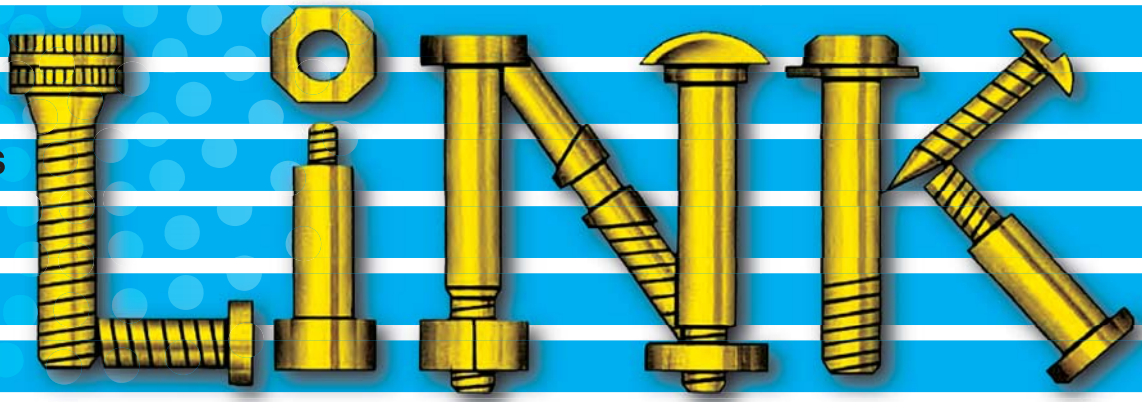


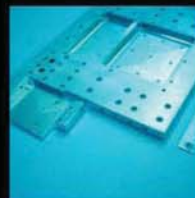
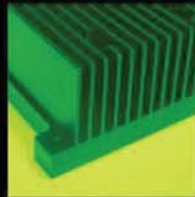
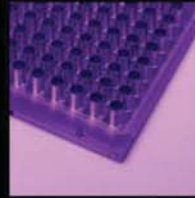
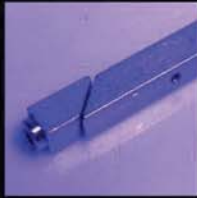
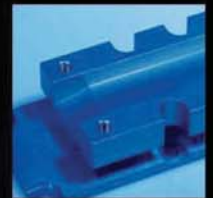
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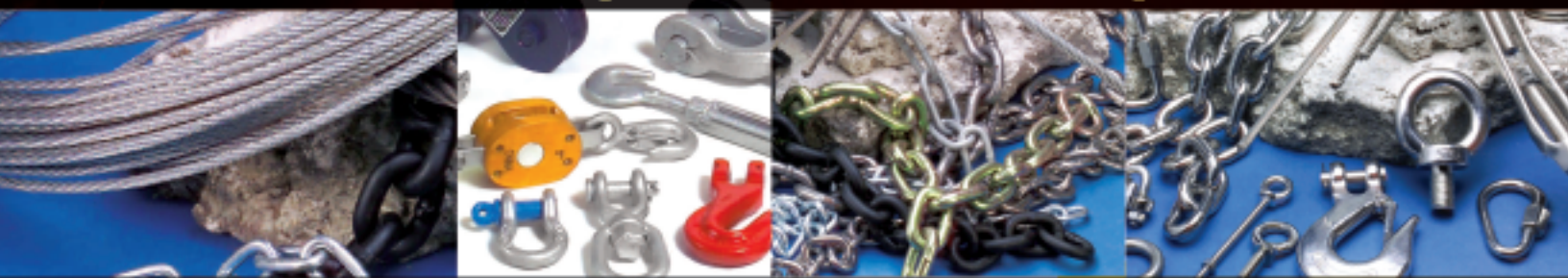
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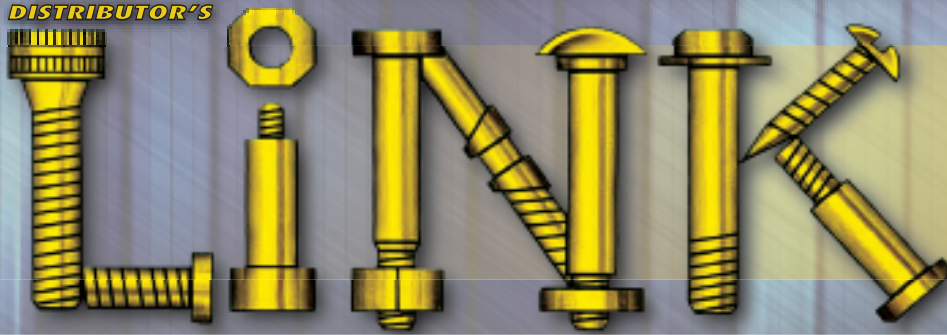


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Distributor's Link Magazine is a quarterly publication dedicated to the Fastener Industry and Fastener Distributors.

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# distributor news

At the **Spirol International** Board of Directors' meeting on August 20, 2010, action was taken to elect Jeffrey F. Koehl as Chairman and C.E.O., and William R. Hunt as President and C.O.O. of Spirol International Corporation – North America effective on that date. Koehl succeeds James C. Shaw who retired on November 19, 2010.

Jeffrey Koehl has been with the company since 1997. His first position was Product Manager, Coiled Pins. Koehl was made an officer of the company in the position of Vice President of Spirol International in 1999. Concurrently, he was elected as a Director of Spirol International in 1999, and was elected President in 2004. He has and a BS in Electrical Engineering from Brown University and an MBA from Boston College.

William Hunt has been with the company since 1979 when he started in the position of Controller. He was made an officer of the company in the position of Treasurer in 1980. Hunt transferred to CEM West for one year in 1981 in the role of Chief Operating Officer. He was promoted to Vice President of Finance (and MIS) in 1986, and was made a Director of CEM (now Spirol International) in 1988. Hunt has a BS in Accounting from Rider College in Lawrenceville, NJ, and is a CPA.

Russell R. Radant, Vice President of Production Technology, has been elected to be a Director of Spirol International at the Board of Directors' meeting. The position became effective on August 23, 2010. Radant has been with Spirol International since 1994 when he was hired as a Project Engineer. He was appointed Chief Engineer in 1998, and was made an officer of Spirol International in 2005. Radant has a BS in Mechanical Engineering from WPI and an MBA from Rensselaer Polytechnic Institute.

\* \* \*

**Prestige Stamping** has added to its line of stocked domestic washers. Prestige now stocks F436 Type 1 extra thick structural washers, F436 beveled washers and also grade 8 USS and SAE extra thick washers. Call your rep or Prestige directly for more information.

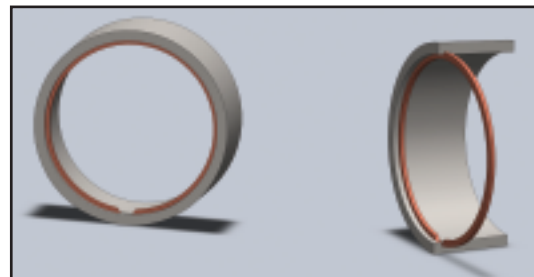
Prestige is also pleased to announce new representation to the Prestige team. Smith Associates now represents the company in the New

England area. Mike and his staff are respected for their knowledge and ethical selling practices in the Fastener Industry. "We are very pleased on his decision to help move Prestige Forward."

For further information contact Prestige at: 23513 Crossbeck Highway, Warren, MI 48089. Call 586.773.2700, fax: 586.773.2298 or visit the website at [www.prestigestamping.com](http://www.prestigestamping.com).

\* \* \*

**Rotor Clip Company, Inc.**, [www.rotorclip.com](http://www.rotorclip.com), the leading manufacturer in retaining rings, hose clamps and related products employs a specialized wire-forming process in the manufacture of constant



section retaining rings for use in automotive transmissions.

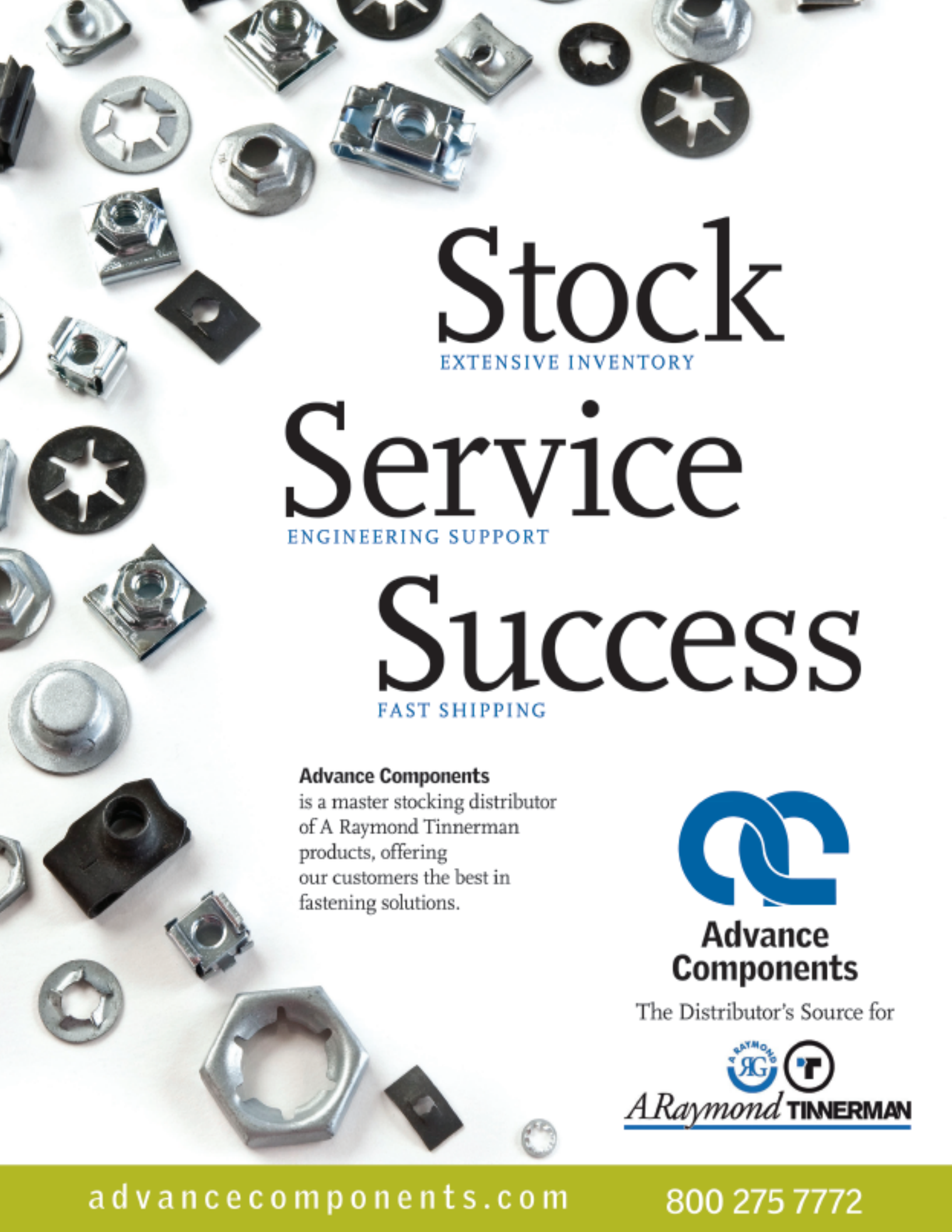
These rings (Rotor Clip designations UMI, UHO, and USH) are coiled into a slightly elliptical shape which compensates for the plastic deformation that will occur during installation. Once installed, these rings "kick-in" and assume a more traditional circular shape which contributes to:

- \* Allowing the parts to clear the bore much more easily due to roundness
- \* Higher load capacity due to increased groove contact
- \* Maximum clearance for assembled part to pass through the installed part.

The "Kick" to the parts is most exaggerated at the gap of the part when it is installed. This allows for easier removal using standard installation tools since the exposure of the gap is increased.

Visit [www.rotorclip.com](http://www.rotorclip.com) for online retaining ring specs, sample requests and quotation requests. To request a hard copy of the 2010 catalog, email [adv@rotorclip.com](mailto:adv@rotorclip.com). For technical considerations or design questions for these and other products, email [tech@rotorclip.com](mailto:tech@rotorclip.com).





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## About the Author...Bengt Blendulf

Bengt Blendulf is the president and principal lecturer of EduPro US, Inc., a company specializing in fastener engineering education and consulting. Bengt's involvement in fastening technology goes back to 1966 when he joined one of the leading European fastener manufacturer. He has been in the mechanical/ metalworking field since 1961. Educated in mechanical engineering in Sweden, he moved to the United States in 1974 to start a subsidiary for a Swedish fastener manufacturer. Bengt also served for eight years on the faculty in the College of Engineering and Science at Clemson University. Since 1997 he (EduPro) teaches highly rated courses in Fastener Technology and Bolted/Screwed Joint Design in the U.S., Canada, Mexico, Europe, Asia and India, primarily for engineers, but also for other fastener professionals. Bengt was the chairman of ASTM F16.96 Bolting Technology from 1996 to 2006. In 2006 he received the Fred F. Weingruber award from ASTM for "his efforts to promote and develop standards for the fastener industry." He is the author of an extensive lecture book as well as over 100 technical papers and articles related to fasteners and international standardization. His business address is: EduPro US, Inc., PO Box 232, Alameda, CA 94501; phone 510-316-3234; email: [bengt@edupro.us](mailto:bengt@edupro.us); web: [www.edupro.us](http://www.edupro.us).



# THREADS: A Chaotic Family

An elementary school class had a field trip to visit some local industries, including a fastener manufacturer. The young, and very excited, students were given a simple test after the visit and one question was: What is a thread? One answer was: "A thread is a scratch wrapped around a pin".

This is, of course, a "slight" simplification of the more accepted definition from ASME; "a screw thread is a ridge of uniform section in the form of a helix on the external or internal surface of a cylinder". Most people would probably be more comfortable with the "scratch" definition.

All threads are not intended as "screw threads", as in fasteners. In preparing for this article, I have been able to identify as many as 246 different types (not number of sizes) of threads (profiles, tolerances, usage areas, etc.) of which a slight majority can be placed in the fastener family folder. This enormous variety of thread types is mostly the result of non-existing national and international standard efforts in earlier years, individual designers need to show-off for colleagues, narrow branch related needs and so on. Today's designers are better off looking at standards published by ISO or ASME when choosing thread types for fasteners, or they will create lots of trouble for purchasing and vendors and probably be fired in the process. With most of our industrial production going to an increasingly larger market area, the need for interchangeability of replacement parts is driving simplification.

But, there are still many pieces of older machinery and other equipment in operation around the world that may have parts like fasteners not conforming to today's standards. For industrial suppliers, like fastener distributors, it is important to be able to identify the types of threads used on replacement parts. Mis-matches can be very costly and even dangerous.

For industrial fastener, inch and metric, the thread profile of 60° is now standardized internationally. Even

tapping screws (sheet metal screws) and wood screws have a 60° thread profile, but the spacing between the threads is, of course, larger than bolt/screw threads in order to increase thread stripping.

The following is a partial listing of other thread types that are or could still be around to make our lives even more exciting:

Thread profile	Name or use	
45°	Muir	instruments
47 1/2°	Thury, B.A., Bodmer	fine mechanics
50°	Progress, N.H.S., SF	fine mechanics
53° 8' (53.1°)	Puteaux, Löwenhertz, early W	instruments
55°	Whitworth (W), Optic	general engineering
55°	Whitworth	pipe threads
60°	ISO, ASME, NM, USST, SI	
60°	Sellers, several M varieties	general engineering
60°	NPS, NPT, NPSL, NPSM, NPSH, NPTF, NPSF, PTF-SPL, Dryseal pipe threads	
64° (29+35)	Cordeaux	29° pressure flank
<u>Also, for special applications:</u>		
29°	Acme	movements
30°	ISA	
30°+3°, 30°+5°	"Saw threads"	
45°	"Saw thread"	
52° (45+7)	Buttress	Low radial loads Let
Rectangular	Several types	Movements
Round profiles	Several types	rail road, mining, etc.
Edison	Light bulbs	E5, E10, E14, E16, E22, E27, E33, E40

There are also a large number of other thread types that we are not likely to come across.

Why all these different thread types?

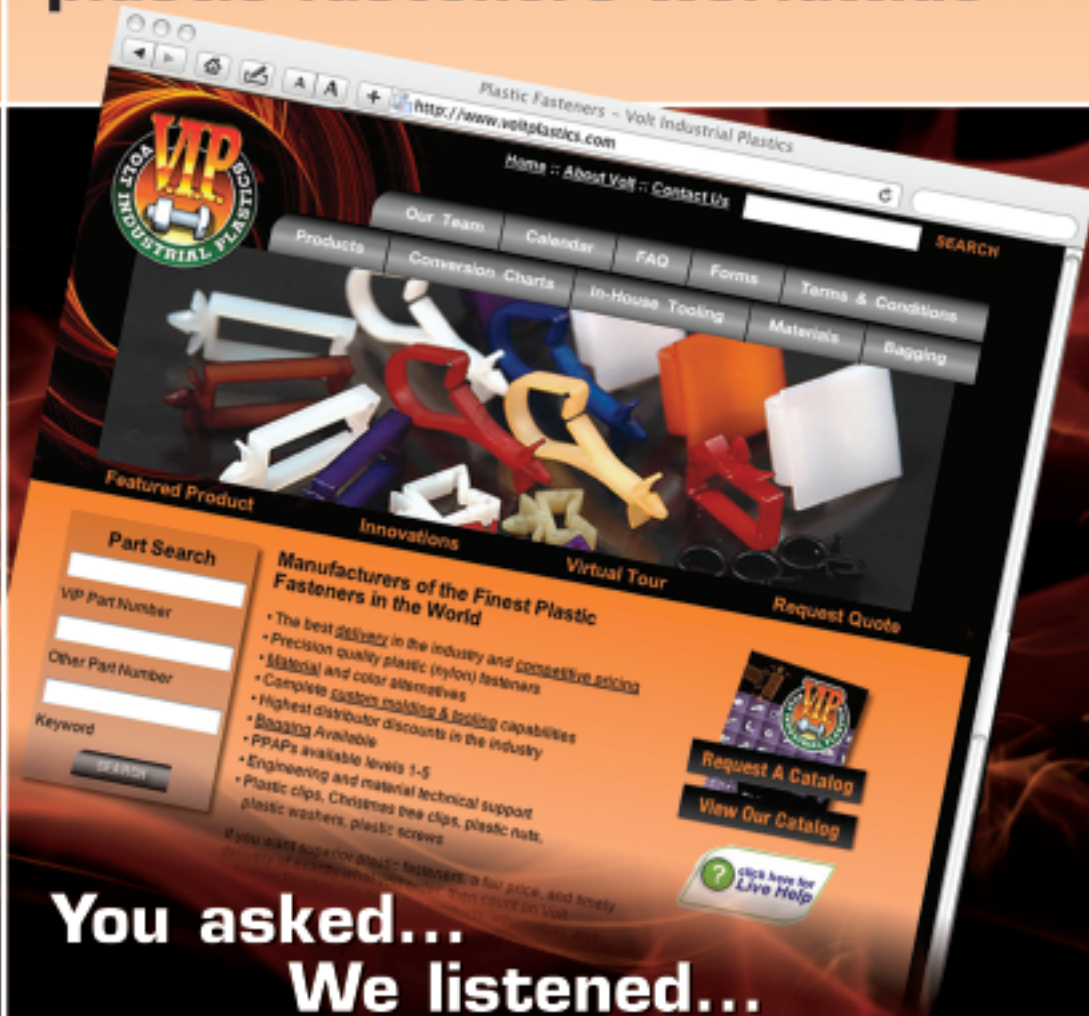
Let's start with the "Mother" of all bolt/nut threads, the W or Whitworth. Joseph Whitworth (Sir Joseph 1841) thought he was really cool and creative by designing a

please turn to page 122



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## About the Author...Robert B. Footlik

Robert B. Footlik is a licensed professional engineer. A graduate of Illinois Institute of Technology, he has worked extensively in the fields of material handling, plant layout, packaging and management systems. The firm of Footlik and Associates serves as staff warehousing and materials consultants to six trade associations. Footlik writes for 12 trade and professional journals. Footlik and Associates is located at 2521 Gross Point Road, Evanston, Illinois 60601;



# REDUCING CONFUSION

## How many times have you pushed a door clearly marked "Pull" or pulled on a door marked "Push?"

This is an everyday example of what is known as "Cognitive Ergonomics Failure." Your perception of what the door should do gets in the way of the reality of how this particular door actually behaves. Similarly we all expect light switches to be mounted so that up is on and down is off. Installing the switch sideways is even more confusing. In most Fastener Distribution operations there are many examples of these problems.

## Reducing External Confusion

The most frequent failure to communicate effectively is when a customer arrives to visit your offices, sales counter or will call. Establishing an intuitive and effective traffic pattern is often the first step in a larger process. One way drives, lane markings and road signage should direct arriving traffic to specific areas to facilitate all the vehicles...but does it?

For one Distributor paving 20' of grass and adding some prominent signs to redirect truck traffic to a new entrance eliminated the chaos of trucks maneuvering on the driver's blind side in the middle of peak counter visitor traffic. This solution came directly from a simple ergonomic observation that the docks were set up with the wrong flow for efficient backing, but it was useless without changing the driver's perceptions of where to go to avoid customer vehicles.

Similarly directing customers who are pulling trailers to diagonal, pull through parking opened up the sales counter parking lot so that customers can spend their time productively at the counter instead of inefficiently waiting

for other traffic to maneuver and depart. Painting lines on the pavement established an intuitive path to reach this parking and a suitable exit strategy. Done properly customer reaction was the typical "Why didn't you do this sooner?"

Making traffic pattern changes may not work for every facility, but large, universal signage can be installed almost anywhere. Pictograms and words work best to insure that the message is both understood and implemented. For example rather than mounting a small sign on the wall for visitor parking, signage with suitable arrows directs guests to a convenient parking area and away from employee and counter/will call high traffic spots. Similarly establishing specific drives or traffic patterns for every visitor will reduce confusion and provide a more welcoming atmosphere.

## If it works outdoors bring it inside

In the course of visiting thousands of supply houses throughout North America we can remember only a small number who provided effective cognitive clues for how to find the offices and other areas. First time visitors often enter through the wrong door and have to be redirected by the counter personnel. This is particularly true when the offices are on the opposite side of the building, or are combined with a showroom that opens at a different hour. Entering at the first available door instead of



the right one is also common when signage is inadequate or missing.

One older facility with thoroughly confusing traffic patterns utilized color coded footsteps painted on the floor. Counter personnel would then tell customers follow the red path to the general offices, green to inside sales/

please turn to page 124



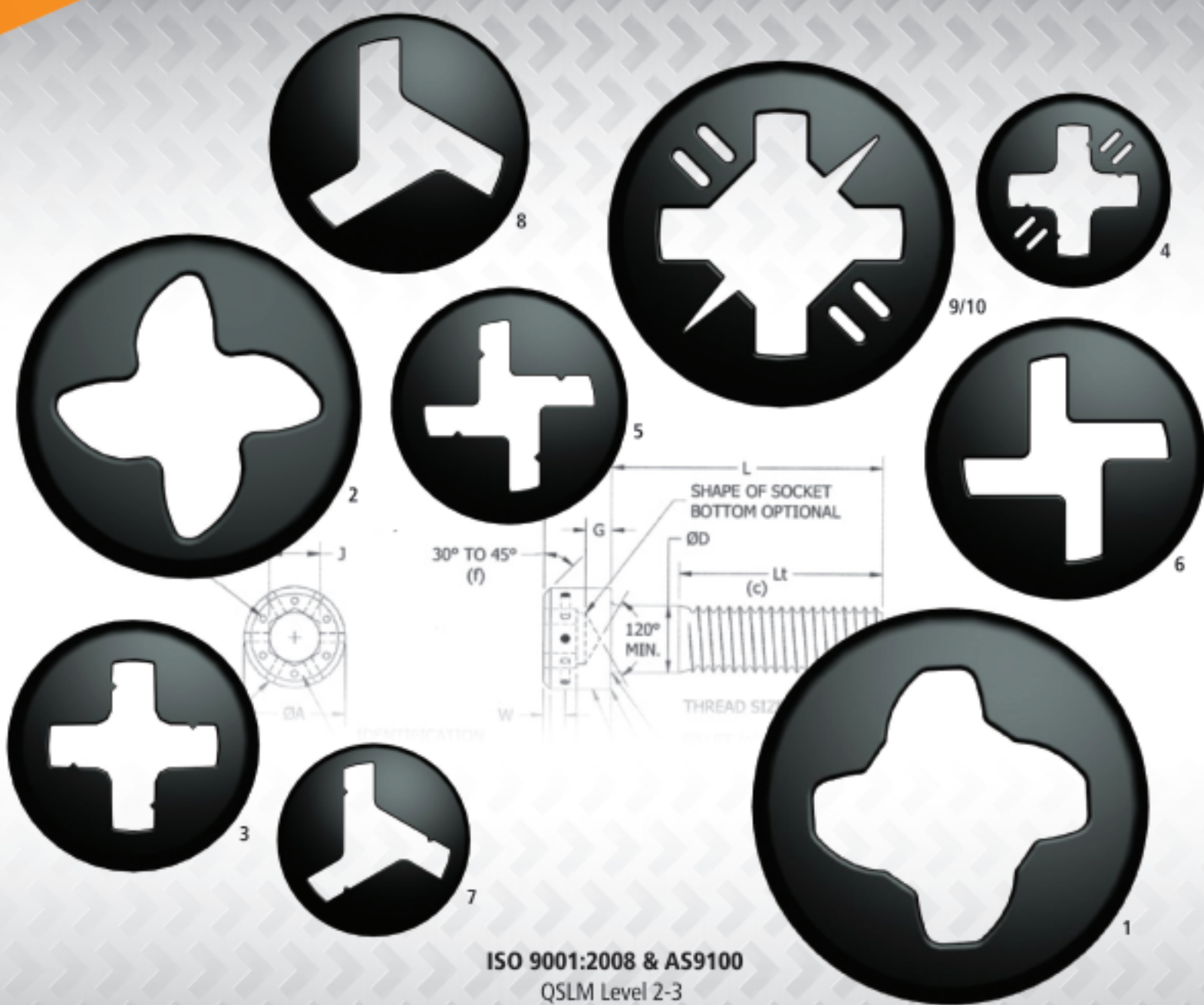


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## About the Author...Guy Avellon

Guy Avellon has been in the MRO and fastener distribution industry for over 30 years. He began his metallurgical engineering career at Republic Steel Research Center in metal coatings and has since held positions as sales engineer; Chief Engineer; Manager of Product Marketing, Product Engineering and Quality and Director of Quality and Engineering. He founded GT Technical Consultants where he performs failure analysis, presents lectures on fastener safety, worked for law firms and designs and audits Quality systems.

He is a member of SAE and is Vice Chairman of the ASTM F16 Fastener Committee and Chairman of the F16.01 Test Methods Committee, since 1988. He also received the ASTM Award of Merit in 2005.

Guy and his wife, Linda currently reside in Lake Zurich, IL and may be reached at 847-477-5057 or visit his website at <http://www.BoltDoc.com>.



# METRIC FASTENERS

Like it or not, Metrics is here to stay and we will soon be converting everything over to metrics. Thomas Jefferson was initiating the reform in his day and we have been saying "the metrics are coming" since 1975. Except for the automotive industry, nothing else has changed.

The U.S. is the last country in the world to not be exclusive users of the metric system in everything. We have been using the metric system for decades in pharmaceuticals, photography, chemical industry, optics and even spark plugs.

As a unit of length measurement, everything is based on the meter, with a shift in the decimal point to the left or right depending upon whether the value goes up or down.

So, if a meter is 1.00, a tenth of a meter is a decimeter at 0.1m, a centimeter (cm) is one-hundredth of a meter at 0.01m and a millimeter (mm), or one-thousandth of a meter is 0.001m. Therefore, 1,000mm = 100cm = 1m. The numbers stay the same, only the decimal point shifts. This is actually like counting change. Going larger, the next unit is 1,000 expressed as a kilometer (km), or 1,000m.

An interesting fact that occurs with metric units; all units of weight, length and volume are related. A cube which measures 10cm on each side has an area of 1,000 cc (cubic centimeters). If the cube was filled with water, it would hold 1 liter (1 l, or 1,000ml for milliliter) and weigh 1,000 g (grams) or 1 kg (kilogram).

### Metric Standards

Until a few decades ago, there was no agreement to standards regarding metric fasteners from France, Italy, Germany, England or Japan. The DIN (Deutsche Industries Normen) devised the most complete standards of any country, but there was still a need for unification. The ISO (International Standards Organization) was formed.

The DIN standards have been modified to follow ISO recommendations. The United States coordinates their

efforts with ISO through ANSI, the American National Standards Institute. Although there are still some slight differences.

### Fastener Designation

First, when ordering or identifying the dimensions of a metric fastener, all metric fasteners are preceded by the capitalized letter 'M'. Then, similar to how inch series fasteners are identified, the diameter is listed with the thread pitch, length and property class. For example: M12 x 1.5 x 50, 10.9 Hex Cap Screw.

This tells us the diameter is 12mm, the thread pitch is 1.5mm and the length is 50mm. The property class is a 10.9.



### Thread Pitch

Users must be aware that there are three types of thread pitches available: the Standard thread, which is similar to the UNC; the Fine thread, similar to the UNF; and the Japanese thread which is in between but is used only on the M10 and M12 fasteners. For

example; an M10 fastener can have a thread pitch of 1.0mm, 1.25mm and 1.50mm.

Identification is extremely important because many metric sizes are very close to the inch series that the nut or fastener may be started but additional tightening may result in thread stripping. For example, a 1/4"-28 fastener has a diameter of 0.250" compared with an M6 which measures 0.236". The difference is 0.014". The thread pitch on the M6 is 1.0 which is roughly equivalent to 25.6 threads-per-inch Vs the 28 TPI for the inch fastener. Not much difference and easy to confuse.

The following chart cites other examples which illustrate the potential danger of mixing an inch with a metric fastener. The resultant assembly will produce clamp loads from 25 to 60% less than expected, providing the threads haven't stripped or have begun to strip, in which case the loads will be close to 100% lost.

please turn to page 135





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## About the Author...Joe Dysart

Joe Dysart is an Internet speaker and business consultant based in Thousand Oaks, California. A journalist for 20 years, his articles have appeared in more than 40 publications, including The New York Times and The Financial Times of London. During the past decade, his work has focused exclusively on ecommerce. Voice: (631) 256-6602; web: [www.joedysart.com](http://www.joedysart.com); email: [joe@joedysart.com](mailto:joe@joedysart.com).



# GOOSING MARKETING EMAIL WITH SOCIAL MEDIA

## With New Tools, it's Easy for Fastener Distributors

Fastener industry marketers looking to get a handle on social media as a promotional tool have found an easy solution: simply integrate the medium into existing email marketing programs.

These pioneers say a little creative contact with current and potential customers on social networks like Facebook, Myspace and Twitter can add new muscle to tried-and-true email.

Case-in-point: some new tools available with StrongMail's new Social Studio website (<http://www.strongmail.com/products/strongmail-social-studio/>) service enable fastener distributors to match email addresses in their databases with 'top influencers' – or people who have a lot of active friends online -- and then reach out to those influencers with rewards, offers and word-of-mouth promotional programs.

A number of marketers, for example, have already used Social Studio to invite such influencers to alert their Facebook friends about discounts and promotions, and then give rewards to those influencers who generate the most conversions in terms of referred sales or another desired action.

"The real value of social media marketing is to move beyond merely listening, to start driving actual revenue," says Paul Bates, UK managing director at StrongMail.

Indeed, the power these programs have to ferret out social activity on the Web with the simple input an email address can be so powerful, the results can be astonishing. Flowtown



**Top:** At Flowtown, you can input any email address, and instantly pull up Web activity associated with that address.

**Middle:** Sophisticated new suites like Interactive Marketing hub offer marketers campaign dashboards they can use to create, manage and monitor such integrated programs across all digital media.

**Bottom:** Responsys also offers an all-in-one email/social media marketing solution.

(<http://www.flowtown.com/tour>), a niche service that focuses primarily on mining and manipulating evidence of social networking, for example, invites all comers to its Web site input any email, and instantly pull up all the Web activity associated with that email.

I took the bait, and not surprisingly, found a few revelations on my social network activity with email addresses I currently use for such purposes. But in addition, Flowtown also unearthed a Web site community I joined – and forgot about – years ago with an old email address I haven't used in years.

Apparently, like rock and roll, the social media never forgets.

Granted, fastener industry marketers will need to tiptoe lightly between being seen as rolling with the latest trend in digital socializing, or being perceived as willing participants to privacy invasion. But either way, it's clear that the ability to literally monitor every public move made by a person on the Internet is already available, and is sure to become only more pervasive in coming years.

In fact, some of the more sophisticated programs now offer fastener industry marketers campaign dashboards they can use to create, manage and monitor such integrated programs across all digital media, including email, social, mobile and web.

ExactTarget's Interactive Marketing Hub can be found at <http://www.exacttarget.com/hub/index.html> and offers a 'CoTweet Social module, that enables

please turn to page 130



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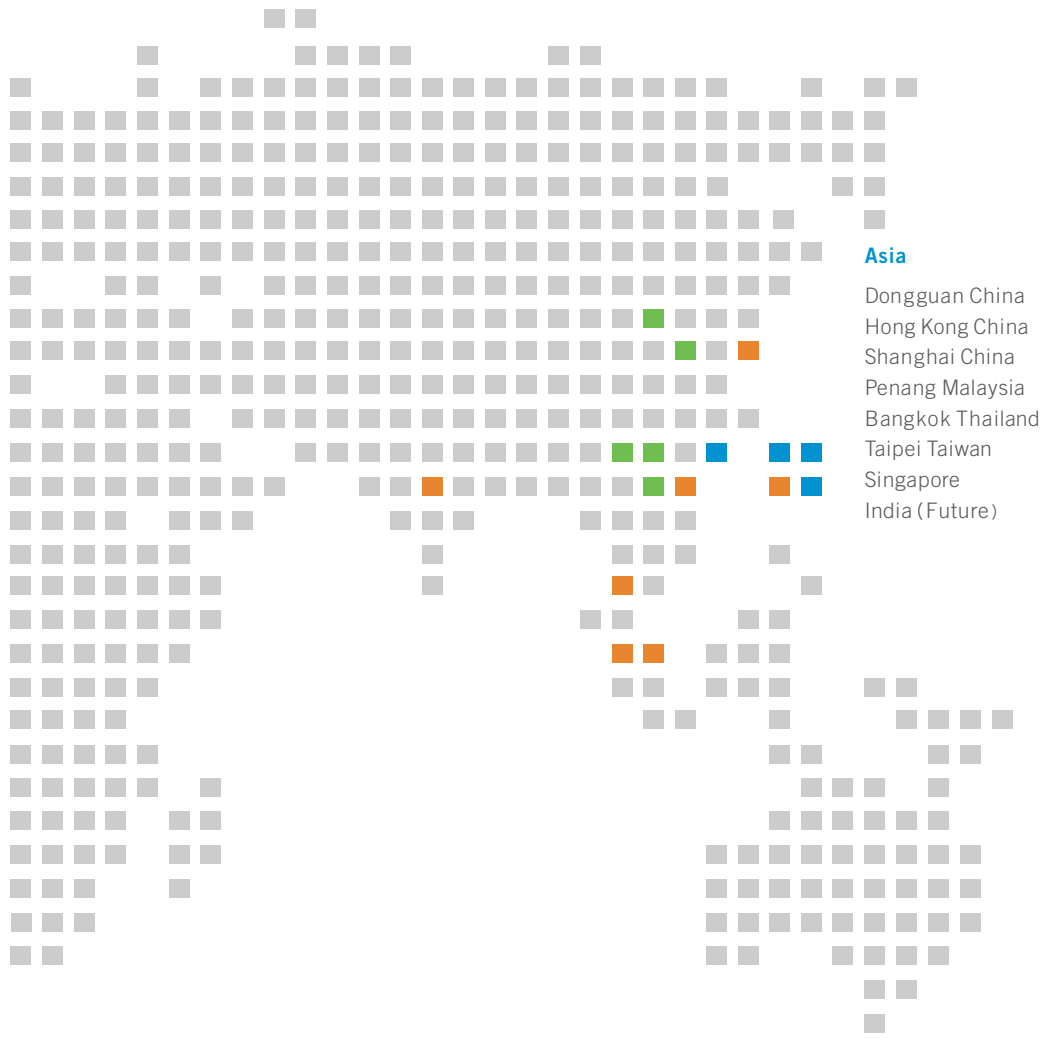
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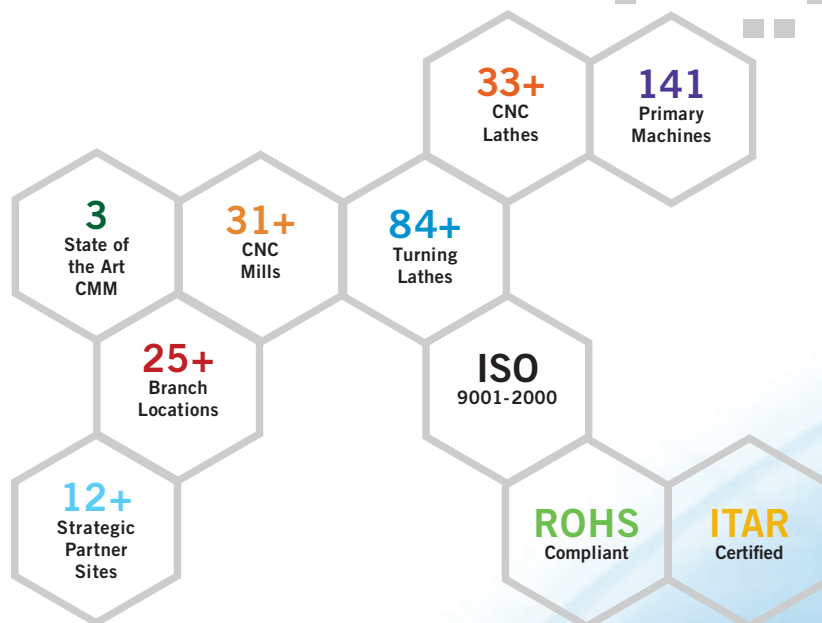




With the knowledge that a customer's component needs are define through the design engineering process. Since its founding in 1982 PENCOM has worked to assist in this design process. By offering a "Value Engineering" approach to design problems. PENCOM proved to design engineers that it was a valuable resource. In Valve Engineering the goal is to find or create the least expensive best design solution. PENCOM's knowledge of standard "off the shelf" products allowed it to suggest these components first. And when the application required a more complex solution PENCOM would employ its internal design capabilities to create a custom component.



**William Gardiner – President**



*(Continued on page 18)*

PENCOM is both a Manufacturer and a Distributor. An engineering design provider and a logistics supplier. Its products are divided into standard and special items. The standard line consists of a full range of fasteners and hardware components.

## Nuts, Bolts, Screws and Washers



No supplier could call themselves a Fastener Distributor without supplying a full range of nuts, bolts, screws, and washers. PENCOM provides machine screws, thread cutting screws, thread forming screws, screws for plastics, screws for sheet metal, as well as, a full selection of SEMS screws in a wide range of head styles and drive types, in both inch and metric sizes. Additionally, PENCOM offers bolts and hex head cap screws in grades 2, 5, and 8, and metric classes 8.8, 10.8, and 12.9, socket head cap screws, nut styles including hex, jam, flange, nylon inserts, and KEPS, and all washer types.

## Standoffs and Spacers



Pencom manufactures a full range of standoffs, spacers, and jack screws with a wide variety of mounting options. They are available with special features like thread locking nylon patches, grounding knurls, hi-torque knurls, and custom dimensions in sizes ranging from 2-56 thru 1/2" and M2 thru M12. Materials include Aluminum, Steel, Stainless Steel, Nylon, Delrin, and Brass. All materials are RoHS compliant.

## PENCOM HISTORY

In early 1982, the United States found itself in an economic slowdown. The results of this slowdown provided PENCOM's founder, William Gardiner with a unique opportunity to pursue his dream of starting a business. Contacting some old friends in the industry, he offered his services as a manufacture's rep on the West Coast. In February of 1982 Gardiner filed for a fictitious business name as Peninsula Components, DBA PENCOM. With MacLean-Fogg, Fastener Technology, Acimet, and Special-T Fasteners on his line card it was now time to go to work. "Looking back at those days, I wonder why I did not starve to death," Gardiner laments.

The previous 10 years had prepared him well. Graduating from college in 1972, with a Bachelor of Science Degree in Aerospace Engineering, he learned right away that things do not always go as planned. The Aerospace industry was going through a massive reduction leaving no jobs for young graduating engineers. In need of a job, Gardiner

started the interviewing process and it was not long before he and MacLean-Fogg found each other. Working as an Application Engineer, Gardiner was able to see first hand customer's needs and provide solutions. The MacLean-Fogg experience supplied many of the principles that still guide PENCOM today. He credits Barry Maclean for teaching him the concept of "Value Engineering"

Though Gardiner had worked with the customer's design engineers he knew he lacked the outside sales experience necessary if he was to fulfill his dream of starting his own company. The last piece of the puzzle came when the Camloc division of Rexnord (now Alcoa Fasteners) hired him as a Field Sales Engineer, responsible for the



*(Continued on page 20)*



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## Guide Pins



PENCOM's GP-series guide pin has become the design engineer's choice due to a broader range of sizes, styles, and tighter tolerances than competing guide pins. The GP is an alignment solution that engineers have relied on for years to precisely locate stacked and/or mating panels and chasses. The series has been enhanced to include a heat treated stainless steel material option for self-clinching installation in stainless steel sheets. Zinc-plated carbon steel and passivated 300-series stainless steel pins easily install in aluminum and carbon steel sheets. PENCOM also offers both male and female threaded versions, as well as pins manufactured to custom dimensions and designs. For applications requiring tighter alignment, PENCOM offers the GR-series press-in guide pin nuts.

## Inserts for plastics and other soft materials



PENCOM offers "ZERTS" line of brass and stainless steel inserts for ultrasonic, heat, press-in, screw-in, or molded-in applications which are equivalent to other available inserts on the market. With PENCOM's commitment to on-the-shelf inventory, a plastic molder can be confident that their order will ship the same day.

Boeing account.

Fast forward to 1982, Gardiner now had the experience to venture into the world of the entrepreneur. Success was not far behind. An order from Westinghouse for a 2 1/2 " socket head cap screw for the MX missile program was followed closely by a captive screw contract with Rohm - Mil Spec.

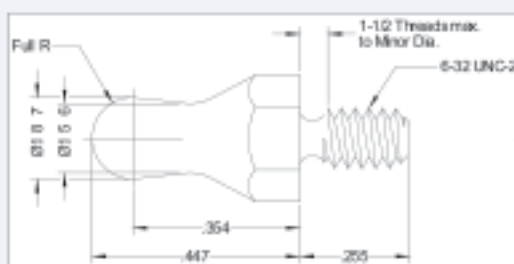
Through the 80's PENCOM operated as a small rep firm. Principles came and principles went. Among them were Captive Fasteners, Lyn-Tron, Pioneer Screw, Special-T- Fasteners, MacLean-Fogg, John Hassell Company, PSM International, Promptus, and Topy International. There were also the non-fastener companies Astron (stamping), Tadco (membrane switched), Mutual Metal Stamping, Design Octaves (Rim Plastic Molding), National Northeast ( Extrusions and Heat sinks ), and NorCal Machining Center.

" Being in the right place at the right time definitely played a part in PENCOM's success "

The old adage " being in the right place at the right time definitely played a part in PENCOM's success," states Gardiner. It came again when Cisco engineering was having a problem with a Ball Stud that would not seat flush to the mounting plate. By adding an undercut to the threaded shank caused the part to work perfectly. Problem solved, customer won!

" Things were different in those days " Gardiner recalls, " I spent many hours, at night, hand drawing prints for customer applications. "

Ball Stud with undercut.



(Continued on page 22)



# Greenslade & Company, Inc.



## Fastener Inspection Equipment

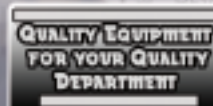
We supply the widest range of fastener inspection equipment in the world. Our line includes GO/NOGO and variable thread gages, recess measuring devices, head height protrusion gages, length gages, concentricity gages, and tapping screw testing equipment (including Nspekt 2, our patented data collection system)

## Innovative Gage Design

With our highly trained engineering department, Greenslade designs special gages to meet customers' unique requirements. This service is performed at NO CHARGE. Most design proposals are provided within 48 hours of receiving a design request. Gage designs can be of attribute or variable type depending on the customer's specific requirements.

## Dimensional Calibration

With our own calibration laboratory and utilizing state-of-the-art precision equipment, we specialize in providing dimensional calibration services to manufacturers and distributors throughout the world. We are accredited to ISO 17025 by the American Association of Laboratory Accreditation (A2LA). With continued equipment additions and scope expansions, we are broadening our capabilities to ensure the best possible service to our customers.



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(continued from page 20)



*Hex Head High Torque Insert.*

When an application requires additional performance, PENCOM's engineers will partner with the customer to design a custom solution as is illustrated by this example. A pool cleaning equipment manufacturer found that after a couple years of ownership, the inserts in their products could sometimes be tightened to failure due to material degradation and shrinkage. By creating an insert with a unique hex shaped flange that provided superior torque-out performance, PENCOM was able to provide the solution the customer was looking for.

## Self-Clinching Fasteners



PENCOM began manufacturing its own line of self-clinching fasteners 11 years ago, starting with custom or modified standard parts that had long lead-times and/or high minimums. Today PENCOM produces a complete line of press-in hardware, "ZINS", as a direct substitute for other press-in fasteners on the market at a lower cost and better availability. Known for having the odd sizes and lengths, many fastener distributors see PENCOM as their source for self-clinching hardware. PENCOM has pioneered innovations in the press-in hardware field, such as floating standoffs and nylon tip standoffs.

PENCOM did not have CAD drawing programs. There were no FAX machines, or internet. There was, however, a garage, and it was from there that parts were counted, bagged, and shipped. PENCOM's first computer was a 286 with a 20MB hard drive (enough for 20 digital pictures today).

In 1989 PENCOM moved from the garage to a 1100 square foot office/warehouse in Foster City, Ca. Silicon Valley customers were in full "afterburner mode" and PENCOM was there to add any fastener assistance they needed. Each successful solution created more calls for help. PENCOM was making drawings and design engineers were putting them in applications. If the designs could not be supplied by the companies PENCOM represented, it would sub the manufacturing out.

In August 1995, Pencom hit the \$1,000,000 milestone for sales in one month.



*Fiber Optic Routing Standoff.*

One of the sub-vendors PENCOM was using was Accuracy Screw Machine in San Leandro. In 1998 Lee Wilkerson, the owner of Accuracy, indicated that he wanted to sell his company. PENCOM saw this opportunity, its own internal manufacturing. The ability to control cost, quality, and delivery was appealing and it was not much later that Accuracy became a PENCOM subsidiary.



The Millennium saw things really begin to change at PENCOM. Its customers were on the move, contract manufacturers were becoming the prime source to manufacture products. PENCOM was pushed to supply these manufacturers, and in one year, 2000, PENCOM opened a Singapore logistic site, a Guadalajara manufacturing plant, an Austin, Texas and Salem, New Hampshire logistic center. The talent of Henry Villume was added as the head of PENCOM's Thermal team.

(Continued on page 132)



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## distributor news

**Semblex Corporation** has received the North American license for the family of REMINC tri-lobular fasteners, including TAPTITE®, DUO-TAPTITE®, TAPTITE II®, TAPTITE 2000®, PLASTITE®, POWERLOK®, and FASTITE® Fasteners.

These high performance thread-rolling fasteners reduce in-place assembly costs and enhance assembly reliability by eliminating separate nut thread tapping operations & cross threading. They have become the fastener of choice for all general purpose attachment, structural and positional applications in a wide variety of industries including automotive, heavy truck, appliance, HVAC, business equipment, home entertainment, and others.

Typical sizes that are available in these products from Semblex range from M1.6 (#1) to M14 (9/16") in diameter with a variety of head styles and both standard and high performance drive systems.

The Semblex Corporation, established in 1968, is a leading manufacturer of fasteners and cold-headed components that specializes in providing global customers in the automotive, commercial, and distribution markets a broad array of cost-saving special and proprietary products and extensive engineering support services. Semblex is TS 16949, ISO 9002, ISO 14001, and A2LA certified.

Additional information on Semblex, REMINC tri-lobular fasteners, and our other engineered products can be found at [www.semblex.com](http://www.semblex.com)

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## About the Author...Jeff Thredgold

Jeff Thredgold is President of Thredgold Economic Associates, a professional speaking and economic consulting company. He is the only economist in the world to have earned the CSP (Certified Speaking Professional) designation, the highest earned designation in professional speaking. He has spoken more than 1,000 times during the past 20 years, traveling more than one million miles in the process. His career includes 23 years with \$100 billion banking giant KeyCorp, where he served as Senior VP and Chief Economist. He now serves as economic consultant to \$50 billion Zions Bancorporation, which has banks in 10 states.

Jeff has appeared dozens of times on CNBC-TV, the nation's business network, in addition to numerous appearances on CNN, and is quoted regularly in the nation's financial press. He is a monthly contributor to the national publication Blue Chip Financial Forecasts and quarterly USA TODAY economic forecast surveys.

Jeff has been writing a weekly economic and financial newsletter, now titled the Tea Leaf, for 33 years. He is the author of four books, "econAmerica: Why the American Economy is Alive and Well...and What That Means to Your Wallet" (published by Wiley & Sons, July 2007); "Economy by Thredgold;" "A Parent's Letter to My Children in School;" and "On The One Hand...The Economist's Joke Book." The company also produces quarterly economic reports and a monthly small business index for various clients.

He served as an adjunct professor of finance at the University of Utah for 16 years and served as President of the National Association for Business Economics Utah Chapter. He is a former member of the Economic Advisory Committee of the American Bankers Association and the Economic Policy Committee of the U.S. Chamber of Commerce.



# OUTLOOK 2011

## The U.S. Economy

While the American economy has now registered growth for five consecutive quarters, the pace of that growth has been meager, averaging a 2.9% real (after inflation) annual rate...and just a 2.1% rate during the past two quarters. Such growth trails the average 3.6% real annual growth pace of the past 30 years.

What we now call the Great Recession enters the history books at 18 months in duration, officially running from December 2007 to June 2009. Never since the Great Depression has a recession wiped out all net job gains of the prior economic expansion. Never since the Great Depression has a painful and lengthy recession been followed by such a limited growth pace.

Growth in 2011? Most forecasting economists see real growth during 2011 at a 2.5%-3.0% annual rate, with the Federal Reserve's forecast a bit more cheery. As before, major economic headwinds of weak residential and commercial real estate construction, soft housing values, and near double-digit unemployment impair the economy. In addition, fragile consumer confidence tied to anxiety about massive government spending and unprecedented budget deficits also constrains growth opportunities.

## Budget Deficits

Effective steps to reduce future growth rates of U.S. government spending are mandatory to getting this nation's

financial house in order. You cannot tax your way to balanced budgets, nor can you tax your way to economic prosperity.

Greater media focus and rising consumer awareness of painful but vital steps necessary to deficit reduction are critical first steps in the process. Both the political left and the political right have been critical of proposals by various deficit reduction groups, while the middle seems more willing to have a healthy debate. Isn't that the basis of effective government...give and take on both sides?

Record budget deficits of the past three years, combined with projected \$1,000,000,000,000 annual budget shortfalls for as far as the eye can see have, to this point, found domestic and global bond markets willing to provide massive deficit funding. However, financial market uncertainty about ongoing

budget deficits and huge national (sovereign) debt levels across southern Europe must be "a wakeup call" for the U.S. We will simply not be immune in coming years to financial market distaste and resistance to boatloads of additional U.S. Treasury debt issued to fund irresponsible levels of government spending.

please turn to page 138



Above: US annual change rate for US REAL GDP.  
Below: US annual average for US UNEMPLOYMENT RATE







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## distributor news

**Aztech Locknut** is pleased to welcome back Andy Hayman. After starting his fastener career with Aztech back in 1994, he's gained additional experience in various areas of the fastener business over the years and has rejoined their team as National Account Sales Manager. Andy brings extensive experience in all facets of the fastener business, including industrial distribution partnerships and application troubleshooting.

We are very pleased to welcome back this high-quality "recycled" employee! You can reach Andy at 1.800-367-2260, 630-258-5366, or



andy@aztechlocknut.com.

Aztech would like to recognize Sara Vasicek for her invaluable service to the company for the past 17 years. Sara started with Aztech in 1993 as a receptionist. She has held various roles throughout the years, currently serving as the Inside Sales Manager. Her experience and dedication to her customers are unmatched in the industry. You can reach Sara at 800-872-7408, 630-865-1870, or email her at sara@aztechlocknut.com.

In 2008, Aztech embarked on a project to convert their conventional building into a LEED-EB certified building. Currently, all LEED-EB Gold requirements have been installed and are functional in the building while they complete the required 12-month monitoring and documentation of the LEED points.

Aztech recently held an open house, sponsored by MFWA, to showcase the efforts that make Aztech the eco-friendly standard among fastener manufacturers.

Aztech has been making quality locknuts since 1978. They know the key to success is the Continuous Improvement process. Making a batch of high quality locknuts from start to finish must require a solid manufacturing process developed from the feedback of a CI system.

Aztech's quality system has been ISO certified since 1999. For the past six years, they have been certified to the AS9100 Standard. Last year, Aztech was awarded ISO14001 certification for their commitment to environmental responsibility, and they are currently completing ISO17025 Lab Certification and TS16949 Certification.



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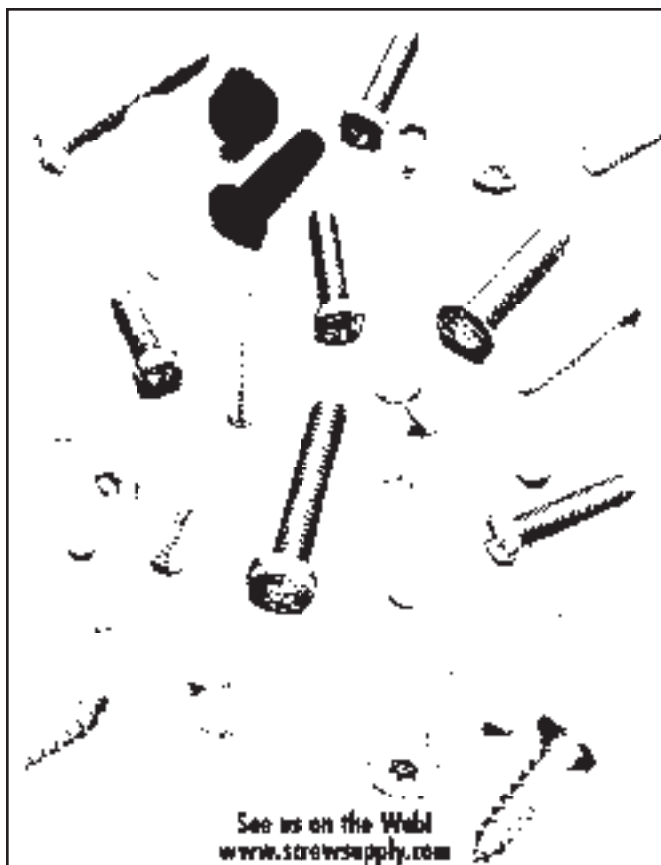
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## distributor news

**Birmingham Fastener** announces ISO 9001 Certification of its Hanceville Distribution facility.

Birmingham Fastener is proud to announce that, as of October 4, 2010, their Hanceville Distribution Center has achieved certification to ISO 9001:2008. The scope of this certification is "Distribution and Value Added Services of Fasteners and Fastener Related Products". This certifies that they are following strict process guidelines regarding the handling of our products. This is the second division within the Birmingham Fastener Inc. group of companies to receive this distinction.

Hanceville Distribution Center is the centralized distribution hub for the Birmingham Fastener Group of companies. Established in 2002, the 120,000 square foot facility utilizes state of the art racking and RF scanning systems that allow Birmingham to quickly and accurately fill orders for our customers.

ISO 9001:2008 specifies requirements for a quality management system where an organization (a) needs to demonstrate its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements, and (b) aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.

This Birmingham facility manufactures custom and non standard fasteners for the structural steel fabrication, metal building manufacturers, transportation, water works and utilities, OEMs, MRO, construction and other industries.

The Alabama Aerospace division, founded in 1995, supplies aerospace, military and commercial fasteners and electronic components. Alabama Aerospace stocks 250,000 line items from 150 manufacturers.

Founded in 1980 by Howard Tinney, Birmingham Fastener has facilities in Alabama, Connecticut, Texas, Nebraska, Wisconsin and Florida.

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## distributor news

The Würth Group, a \$10B USD global company comprised of over 400 companies in 80 countries and a world leader in providing assembly components, is pleased to announce the establishment of **Dokka Fasteners Inc.**, a state-of-the-art hot forming fastener manufacturing facility that will be located in Auburn Hills, Michigan. Specializing in providing product for the North American wind energy market, Dokka's fully automated manufacturing process will be the first of its kind in the US, and will replicate the high tech process found in the Dokka Norway facility. The Dokka Norway facility has been an industry leader in providing products to the Wind Energy Market for over two decades.

After a highly detailed review of incentives from Illinois, Missouri, Indiana and Michigan, the clear advantage to Dokka was the overwhelming support of the state of Michigan, Oakland County, and the city of Auburn Hills. With Michigan developing into an epicenter for wind energy technology and manufacturing, and coupled with the exponential growth of the wind farms throughout Michigan, Auburn Hills is the ideal location for Dokka Fasteners Inc. to support the North American wind market.

The Würth Group will invest over \$20MM USD into the facility, which will feature robotic hot forming manufacturing of high quality bolts from M24 through M72 up to 675mm in length, as well as studs and threaded rod in sizes M16 through M80 and lengths up to 2300mm. Dokka Fasteners Inc. will feature state-of-the-art in-house heat treat capabilities to allow Dokka to control the quality and integrity of each fastener produced.

Dokka Fasteners Inc. will be managed by a team of long time fastener industry professionals with a hundred years of combined fastener manufacturing and distribution experience. Marc Strandquist - CEO, Brian Becker-Sales/Marketing, Rob Girdley-Director of Quality, and Carlos Cham-Director of Materials are just some of the experienced fastener professionals launching this organization. Also joining the team are Mike Lafair-Director of Manufacturing, a 25 year hot forming automotive manufacturing executive; Marcel Scheicher-CFO, a 20 year financial manager, and Wendy Tichenor-Facility Manager.

For more information on the Würth Group, please visit the website at <http://www.wuerth.com/web/en/wuerthcom/index/php>

## About the Author...Dennis R. Cowhey

Dennis, R. Cowhey, CEO – Computer Insights, Inc. Started Computer Insights in 1981. He served for many years on the Illinois CPA Society Computer Information Systems Committee. He is a frequent author of articles for Industry Trade Magazines. Before starting Computer Insights, he served as Central District Manager for a division of Litton Industries (now part of Northrup Grumman). That company offered Inventory Control Systems to Retailers. Prior to that, he was a Credit and Financial Analyst for National Credit Office division of Dun & Bradstreet, Inc. He received his education at Chicago City College and DePaul University.



# IS TECHNOLOGY HOLDING YOU BACK?

I hear it every day, potential clients for The BUSINESS EDGE 2.0 say "if it ain't broke don't fix it". The fastener industry is known as a trailing industry when it comes to the use of technology. As I talk to people about their technology needs they are often quick to defend their use of 30-year-old technology. It reminds me of a problem-solving class that I attended. When you're considering a problem you must know what you know; you must know what you don't know; and you must realize that there are some things that you don't know you don't know. The biggest problem is the last area when you are completely unaware of something you should be addressing.

## Customer Expectations are Escalating

Selling a commodity product like fasteners presents interesting challenges. Times are changing. Customer service expectations are higher than ever. People expect real time answers to all of their questions. They expect their vendors to know more about their business than they do.

In order to differentiate themselves from other companies offering essentially the same products, fastener distributors need to provide world-class service. Information is becoming an extremely important component of that service.

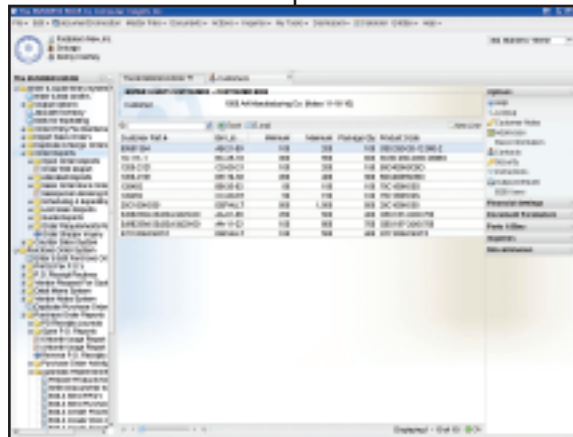
## Customer Required Reports

How often do you receive a request from a customer that requires you to create a spreadsheet showing their usage? Do they ask for a separate report of those items that were on the bin stocking program? Do they want a different report that shows only sales not on the bin stocking program? Have they asked you for price

comparisons by year, usage by quarter or usage by shipping location? With many legacy software packages each of these requests requires a huge amount of manual work to satisfy your customer.

You have to comply. Your competitor would. The process is time-consuming, tedious, and error-prone. If you are late with the report, if it is wrong or if you refuse to do it you could easily lose that customer.

A modern computer system would enable you to easily put the required information into an Excel spreadsheet and e-mail it to the customer. It would be up-to-the-minute, correct, and presented to them in a form that they could easily use.



*The BUSINESS EDGE 2.0 has a fully integrated Vendor Managed Inventory System (Bin Stocking). Hand held devices with bar codes are used to take orders at the customer sites. All the data is uploaded to The BUSINESS EDGE 2.0 seamlessly.*

## Price Changes & Inventory Updates

I've talked with fastener distributors that have a three day project each time they receive pricing updates from their vendors. Their system doesn't have any easy way to update the prices. It's necessary for someone in their office to go, part by part, increasing the price. I shudder when I see this kind of wasted time because I know that this

entire process could be done in a very few minutes. Nevertheless in talking to the client, I find that they frequently don't really see this as a problem. It's just what they've always done.

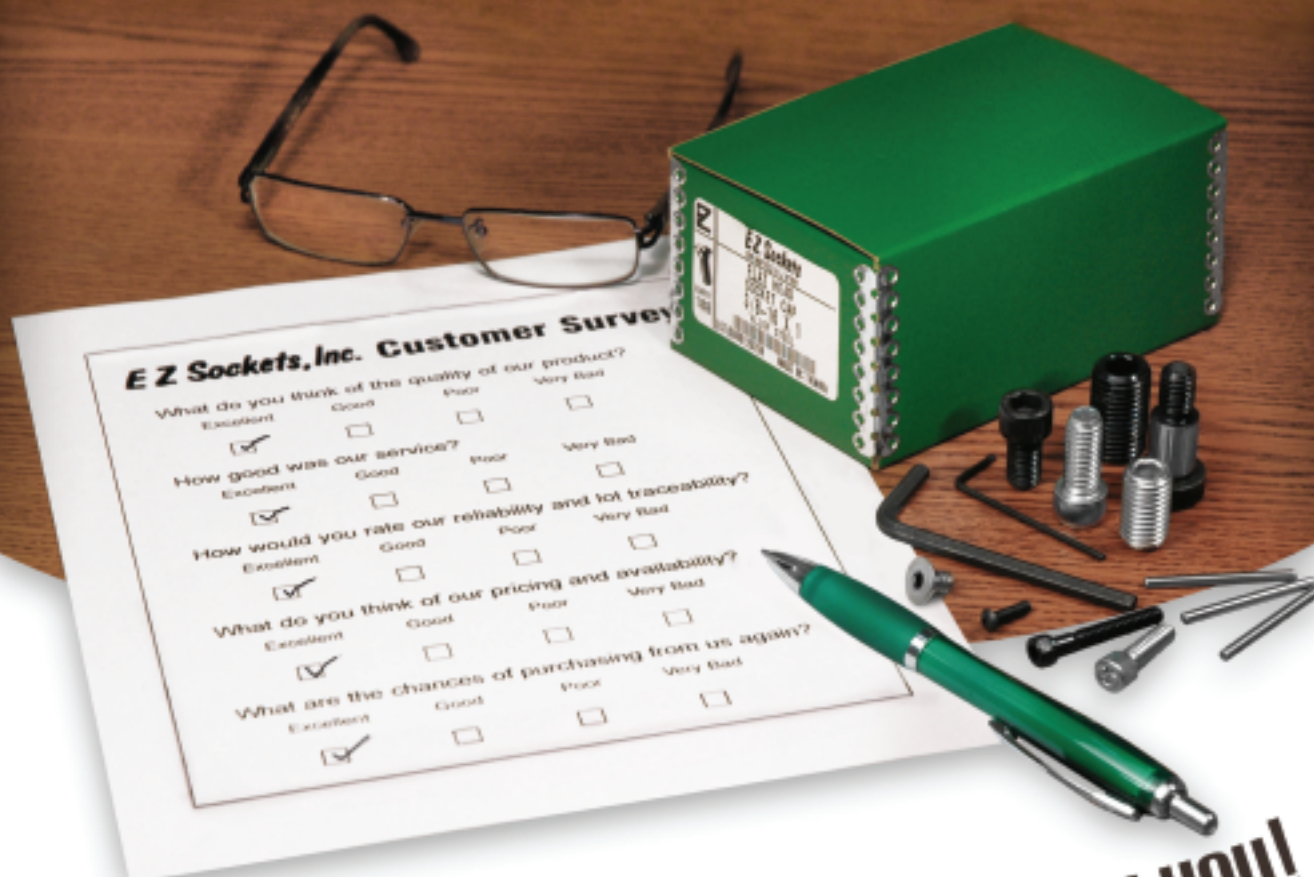
## Bin Stocking

In an effort to offer superior service many fastener distributors offer to do vendor managed inventory (VMI) or bin stocking programs as they are commonly called. These programs enhance customer loyalty, improve margins and

please turn to page 143



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## About the Author...Bart Basi & Marcus S. Renwick

Dr. Bart A. Basi is an expert on closely-held enterprises. He is an attorney, a Certified Public Accountant, and President of The Center for Financial, Legal & Tax Planning, Inc. He is a member of the American Bar Association's Tax Committee on Closely-Held Businesses.

Marcus Renwick is an attorney and the Director of Research and Publications with the firm. With four specific services, The Center provides complete unbiased planning. The Center does not sell any products; its main purpose is to provide advice. Local experts are retained to implement the plans developed by the Center. The Center for Financial, Legal & Tax Planning is located at 4501 W. DeYoung Street, Suite 200, Marion, Illinois 62959. Phone 618-997-3436; Fax 618-997-8370.

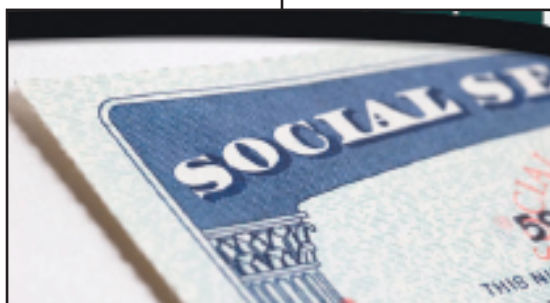


BART BASI

## A VERY PRACTICAL OPTION REGARDING SOCIAL SECURITY

### Introduction

There has been a lot of talk about Social Security and its future. Unfortunately, a lot of the attention it has received lately has been negative. Social Security was designed to be a cross generational system of support based upon a number of then valid assumptions regarding demographics, life expectancy, and other factors. The original assumptions, through medical advancements and other changes in our health and in society have lead to some flaws in the system. Although this is true; Social Security still remains a viable system of supplemental support for seniors now, and will continue to be in the future as well. It can and will be depended upon for generations of Americans to come. While most people see Social Security as a system of support payments that requires and mandates little planning, Social Security has its complexities and opportunities. In this advisory we look at the little used "Do-Over" option.



### "Do-Over Strategy"


Within the rules regarding social security, a provision exists enabling those who have taken early distributions and who have the means, to increase their monthly social security payments once they reach the age of 66. Out of the millions receiving early distributions, utilization of the "Do-Over" option is relatively unused. Here's how it works: Upon reaching 62 years of age, Person X opts to take early Social Security benefits. The benefits are 20-25% lower than had the participant waited until 66 to draw social security. In our example, Person X then draws Social Security for a term of years. He then decides he should have waited until the age of between 66 and 70 to draw Social Security and get the higher amount because 1) He is in good health, 2) his family history suggests he could live to 80 or longer, and 3) he has the means to pay Social Security back and get handed a higher monthly distribution thereafter. The participant then pays his cumulative payments received back to the Social Security Administration in order to receive what would have been Social Security payments of 100 – 132% of full Social Security benefits.

### Weighing Your Options

Paying back the cumulative payments received is expensive, typically over \$100,000. As mentioned, those weighing whether to pay back Social Security, should consider why and if they should. Health is a big factor. It will take time to overcome the payback. Usually it takes 13 years to break even on the Do-Over. If you are healthy and longevity is within your family health history, there is a good chance you will recover the investment and more. Second, your overall financial condition must be considered. Additional factors include: life goals, immediate financial needs, family needs, and various others. For those in business, business cycle, funding, and volatility can also be factors. Those in business do not necessarily always receive a week to week paycheck and the business may demand shareholder loans in order to continue. A financial analysis can be beneficial for those in business to determine whether the risk is acceptable or not.

To illustrate, consider a man who just turned 66 with excellent health and an excellent family history including his parents living well into their 90's. This person will likely see 80 years of age. And, while the extra income may seem somewhat insignificant now, the step up in income will be even more useful during his 80's when Social Security is statistically likely to be his only source of income. On the other hand, there are those in their 60's with significant health problems and a very meager family health history. Those individuals may be better advised to forgo the Do-Over option.

### Conclusion

Giving the Social Security Administration a check to payback benefits can be daunting. Even though, it may be seem like an expensive option, the Do-Over is a relatively inexpensive option when considering inflation adjusted increases and when compared to other investments such as annuities. Everything else being equal, the Do-Over feature is a good option to consider, especially for those with the means to do it and the health that will endure. If you are in the process of planning business succession, estate planning or a financial review, call the Center with your concerns. 



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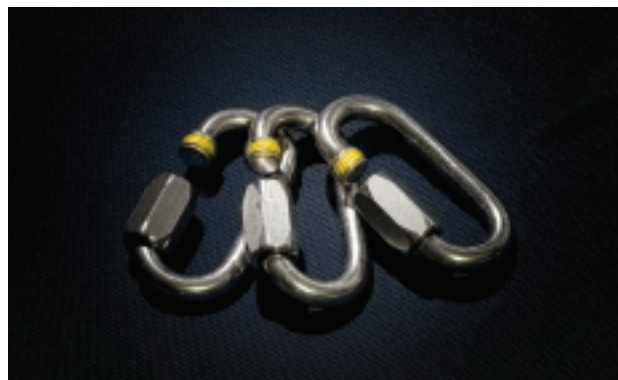
## distributor news

**ND Industries**®, an internationally known developer and supplier of high quality fastener coating products and services, is pleased to announce a new contract to apply ND Patch to fastener threads on parachute links for the United States Military. ND's Oakland, New Jersey Processing Center is using an application process it developed specifically for this project which provides rapid production, yet eliminates any overspray on this unique fastener.

"Randy (Pachella, ND Production Manager) did a great job designing and building the tooling. When the military engineer came in to review our process, she was very impressed," said Bill Lang, General Manager of ND's Oakland, New Jersey facility.

ND is pleased to play a role in making our paratroopers' equipment as reliable as possible. Adding ND Patch to parachute links ensures that, once the link nut is tightened onto the threads, it will remain locked and secure.

ND Patch meets or exceeds the performance requirements of the following United States Military specifications: MIL-N-25027; MIL-F-18240E; MIL-DTL-18240F.



The ND Patch coating process produces a completely dry product that is fused to the fastener and is ready to use right out of the box. ND Patch performs immediately upon assembly with no curing time required.

The ND Patch material (typically Nylon) is compressed when assembled with a mating part. Its vibration-dampening characteristics create a locking action in the thread instead of at the bearing surface. The resilience of ND Patch holds the fastener in place without adhesives or thread distortion. ND Patch can be repeatedly adjusted and reused.

ND's patch application process involves no drilling or milling, so there is no loss of the fastener's strength or hardness and no problematic burrs or chips. Use of ND Patch eliminates the need for costly lock washers, cotter pins, or castellated nuts. It's also less expensive than applying bottled thread locking compounds at the point of assembly.

ND Industries provides many top quality fastening and assembly related products and services, specializing in threadlockers, sealants, anaerobics, lubricants, adhesives and more, to a wide variety of industries, including military, automotive, electronics, aerospace, marine, construction, and appliance.

To learn more about ND Patch and other ND Industries products and services, visit our website at [www.ndindustries.com](http://www.ndindustries.com). For quote requests and inquiries, or to obtain free product samples, call or email ND Industries at: Phone: 1-248-655-2503; Email: [products@ndindustries.com](mailto:products@ndindustries.com).



# W.J. Roberts

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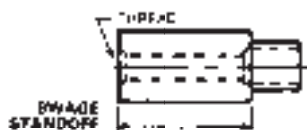
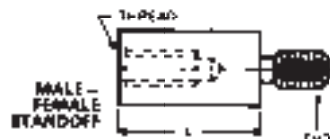
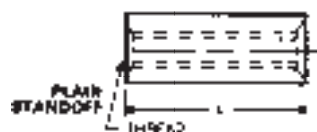
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## About the Author...Del Williams

Del Williams is a technical writer based in Torrance, California. He writes about health, business, technology, and educational issues, and has an M.A. in English from C.S.U. Dominguez Hills.



## Innovative Fastener Takes the Shock, Heat & Vibration of Oil Industry Drilling Equipment

***A unique internal thread form is helping the oil industry enhance reliability even in super alloys by combating vibration, thread loosening, and extreme temperature, while easing assembly, maintenance and inventory management without need for secondary locking features.***

Whether drilling or producing, oil rig operations have some of the harshest operational requirements of any industry. That's particularly true today as more remote, hard-to-reach onshore and offshore oil reserves are sought, and the demand to drill deeper at higher speed continues unabated. Despite ever more extreme shock, vibration and temperature, critical joints must be maintained and production downtime minimized.

From drill collars, cutting tools, and high pressure valves to down hole tooling for controls, measuring and monitoring, the tapped holes and fasteners holding vital equipment together must operate with virtual 100% reliability—because the cost of failure or unscheduled service when a million-dollar component is thousands of feet below ground or sea level can be astronomically high. To maximize safety and production uptime, fastened joints must stay secure with minimal maintenance, particularly in the well bore.

While many engineers gravitate toward lock wires, prevailing torque fasteners, or adhesives to prevent loosening, these may be less effective in oil rig applications or have higher total cost when maintenance and production issues are considered. As an effective alternative to traditional fastening methods, a unique internal thread form is helping the oil industry enhance reliability by combating shock, vibration, thread loosening, and extreme temperature even in hard-to-cut super alloy materials, while easing assembly, maintenance and inventory management.

### Solving Fastening Problems with an Innovative Thread Design

Most locking fasteners do not address a basic design problem with the standard 60-degree thread form: that the gap between the crest of the male and female threads can lead to vibration-induced thread loosening. Stress concentration and fatigue risk at the first few engaged

threads is also a problem. Temperature extremes can also expand or contract surfaces and materials, potentially compromising joint integrity.

Engineers, however, have successfully attacked these challenges while easing assembly, maintenance and inventory management with innovative Spirallock self locking threaded fasteners. This re-engineered thread form adds a unique 30-degree wedge ramp at the root of the female thread which mates with standard 60-degree male thread fasteners.

The wedge ramp of the self-locking threaded fasteners allows the bolt to spin freely relative to female threads until tension is created in the male fastener. The crests of the standard male thread form are then drawn tightly against the wedge ramp, eliminating radial clearances and creating a continuous spiral line contact along the entire length of the thread engagement. This continuous line contact spreads the clamp force more evenly over all engaged threads, improving resistance to vibrational loosening, axial-torsional loading, joint fatigue, and temperature extremes.

The innovative threaded fasteners with a locking feature integrated into the thread form compensates for variations in manufacturing tolerances and processing. This locking feature enhances joint reliability, which can help reduce potential liability. By eliminating the need for secondary thread locking devices or procedures, it also simplifies assembly, maintenance, and

inventory management.

When a design engineer began work on a rotating control device (RCD) prototype for a major oil services company, for instance, the decision was made to use the Spirallock thread form to help enhance its design reliability and production uptime. During drilling, RCDs help meet rig health, safety, and environment challenges by keeping a pressure-tight barrier between personnel on the rig floor and rig drilling fluid and gas returns.

The previous generation of RCDs had used a lock wire with a special cross-drilled bolt to keep certain fastened joints from coming apart. But wiring the screw head on the RCD required added time, labor, cost, and component space for service maintenance.

please turn to page 141



As an effective alternative to traditional fastening methods, a unique internal thread form is helping the oil industry enhance reliability by combating shock, vibration, thread loosening, and extreme temperature even in hard-to-cut super alloy materials, while easing assembly, maintenance and inventory management.

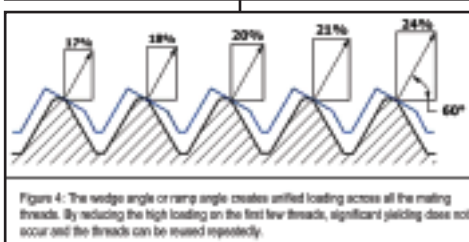


Figure 4: The wedge angle or ramp angle creates unified loading across all the mating threads. By reducing the high loading on the first few threads, significant galling does not occur and the threads can be reused repeatedly.



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# New Trinity Hardware Headquarters Warehouse Offer Customers More and Better Products and Services

## The Good News...and the Bad News

The good news: Trinity Hardware Headquarters is expanding with 73,000 sq. ft. of new distribution warehouse space Muscatine, Iowa. The bad news? There is none!

For those who buy fasteners, whether in small or bulk quantities, the goals remain constant: lowest price, best quality, lightning-fast shipping – and don't forget responsive and helpful customer service. The warehouse expansion helps buyers not only meet but exceed those goals.

By more than doubling their inventory in the new facility, Trinity now has the ability to offer traditional wholesale customers specialty products, such as Grade 8 Carriage Bolts and Finished Hex Nuts, as well as standard components with a quicker turnaround than ever before.

"Trinity is making investments as part of our continued and focused growth," said Trinity President Tim Dunn. "Our history of more than a century of fastener experience and vast inventory has significant value in the marketplace. What sets Trinity apart are our product niches in addition to our standard components."

## The Nuts and Bolts of Nuts and Bolts

The Muscatine center can accommodate more than 7,000 bulk locations, which equals 13 million pounds of inventory. For wholesale distribution customers the benefits don't stop with an expanded product offering.

Trinity also offers additional value-added services including:

- ~ Custom packaging
- ~ Kitting
- ~ Sub-assembly
- ~ Private labeling
- ~ Drop ship
- ~ Third party logistics (3PL)

## Enhanced Testing with Muscatine's Engineering Lab

Quality control and technical assurance is a top priority at Trinity. The Muscatine center will also house an engineering lab with enhanced internal testing capabilities including new salt spray equipment for material verification, green structures and product review, harness testers and tensile testing.

The new engineering lab allows Trinity the ability to test in a broader scope than the industry norm. For example, most companies don't perform salt spray testing in-house. In-house testing means faster results,

more testing on more product at a given time, and cost effectiveness.

## Trinity Goes Green at Muscatine

Trinity had more in mind than just aesthetics when remodeling the Muscatine facility. While it was originally designed around product flow for maximum efficiency, significant improvements were made in the remodel to be



*Trinity's Muscatine, Iowa facility*



## distributor news

**Applied Bolting**, based in Vermont, supplies tens of millions of Standard DTIs and Squirter DTIs world wide to structural steel projects such as power plants, oil, gas and chemical plants, mining sites, State DOT bridges, high rises and stadiums.

Here at Applied Bolting we are driven by what we hear from and see at jobsites. Derived from these field experiences, we have produced a video series of Field Bolting Clinics for bolting with our DTIs and Squirter DTIs

These will improve the constructability of Squirter DTIs by making training videos available on YouTube, Vimeo, and Appliedbolting.com, and flash drives and DVD's. These videos are designed to give jobsites visual assistance not only on the installation and inspection of Squirter DTIs, but also to better understand field bolting. As of now, there are two background videos designed for Engineers and Inspectors. The training videos cover torque and tension, Squirter Calibration Exercise, What are DTIs and Squirters, and what happens when you cannot squash the bumps. This will be a living document as we will compile more training videos every few months. These will be driven by questions from the field.

This will be an invaluable tool for bolt distributors. When there are bolting problems at jobsites, the erector calls the fabricator, and the fabricator calls the bolt distributor. The bolt distributor gets blamed for the bolting problems, while the problems might be caused by site conditions. These videos will address these concerns by getting the right information to the jobsite.

As always, you can call Applied Bolting direct for Field Bolting Services. They can be contacted at: 1413 Rockingham Road Bellows Falls, VT 05101. Telephone: 1.800.552.1999 or visit, [www.appliedbolting.com](http://www.appliedbolting.com).

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## About the Author...Richard P. Hagan

Richard P. Hagan is the president of Pinnacle Capital Corporation, a boutique investment banking firm which specializes in providing merger & acquisition advisory services to the global fastener industry. Since its founding in 1993, Pinnacle has provided expert guidance and assistance to a broad range of fastener company clients - large and small, manufacturers and distributors, publicly-traded and privately-owned - in numerous countries around the world. The majority of the projects undertaken by Pinnacle are sale / divestiture assignments, however, the firm also provides expert advice and assistance with acquisitions, debt & equity financings, strategic investments, joint venture partnerships, business valuations and fairness opinions.

Hagan has more than twenty-three years of international investment banking experience and has worked on a broad range of successful domestic and cross-border M&A transactions, corporate restructurings and capital raisings. Prior to founding Pinnacle, Hagan managed the New York operations of a major Australian investment bank. He began his career in the fund management field in 1985 after earning a B.A. in Economics from the University of North Carolina at Chapel Hill and an M.B.A. in Finance from Fordham University in New York City. Pinnacle is located at 79 Pine Street, Front 6, New York, New York 10005. Phone: 212-267-8200. Email: [rphagan@pinnaclecapitalcorp.com](mailto:rphagan@pinnaclecapitalcorp.com).



## Review of the Fastener Company Acquisitions Completed in 2010

In this issue, we will briefly review all the fastener company acquisitions - a total of twenty-four worldwide - completed through early December 2010. Of course, it is impossible to track every single fastener transaction because many deals involving private companies are not publicly disclosed. That said, we believe the included list is the most comprehensive (and detailed) you will find.

- On January 5, 2010, Lord & Sons Inc. purchased Carson Sales Inc. Carson Sales is a distributor of construction fasteners and supplies based in Glendale, Arizona, with a single branch in Las Vegas, Nevada. Carson Sales, a privately-owned company founded in 1966, will expand the product range and geographic coverage of Lord & Sons. Lord & Sons is based in San Jose, California and operates three branches in Benicia, Sacramento and Los Angeles, California. In addition to selling construction fasteners and supplies, Lord & Sons provides engineering services for seismic bracing and has an in-house bracing fabrication shop. Purchase price: not available

- On January 18, 2010, Indutrade AB (Stockholm Stock Exchange: INDST) purchased Techno Skruv AB. Techno Skruv is a privately-owned distributor of fasteners and assembly components located in Värnamo, Sweden. The company has 14 employees and generates annual net sales of SEK70 million (US\$9.3 million). Indutrade is a manufacturer and distributor of a diverse range of industrial products, including flow control systems, pumps & compressors, hydraulic & pneumatic products, transmission & automation systems and mechanical components. Headquartered outside Stockholm, Sweden, Indutrade completed seven acquisitions during the first four months of 2010. Purchase price: not available

- On February 2, 2010, Odyssey Investment Partners LLC purchased Wencor Group LLC. Wencor Group is a stocking distributor of aerospace fasteners and consumable hardware headquartered near Salt Lake City,

Fastener Deals Completed - January through early December 2010		
Closing Date	Target	Acquirer
Jan 5, 2010	Carson Sales Inc.	Lord & Sons Inc.
Jan 18, 2010	Techno Skruv AB	Indutrade AB
Feb 2, 2010	Wencor Group LLC	Odyssey Investment Partners LLC
Feb 4, 2010	T-bolt operations of NSS Technologies Inc.	Birmingham Fastener & Supply Inc.
Feb 26, 2010	Armstrong Precision Components Limited	Wilhelm Bathoff GmbH & Co.
March 1, 2010	Fastener Innovation Technology Inc.	Black & Decker Corporation
March 2, 2010	Mr. Metric Inc.	Mountz Inc.
March 12, 2010	Black & Decker Corporation	The Stanley Works
March 24, 2010	French operations of Acument Global Tech. Inc.	A. Agnelli SpA
March 24, 2010	Bisco Industries Inc.	ES&CO Corporation
March 26, 2010	French operations of Acument Global Tech. Inc.	LSI - Link Solutions for Industry
April 8, 2010	Action Threaded Products LLC	Active Screw & Fastener Inc.
April 27, 2010	Danforth Screw & Bolt Co. Inc.	John Peirce Company Inc.
May 26, 2010	Microlog LLC	Jergens Inc.
May 21, 2010	R.G. Ray Corporation	NORMA Group
May 28, 2010	The Hillman Companies Inc.	Oak Hill Capital Partners LP
August 3, 2010	Acetal & GGC div. of Acument Global Tech. Inc.	Infatech Limited
August 31, 2010	Lane Star PRED Group	AEA Investors LP
Sept 1, 2010	Assembly Component Systems Inc.	Supply Technologies LLC
Sept 3, 2010	HS Fasteners div. of Hickory Springs Mfg. Co.	GRABBER Construction Products Inc.
Sept 28, 2010	GFP Inc.	Parr Engineering & Manufacturing Corp.
Oct 27, 2010	OEM division of Satair A/S	B/E Aerospace Inc.
Nov 1, 2010	South Texas Bolt & Fitting Inc.	TriMax Corporation
Dec 6, 2010	McKeeville Aerospace Holdings Inc.	TransDigm Group Inc.

Utah. Wencor Group specializes in supplying commercial airlines, aircraft repair stations and operators of general aviation aircraft. The company stocks more than 150,000 SKUs and has branch locations in Chicago, Illinois; Miami, Florida; and Amsterdam, The Netherlands. Wencor Group operating units include: Kitco Defense LLC; Dixie Aerospace LLC; and Boone Air Parts LLC. Odyssey Investment Partners is a private equity firm focused on investing in industrial manufacturing, aerospace / defense products & services, supply chain management and energy products & services. Odyssey maintains offices in New York and Los Angeles and has more than \$2 billion under management. Purchase price: not available

please turn to page 143



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## distributor news

**Holo-Krome**, a leading domestic manufacturer of fasteners for critical applications, held a ribbon-cutting ceremony on October 28, 2010 to celebrate the renovation of its new facility in Wallingford.



From left to right: NE Regional Vice President Fastenal: Scott Wilson, Vice President Real Estate and Development Fastenal: Dana Johnson, Director of Operations Holo-Krome: Tim Thompson, Vice President Business Development Fastenal: Bob Strauss, Connecticut Governor M. Jodi Rell, Chairman Wallingford Town Council: Robert Parisi, President and CEO Quinnipiac Chamber of Commerce: Robin Wilson, Senator Leonard Fasano, VP and COO Quinnipiac Chamber of Commerce Cindy Semrau

Holo-Krome and Fastenal, a national industrial and construction supplies distributor, worked closely with the Connecticut Department of Economic and Community Development and the Town of Wallingford to keep Holo-Krome's operations – and in turn, more than 100 manufacturing jobs – within the state.

Holo-Krome sales are being driven by Fastenal's newly expanded team of 15 regional manufacturing sales specialists, who are working with local personnel at 2,400+ Fastenal stores across North America to provide manufacturing solutions for customers.

Since its formation in 1929, Holo-Krome has been at the forefront of fastener development and innovation. Having built its business on quality for more than 80 years, Holo-Krome is recognized as the leading American producer of socket head fastener products. The company employs 100 skilled machinists at its Hartford, CT plant – and today, as always, each product is proudly Made in the USA. For more information, visit [www.holo-krome.com](http://www.holo-krome.com)

As of November 30, 2009, Fastenal operated 2,357 stores in the United States (all 50 states), Canada (all provinces), Puerto Rico (multiple), Mexico (14 states), Singapore (one location), Netherlands (one location), Hungary (one location), Malaysia (one location) and China (one location) selling to the general public. The Company operates 14 distribution centers located in Minnesota, Indiana, Ohio, Pennsylvania, Texas, Georgia, Washington, California, Utah, North Carolina, Kansas, Ontario, Canada; Alberta, Canada; and Nuevo Leon, Mexico. Learn more at [www.fastenal.com](http://www.fastenal.com).

For more information, contact: Charles LaBove, National Sales Manager, Holo-Krome Fasteners, Tel: 860.523.3416, email: [clabove@holo-krome.com](mailto:clabove@holo-krome.com).



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## distributor news

**Rotor Clip Company, Inc.**, the leading manufacturer in retaining rings, hose clamps and related products, released the 2010 edition of their Product Specifications catalog.

The catalog lists full engineering specifications for tapered section retaining rings, constant section rings, spiral rings, wave springs and hose clamps in inch and metric configurations. Installation tools for rings and clamps are also included.

A section on load capacity and other retaining ring formulas was added, as well as other technical information on Rotor Clip products.

Visit [www.rotorclip.com](http://www.rotorclip.com) for online specifications, sample requests and quotation requests. To request a hard copy of the 2010 catalog, email [adv@rotorclip.com](mailto:adv@rotorclip.com).



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## Looking to sell your company?

*Active continues its national acquisition search for fastener distributors meeting the following criteria:*

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If you or someone you know would like to talk to Active about selling your business, please contact **Kate Johnstone** at **303-845-2668** or [kate@redideapartners.com](mailto:kate@redideapartners.com).  
For more information about Active please see [www.activescrew.com](http://www.activescrew.com)

## About the Author...Paul Rimmer

Paul completed a 35 year career with Customs and Customs and Border Protection (CBP) in 2006 when he retired as Area Port Director for CBP in Dallas Texas. Paul began his Customs career in 1971 as an inspector at LAX where he later held several management positions including Fines Penalties and Forfeitures Officer, Chief Inspector for LAX, and Chief Inspector of the District enforcement teams. Paul left LA to take the position of Inspectional Enforcement Program Manager in Washington D.C. In 1989 he began work in Houston, Texas as the Regional Director for Inspection and Control and had program oversight for inspections on the Mexican border from Brownsville to Arizona. For the last eleven years of Paul's CBP career he was the Port Director in Houston and then Dallas. After retiring, Paul worked as the Chief Compliance Officer for EZFTZ, a company that provides Foreign Trade Zone software. In 2008 Paul broadened his work by starting his own company, PDR Customs Consulting LLC.



More than twenty years of Paul's work experience directly focused on compliance issues relating to international trade including anti-dumping and countervailing duty programs, intellectual property rights enforcement, and cargo/trade security practices (C-TPAT). Paul is recognized across the Foreign Trade Zone (FTZ) community as a leader in FTZ compliance and promotion. He holds a Bachelor of Arts, Economics degree from the University of California, Northridge, and in 1989 he passed the Custom House Brokers exam. Paul may be contacted at [pdrcustoms@gmail.com](mailto:pdrcustoms@gmail.com).

# THE NUTS & BOLTS OF FTZs

It was my pleasure to attend the "14th Annual National Industrial Fastener Show/West" at the Mandalay Bay Convention Center in Las Vegas last November. As I met with many of the exhibitors at the convention I became aware that the industry as a whole is unaware of a tool that could provide substantial savings to at least some of its members. The industry needs to be aware of a Department of Commerce program designed to assist manufactures and distributors located in the United States. The program is the establishment of "Foreign Trade Zones" (FTZ's).

I retired in 2006 as the Port Director for Customs and Border Protection in Dallas. In that capacity, I assisted in establishing FTZ's that relocated manufacturing/assembly activity from the Orient to Dallas creating more than 1300 jobs in Dallas and making the companies more profitable. The FTZ program helps American companies improve their competitive position versus their counterparts abroad. The FTZ program allows U.S.-based companies to defer, reduce or even eliminate Customs duties on products. The FTZ program is an often misunderstood and underutilized tool for reducing corporate costs. There are additional savings for companies that manufacture and increased savings for those companies that export a portion of their goods. There may also be increased benefits in logistics, customer service, and intellectual property rights protection. Savings for a modest corporation with substantial imports can easily exceed one million dollars per year.


Let me give you a short summary of what an FTZ is, and how operating inside of one can help your business. An FTZ is considered outside the Customs territory for the purpose of making entry on arriving foreign merchandise. No duties are paid until the foreign product leaves the zone for a domestic purchaser. Manufacturing authority in an FTZ gives you the ability to choose to pay the duty rate of the part or the finished product, whichever is lower. Additional benefits include no duty on any product re-exported. You can avoid most merchandise processing fees which can be a substantial

savings, you lower your brokerage costs, you may reduce both the time and costs involved in moving containers to your facility, and you delay the duty on what is eventually imported. If you have a retail distribution activity you dramatically reduce your time to fill orders, improve customer satisfaction, and take advantage of any short-term trends in the industry.

I do not wish to mislead. There are issues that will impact use of the zone program by the fastener industry and costs to establish a zone. These include restrictions on manufacturing with foreign steel in zones. There is current controversy over the use of inventory subject to 'anti-dumping and countervailing duties' in zones. There are 'start up' costs to establishing a zone and annual maintenance costs as well. You are making Customs and Border Protection (CBP) a partner in your warehouse so you need good security and inventory controls. You may need a software interface for providing information to CBP. If you don't control your inventory there can be penalties and removal of some 'privileges' that are saving you money. As in any major business decision, thorough research and a good cost analysis are essential before you proceed. "Do it right or don't do it" is an excellent motto for zones.

*As in any major business decision, thorough research and a good cost analysis are essential before you proceed.*

*"Do it right or don't do it"*

I attended the convention as a representative of the Lubbock Economic Development Alliance (FTZ 260) in Lubbock, Texas. While many of the zone benefits are available at any location across the country not all are. Lubbock is a location with a low cost of living, a stable, educated workforce, good schools (GO TECH), and a great family environment. It is also one of a few places around the country where you can operate in a zone basically tax free until you import your goods. In Lubbock you get all of the available zone benefits. Texas has no personal income tax, no corporate income tax, and the annual inventory tax in Lubbock is waived for all foreign sourced merchandise in a zone. Lubbock is set to handle FTZ status accusation anywhere in a five county area. If you are interested in the program and you have the ability to establish a new facility, expansion, or relocation to reduce costs, Lubbock is a location you should consider. 



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## THE INDUSTRIAL FASTENER INSTITUTE (IFI) NEWS

*by Joe Greenslade Director of Engineering Technology, IFI*

### NEW 8th Edition IFI Inch Standards Book Available

The 8th Edition of the Industrial Fastener Institute (IFI) Inch Standards Book will be available in January of 2011. Over 50% of its content of the 1100 page book of standards is updated since the 7th Edition. It has a new format making data easier to locate. For the first time the book will be offered in two formats, hard cover and digital download. Those ordering before December 31, 2010 will save the shipping charges. More information is available at the IFI online store at [www.indfast.org](http://www.indfast.org).

### NEW IFI Web Site

The IFI web site was completed during the third quarter of 2010. It has a fresh, crisp appearance with much new material accessible from the home page at [www.indfast.org](http://www.indfast.org). The "Find a Supplier" feature has been expanded and upgraded to make finding a specific supplier faster and easier. The DFARS compliance information section and list of manufacturer's self-certifications has also been expanded. The Membership area has more detailed information on the various membership categories and membership applications can now be downloaded directly from the site.

### IFI Technology Connection Upgrade

As part of the main web site update the IFI Technology Connection, the online fastener data service, was upgraded to make finding data even easier than the original site. Users can obtain complete fastener part data including all dimensions, all physical requirements, and calculated tighten torque values with a few mouse clicks within seconds. For a FREE online demonstration send a request to [techinfo@indfast.org](mailto:techinfo@indfast.org)

### Fastener Training Institute (FTI) – IFI Fastener Training Technology Program

The FTI – IFI second week-long Fastener Technology training program was held at the IFI Headquarters during July. The courses were taught by Consultants Carmen Vertullo, Salim Brahimi, and Joe Greenslade of the IFI. In addition to 24 hours of class room instruction the attendees took plant tours of Quality Bolt and Screw Co., Cardinal Fastener & Specialty Co., and AMAC Industries to see cold heading, thread rolling, hot heading, cut threading, heat treating, and fastener finishing first hand. There were over 30 attendees from many parts of the USA and Canada. The next program will be held again at the IFI Headquarters in Independence, Ohio in the summer of 2011. For more information, visit [www.fastenertraining.org](http://www.fastenertraining.org).

### DFARS explained

The DFARS rules and regulations relative to fasteners is a confusing topic. In a effort to help clarify this subject, Jennifer Baker-Reid, of the Lauren Baker Group, and Pat Meade, Manager of the IFI Division II for aerospace fastener manufacturers and distributors, presented a webinar to the attendees of the IFI Division II meeting held in the Los Angeles area on November 3, and again in conjunction with the Wes-Pac Association at the Las Vegas


trade show on November 8, 2010. The programs were well attended, the interest was keen, and many good questions were fielded. Most of the information that was presented is available on the IFI web site at [www.indfast.org/info/specialty\\_metal\\_certifications.asp](http://www.indfast.org/info/specialty_metal_certifications.asp).

### Proposed OSHA Interpretation of Workplace Noise Exposure Standards

The Occupational Safety and Health Administration (OSHA) issued a notice on October 19, 2010 announcing its intention to change its official interpretation of the word "feasible" as it applies to engineering, administrative and other workplace noise exposure protection programs. OSHA regulates the acceptable levels of noise to which employees are exposed in the workplace. To protect employees against hearing loss, the Agency has maintained a decades-old policy that allows employers to provide "personal protective equipment" such as ear plugs and ear muffs as well as engineering controls like noise-dampening equipment, enclosures, sound barriers, etc. to effectively supplement their operating practices when they were effective in reaching the permissible noise levels. However, in its October 19th notice the Agency announced a goal of requiring employers to implement all "feasible" controls – with "feasible" meaning "capable of being done" – regardless of the costs or effectiveness of currently-used personal protective equipment. According to the notice, these changes must be adopted regardless of the costs unless an employer can prove that making such changes will "put them out of business" or severely threaten the company's "viability." IFI is currently working with its members and others in the manufacturing community to gather information supporting the economic harm such a change could cause to manufacturers. Comments are due to OSHA by March 20, 2011.

### IFI Hosts ISO TC2 Fastener Committee

During October the IFI hosted the annual ISO TC2 Fastener Committee meetings at the IFI Headquarters. Most of the week's work focused on ISO 10683, the Zinc Flake coating standard, ISO 4042, the electroplating standard, and ISO 898-2 & 6, the nut properties standard. There were representatives from the UK, Germany, Italy, France, Australia, Japan, Sweden, Switzerland, Canada, and the USA. This standards group is achieving a level of understanding and cooperation not previously achieved. It is recognized that the world is become a huge single market and the use of international standards is a must for component suppliers and users. The USA delegates were Chris Williamson, Adrian Cockman, Ron Strong, Charlie Wilson and Joe Greenslade. The meeting costs were sponsored by ATF, Inc. SEMBLEX, Spiralock – Emhart, Bay Bolt, National Rivet, FASTENAL, American Society of Mechanical Engineers, Canadian Fastener Institute, and the IFI. The next meeting of the ISO TC2 Committee will be in October 2011 in Berlin.

For more information on the activities of the Industrial Fasteners Institute (IFI), contact Rob Harris at [rharris@indfast.org](mailto:rharris@indfast.org) or Joe Greenslade at [jgreenslade@indfast.org](mailto:jgreenslade@indfast.org). 



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The National Industrial Fastener Show reports that 4,096 persons from throughout the USA and 34 foreign countries around the world registered for the November 8-10 event at the Mandalay Bay Convention Center in Las Vegas, Nevada. Registration figures include 1,033 distributors, 329 manufacturers, 151 independent sales reps, 113 importers, 63 manufacturers' reps and hundreds of others who visited the 3-day expo and conference.

"We have received a number of very positive comments from exhibitors and Show visitors alike who are saying the Show was busy and productive", informs Susan Hurley, Show Manager.

## Exhibits Top 2009 by Over 11%

The exhibition had 693 booths (69,300 net sq. ft.) occupied by 568 companies from all across the United States and 17 other countries including Belgium, Canada, China, India, Israel, Italy, Korea, Malaysia, Mexico, Saudi Arabia, Singapore, Spain, Taiwan, The Netherlands, United Kingdom and Vietnam. "We had 114 new exhibitors with us this year and many of these were companies in the greatly expanded Machinery & Tooling Section of the Show. The machinery people reported good results from the Show and we expect this part of the expo to grow significantly in the future", says Susan A. Hurley, Show Manager.

## Strong Conference Program Draws Good Attendance

A full agenda of meetings, seminars and workshops was offered on Monday, November 8th. These programs were sponsored by the Fastener Training Institute, National Fastener Distributors Association (NFDA), Pacific-West Fastener Association, Fastener Industry Financial Group Network & Business Credit Management Association, and Women in the Fastener Industry (WIFI). There was also a Mergers & Acquisitions Roundtable. The International Fastener Machinery & Suppliers Association held a

membership meeting and reception on Tuesday afternoon, November 9th and the ASME B18 Committee met November 11-12 at the Tuscany Suites & Casino. The NFDA-sponsored program on "Looking to the Future: A Perspective from the Fastener Supply Chain on 2011 and Beyond" drew a packed room, according to Mark Lenhart, NFDA Executive Vice President.

## Welcome Reception Featured Good Food, Good Drink and Major Networking

The always popular and well attended Welcome Reception on Monday evening, November 8 attracted a huge gathering of exhibitors and Show visitors to enjoy Show Management's hospitality featuring plentiful hors d'oeuvres and a hosted bar. "The room was buzzing with serious networking activity and it certainly appeared that a good time was had by all", observed Show Manager Hurley.



Above: Leo J. Coar, Anna and Bengt Blendulf

Below: Crescent Manufacturing booth at the 2010 NIFS/West Show



## "North America's Largest Fastener Expo" Features Latest Products and Services Plus Greatly Expanded Machinery & Tooling Area

The exhibition was open from 9:00 am to 4:00 pm on Tuesday, November 9th and from 9:00 am to 1:00 pm on Wednesday, November 10th. The aisles were filled with eager buyers until Show closing the first day and there was a good turnout

for the first 3-hours on Wednesday, reports Show Management. There were many new products and services offered at this year's event, including a much larger display of fastener-producing machinery and tooling.

"We are confident that the recent merger of the International Fastener Exposition (IFE) with our event along with our new alliance with the Machinery & Suppliers Association (IFMSA) will bring a whole new and exciting dimension to our Expos in the future", commented Jim Bannister and Mike McGuire, the Show's General Partners.

please turn to page 172





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In today's global economy they felt it was important to communicate effectively with companies south of the border. HWE has three bi-lingual sales people that are always available for any questions.


H.W. Eckhardt is a factory authorized Master

Distributor for over 20 manufacturers. They include A Raymond Tinnerman, AVK Industrial Products, Heyco Nylon Molded Products, PSM Inserts, Emhart POP Rivets, Bumper Specialties, Device Technologies and ND Adhesive Products.

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## About the Author...Jim Truesdell

James Truesdell is president of Brauer Supply Company, a distributor of specialty fasteners, insulation, air filtration, and air conditioning with headquarters in St. Louis. Mr. Truesdell is adjunct professor at Saint Louis University and Webster University. An attorney and frequently published writer, he is the author of "Total Quality Management: Reports From the Front Lines".



# DISTRIBUTION STILL A MARKET CENTERED FUNCTION

In the face of continued high unemployment rates there have been lots of complaints about American companies shipping jobs "off-shore." Manufacturing has gravitated to wherever the lowest labor and production costs can be found and even customer service has seen a move to call centers which are at a great distance from the consumers they are serving. Young people, just out of school in the U.S. are finding those start-up jobs hard to find - and with no certainty that they will again be plentiful any time soon.

Perhaps it is easy to overlook that, in a nation that still is consumer-orientated, there is a need to get material where it needs to be when it is needed (what we used to refer to as adding value with time and place utility). This is still a critical function that cannot be moved easily (at least for heavy duty industrial goods) and which still requires a knowledge of local markets, local warehouses and transportation links. It still needs knowledgeable people who can move with a sense of urgency to meet customer needs and it doesn't really matter that many of the goods being distributed originate at foreign manufacturers. Goods might come in containers on ocean-going vessels from some site or another continent, but when they arrive in U.S. ports they still need to be delivered by rail or truck

to distribution hubs in the interior of the country from which local deliveries will replenish supply inventories of contractors, maintenance departments and end user customers. They will still need local sales forces to identify those with appropriate needs to be met and to help match the products with applications.

Wholesale-distributors located in regional markets perform critical functions which are difficult to replicate for companies operating at a vast distance from the customer. With companies wary of tying up too much investment in idle inventory, but still needing access to goods on the spur-of-the-moment, they need local partners who maintain those inventories and can deliver it on a daily basis.

Not every technical problem can be resolved at a distant, off-shore telephone support center. Sometimes it may take the representative who can pay a visit to the customers' site. As bankers tighten their lending standards the value of trade credit extended by local wholesalers becomes more critical to the cash flow of business customers. Manufacturers may rely on their local distribution networks to see that warranty paperwork is handled efficiently and customers remain satisfied that the product will be supported after purchase.

*Young people, just out of school in the U.S. are finding those start-up jobs hard to find - and with no certainty that they will again be plentiful any time soon.*

*As bankers tighten their lending standards the value of trade credit extended by local wholesalers becomes more critical to the cash flow of business customers.*





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## distributor news

For over 20 years, **Goessling USA, Inc.** has supplied companies involved in the Fastener Industry with high quality material handling equipment.

Applications where a rubber belt is required can now utilize the new "Corrugated Sidewall Belt Conveyor." Corrugated sidewalls fused to the conveyor belt significantly increase the delivery volume and consequently the conveying performance.

The conveyor belts, as well as the corrugated sidewalls are made of a textile fabric material which has a PVC/rubber coating. Transverse cleats and guide rollers in the curved sections of the conveyor allow for the conveying angles up to 60°.

For more info contact Goessling USA at: 3308 Wayfield Drive, Johnson City, TN 37601. Tel: 423.915.0472 Fax: 423.915.0839, Email: [info@goesslingusa.com](mailto:info@goesslingusa.com) or visit [www.goesslingusa.com](http://www.goesslingusa.com).

## distributor news

**Würth Service Supply** has recently earned ISO 14001 certification at four of its locations: Indianapolis, IN; Atlanta, GA; Grand Rapids, MI; and Greenville, SC. The decision to pursue certification was made in January 2010, and after several months of planning, implementation, training, and review, Würth Service Supply successfully completed the ISO 14001 certification audit.

ISO 14001 is an international standard that allows businesses to develop an Environmental Management System (EMS) with the goal of minimizing their carbon footprint. It is a guide for developing an environmental policy, determining how the business impacts the environment, and implementing programs to improve a company's environmental performance. ISO 14001 certification consists of careful planning, implementation and operation, control of documents and records, corrective action, and management review. To receive certification, a business must pass a detailed audit of each location involved, proving it has a fully developed and implemented Environmental Management System.

Würth Service Supply made the decision to pursue certification in order to identify the impact its activities have on the environment and to minimize harmful

effects. An employee team was appointed in early 2010 to develop the company's EMS and environmental policy along with the guidance of a consultant. Employees were then trained in the EMS specifically developed for the business and successfully completed the audit in early fall of this year, resulting in ISO 14001 certification for the participating locations. This certification not only shows that Würth Service Supply is environmentally responsible and complies with environmental laws and regulations, but the company will also benefit from potential process improvements and energy conservation.

Würth Service Supply, Inc. is a part of the Würth Group, a world market leader in its core business, the trade in assembly and fastening material. It currently consists of about 400 companies in 84 countries and has approximately 58,000 employees on its payroll. Over 28,000 of these are permanently employed sales representatives. The Würth Group generated EUR 7.52 billion (\$9.27 billion) in sales in the business year 2009.

For more information on Würth Service Supply and its parent company, please visit the website [www.servicesupply.com](http://www.servicesupply.com).



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## DACO ANNOUNCES HIRING AND NEW PRODUCTS

DACO Precision, a leading supplier of special washers and custom stampings, has hired Gary Zick for inside sales and customer service to help with the growing demand for their products. "Gary is an industry veteran having spent over 18 years with a local fastener distributor and he brings an immediate impact to our business," commented Randy Weber, president of DACO. Additionally, Austin Weber returns full time to DACO after receiving his degree in Business Administration & Supply Chain Management and will assume responsibilities on both the procurement and sales side of the business.

Randy indicated that it has been a better year with more demand for domestic stampings due to shorter lead times and they are in a good position with raw material and the necessary work force to accommodate this increased demand. Their new website [www.daco-precision.com](http://www.daco-precision.com), created and launched within the Thomas Register work-frame, has also led to increased exposure for the company.

Other improvements have been the addition of a 260

ton press and new products such as wave & spring washers and belleville & conical washers, (.012"-.187" thick, high carbon steels, 300 and 400 series stainless and 17-PH material). These products complement the existing inventory of special washers, machinery bushings, shims, nut plates, brackets, levers, and clips, as well as stamping assemblies with blind and threaded PEM style inserts.

In September, DACO was upgraded and certified to the latest ISO 9001/2008 standard. The company continues to implement LEAN initiatives to improve process and material flow throughout the plant. DACO's ability to create all of their own tooling has enabled them to run difficult jobs and in some cases win business from standard catalog houses that cannot hold the necessary tolerances for demanding applications. DACO offers engineering expertise and technical support to reduce part costs while also focusing on soft costs such as custom packaging and direct shipping. 



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## About the Author...Jeff Drumheller



Jeff Drumheller is Fastener Testing Engineer at RS Technologies, a division of PCB Load & Torque Inc. Drumheller has over 12 years experience in the mechanical testing and analysis of threaded fasteners. As manager of an A2LA Accredited Fastener Lab, he has been responsible for thousands of tests on a wide variety of threaded fastener applications and is well-versed in the multitude of fastener industry and OEM threaded fastener test specifications. He has worked with hundreds of customers to develop fastener assembly specifications, determine friction coefficients, and analyze problematic bolted joints. He has been thoroughly involved in the design and documentation of RS Technologies fastener testing equipment and is a frequent contributor to fastener industry-based periodicals. Drumheller holds a BSME from the Lake State Superior University.



# FUNDAMENTALS OF TORQUE-TENSION & COEFFICIENT OF FRICTION TESTING

## Understanding the Basics of Tightening Threaded Fasteners

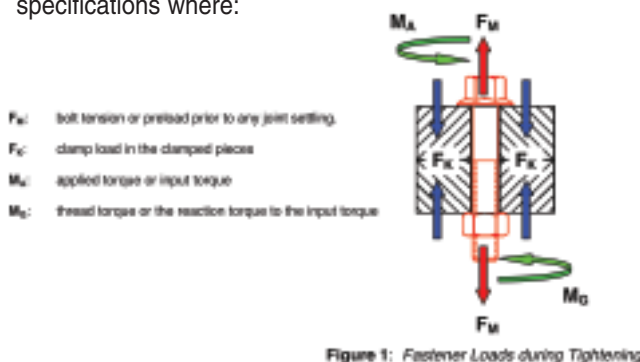
More and more fastener coatings are being required to not only comply with corrosion specifications, but to also fulfill specified tightening characteristic requirements. These requirements include at least a torque-tension test and at times a coefficient of friction test. The torque-tension test usually consists of an acceptance input torque window at a specified tension or clamp load value, while the coefficient of friction test requires an acceptance coefficient of friction window (typically the reference coefficient of friction  $\mu_{ref}$ ) at a specified tension or clamp load value.

Prior to understanding the "whys" of this testing it is necessary to know some of the "hows" and "whats" of basic tightening of threaded fasteners. The following sections will attempt to answer all of these questions.

### Fastener Loads During Tightening

When a bolt is tightened, by applying a torque to the bolt head or nut, the bolt gets stretched causing the clamping plates to be compressed together.

The nomenclature used to describe the loads remains true to its German roots from the VDI and DIN specifications where:



The thread torque can be described as the torque it takes to keep the nut from turning when an input torque is applied to the bolt head.

**Note:** During the tightening process the bolt tension is equal to the clamp load and these value are often

interchanged. This is perfectly correct until the joint is in service and external loads are applied.

### Bolt Tension and Clamp Load

As the bolt is being tightened, the bolt is actually being stretched causing tension while the clamped pieces are being compressed causing clamp load. This phenomenon can be shown in the traditional joint diagram in Figure 2.

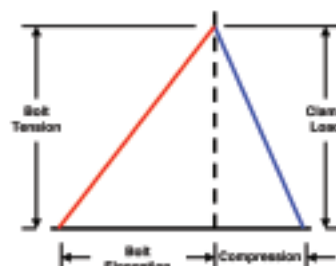


Figure 2: Joint Diagram

The slope of the curve represents the resilience (elasticity) of the material being stretched or compressed.

**Note:** The resilience is the inverse of the spring rate given in units of length/force (i.e. in/lb, mm/N).

The slope is a function of the material properties of the part being stretched or compressed along with the length of the part being stretched or compressed and remains a constant until the material experiences yield or permanent deformation. This being the case, it can be shown that to obtain a certain bolt stretch, for a given material and geometry, it will always require the same amount of bolt tension. The following equation is the basic equation for the elastic resilience:

$$\delta = \frac{l}{E \cdot A}$$

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# National Industrial Fastener Show/West Welcome Reception

**November 8, 2010 - Mandalay Bay, Las Vegas**



turn to page 110 for NATIONAL INDUSTRIAL FASTENER SHOW/WEST CONVENTION PHOTOS



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## Field Celebrates 20 Years of Derry Family Ownership with Continuous Growth

MACHESNEY PARK, Ill. — Field, a global supplier of fasteners, inventory management systems and technical support, celebrated 20 years of ownership by the Derry family in November, marking two decades of continuous growth averaging 19 percent a year.

In 1990, brothers Bill and Jim Derry purchased Field Fastener Supply Co., then a Rockford, Ill.-based distributor of nuts, bolts and screws. Founded in 1976, Field Fastener was located in the 600 block of South Main Street. It employed 12 people and generated annual revenues of \$1 million.

Today, Field specializes in supplying fasteners and "C" commodities and reducing customers' costs through inventory management services and comprehensive technical support. The company occupies a 33,000 sq.ft. headquarters at 9883 North Alpine Road in Machesney Park. Providing livelihoods for 51 team members, Field is on track to finish its anniversary year with approximately \$25 million in sales.

Change has been deliberate and constant since the Derrys — Bill is president, and Jim is executive vice president — began running the supply business.

"We saw an excellent opportunity for growth in capitalizing on the great reputation as a secondary supplier and great customer base that Field had developed," Bill Derry said. "We realized that if we could go from being customers' second or third choice for a supplier of fasteners to making technical contributions to the production end of their businesses, our volume and our revenues would climb."

Adding significant value to customers sets Field apart

from its competitors. Its FIRST (Field Inventory Replenishment Service and Technology) vendor-managed inventory systems reduce the procurement, inventory and material handling costs associated with the products it supplies. High-quality fasteners are available in the exact quantities at the right times to customers around the world.

Field's focus on technical support also has put the company in a class by itself. Its fasteners are used in the assembly of everything from valves and actuators to window closures and shelving units.


Because the fastener accounts for only 15 percent to 20 percent of the total fastening costs, Field helps customers save money and improve product quality during the design and production stages. The Field team evaluates customers' fastening and assembly methods and recommends the most efficient and cost-effective ways to fasten, join and assemble their products.

"Labor, scrap and rework are the biggest components of fastening costs," Bill Derry said. "We pride ourselves on being the best in the world at minimizing those costs through a technical approach to fastening."

What has remained unchanged at Field under the Derrys' management is the pursuit of excellence.

"The competence and capabilities of our team and the culture the company fosters are critical to our success," Bill Derry said. "You can't grow a business at the rate Field has

grown without dedicated individuals who take responsibility and get things done."

Field will commemorate this 20-year milestone by hosting the entire team, including spouses and significant others, to a weekend in Las Vegas. 



*Brothers, Bill (top) and Jim (bottom) Derry, owners of Field Fasteners*





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## NATIONAL INDUSTRIAL FASTENER &amp; MILL SUPPLY EXPO - EAST

# The National Industrial Fastener & Mill Supply Expo/East Growing: 100 Booths or More Expected

NIFS - 34 North High Street • New Albany, OH 43054 • Phone 614-895-1279 • Fax 614-895-3466 • [www.fastenershow.com](http://www.fastenershow.com)

The National Industrial Fastener & Mill Supply Expo scheduled for April 26-27, 2011 at the Greater Columbus Convention Center, Columbus, Ohio has grown to 37 companies and 40 booths, informs Susan A. Hurley, Show Manager.

Following is a list of exhibiting companies as of December 3, 2010:

- All American Threaded Products, Inc.
- American Fastener Journal
- Brighton Best International
- Computer Insights, Inc.
- Distributor's Link Magazine
- Dynacast Industrial Products
- Edward W Daniel LLC
- Fascomp Electronic Hardware
- Fastener Technology International
- Fastener World, Inc. (Taiwan)
- Garland Manufacturing
- Granite Industries
- Industrial Rivet & Fastener Co.
- INxSQL Software
- Ken Forging Inc.
- Metric Fasteners Corporation
- Mubea Inc.
- NIECO (China)
- Northwest Hydra-Line
- S & M Retaining Rings Assortments
- Sarjo's Faskit Fastener
- Star Stainless Screw Company
- Tapco Inc.
- W J Roberts Co., Inc
- Yellow Woods & Roads Less Traveled Co.

"There has been a lot of interest and new contracts recently. We are also seeing positive effects from the



addition of mill supplies to the Expo. We are expecting 100 booths or more by show time", says Show manager Hurley.

The Fastener Training Institute is presenting an all day seminar on "Understanding the Bolted Joint" on Tuesday, April 26. Show Management may also offer a tour of a local fastener company.

The Expo's Welcome Reception is scheduled for 5:30 – 6:30 p.m., Tuesday, April 26 in the Greater Columbus Convention Center. This always popular and well attended event will offer complimentary drinks and hors d' oeuvres to all Expo exhibitors and visitors.

The one day Expo will be open from 9:00 a.m. to 4:00 p.m., Wednesday, April 27.

Hotel reservations are available at the adjoining Drury Inn & Suites, (614) 221-7008, and the Hyatt Regency Columbus, (614) 463-1234. Simply mention the National Industrial Fastener & Mill Supply Expo to receive the special Expo rates.

Complete Expo information and registration materials are being mailed in early January and online registration will be available on January 3, 2011, announces Denise Hill, Registration Supervisor.

For more information contact National Industrial Fastener & Mill Supply Expo/East, (614) 895-1279, email [info@fastenershow.com](mailto:info@fastenershow.com) or alternatively visit our web-site at [www.fastenershow.com](http://www.fastenershow.com).





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## About the Author...Anthony DiMaio

Anthony E. Di Maio attended Wentworth Institute and Northeastern University. In 1962 he started working with Blind Fasteners as Vice-President of Engineering & Manufacturing for two blind rivet manufacturers. He has been Chairman of the Technical Committee of the Industrial Fasteners Institute (IFI) and is still involved in the writing of IFI specifications. In 1991, he started ADM Engineering and is working with Fastener Manufacturers developing new fasteners and special machinery. He can be reached at ADM Engineering, 6 Hermon Ave., Haverhill, MA 01832; phone and fax 978-521-0277; e-mail: [tdimaio@verizon.net](mailto:tdimaio@verizon.net).



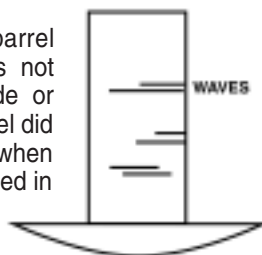
# BLIND RIVET QUALITY INSPECTIONS

The following are visual inspections that can tell you if the blind rivet is of good quality. Tensile and Shear value tests of a blind rivet are important and should always be performed to assure the user that the blind rivet does have the correct Tensile and Shear values as listed in the manufacturer's catalog or the IFI (Industrial Fasteners Institute) specifications.

The following inspections are a very good visual inspections that will tell you if the blind rivet is of good manufacturing procedures and quality.

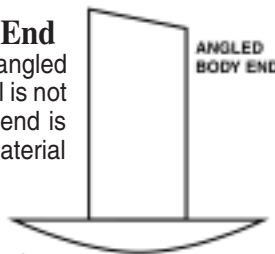
### Rivet Body Waves

Waves or ripples on a barrel diameter denotes that there was not enough materials used to extrude or cold head the rivet body. The barrel did not fill out inside the extrusion die when the material was pushed and headed in the extrusion die. These waves in the rivet body will affect the upset of the rivet body when the mandrel is pulled into the rivet body. The rivet body will not upset in a symmetrical configuration. The Shear strength of the set rivet will be weaker than the specified Shear value, because the rivet barrel diameter is not completely formed, thus making the barrel wall thickness thinner and weaker.



### Rivet Body Angled Barrel End

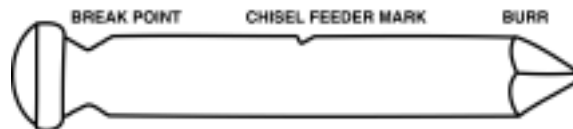
A blind rivet body with an angled barrel end, denotes that the barrel is not fully formed. This angled barrel end is caused by not feeding enough material into the extrusion die. When a blind rivet with this type of barrel defect, is set in a work piece, the upset side of the blind rivet will be deformed and will effect the mandrel head retention of the set rivet.



### Chisel Feeder Mark

The chisel feeder mark should never be in the linear area where the pulling jaws of the rivet setting tool contacts the outside diameter of the mandrel. The chisel feeder mark is made by the wire feeding device that indexes the wire into the mandrel making machine. The chisel that feeds the wire into the mandrel making machine is


adjustable and can be positioned along the diameter of the wire and should not be in the jaw pulling linear length of the mandrel. When the chisel feeder mark is in the linear length of the pulling jaws, the mandrel can break at the chisel mark. The pulling jaws teeth penetrate the outside diameter of the mandrel to grip and pull the mandrel to set the rivet. The pulling jaws teeth penetrate into the mandrel, plus the depth of the chisel mark, will reduce the cross section of the mandrel to a point where the tensile strength of the mandrel is weaker at the chisel mark than at the break point of the mandrel, and the mandrel will break at the chisel point rather than at the mandrel break point when the rivet is set.



### Burrs

Burrs at the point of the mandrel indicates that the point cutting tooling in the mandrel making machine, are dull and worn. The burr height should not be over .004 high, a total of .008 over wire diameter when being made the manufacturing process for mandrels is that they are processed in a de-burring machine after being made to reduce all the burrs. If the point burrs are too thick because of dull point cutting tooling, the de-burring machine cannot reduce the burr height. This is why the burr height of the mandrel when it is produced should not exceed .004 in height and the de-burring machine will then reduce the burr height to mandrel diameter or to a maximum height of .002.

Mandrel straightness is also a visual sign of the quality of the blind rivet. Blind rivet mandrels are allowed a maximum of .008 total mandrel run out. The mandrel making machine has wire straightening rollers that when properly set will straighten the wire while producing the mandrels and will produce a straight mandrel.

Viewing the inspection features noted in this article, will tell you if the blind rivet has been produced with quality in mind. If a blind rivet has no conditions mentioned, you can feel comfortable that the manufacturing procedures are good and are in the manufacturing operations. Remember also, to either test yourself, or ask the manufacturer to supply you with the full inspection report that will include the Tensile and Shear values. 



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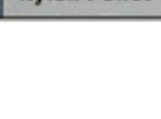
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## NATIONAL FASTENER DISTRIBUTORS ASSOCIATION

# NATIONAL FASTENER DISTRIBUTORS ASSOCIATION

## Panel Meeting - Las Vegas

by Jason Sandefur *GlobalFastenerNews.com*

The 21st century is a brave new world for the fastener industry. The rise of China, the constant threat of terrorism, raw material shortages, fluctuating demand — these factors increase risk in a global supply chain, a National Fastener Distributors Association panel concluded in Las Vegas.

Add to those risks the usual factors, such as labor strikes, container availability and exchange rates, and you begin to understand how a supply chain manager could quickly develop an ulcer.

### Wrenn: Fastener Margins Shrinking

While risk is increasing, prices are not, leading to lower profitability, according to Mike Wrenn, CEO of Heads & Threads International.

"For the fastener industry, our margins are going to be lower than they've ever been, and we need to prepare for it," Wrenn told attendees of the conference, which was part of the NIFS/West trade show.

As China assumes a more dominate role on the global stage, its workforce is demanding — and getting — higher wagers, reducing the Asian powerhouse's cost advantage. China's fastener price "is not going to be competitive as it has in the past," Wrenn said.

But that doesn't mean low-cost fastener production will soon move elsewhere. China enjoys natural advantages, including a massive labor pool and geographic conveniences, that will keep fastener production on the mainland for some time to come.

"I don't believe China will be displaced as major fastener exporter," Wrenn stated. "They'll continue to be a major producer of fastener exports, and their price will get higher."

Wire rod prices in Asia jumped in 2008, collapsed in 2009 and are slowing rising in 2010.

"Almost certainly prices will continue to move up."

However, the deep recession has put a blanket on commodity pricing, Wrenn noted.

China's growth to become second-largest manufacturing country in the world has been the driving force on commodity pricing over the past 20 years.

China's legacy of pegging the yuan to the dollar has given them a significant advantage to exporting products.

As your supply chain stretches you increase your risks. Natural disasters including recent typhoons in Taiwan; political risks; disease (SARS) - at time it "all but halted air traffic"; labor strikes; electricity shortages; raw material shortages; container availability; first half of this year "you could not ship all the product you wanted to ship"; cultural holidays; exchange rates; antidumping duties; cultural misunderstandings.

"Biggest risk of all is changing demand."

### Liter: 'Sales Per Employee' New Profit Metric

Elgin Fastener Group President Jeff Liter said the old days of steel being flat as a commodity are long gone. Most

contracts now have a steel index attached to them.

But that's just one problem facing fastener manufacturers.

Consumer demand is also fickle, making orders a riskier endeavor.

Political changes loom as well. Liter said that no one knows how the "wave of red" in the most recent U.S. elections will affect the business climate.

Liter said one thing is certain: "The moderates are gone."

Political uncertainty in the U.S. is likely to hamper solutions to border issues with Mexico — conditions he said were threatening North American manufacturing.

An even bigger threat to the fastener supply chain is the ongoing "war on terror," Liter stated. "In terms of the supply chain, it's the elephant in the room."

Liter asked what would have happened to the global supply chain if recent carrier packages had not been found overseas before they arrived in the U.S.

All these factors are placing enormous pressure on supply chain managers.

Despite these variables, business is on the uptick, though companies are reluctant to add new employees to meet growing demand, Liter explained.

"Sales per employee" is new metric to examine profitability," he emphasized.

And speed is what separates the winners from the losers, he advised. Three years ago a 20-day lead time was good, but it's not enough now.

"We need to continue to reduce and reduce lead times."

The good news is that growing supply chain risk creates more need for domestic manufacturing, Liter stated.

"Risk is one of the reasons domestic manufacturers will always be needed in the supply chain."


### Fang: EU Tariffs Help Taiwan Manufacturers

Taiwan Fastener Trading Association director Steven Fang told fastener veterans that the perception is that Taiwan exports many fasteners. But Fang said China and Japan are about equal in fastener exports, whereas Taiwan is about one-third of their levels.

Taiwan fastener exports have surged by 63.5 % due to increased orders from the EU in the wake of tariffs on Chinese fasteners. The Asian giant has 10,000 fastener manufacturers, about 95% private owned.

Fang said China exports about \$2.36 billion fastener export, while importing has jumped to more than \$2.1 billion because "China wants to grow quickly."

Labor costs in China increase 20-25% per year, but Fang predicts China will increasingly focus on domestic demand at the expense of exports.

"China is no longer stuck in the past. They are building their own future in their own way, no matter what the world thinks." ©2010 GlobalFastenerNews.com 





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## Accu-Load Opens UK Manufacturing Facility

Accu-Load Limited has opened a new Engineering facility in the UK which produce sophisticated monitoring systems for some of the worlds most demanding applications. The monitoring systems measure strain inside bolts or studs being used to secure some of the largest structures known to man.

Tightening bolts on simple applications can be a tricky business but imagine fastening down a leg of an oil rig or connecting the drive shaft of a steam turbine to a generator in a power station. The task of tightening a bolt becomes complex and huge in scale and like most items that are being fastened together, there is a need to know when the bolt is tight. The issue of how tight a bolt should be secured is as complex as the task of actually fitting it. Some of these bolts can be a metre long and 100mm in shaft diameter. Securing the base of a propeller blade on a wind turbine to the hub of a generator 70 meters in the air or securing the leg of an oil rig a 1000ft underwater in the North Sea are all difficult operations but utilising hydraulics rather than spanners

enable larger bolts to be tightened correctly. Even so this can lead to inaccuracies. It is estimated that using hand held torque wrenches then it is possible to under load the bolt by as much as 30%. This can be improved upon by using hydraulics torque setting devices but it still only measures the load going to the bolt head to make it turn.

As friction in the thread of the bolt and under the head of the bolt play a major factor in determining the true tension then it is important to know what the true load in the bolt actually is. To compound this problem further bolts also

come loose for a variety of reasons but how do you know if a bolt is coming loose, particularly one so large that a person can't lift it? It's not so critical on a simple structure such as a washing machine but if you are operating a nuclear power station or crane the ability to monitor the

tension in a bolt initially and to know if it is coming loose is of concern. These aren't the type of bolts that can be tested using a conventional spanner set!

Accu-Load Limited provide a solution in the form of a series of gauges which is built into the head of the bolt. This provides a live readout of the true load within the bolt. The principle of the gauge is relatively simple. As a bolt is tightened it begins to stretch. Depending upon the material and size of the bolt this stretch can be

calculated. The gauge, in the form of a cartridge is then adjusted to cater for the different type of bolts. As the cartridges are largely mechanical with few moving parts or electronics it makes them suitable for high temperature use and makes them robust enough to be used in

arduous circumstances. Another growing area of use is on large vessels which are subject to constant temperature and pressure fluctuations. Usually these bolts are used on heat exchangers where there could be 60 to 300 bolts depending upon the size of the vessel. To ensure that the joint is sealed tight it is important that each bolt is tensioned equally. One bolt is not too difficult but 300 bolts presents a significant issue? If one or more bolts are not tensioned sufficiently or comes loose during operation then it is a potential leak path.



*Above: SPC4™ Mining Application in Dakota  
Below: Max-Bolts™ with Visual Load Gauges*





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## MID-WEST FASTENER ASSOCIATION

# 2010 SCHOLARSHIP RECIPIENTS

The MWFA is pleased to announce their 2010 Scholarship winners. As of 2010 MWFA has awarded \$434,000 in scholarships. Thank you to our member's donations, support and continued assistance in raising these funds.

### \$1,500 XL Screw Corp

We thank XL Screw for donating a scholarship for the 14th year. XL is proudly presented the XL Screw Corp. to one of our top applicants: **Bobby Baer**, son of Bob Baer of Abbott-Interfast. Bobby is currently a senior at Downers Grove South H.S. He has continuously excelled in H.S. His interest in Math and Science has led him to his plan to pursue a career in Engineering. All these plans stemming from a trip to Disney World-long story! His top areas of interest are Nuclear Engineering, Materials Science and Mechanical Engineering. He also hopes to minor in movie making. He is still exploring his options as to where he will attend college. Besides Bobby's plans of becoming an engineer and producing an independent film, he plans to do community service, in his spare time?



of Rogers Brothers Galvanizing. Kelly is currently a H.S. senior. While Kelly is completing a successful H.S. career including many team and club participations she is researching her college options. School hasn't always been enough of a challenge for Kelly so she took on the challenge of helping educate her peers. She enjoys being

a person anyone can go to for help. Although it's hard, at such a young age, to determine her future, she does have an aspiration to assist in a cure for cancer. Kelly is aware she has been granted many qualities others have not and plans to utilize her goals, purpose and career to change the world no matter how impossible it may seem.

### \$1,000 Art Wondrasek Scholarship

In 2010, we lost another past board member, Art Wondrasek. Art was a very strong business man, building his business from scratch to a multimillion dollar company. Glen you can expand on this.

This award went to **Clay McRoberts**, son of Todd McRoberts of Stelfast Inc. Clay is a freshman at Ohio State University. He is in the Biomedical Engineering program. His interest in math and science led him to this major. After college he plans to either pursue a career in this field or go on to med school. In Med School Clay would like to minor in Spanish to afford him the opportunity to spend a few years in impoverished parts of Latin America or Mexico



### \$1,500 Bill Lang Sr. Scholarship

Christmas 2009, we lost a past MWFA President and several term board member-Bill Lang Sr. of Certified Products. Bill Lang Sr. was a one of a kind person in our industry who will always be remembered for his "great ideas," support of the association, his humor and his assistance whenever needed. We thank the following for their contributions toward this award:

Glen Brin Family, Bob O'Brien Family, Abbott-Interfast, Nancy Rich, Mid-West Fastener Association, Wally & Julie Olczak, KDS Imports, Federal Screw

This award went to **Kelly McKinnon**, another of our top applicants. Kelly is the daughter of Michael McKinnon



**Laura Broderick**, daughter of Jim Broderick/Global Certified Fasteners and Ann Broderick of Abbott-Interfast. Laura is currently a freshman at the University of Illinois, Champaign-Urbana where she is studying Economics. She plans to transfer to the Business School at the end of this school year. She graduated H.S. with honors. She

please turn to page 164



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## distributor news

It's official, Anthony Manno, formerly of Richard Manno, Co. is pleased to announce the formation of **Anthony Manno, Co.**, located in West Babylon, New York. In the beginning I will be concentrating on building inventory in shoulder screws, captive screws, thumb screws, dowel pins and handles. Acting as manufacturer and direct importer I will also provide competitive pricing on all your ball bearing and print requirements.



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## HOW MANY THREADS SHOULD BE BEYOND THE NUT? - TWO MINIMUM

by Joe Greenslade *Director of Engineering Technology, IFI*

The question is asked fairly frequently, "How many threads should extend beyond the nut?" The answer is, "A minimum of two thread pitches should extend beyond the top surface of the nut."

The reasoning underlying this rule is simple:

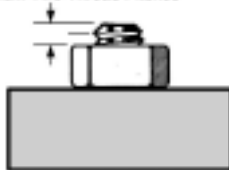
1. The full strength capability of a nut can only be assured when all of the engaged screw or bolt threads are fully formed and at full size.

2. Many screw and bolt standards require or allow one to two incomplete threads on the point end of a screw to facilitate easy screw or bolt starting in a mating nut or tapped hole.

3. The only way an assembler can be assured that all threads engages in a nut are fully formed and at full diameter is if two or more screw or bolt thread pitches extend beyond the top surface of the mating nut.

A chart showing the minimum length of screw or bolt

Minimum Two Thread Pitches



beyond the top of the nut is shown below:

This rule applies to all nuts of all styles, types, and materials. For more information on this or other technical subjects contact the author at [techinfo@indfast.org](mailto:techinfo@indfast.org).

Minimum Length Beyond the Nut							
Inch Fasteners				Metric Fasteners			
Nominal	TPI	Pitch	Minimum length beyond the nut (in.)	Nominal	Pitch	Minimum length beyond the nut (mm)	Minimum length beyond the nut (in.)
1/4	20	0.050	0.100	M5	1.00	2.5	0.109
1/4	20	0.050	0.071	M5	1.25	2.5	0.109
5/16	18	0.056	0.111	M5	1.00	2.5	0.109
5/16	24	0.042	0.083	M6	1.50	3.0	0.118
3/8	16	0.063	0.125	M6	1.25	2.5	0.109
3/8	24	0.042	0.083				
7/16	14	0.071	0.143				
7/16	20	0.050	0.100				
1/2	13	0.077	0.154	M12	1.75	3.5	0.138
1/2	20	0.050	0.100	M12	1.25	2.5	0.109
9/16	12	0.083	0.167				
9/16	18	0.056	0.111				
5/8	11	0.091	0.182	M16	2.00	4.0	0.157
5/8	18	0.056	0.111	M16	1.50	3.0	0.118
3/4	10	0.100	0.200				
3/4	16	0.063	0.125				
7/8	9	0.111	0.222	M20	2.50	5.0	0.197
7/8	14	0.071	0.143	M20	2.00	4.0	0.157
1	8	0.125	0.250	M24	3.00	6.0	0.236
1	12	0.083	0.167	M24	2.00	4.0	0.157
1	14	0.071	0.143				



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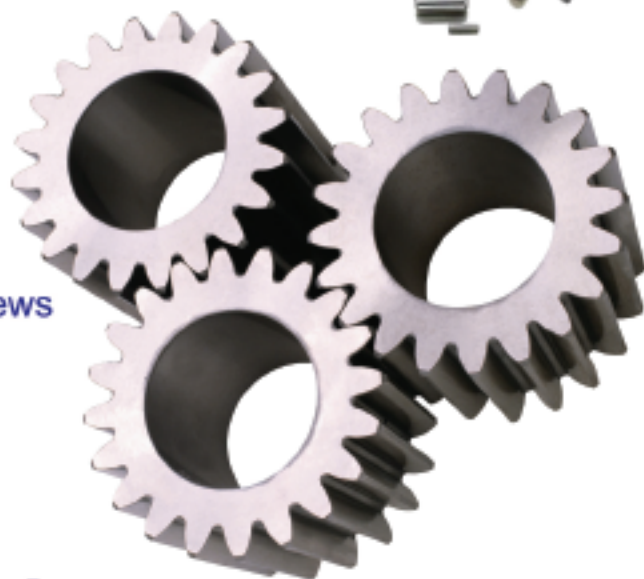
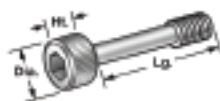
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## distributor news

**Micro Plastics, Inc.** introduces a new product Catalog #39, which details their extensive inventory of plastic fasteners. With 290 pages, this catalog contains thousands of fastener items.



This year's publication features 12 new product lines with over 500 NEW items added.

Contents include: standard and metric machine screws, cap screws, nuts, washers, spacers, insulators, grommets, bushings, rivets, hole plugs, clamps, printed circuit board accessories, suspended ceiling hooks, wire routing kits and many other hardware items.

Micro Plastics' manufactures millions upon millions of fasteners daily. They offer over 20,000 items and maintain an inventory of over 250 million parts.

See their full line catalog #39 for a complete line of nylon fasteners that are available. FREE samples are available upon request. See more details at [https:// secure.microplastics.com/](https://secure.microplastics.com/)

For a FREE copy of their NEW full line catalog #39 contact: Micro Plastics' Customer Service Department, P.O. Box 149, Hwy 178 North, Flippin, Arkansas 72634

Technical Contact: Bruce Sanders, Sales Manager, Tel: 870.453.2261 or 870.453.8861, Fax: 870.453.8676, Email: [mpsales@microplastics.com](mailto:mpsales@microplastics.com) or visit our Website: <http://www.microplastics.com>.

## distributor news

**The Industrial Fasteners Institute** is excited to make available two valuable online learning opportunities, one the basics fastener metallurgy and the other the heat treatment of steels. These two courses were developed by Professor Michael Pfeifer, Ph.D., P.E.

All strength and performance characteristics of fasteners are based on their metallurgy. Understanding the basics of metallurgy can make anyone serving in the fastener industry much more technically competent and valuable to their company and customers. Once one understands metallurgy the next logical step is to learn the fundamentals of steel heat treatment. These courses are written in such a way that the student does not have to have a technical degree to grasp the valuable content.

These two courses are self-paced. It takes approximately five hours to complete the metallurgy course. The programs include pre and post tests to demonstrate what has been learned from the course. The cost of the metallurgy course is less than \$200.

For more detailed information visit the IFI online store ([www.indfast.org](http://www.indfast.org)) and click on the "Online Course" tab or send an email to [techinfo@indfast.org](mailto:techinfo@indfast.org).





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Photos courtesy of SwiftShots, Silver Dollar City, Rob Perry.

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## PACIFIC-WEST FASTENER ASSOCIATION

# FROM THE PRESIDENT...

*Andy Cohn, Duncan Bolt Company*

First off, those of you not in attendance missed a really fun party on December 2. More than 180 members and guests partied through the evening at the Holiday Inn Select in La Mirada, California, with fabulous food, games, and a ton of presents!

We were entertained by The Boomers, who were just fantastic (despite Mark Jojola from Vertex on the drums). The Marine Corps Reserves were there collecting our Toys for Tots.

And, unless you see the pictures, you would not believe how stylish and sophisticated this group can look!

Thanks to everyone who made this such a great success: Rebecca Day CFS from Exact Industries and Holly McDaniel from WCL Company for organizing the event, and all of our fabulous sponsors -- Bossard Metric, Bisco Industries, Brighton-Best International, Duncan Bolt Company, Heads & Threads International, Ideal Fasteners, INxSQL Software, Metric & Multistandard Components, R&D Fasteners, Stork Materials Testing & Inspection, T&T Enterprises, Ultra Fastener Co., Valley Nut & Bolt, WCL Company, Ababa Bolt, DISCO Industrial Screw, Integrity Fasteners, ITW Shakeproof Industrial Products, Jacon Fasteners & Electronics, Sonic Plating Company, Star Stainless Screw, The Olander Corporation, Westbrand Industries, Activant Solutions, Exact Industries, Graham Fasteners, Pacific Warehouse Sales, Vertex Fasteners.

### New Membership Benefit

The National Fastener Distributors Association has invested in a new financial reporting tool that permits the members to input financial data and get comparative data, analysis, and the ability to do "what if " scenarios. All this



*Andy Cohn, President*

info is captured and analysed by an independent third party provider to keep it secure.

There was a free demonstration webinar for us on December 15. A repeat demo will take place on January 13. For information on how to participate, contact the Pac-West office at 877-606-5232, 714-484-4747, or [info@pac-west.org](mailto:info@pac-west.org).

### Training, Training Training!

Starting January, the Fastener Training Institute®'s Product Training Program kicks off. Part 1 takes place January 18 in La Mirada, California. Subjects covered in this full-day class include: Hex Head Products, Nuts, Socket Products, Common Materials, Methods of Manufacturing, How To Call Out Parts, How To Use the IFI Manual, and What Size is the Screw?

Parts 2 and 3 of the Product Training Program take place in February and March.

Invest in your people and your company! Send someone to these classes. I truly believe


that your employees come back better employees from our training classes.

If you would like more information, please visit <http://www.fastenertraining.org/events.html>

### Spring Conference

Mark your calendars for March 17-19 at the Hotel 1000 in downtown Seattle, Washington. We chose Seattle for the fun downtown, Pikes Place Market, wonderful March weather, easy access, and reasonable prices.

You will have a chance to network with your fellow members and attend some awesome programs, including Barry Porteous on how to use your iPad! Watch for registration materials in the mail after the holidays.

Looking forward to meeting you all somewhere soon. 



*Pac-West Annual holiday party and Toys for Tots Collection.*



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303

304

304L

309

310

316

316L

317

317L

321

330

347

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416

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## distributor news

**InterCorp.**, an importer of high quality construction fasteners under the Strong-Point® brand, is pleased to announce the addition of a new product line and the expansion of a popular existing one. Strong-Point® Pole Gripper screws, for



post frame metal to wood applications and Strong-Point® 410 type stainless steel, self-drilling, modified truss screws for metal to metal applications.



"The addition of these products will fill a need for many of our customers throughout the U.S.," states Director of Sales, Law Winchester. "It has been a priority of InterCorp to expand and offer products that complement our core product lines, and at the same time, give our customers the quality, service and competitive pricing that they have come to expect."

The Pole Gripper screws are Hi-Hex washer heads with a "SP" head mark. They are available in both a #9 or #10 diameter and come in Sharp Point, Type S & Hi-Low thread, Type '17'. All Pole Gripper screws are available with or without a stainless steel EPDM bonded washer and have a Strong-Shield coating for rust, acid rain and ACQ resistance. These fasteners are perfect for post frame buildings.

The 410 stainless steel Modified Truss self-drilling line has been expanded to now include #8 x 1", 1-1/4", and 1-5/8" screws. These, in addition to InterCorp's current sizes of #8 x 1/2" & 3/4", makes this one of the most extensive product lines available on the market today. They have a low profile and large diameter head which makes them ideal for many uses.

For more information on InterCorp and their Strong-Point® brand of fasteners, contact them by phone at 800-762-2004 or visit them on the web at [www.strong-point.net](http://www.strong-point.net).



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## AZTECH LOCKNUT OPEN HOUSE

On October 21, 2010, Aztech Locknut Company was proud to welcome Mid-West Fastener Association members, customers, and other industry friends for an open house event. The MWFA helped organize the open house in place of its annual fall meeting. Aztech has ingrained a multitude of healthy and efficient systems into their building on the way to achieving LEED-EB Gold certification. For most participants, this was their first opportunity to see many amazing environmental elements operating together in a real functioning industrial facility.


In 2008, Aztech embarked on the project to convert its conventional building into a LEED-EB certified building. Currently all the LEED-EB Gold requirements have been installed and are functional in the building while the company completes the required 12 month monitoring & documentation of the LEED points earned. Attribute signs along with a guide pamphlet provide visitors, customers, suppliers and contractors with a walking tour through the various operational areas of the company. You see and understand how Aztech's business processes work in concert with the 42 main environmental attributes of the building that are not typically found in a fastener production

and distribution plant/office. Setting up the permanent tour was a benefit to the MWFA participants and contributed to the point total required to achieve LEED. The primary reasons for the environmental effort include employee comfort and satisfaction, business opportunities, lower utility and maintenance cost, and increased property value.

There was a surprisingly large turn out at the Open House and the feedback afterward was very positive. While everyone was impressed by the triple-pane curtain wall windows and the solar hot water tooling wash equipment, the VW Golf converted to a battery powered car was certainly the highlight!

Aztech Locknut Company began operations in 1978 and has been situated on its Aurora, IL-based campus

since 1998. Aztech is a brand name importer and manufacturer of Locknuts. Aztech continues to strive to maintain the LEED-EB Gold standard as an indicator of the advanced technology also applied to its products and customer service.

If you're interested in seeing our facility in person, please call your favorite Aztech Locknut Sales Representative at 800-321-5625. Our "green" door is always open! 



**Aztech Locknut's Eco-Car with Mike Kaendl standing by it (the force behind the success of the car)**

## Aztech Locknut's Open House was a great success!





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## NORTH COAST FASTENER ASSOCIATION

# NCFA HOLIDAY BASH.....Always a Great Time!

by J. Kelly Hommel (XL Screw), NCFA President

This has been very productive year for the North Coast Fastener Association. Our events varied from entertaining networking events, to educational and informative meetings. Although some of our events change each year, the end of the year Holiday Bash is an NCFA Tradition!

This past year, the event location changed to the Crown Plaza Hotel in Independence, OH. This location has been a great addition to our association and hosted some of our other events this past year. Being centrally located, it allowed a more evenly spaced commute for all of the attendees in the wintry snow conditions.

The ever famous Virgil from Brighton-Best was the DJ again this year. He never fails to bring a great mix of music and entertainment to our events and kept the party going until the evening came to a close. The beautiful banquet room, with a full wall of windows, allowed for a great view while dancing the night away.

Kurt Triptow, NCFA Trustee, did a fantastic job running the Gift Auction. Thank you to all of the companies who donated gifts for the auction. All of the proceeds from the gift auction are going to the 2011 NCFA Scholarship Fund.



*Incoming NCFA Board (from left to right)  
Kelly Hommel, Lisa Graham, Ken Graham, Dave Audia, George Hunt, Steve Matthews, Kelly Sawchik, Kurt Triptow, Scott Faidiga*


The 2011 NCFA Board Elections were held at the start of the evening. The incoming board consists of:

President:  
Kelly Hommel, XL Screw  
Vice-President:  
Michael Delis, Fastener Tool & Supply  
Treasurer:  
Ken Graham, National Threaded Fasteners Ltd.  
Recording Secretary:  
Marty Nolan, R.L. English Co.

### Trustees:

Dave Audia, Advance Components  
Scott Faidiga, K-J Fasteners  
George Hunt, Brighton-Best Int'l  
Steve Matthews, Acument Global Tech.  
Kelly Sawchik, Cardinal Fastener & Specialty  
Kurt Triptow, Branam Fastening Systems

The NCFA Board would like to thank all of the companies who supported the Holiday Bash and/or any of the other events throughout the year. Thank you for your continued support of OUR association. We look forward to another great year in 2011!

If you are interested in joining the NCFA, please visit our website [www.ncfaonline.com](http://www.ncfaonline.com) to download an application or contact the NCFA Office at 440-975-9503. 





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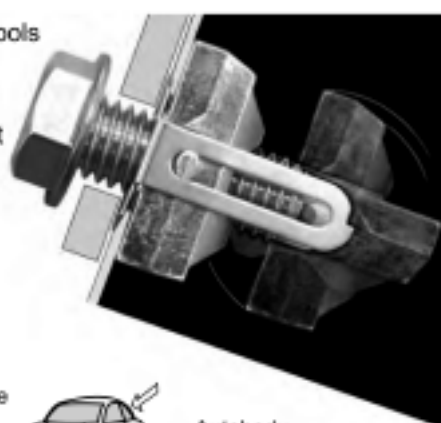
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## distributor news

**Quick Cable**, a leading manufacturer of battery connectors, battery cables and accessories, today announced the availability of its Quick™ line in new retail packaging designed exclusively for dealers and distributors.



The new retail program covers over 600 SKU's in 10 different product categories for automotive, marine, heavy truck, agriculture and construction.

Quick Cable has been prominent in the battery accessory market for over fifty years but this is the most comprehensive retail packaging program in the company's long history. In addition, the new Quick® retail program, with a green and black color scheme is complimentary to the existing RESCUE™ and QuickBox™ product lines.

The modern, vibrant packaging calls attention to the product features with a high visibility packaging style, bar codes for easy inventory & pricing, and bilingual product descriptions (English/French, English/Spanish). The product categories included in the new line are:

- Connectors
- Solderless Terminals
- Primary Wire
- Booster Cables
- Protective Products
- Jump Packs
- Accessories
- Battery Boxes
- Battery Maintenance
- Tools

As part of the retail program introduction, Quick Cable is offering retail solutions including several retail plan-o-grams with pre-picked product selections that are market specific. In addition, Quick Cable is introducing a brand new retail catalog with complete product offerings and has created a training program to help dealers better train their associate staff on the entire Quick® retail offering.

For more information on the Quick® retail program, contact: QuickCable, 3700 Quick Drive, Franksville, WI 53126, Tel: 1.800.558.8667, Fax: 1.800.733.8611 or visit online at [www.quickcable.com](http://www.quickcable.com).



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To those who we have sold before, thank you, and to those we haven't, we are looking forward to selling you in the future.

*Lori Coar, President*  
*Aluminum Fastener Supply Co., Inc.*

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METROPOLITAN FASTENER DISTRIBUTORS ASSOCIATION, INC.

## MFDA HOLDS 12th ANNUAL TOYS FOR TOTS PARTY


The MFDA gathered on December 6, 2010, for the 12th Annual Toys for Tots Party. The party was held at the Al Di La Restaurant in East Rutherford, New Jersey. Through the amazing efforts of Toys for Tots Chairmen, Dennis Shanahan, Mutual Screw & Supply, Keith Monteleone, Kanebridge, and Doug Thonus, Fastar, Inc., many companies in the tri-state area acted as "collection sites" for the U.S. Marines Corp, collecting toys for weeks before this evening.

Forty people came out for the MFDA's last event of the year, and all were overwhelmed when they saw the piles and piles of wonderful gifts that filled the dining room. Two U.S. Marines dressed in full uniform came to join in the festivities, and to express their appreciation to the association for their efforts and

generosity. Many companies also made monetary contributions, which will be used by the Marines to purchase additional toys for children. The MFDA presented the Marines with a check for \$3,200.00.

While everyone was enjoying good company and delicious food, a raffle was held, and as luck would have it, one of the Marines won the \$100 cash prize!

Having concluded a very successful year, the Board of Directors would like to thank everyone who supported the Association in 2010, and are looking forward to providing the membership with educational and social events during 2011.

For more information regarding the Metropolitan Fastener Distributors Association, please visit [www.mfda.us](http://www.mfda.us) 



### MFDA Annual Toys for Tots Party...





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## ERIC MARBE COHN, 1922-2010

Eric Marbe Cohn, 88, who started importing fasteners in 1953, died November 8, 2010.

Born with his twin Jay Cohn on 2-2-22, he started in the importing business with his father. After five years importing straw goods for men's hats, he began importing fasteners.

He retired from his fulltime role as president of Allied International in 1986 when he sold his shares to Kay Corporation. In retirement he operated a telephone business and traded in fasteners.

Allied International, American Eagle International, Allied Stainless, Allied Surplus and Allied Specials were successor companies to Northern Screw Corporation and Northern Trading Company, which were founded in 1955.

Allied eventually was headquartered in Rye, NY, and grew to have facilities in Stamford, CT; Los Angeles; Tulsa; Denver; Charlotte and Port Newark.

In a 1995 presentation to the Western Association of Fastener Distributors, Cohn recalled that in 1955 Reynolds was importing fasteners from Holland; GKN and H.J. Kennedy from England; Norman Sackheim from Germany and Allied from Belgium.

"In the late '50s the – the domestic manufacturers who had been buying abroad to supplement their capacity – told the foreigners, 'We don't need you anymore,'" Cohn recalled. "That was a gross mistake because the foreigners liked our business. Importers got into it to fill this void."

Because of pressure against foreign competition, "a lot of distributors wanted me to deliver at night so that domestic manufacturers wouldn't see what they were doing."

In the early days importing was mostly low-end fasteners "that the domestic manufacturers did not even want to make," Cohn once said. He cited 1/4-20 x 1/2 license plate bolts with washer head and "any cheap nut" as

an example.

Cohn blamed cutbacks under the Reagan Administration for imported fastener quality problems. "The crooks quickly saw that the government did not have the manpower to enforce its own regulations. In the 1950's every tenth case of bolts was checked by a U.S. examiner," Cohn recalled. "By the 1990s they checked some shipments at the pier when they could."

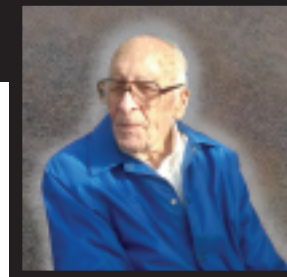
He testified at a U.S. House of Representatives Ways & Means Committee hearing on tariffs in 1955 and 1975.

"A lot of interesting things came out of the hearings. For example, there was an Australian wood screw manufacturer who decided that if he came to the United States he could sell wood screws," Cohn remembered. "So he announced that he was coming and the domestic industry met him on the dock, bought his plant and he went home."

The National Fastener Distributors Association and the Western Association of Fastener Distributors honored him with life memberships.

Survivors include his wife of 45 years, Barbara Cohn; two sons, fastener distributor Andy Cohn of Duncan Bolt and Lee (Chip) Cameron; three stepdaughters, FIN co-publisher Ann Bisgyer Wolz, Marcia Bisgyer Avallone and Susan Bisgyer; and six grandchildren.

Messages to the family may be sent c/o Ann Bisgyer Wolz, GlobalFastenerNews.com, 2207 NE Broadway #300, Portland, OR 97232 USA. E-mail: ann@expoexperts.com or Andy Cohn, Duncan Bolt, 8535 Dice Rd., Santa Fe Springs, CA 90670. E-mail: acohn@DuncanBolt.com



# FASTENER CROSSWORD PUZZLE

Test Your Knowledge!

## ACROSS

1. Deviation in a fastener's side
4. Pipe \_\_\_; cap that seals
8. Device for holding or grappling
11. "By the Time \_\_\_ to Phoenix"
15. Sheet of ice on the ocean
16. Make, as a salary \_\_\_ bolts;
17. \_\_\_ fasteners used to attach cables
19. Fastener used to join two externally threaded objects
22. Basketball players, at times
23. Chopping tool
24. \_\_\_-nine-tails; type of whip
25. Wipe away
27. French cap
28. Textbook division
30. "Carmen" or "Otello"
33. Actress Jillian
35. Flower stalk
36. Ridge inside a nut
42. Screw-and-washer assemblies
44. Once more
45. Struck with fear
47. Laughing syllables
50. ABC followers
52. Hooter
54. Portion
55. Bin Laden and others
57. Suffix for violin or balloon
60. \_\_\_ nut; mired by routine
61. Yoko Ono's man
62. Electrician
63. Just about
65. Observe
67. Surface defect
68. Rounded fastener top
72. TV crime drama series
75. Bullring shout
76. Slight arching
77. Body of water
79. Texas city
84. Refrain syllable
86. Gentleman
87. See 87 Down

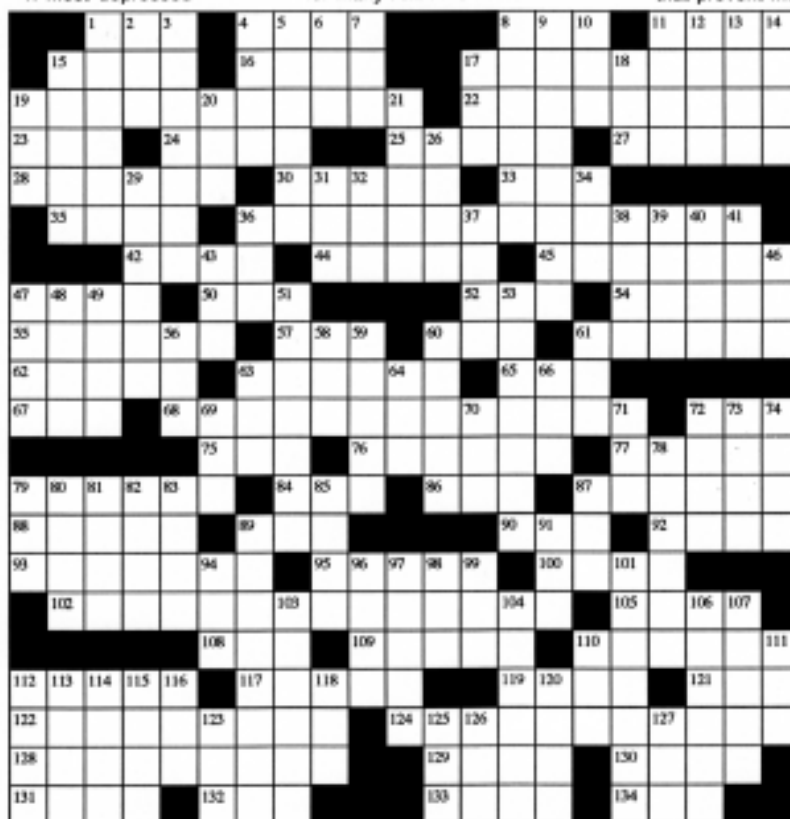
## DOWN

88. Depart
89. "\_\_\_ was saying..."
90. Take to court
92. Helper; abbr.
93. Like plywood-covered walls
95. Ridged metal plates
100. Rat-\_\_\_-tat
102. Fastener with a six-sided head
105. Vane direction
108. Military mail letters
109. Assumed name
110. Bernhardt and Palin
112. CA's Santa \_\_\_ Racetrack
117. Plain twill weave fabric
119. \_\_\_ bolts; toilet installer's items
121. Actress \_\_\_ Arthur
122. Sharp fastener end
124. Sharp conical fastener top
128. Tallies up incorrectly
129. S-shaped molding
130. Bookish fellow
131. Greek love deity
132. "\_\_\_ to Extremes"; 1990 Billy Joel song
133. Cruise and Hanks
134. Yrbk. section

2. Comic strip "Alley \_\_\_"
3. Word on a porch mat
4. \_\_\_ up; confined
5. Shallow body of water
6. "Ode on a Grecian \_\_\_"
7. African antelope
8. \_\_\_ spine; vertebral column
9. Of Asia
10. Post Byron's initials
11. Doing nothing
12. Will of "The Waltons"
13. Brontë's "Jane \_\_\_"
14. Examination
15. Wild canines
17. Meat-inspecting agcy.
18. Flow back
19. Coolidge or Ripken
20. Actor McKellen
21. \_\_\_ firma; solid ground
26. Rajah's wife
29. TV's "\_\_\_ Street"
31. School org.
32. Brain wave test, for short
34. Canucks' league; abbr.
36. Suffix for treat or expert
37. Abbr. after many poems
38. Molestation
39. Actress Moran
40. Prayer closing
41. Art \_\_\_; cubic & zigzag designs
43. Many AMA members

46. Comfy room
47. Long, doleful cry
48. Oman's continent
49. Stringed instrument
51. Junctions of fastener surfaces
53. Thin, flat rings
56. Sound from Annie's dog
58. Speedway Motorsports, Inc.; abbr.
59. Puccini opera
60. Articles
61. Meadowland
63. Everybody
64. Railroad depot; abbr.
66. Suffix for profit or musket
69. Large bill
70. Baseball stat.
71. One of the Seven Dwarfs
72. Average grades
73. Cutting tools
74. MIT, for one
78. Moon depression
79. Assist, cockney-style
80. Actress Remini
81. Window glass
82. \_\_\_ rivets
83. \_\_\_-assured; confident
85. Actress Diana
87. With 87 Across, fasteners that prevent movement

89. Modifying
91. Detroit-based union, for short
94. Leprechaun
96. Genuine
97. Small bits of land in the ocean
98. 601, in old Rome
99. Mexican Mrs.
101. Rouses
103. From \_\_\_ midnight; PM hours
104. Regard with respect
106. Cavalry swords
107. \_\_\_ bolt; one used to fix parts to a vehicle body
110. NBC weekend prog.
111. Unhappy
112. High point
113. Black, in French
114. \_\_\_ many words; speaking frankly
115. Detectives, slangily
116. Military mail letters
118. "\_\_\_ a Small World"
120. Gorillas
123. "Yes, Pierre!"
125. Little child
126. Self-esteem
127. That girl



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## FASTENER WORD SEARCH

F	T	H	T	L	O	B	K	C	I	R	R	E	D	R
L	G	A	T	R	U	S	S	H	E	A	D	G	E	H
A	D	N	P	R	O	O	T	A	P	E	X	H	B	E
S	G	G	A	P	R	I	V	E	T	G	S	E	U	L
H	C	E	N	B	I	G	G	I	N	A	T	X	T	I
S	T	R	H	U	G	N	B	I	W	G	L	B	T	X
G	L	B	E	R	H	L	G	K	S	N	O	O	O	A
U	O	O	A	R	L	R	C	S	G	M	B	L	N	N
L	B	L	D	I	O	O	G	O	C	D	E	T	H	G
P	K	T	R	F	L	A	P	S	R	R	Y	S	E	L
E	N	D	G	H	S	E	A	M	S	E	E	G	A	E
P	A	X	T	W	E	R	C	S	D	O	O	W	D	N
I	T	O	G	L	O	B	E	H	E	A	D	D	G	I
P	O	G	S	G	S	T	U	N	H	C	N	I	L	C
T	D	O	U	B	L	E	E	N	D	S	T	U	D	K

Can you find and circle in the grid above the terms listed below?

Burr  
Button head  
Clinch nuts  
Core  
Derrick bolt  
Double end stud  
Drill bit  
Eyebolt  
Flash  
Forging  
Globe head  
Hanger bolt  
Helix angle  
Hex bolt  
Laps  
Nick  
Pan head  
Pipe plugs  
Rivet  
Root apex  
Seams  
Sems  
Tank bolt  
Tapping screw  
Tooth lock washer  
Truss head  
Wood screw

Solution on Page 176

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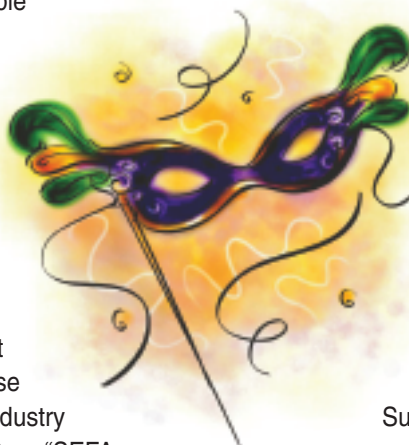
## SOUTHEASTERN FASTENER ASSOCIATION

# SAVE THE DATE: CELEBRATE MARDI GRAS MARCH 8-10, 2011 "SEFA STYLE"

The dates will be March 8-10, 2011 so mark your calendars now. Plan to come down to network poolside, catch beads, and more. Distributors will have the opportunity to "earn" coins at the Table

Top show where they can turn them in for chances to win prizes! There is a rumor that there may even be an Apple iPad to win this year!

The conference will be held at the Hilton at Walt Disney World Resort. We will be having our golf outing at one of the famed Disney courses. Wednesday evening will be poolside (weather permitting) with great food, live entertainment, and of course great opportunities to network with industry professionals. As we celebrate Mardi Gras "SEFA Style", you won't want to miss out and see who will be voted in SEFA's Mardi Gras King and Queen!



Featured speakers will highlight the Thursday morning Business Meeting and an afternoon of meetings with each of the Supplier Members at the Supplier Showcase will make for a full day!

This event is for members of the Southeastern Fastener Association. If you are not currently a member, now is the time to join. Please visit our website, [www.theseffa.com](http://www.theseffa.com) to fill out your application online or download the application and send it in. Membership costs are very little and members who join now receive a Book of Value worth over \$1500 in valuable Supplier coupons.

*We are all looking forward to another successful year in the South East!* 

## SEFA Application for Membership

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

No. Years in Business: \_\_\_\_\_

Main Contact: \_\_\_\_\_

(Designated Voting Representative)

Alt. Contact: \_\_\_\_\_

Email Address: \_\_\_\_\_

Check One: \_\_\_\_\_ Distributor \_\_\_\_\_ Supplier

\_\_\_\_\_ Importer \_\_\_\_\_ Mfg Rep \_\_\_\_\_ Service Provider

Initiation Fee: \$150, Includes Membership through end of Calendar Year

Annual Renewal of Dues: \$275 Distributors, \$295 Suppliers

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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## ALL AMERICAN FASTENER SHOW

# THE ALL AMERICAN FASTENER SHOW

## Branson MO, May 12-13, 2011

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All American show is set for May 12-13th, 2011 in Branson, MO. The list of exhibitors is growing and the excitement is building. The Hilton Convention Center and Hotel is a great venue and Branson offers many things to entertain anyone and everyone. The Landing is next to the Hotel set on the lake with shops, dining and nightlife just steps away from the Hotel.

Golf Tournament is also set for May 12th Two man scramble at the Payne Stewart Golf Club and later that evening a welcoming reception for everyone attending and exhibiting. Last year the welcoming reception was extended because everyone was having such a great time, so for 2011 the reception will be from 5:30pm – 7:00pm.

Registration deadline is 4/4/11, but if you register before 2/21/11 there is a early bird discount of 100.00.

Sponsorship opportunities are available for the show as well. We have a red, white and blue sponsorships along with show program advertisements available.

The All American Fastener Show is the show for American Companies and Branson is a great place to bring them all together! Please take a look at all the information on line at [www.allamericanfastenershow.com](http://www.allamericanfastenershow.com).



Current Registered Exhibitors include:

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Hill Fastener Corp  
ITW Shakeproof  
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Metric & Multistandard Components Corp  
Minneapolis Washer And Stamping Inc  
S.W. Anderson Co.  
Sarjo's Fas-kit Fastener Assortments  
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Superior Washer & Gasket Corp.  
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## ALL AMERICAN FASTENER SHOW

## AAFS First Annual 18 Hole Two-Man Scramble Golf Tournament - May 12, 2011

### 2011 Golf Tournament

New for the 2011 All American Fastener Show is a two-man scramble golf tournament at the award-winning Payne Stewart Golf Club. Golfweek magazine ranked Payne Stewart Golf Club as one of the Top 40 New Course Layouts in 2009 as well as a Top 5 Public Access Course in Missouri in 2010. Designed by Chuck Smith and consultant/PGA Professional Bobby Clampett, the course is a tribute to Missouri native and favorite son, Payne Stewart.

Deadlines for entries will be March 15, 2011. Entry fee is \$290 per two-man team. Registration includes cart fees, tournament entry, and lunch with beverages following tournament. The tournament will be in the scramble



format. Tournament limited to 36 two-man teams with prizes as follows: 1st \$300 - 2nd \$200 - 3rd \$100. Tee times will begin on Thursday, May 12th at 9am. Refreshments will be available on the course. 





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only consideration. There are a number of other elements of TPC which can have a major impact on product acquisition including all the activities required to insure production plans are achieved.

JL Haber, Vice President of Programming at Multi Media Productions, added, "Falcon Metal Corporation is certainly responding to a major need in most industries today. We are excited to have them as a guest on our program."

Falcon Metal Corporation was founded by in 1979 as an industrial fastener distributor in rented office/warehouse space in Charlotte, North Carolina.

The company changed its focus in the late 90's from a traditional fastener distributor to meet the changing needs of its customers. Falcon's staff focuses on managing Class C components for original equipment manufacturers (OEMs). Class C components represent a small portion of the company spend, yet represent a large percentage of the purchased parts. The overall goal is for the customer to always have access to the products at point of use, while Falcon Metal works with the distinct manufacturers/vendors. The extent of the onsite service is driven by the needs of the respective customer. It ranges from dedicated on site staff to scheduled inventory replenishment.

Falcon typically uses a "pull" system which supports lean manufacturing. Inventory is only replenished when it has been consumed. Falcon's

Bar Code Inventory System (FBIS) replaces the tedious process of checking inventory levels, filling out requisitions, sourcing and expediting overdue orders. Falcon's staff assumes full responsibility for insuring the customer has what is required to build the finished product.

Falcon's staff is experienced in managing a wide range of commodities. Key staff members have long tenure with the company. Falcon has been recognized as one of the Best Places to Work, 4 years in a row by the Charlotte Business Journal.

To find out more about Falcon Metal visit <http://www.falconmetal.com>.

## distributor news

Multi-Media Productions (USA), Inc. is pleased to announce that **Falcon Metal Corporation** will be featured on 21st Century Business.

Falcon is focused on helping its customers reduce their Total Procurement Cost (TPC) for Class C production parts. This is achieved through cost effective managed inventory programs, including Bin Management, Bin Stocking, Inventory Control Management Services, Supply Chain Management Services, Lean Initiatives, and Third Party Logistic Services. Falcon's solutions include both vendor managed Inventory (known as VMI) & customer managed inventory (CMI) programs.

Falcon's staff has experience with a wide variety of OEM industries.

What are Class "C" production components? These are the items that are the reverse of the 80/20 rule—the large number of low value items that are required to produce the end product. Studies have shown that production downtime is primarily due to lack of an inexpensive component.

All costs, whether sourcing, paperwork, storage space cost, or taxes and insurance should be considered to ensure the cost effective decisions is being made.

Direct acquisition cost (price) is the most visible element of OEM purchasing cost. Too often it is the



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## NEW ENGLAND FASTENER DISTRIBUTORS ASSOCIATION

# NEFDA HOLIDAY LUNCHEON AND ASSOCIATION NEWS

## NEFDA Held Education Seminar on October 14, 2010

"Government Regulations of Foreign Sourcing" by Joe Soja

Joyce L. Tong, Attorney at Law, from Bryan Cave LLP out of Washington, D.C. discussed:

1. Buy American Act
2. Trade Agreements Act
3. Specialty Metals
4. American Recovery and Reinvestment Act Buy American Restrictions
5. ITAR and Mil-Spec

The BAA restricts government purchase of items to primarily domestic end products. What is "American?" is determined in a two part test: Manufacture in the U.S. and the cost of components which are not the cost of manufacture or acquisition. It applies to small businesses and set-asides.

The TAA waives the BAA requirements for U.S. supplies for eligible products in acquisitions covered by the WTO GPA. The Government may not purchase products from non-designated countries.

Specialty Metals is covered under the Berry Amendment which restricts the purchase of specialty metals used, for example, in space programs, ships, tanks etc. that were not melted or produced in the US. Specialty Metal Regulations are defined under Defense Federal Acquisition Regulation Supplement (DFARS) Part 225.7003 Restrictions on Acquisition of Specialty Metals.

The ARRA states that no funds appropriated by the Act may be used for a public building/works project unless all manufactured goods used are produced in the U.S. which includes fasteners made out of iron



or steel.

International Traffic in Arms Regulations (ITAR) restricts the export of a good or service that is specifically designed for the military, commercial satellite or space related application. The Government is looking to move away from military specifications to more commercial standards and performance based procurement.

The above information is paraphrased from Joyce L. Tong's power point presentation. Joyce gave NEFDA permission to distribute this information to its members.

## NEFDA Held Panel Discussion on October 14, 2010

On "State of the Fastener Industry" by Joe Soja

The panelists selected were: Jay Queenin, COO, Specialty Bolt and Screw, O.J. Simpson, Sales Manager, Heads and Threads International, Joyce L. Tong, Attorney at Law, Bryan Cave LLP, Steve Wilson, CEO, Crescent Manufacturing Co., Moderator: Rick Rudolph, Sales Manager, Lehigh-Armstrong, Inc.

Each of the panelists gave an overview of their company and their background in the fastener industry. Topics included the following:

1. Business levels the last two years - The slowdowns started in 09 which for some companies were abrupt. Others, the slowdowns came later but they did not recover until later. Business is better but a new normal has been established.

2. Different ways of doing business - Most companies are working with less people. They are finding ways of working more

please turn to page 174



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## **Week-long Certified Fastener Specialist™ training to be offered again in 2011**

The Fastener Training Institute® in partnership with the Industrial Fasteners Institute will offer a week-long intensive version of FTI's Certified Fastener Specialist™ advanced technical training program, July 25-29, 2011 in Cleveland OH.

Fastener Training Institute/IFI-Cleveland 2011 will include everything that a student would experience in the regular seven-course CFS™ training, but all on consecutive days. And fastener association members will receive substantial discounts on registration fees. For more information or to register online go to [www.fastenertraining.org](http://www.fastenertraining.org).

*The difference between you and your competition is employee skill, knowledge and productivity. Your return on investment will be:*

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- *Increased efficiencies in processes, resulting in financial gain and sustainability*
- *Increased innovation in strategies and products, risk management*

The FTI/IFI Cleveland 2011 event will feature learning labs taught by leading industry experts, Joe Greenslade (IFI), Carmen Vertullo CFS (Simply Better Inc.), and Salim Brahim (IBECA Technologies), interactive exercises, quizzes to reinforce learning, and plant tours of manufacturing, secondary processes and testing facilities. Upon completion of this training and passing a final exam, attendees will be eligible to receive the Certified Fastener Specialist™ (CFS) designation.

Registration fees for members of an endorsing organization are as low as \$2,500 for the first person from a company with a 40% discount for each additional attendee from the same company. The deadline for this special rate is May 27, 2011.

*What our students have to say:*

- *"Great. Well worth my time and money. The instructors are very dedicated to the improvement and education of the industry."*
- *"The CFS program drastically shortened my learning curve regarding fastener specifications.....CFS is a great program taught by excellent instructors."*

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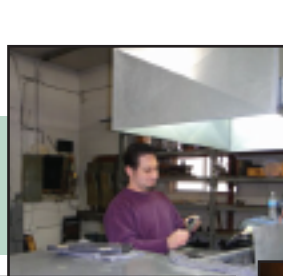
## Tristate Weathering the Economic Climate

Tristate Tool and Die has been in business for over forty years and has been making locknuts for over twenty-five of those years. We still continue to do tool and die work, but over the years the focus changed to making a full line of locknuts. We continue to stock a full line of standard locknuts, but lately our emphasis has shifted to special nuts. We have always served a niche market, but the niche has always been an evolving one. What hasn't changed is our basic philosophy: Whatever we do we will do it better.

Lately, we have been in a difficult business cycle but we have weathered the storm and prospered. We have lost some ground to those that will do it cheaper, but our customers continue to reward us for doing it better. We continue to develop new products.

Along with our promise to do it better comes our guarantee to keep our customers projects confidential.


We advertise our standard products, but never those special products of our customers. We are always seeking new products. We welcome the opportunity to process parts for others, or to develop entire new product lines.



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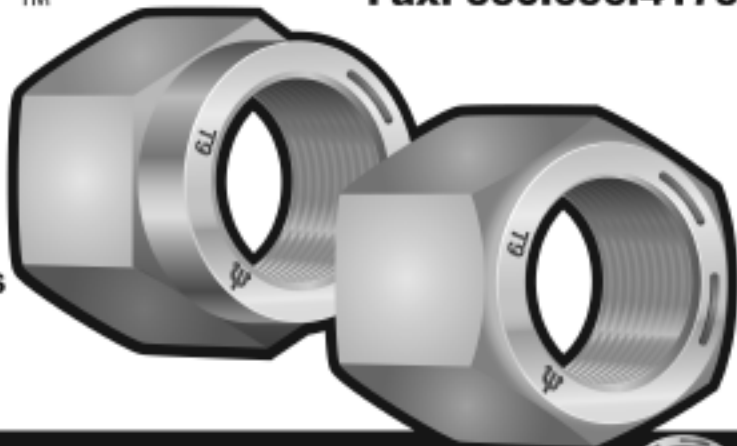
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## MID-WEST FASTENER ASSOCIATION

# MWFA HOLIDAY PARTY AND NEWS

## MWFA Holiday Party Draws Increased Attendance & Donations

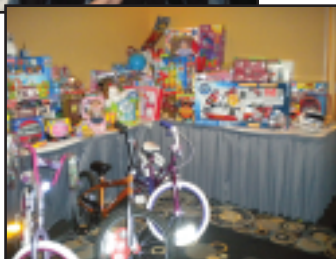
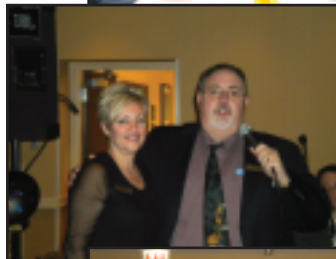
December 9th was an evening to celebrate the holidays by not only gathering with industry friends but donating toys and/or cash to the Toys for Tots program sponsored by the U. S. Marines. Representatives from the U.S. Marines were on hand to collect toys as guests arrived. They were later even more grateful to learn the MWFA had collected nearly \$2,000 for additional toys.

170 guests enjoyed the Open Bar (who doesn't enjoy that!), appetizers, pasta and carving stations and music by Music That Moves. Guests were very generous with their purchases of scholarship raffle tickets. Both Thomas Anderson/Active Screw and Pam Glos/Anixter were cash winners, both donating their winnings back into the scholarship fund. Thank you Thomas and Pam for your generosity!

Everyone was in the holiday spirit with snow falling and the festivity of the party! Check our website for pictures [www.mwfa.net](http://www.mwfa.net)

## Aztech Locknut Shows off Facility - Open House Amazes Attendees with their Green Attributes

On October 21st Aztech Locknut was gracious enough to open their doors to the members of the Mid-West Fastener Association by conducting tours and hosting appetizers and beverages. Mark Kaindl (owner) and Mike Kaindl led tourists through the office and the plant to view the facility. While the manufacturing was in progress and of interest, what really caught everyone's attention were the changes made to



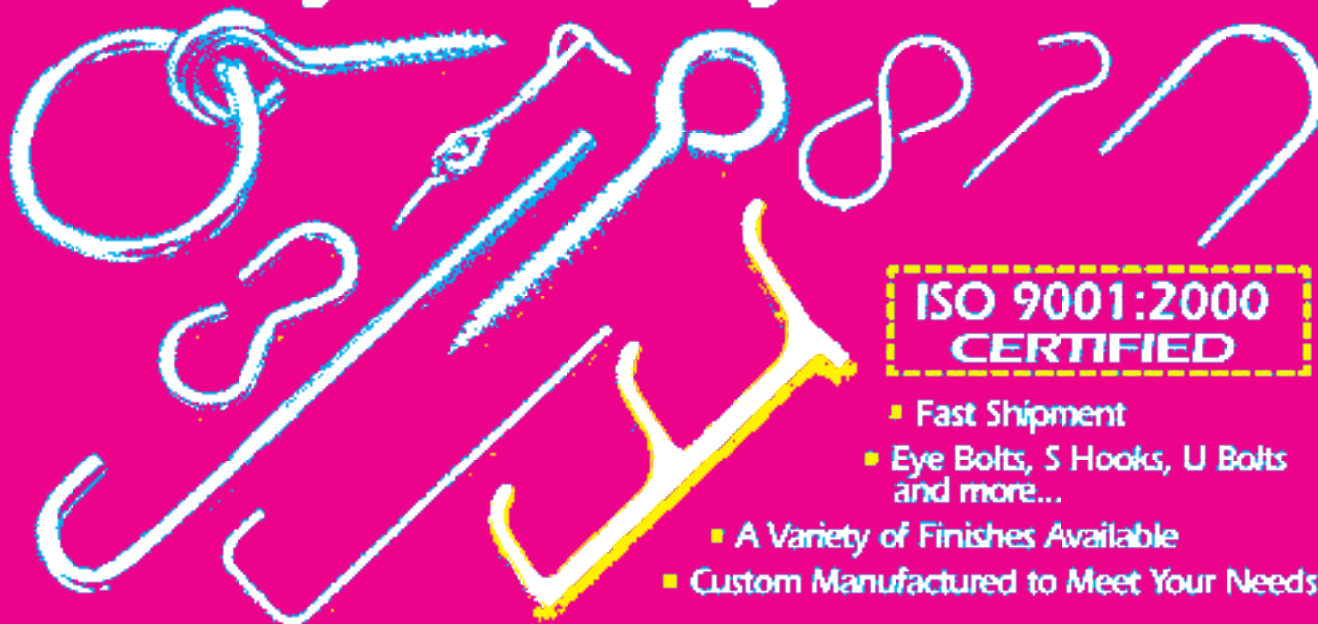
convert their building into a LEED-EB certified building. All requirements have been installed and are functional while they complete the required 12 month monitoring and documentation of the LEED points. The indications of their attributes include, high ration natural areas, no mow native areas, no smoking, bike rack, hybrid company car, certifications, triple pane windows, energy use, daylight views (even in the plant), water and heat recovery, solar hot water heat, motion sensor lighting, spill control stations, employee home recycling center, controlled lighting, eco-friendly cleaning and more. Their recycle plan is so efficient they only fill one dumpster a week. Mike even made an all electric car with the help of a donated VW. The result is a road worthy transport which goes 40 miles at 40 mph between charges, zero gas, and zero emissions! Thank you to Kimberly Kaindl for coordinating this event. For more info on Aztech's renovation visit their website at [www.aztechlocknut.com](http://www.aztechlocknut.com).

## MWFA Announces 2011 Board of Directors

The Mid-West Fastener Association is pleased to announce the 2011 Board of Directors. Ms. Becky Moujouros, as the new president, is the second female president for the association in 65 years. Alina Agresto, Delta Secondary was the first president in 1994 and 1995 (at that time the association was still Chicago Bolt, Nut & Screw Association). 2011 celebrates the 65th anniversary of the association as well as the 30th anniversary of trade shows for the association. Visit their website at [www.mwfa.net](http://www.mwfa.net) for more info.



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### MID-WEST FASTENER ASSOCIATION

MWFA HOLIDAY PARTY AND NEWS continued from page 112

#### The 2011 Board is as follows:

##### President

Becky Moujouros, American Fasteners and Components

##### Vice President

Matt Delawder, SWD Inc.

##### Treasurer

Paula Evitts, KDS Imports

##### Secretary

Glen Brin, Innovative Components

##### Directors:

Rich Cavoto, Metric & Multistandard

David Gawlik, Heads & Threads Int'l

Bob O'Brien, Certified Products

Rich Pease, Federal Screw Products

Wayne Wishnew, XL Screw Corp.

##### Alternate Directors:

Henry Chernow, MAE Specialties

Cliff Hauger, Acme Threaded Products

##### Executive Director:

Nancy Rich

#### MWFA Welcomes New Members

Aspen Manufacturing Inc./Addison, IL

Assembled Products Inc./Des Moines, IA

DDI System/Sandy Hook, CT

MacDermid Inc./Waterbury, CT

TriStar Metals, LLC/Carol Stream, IL

#### MWFA Issues 2011 Calendar

2011 marks the MWFA 65th anniversary and 30th trade show, join us throughout the year as we celebrate.

February 24th	Education Seminar
February 24th	AESF/CMFI/MWFA Joint Dinner Meeting
March 24th	Dinner Meeting, Milwaukee, WI
April 13	Education Seminar
May 19th	Dinner Meeting, Rockford, IL
June 6th	59th Annual Golf Outing
	Cress Creek Country Club/Naperville, IL
June 13-15th	Fastener Tech '11
	Donald E. Stephens Convention Center, Rosemont, IL
July 21th	Social Outing for MWFA
	65th Anniversary
September 7th	Education Seminar & Networking Meeting, Minneapolis, MN
September 15th	Education Seminar Board Meeting
October 13th	Open House
November 10th	Education Seminar Elections, Scholarships Awarded-Dinner Meeting
	Rosewood Restaurant, Rosemont, IL
December 15th	Holiday Party



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Industrial Rivet & Fastener Company is a global distributor, manufacturer and importer with eight international locations,

nine U.S. distribution centers and nearly 55 employees. Specifically, the company holds one of the industry's largest inventories of off-the-shelf products ranging from standard to highly specialized rivets, available in any head style, length, material and finish. In addition, Industrial Rivet's far-

reaching manufacturing capability enables them to design, engineer and engineer both custom and ready-made products. The company also offers a wide range of proprietary riveting products, as well as sophisticated automated rivet tools and delivery systems. Founded in 1912, Industrial Rivet remains family owned and operated and gives its clients access to both products made exclusively in the U.S., as well as lower-cost alternatives imported from the company's international facilities located in Australia, Canada, China, Germany, Mexico, Spain, Taiwan and the United Kingdom.

## Industrial Rivet & Fastener Company Names Jim Howard to Manage its North Carolina Distribution Center


Northvale, NJ — Industrial Rivet & Fastener Company, a global manufacturer, distributor and importer of quality rivets and fasteners, announced that industry veteran Jim Howard will oversee the company's new distribution center located in Burlington, North Carolina.

Mr. Howard joined Industrial Rivet in 2003, bringing with him more than 45 years of experience. Over the course of his career, he has worked in a variety of different aspects related to rivets and permanent fastening solutions. Since joining Industrial Rivet, Mr. Howard has been instrumental in the success of the RivetKing® brand and the companies nine domestic warehouse locations across North America that include the North Carolina facility, as well as distribution centers in California, Colorado, Missouri, New Jersey, Texas, Utah and Illinois.

In his new role, Mr. Howard will manage the day-to-day operations of the 32,000 square foot warehouse at the Willow Springs Industrial Park in Burlington while also retaining his current responsibilities as National Sales

Manager. This newest facility will take on some of the distribution functions currently handled at the company's home office location in New Jersey, which is increasing its assembly, kitting and manufacturing capabilities.

According to Mr. Howard, the distribution center will also be equipped with the company's new state-of-the-art wireless warehouse capabilities. "The system has just recently gone live in other facilities," he explains. "And we expect that it will streamline shipping and receiving in the North Carolina warehouse so that we are able to get our products where they need to be even faster and more efficiently than ever before." In addition, Industrial Rivet will also offer classes to customers and employees in the North Carolina center's new in-house training facility.

Mr. Howard is relocating and will be initially joined by two additional Industrial Rivet employees to assist in running the facility. However, the company plans to add staff over time as the distribution inflows expand. 

### NEW TRINITY HARDWARE HEADQUARTERS WAREHOUSE continued from page 40

#### Trinity Goes Green at Muscatine

Trinity had more in mind than just aesthetics when remodeling the Muscatine facility. While it was originally designed around product flow for maximum efficiency, significant improvements were made in the remodel to be environmentally conscious, with energy-efficient lighting, heating and insulation.

"How we impact the environment is important to Trinity and we made a concerted effort to create a green facility," said Tim Dunn. "We saw an opportunity to do the latest and greatest in energy efficiency which not only translates to lower costs, but it's better for the environment."



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Trinity's Hardware Headquarters encompasses more than 34,000 types of standard, metric and specialty hardware and fasteners available immediately. All are lot controlled and quality inspected. The hardware adheres to industry standards including but not limited to IFI, ANSI, ASME, DIN, & SAE. Trinity is ISO 9001:2008 registered and provides consensus standard parts for your applications.

Product lines will continue to expand in the coming months, so be sure to visit [www.TrinityHardwareHQ.com](http://www.TrinityHardwareHQ.com)

Trinity is headquartered in Davenport, IA with a total of over 200,000 sq. ft. strategically placed warehouse facilities that supply fasteners across the United States

#### Easy Ordering at TrinityHardwareHQ.com

As part of its continued growth, Trinity recently launched a new user-friendly website where customers will find:

To receive a low cost fastener quote or additional information, call Trinity Hardware Headquarters at 1-888-232-1010 or visit [www.TrinityHardwareHQ.com](http://www.TrinityHardwareHQ.com). 



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## distributor news

Brewster based **Powers Fasteners**, the largest supplier of professional mechanical and adhesive anchors in the United States, has announced a strategic succession of management for its family-owned business. Chris Powers, formerly company CEO, will assume the advisory role of Chairman, while Jeffrey R. Powers has been promoted to CEO of Powers Fasteners global business, operating in eight countries worldwide. Frederic Powers III, former VP of Purchasing, will be President of Powers Fasteners Inc., the largest Powers business unit with 26 warehouses and 185 employees throughout the United States. Mike Fergus, former VP of Global Operations at Black and Decker's Accessories Division, has been hired as VP of Purchasing for Powers Fastening Inc. He was responsible for facilities in the U.S., Canada, UK, Germany and Asia, as well as all the commercial responsibilities relating to supplier relationships around the globe. Mike has a vast background in international manufacturing and supply chain, holding an MBA from Loyola, and an engineering degree in Industrial and Mechanical Engineering from Leeds University. Mike joins a Powers Executive staff of six career professionals with more than 100 years of experience.



Pictured Left to Right: Frederic Powers III, President; Jeffrey R. Powers, CEO;  
Mike Fergus, VP of Purchasing; Chris Powers, Chairman

Chairman Chris Powers commented on the new structure at Powers, stating, "These corporate changes represent the natural evolution of a rapidly expanding business. Powers Fasteners is currently a healthy, dynamic entity poised to expand on a global basis. We have helped ensure prosperity in every country we serve, but we also need to be forward-looking, and continue our investment in people and products for even greater success worldwide. Our father and grandfather laid the foundation for this business more than fifty years ago, and today's changes represent a step forward in securing the success of the Powers brand and legacy for our customers long term."

For more information, call 800-524-3244; write to Powers Fasteners Inc., 2 Powers Lane, Brewster, NY 10509, or visit Powers' website at [www.powers.com](http://www.powers.com).



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**Charlotte Office** 9317 Monroe Rd, Ste F, Charlotte, NC, 28270 Tel: 704.844.1212 Fax: 704.844.1277

## Active Pursues Acquisitions

With more than 60 years in the fastener distribution business, Active continues to be a company on the move! Having achieved a reputation as an industry leader, Active is known for its outstanding customer service and innovative ideas. One of the first companies in the industry to introduce Vendor Managed Inventory (VMI), Active prides itself on supplying all of a customer's needs and leveraging technology to manage efficient communication with both customers and suppliers. Customers realize a substantial savings on component costs, facilitated vendor consolidation through a single-source solutions provider, reduced waste and improved productivity.


As Active plans for continued future growth, the company's strategic initiatives include an ongoing Acquisition campaign. Having acquired Action Threaded Products in Countryside, IL in April 2010, Active is pleased to welcome Action and its team members.

Active continues its national search for owners of fastener distribution businesses, who may be interested in

selling and who meet the following criteria:

- Between \$1-10 million in annual revenues.
- Between 5 and 75 employees.
- Inventory management, component sourcing and distribution services for fasteners, MRO, or Tool Room supplies.
- Most desired geographies include: Southern CA, AZ, the Midwest (particularly Chicago-area, MN, WI & IA), TX and the Southeast.

In November, Active hosted a Mergers & Acquisitions panel at the 2010 National Industrial Fastener Show (NIFS) West in Las Vegas. Active's CEO, Buddy Blattner, joined other panelists to discuss key topics relevant to both buyers and sellers. The panel was very well attended as was the NIFS show.

If you or someone you know would like to talk to Active about selling your business, please contact Kate Johnstone at 303-845-2668 or [kate@redideapartners.com](mailto:kate@redideapartners.com). For more information about Active please see [www.activescrew.com](http://www.activescrew.com). 



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## SOUTHWESTERN FASTENER ASSOCIATION

# SFA to Hold Annual Spring Conference in New Orleans March 24-27, 2011


The 2011 SFA Spring Conference will be held at the Crowne Plaza Hotel on March 24-27 in New Orleans, Louisiana. In addition to the outstanding Cajun Dining that attendees will experience in the New Orleans French Quarter, there will be ample time to enjoy additional sites and sounds of a great American city.

The conference will open with a welcome reception on Thursday evening, March 24. Friday, March 25, will have the General Business Meeting during which three newly elected Board Members will be announced. Also during the Business Meeting, American Alloy Nut & Bolt LLC, Carrollton, Texas, will be welcomed as a new Distributor member of SFA. Following the Business meeting, attendees will receive a presentation from Linda Wing, Enthone Inc., on the subject of what, how and why electroplating is used in the fastener industry. Ms. Wing will be followed with additional timely topics on new technology and/or applications in the fastener industry. Friday afternoon is reserved for a round of golf on one of New Orleans championship golf courses. Non-golfers will have an open afternoon to tour the many attractions available in New Orleans. It could be the Aquarium, World War II Museum or try your luck at the casino. As always, Friday evening is open for client entertainment and an opportunity to enjoy the major

attraction of New Orleans, the French Quarter.

Seminars for Saturday, March 26, will offer attendees the opportunity to hone up on their marketing skills and learn some new techniques that they can apply to increasing their market share in the fastener industry. Jodie Elizabeth Jeffrey, Partner in Brooks-Jeffrey Marketing, Inc., will present a two part seminar. The first section will feature the best practices in using various social media for marketing a company and its products. The session will feature effective uses of Facebook, Twitter and other social media vehicles. The second session will concentrate on branding your company and its products. The presentation will encompass how to effectively brand your company and the products it sells and how to effectively interface branding with the social media opportunities that are available to SFA Distributors. Friday afternoon is open for SFA members to enjoy the many activities that New Orleans offers. The 2011 Spring Conference will conclude with a reception and dinner on Saturday evening.

For information on SFA Conferences and/or membership in the Southwestern Fastener Association, contact John Elsner, Executive Director, 292 Sugarberry Circle, Houston, Texas 77024.

Phone: 713.952.5472, Fax: 713.952.7488 and/or email at [swfa@swbell.net](mailto:swfa@swbell.net). 





# Nitro Drills

Give You

**MORE HOLES PER DOLLAR**



The **NITRO** ruggedly constructed heavy duty drills were developed to drill the harder alloy steels, including the aluminum alloys, the harder stainless steels and titanium alloys.

#### ◆POINT

The **NITRO** 135° Split Points main advantage is the large reduction in high end thrust and a positive rake cutting edge extending to the center of the drill which makes the drill generate less heat therefore last longer. In many materials this point will act as a chip breaker to produce small chips which can be readily ejected through the flutes also making the drill cut cooler. The self-starting split point minimizes skidding or walking and quickly bites into hard materials. This is a distinct advantage when portable drilling is used, or in drillpress work where bushings cannot be used.

#### ◆WEB

The **NITRO** has a heavy duty web construction that promotes quick penetration at the point, longer cutting life and provides greater strength and rigidity which improves hole tolerances, resists deflection, permits higher feed rates and gives greater breakage resistance.

#### ◆FLUTE

The **NITRO** has a wide flute that enhances chip removal, reduces drill retractions (woodpeckering), and improves coolant flow to the point.

#### ◆BODY

The **NITRO** is manufactured from a Premium Grade of M-2N Molybdenum High Speed Steel, which has a high Vanadium and Tungsten content.

The **NITRO** also has a Superhard Nitride surface treatment which increases the Rockwell Hardness without increasing brittleness, improves drill life and productivity.

The **NITRO** is Black and Bronze surface treated for maximum lubricity.

#### ◆MATERIAL APPLICATIONS:

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301, 302, 304, 310 and 316.
- Precipitation Hardening Grades of Stainless Steel  
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- Alloys  
A-286 19-9DL, N-155, Haynes 56, Timken 16-25-6.
- Low Alloy and Die Steels  
4130, 4135, 4140, 4340, Hy-Tuff, Vasco Jet 1000 and Thermold J
- Titanium Alloys  
A-110AT, 251AL-16V, B-120VCA, RS140, 6AL-4V, 8AL-MO-1V, 5AL-2-5SN, 3AL-13V-11CR and 5AL-1.25/2.75CR.
- Aluminum and Magnesium Alloys  
2014-T6, 2017-T4, 2024-T4, 6061-T615, 7075-T6, 7079-T6 and 7178-T6.
- Carbon Steels  
10 XX Plain Carbon Steel, 11 XX Free Cutting Carbon Steel, 13 XX Manganese Steel, 23 XX Nickel Steel and 31 XX Nickel-Chrome Steel.
- Copper and Copper Alloys  
Yellow Brass, Medium Leaded Brass, Naval Brass, Leaded Muntz Brass, Leaded Commercial Bronze, Red Brass, Commercial Bronze, Cartridge Brass, Admiralty, Muntz Metal, Phosphor Bronze, Nickel Silver, Aluminum Bronze, Beryllium Copper and Oxygen Free-Hand Copper (PFHC) Plus.

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SOUTHWESTERN FASTENER ASSOCIATION

## SFA Annual Fall Meeting, Albuquerque New Mexico





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**SOUTHWESTERN FASTENER ASSOCIATION**

## SFA Annual Fall Meeting, Albuquerque New Mexico

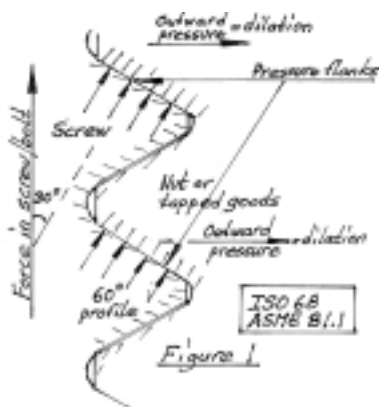


# THREADS: A CHAOTIC FAMILY continued from page 8

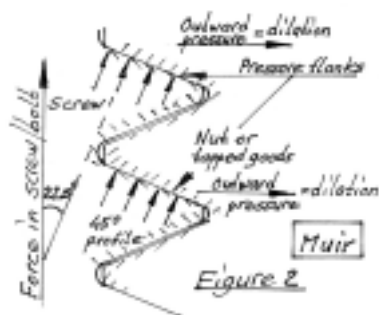
thread profile like a triangle where the height was equal to the base. That will give us a top angle of  $53.1^\circ$  (or  $53^\circ 8'$ ). Since that is not a particularly good number to put on a blue print, it was quickly changed to  $55^\circ$  for W, (with a couple of guys, Puteaux and Löwenhertz, not paying attention). Our own US thread-hero, William Sellers (no relation to Peter), managed to throw another "curve-ball" into the game 1864 by introducing  $60^\circ$  for USST (United States Standard – should be Sellers – Thread). The  $60^\circ$  profile was then suggested by Mr. Sauvage of France 1891, but with (of course) metric sizes, followed by the Germans with DIN 13 in 1919.

Now we have real CHAOS!!

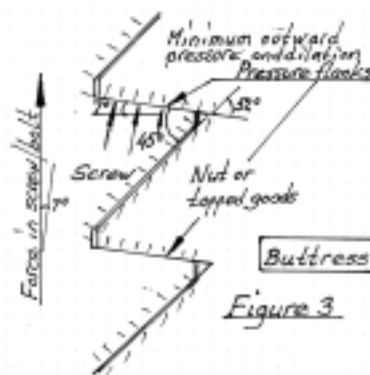
Are there any particular advantages or draw-backs with the different thread configurations? Let us first look at the common  $60^\circ$  used for all new fastener standards – metric and inch.



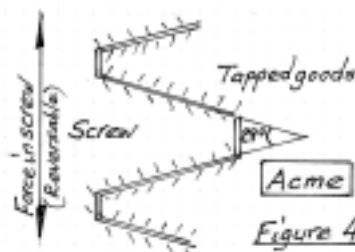
The  $60^\circ$  thread profile, ISO 68 and ASME B1.1 (B1.13M for metric) is easy to manufacture, specify and use. This profile, however, (like many others) will cause an outward pressure on the internally threaded part (nut or tapped material). This can cause dilation or widening of the nut or part primarily around the first few engaged threads. This is where the highest stresses between the threads are located. Typically, the first engaged nut thread takes about 30-35% of the entire load, the second about 25% and then gradually less for the subsequent threads. The nut standards (height and materials) have been revised to lower the risk of thread stripping due to dilation and the uneven loading of the threads. As long as we make sure that the correct nut grade/class is used with the bolt, we should have good results. You will notice that there is a  $30^\circ$  angle between the bolt axis (preloading direction) and the pressure flanks.



As an example of how to lower dilation, Figure 2 shows the Muir profile with  $45^\circ$  top angle. In this case we still have a dilation effect caused by the pressure on the load bearing flanks. But, since we now have a  $22.5^\circ$  angle to the axis of the bolt/screw it will cause a lesser amount of outward pressure. Keep in mind that this is not a common standard thread and should be very carefully and seriously considered (and probably avoided).




For very sensitive materials to be tapped and screwed together, and to add a very minimum of outward pressure we can use the Butress thread as shown in Figure 3. There is also a "Butress Special" where the  $7^\circ$  angle is eliminated all together and the pressure flank is perpendicular (normal) to the bolt axis. This type of thread is used for very special fasteners in applications like turbines and also lately for medical implants where radial loads must be kept to an absolute minimum.



The last group I'd like to discuss is the Acme profile. This is not a thread type for fasteners in traditional bolted joints, even if I have seen it being used in that context. Maybe some engineers remembered that the common textbooks in engineering college often combine the chapter (-s) on fasteners with so called "Power-screws" where the Acme type is also included. In my humble opinion, Acme and the various rectangular thread profiles should be used in reversible load application (as power-screws), like closing and opening of valves, as lead screws for various movements and similar cases.

## Conclusion

With more and more industries (in all countries) choosing up-to-date thread standards, maybe our grandchildren will have an easier time with this chaotic thread family. I hope you remember my article about "Thread Mismatches" in the Distributor's Link Magazine year 2001, keep it handy for the next 30-40 years if you still have it. 



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**REDUCING CONFUSION** continued from page 10

quotations and blue to the warehouse. This works, but it could be even more effective with signs to explain the trails when there is no one available at the counter. GPS does not yet work at the building interior level, so providing clear directions definitely saves time and effort for both staff and visitors. Making this clear from the moment a visitor enters should be the standard for eliminating confusion and welcoming strangers.

Take this to a higher level by redesigning internal procedures and paperwork to reduce errors and make the tasks more intuitive.

Paperwork such as receiving documents and pick tickets often evolves around the idiosyncrasies of old systems. Columns are frequently displayed in the wrong sequence for maximizing efficiency. Take a look at your pick document (or screen for an online system). The first information that an employee requires is the location or address of the item, not what line this is on the page. Providing this information in the most prominent location arranged in a logical pick path sequence is ideal for easy recognition. The next column should indicate what they are looking for by description or stock number to establish that they know where they should be and what they should be looking for. Quantities and check columns come next followed by back orders and other notes. Working from a less intuitive form can lead to a high error rate with low productivity. This is an often overlooked enhancement to an otherwise efficient system.

White space can also be used to good advantage on any form. For picking documents skipping a line between the storage formats can lead to quality and efficiency enhancements. Given the industry average of less than 10 lines per order making a distinct break on the paperwork between shelving, hand stacked pallet racks, and full pallet locations will enable the warehouse staff to better plan their activities and equipment utilization at zero additional cost.

Reinforce this with pictographic signage or color coding to create mnemonics (memory aids) in the warehouse. This does not require a lot of effort and the results should be instantaneous and highly visible if you follow a few simple rules:

### Simple Rules for Cognitive Ergonomics

Use **stereotypes** common to your region, industry and crew. In your context this means that people have a perception of how things can and should work. This is the primary consideration of developing ergonomically comfortable solutions. Translating this into action might mean using red for stop, green for go and yellow for caution. While OSHA has recommendations (Section 1910.144) it is more important to tailor your systems to the employee's expectations.

Be sure to **standardize** following uniform presentations of how information, signage and other delineations are

displayed. If these standards already exist and are recognized by your staff all the better, but unless code or regulation dictates what to do you are far better served to conform to your context. Essentially it does not necessarily matter what conventions you adopt as long as you are consistent in how you display and use these internal standards. An example of this would be locating a heat control on the left and cold on the right...just like faucets on a sink.

Most people prefer to have **actions linked to perception**. There should be some strong relationship or mnemonic between the command or direction and the action that will result. This is why pressing the "control" key and the "p" key in computer programs directs a document to be printed and why reverse gear on your car is indicated by the letter "R." On a receiving document or screen typing in the PO number should display the open orders in an immediately useful format not by the way it was originally listed.

**Simplify** how information, directions and details are presented. Don't provide inappropriate input or follow a complex format. This is a common error in Warehouse Management Systems. Yes, there may be situations where the worker needs more information but it is far better to provide a path to retrieve it rather than cluttering a page or screen. If the only time they need to know about appropriate substitutions is when an item is not available why provide this level of information unnecessarily on every document?

**Appropriate detail** is what each individual expects and everything you do should strive to deliver this...and nothing more unless they ask. In a warehouse where a checker is comparing what was picked to what was ordered do they really need to know the warehouse location? The traditional method of working from the same form or screen as the pickers provides too much detail that has no effect on their checking operation. Similarly including shipping details might be important to how a packer performs their job but is this really vital for the order picker?

**Providing clear images** on a printed page is obvious, but doing this on a printed label can be far more subtle. The size and location should be appropriate to the message and subsequent activity. A label that can be easily read in a well lighted warehouse might be unreadable in the dark confines of a truck on a dark winter day. Remember to factor in the distance that the label will be read from, along with the amount of information included. Often simply using borders, backgrounds and colors to delineate customers, procedures and activities will be a no cost way to enhance subsequent operations. If all the labels for north side truck route deliveries are red and south side ones are green both drivers and loaders are more likely to catch misdirected merchandise.

*There should be some strong relationship or mnemonic between the command or direction and the action that will result.*



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# Advance Components Party

November 9, 2010 - Mandalay Bay, Las Vegas



## REDUCING CONFUSION continued from page 124


Provide **redundancies** that will reinforce the image, message and information. This is why stop signs have a red color, distinctive shape and the word "STOP." Any of these could be omitted and you will still recognize the sign and do the appropriate action. Sometimes just one message is not enough. Critical instructions should appear at both the top and the bottom of a form printed in a contrasting color. Directional signs posted upon entry should be followed by signs along the path.

**Vary the stimulus** to command attention and maintain interest. If forklifts beep continuously every time they are in reverse gear people begin to ignore the danger. Until someone invents a random message generator like kid's doll a better solution is to wire the horn into the wheel sensors so that it beeps only when the truck is moving. Adding a strobe light that is green for forward movement and red for backing up is another easy solution. Any thing that avoids repetitive stimuli is desirable; just think about how passengers "tune out" the airlines mandatory safety message unless it is delivered in a singing or humorous format.

Take advantage of how humans react to **patterns**. This is why bar graphs and pie charts are so much more effective than raw data. Arranging the inventory in a recognizable,

usable format makes it far easier to find something initially and spot errors if they occur. Avoid the traditional stock arrangement by vendor and instead place the goods on the shelves and racks according to usage patterns...as pulled for customers. This leads to affinity (where one item is used with another) family grouping which is a little harder to stock once, but far more efficient when picking 100 times.

Don't forget to provide **instantaneous feedback** at every step of the operation. A simple count of the number of different items (with this number also appearing on a document or screen) can alert a staff member that something is amiss with too many or too few pieces, boxes, items, etc. Similarly use a stock out as an automatic spot check of inventory accuracy and make sure that the systems do not send personnel multiple times to verify the empty bin. This is why we should repeat telephone numbers, utilize a "check digit" and acknowledge information in our systems.

None of this is complicated or a huge paradigm change. All it takes is recognition of the problems and a willingness to develop and implement solutions that everyone can live with. Start with a training session that takes a "tour of the paperwork" or visits your facility as though viewing it the first time. Most cognitive problems will announce themselves and often the solutions are obvious, simple and cheap. 



# Look For The WHITE PATCH

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# Brighton-Best International Party

November 9, 2010 - Mandalay Bay, Las Vegas





## distributor news

**Sherex Fastening Solutions**, an industry leader in the manufacturing and distribution of blind rivet nuts and specialty fasteners announced the launch of their totally designed website, [www.sherex.com](http://www.sherex.com).

"In 1992, long before most companies knew what the www was; Sherex hosted its first web site. We've come a long way since then and so has our new site with 3D downloadable drawings, easy navigation, and videos. Our goal for our new site is to provide the essential information our customers require in an easy to use manner," said Andrew Johnson, President of Sherex Fastening Solutions.

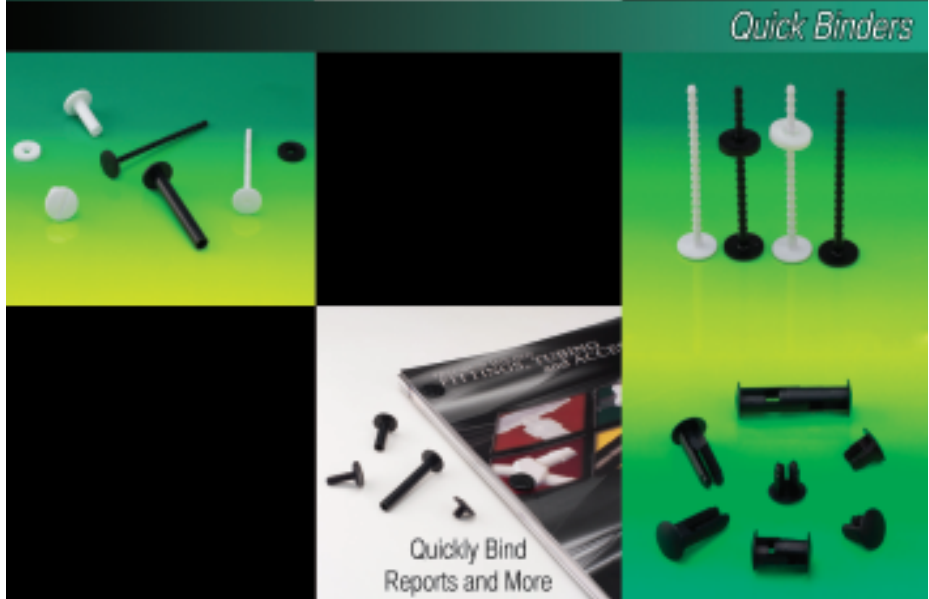
Sherex Fastening Solutions new website includes a brand new modern look and feel along with many new features to make the site even easier to navigate. Every page will have links to our innovative 3D models, quality certificates, & information on our new FLEX line of rivet nut installation tooling. The new site also features a significant expansion to content & brand new rivet installation tooling videos.

From the new Sherex homepage visitors will be able to access all of the product lines that Sherex offers including our brand new line of Clinch Nuts & Fastener Automation Systems. Within the "Blind Rivet Nuts" product bucket on the home page there are three links to in-depth rivet nut selection guides which break down each series of rivet nuts that is within that family. These selection guides allow visitors to see the different features & benefits between the different rivet nut styles Sherex offers and then probe farther into the catalog or Download a 3D model of that style rivet nut. An entire page was also developed for our innovative "RIV-FLOAT®" product, which includes specific applications and kit & bag information.

On our new "Installation Tooling" page, Sherex features the new FLEX line of rivet nut installation tooling which can install rivet nuts & rivet nut studs by both pull to stroke installation method and pull to pressure installation method depending on the customer's application requirements. This page also includes information on our SSG tools (Spin-Spin) & hand tools for rivet nut installation.

The new "About Us" page provides an in-depth look at the history of Sherex Fastening Solutions & also shows how much Sherex has grown geographically since its inception in 2004. On the

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"News & Events" page visitors can see everything that is new with the company & also what upcoming trade shows Sherex will be exhibiting at. Our new "Sales Rep" page has a color coded U.S., Mexico, & Canadian map to make it easier to find out who they should contact for additional information or to place an order. On the "Contact Us" page a brand new Google Map was added showing the location & surrounding area of Sherex Fastening Solutions US facility.

Moving forward Sherex will be updating & improving its entire website on a continual basis to make sure all of our customers and viewers can navigate & collect information efficiently.

Sherex Fastening Solutions is the world leader in the manufacturing and distribution of Sherex blind rivet nuts, brass inserts, and other specialty fastening products. Sherex rivet nuts are ideal for providing load-bearing threads in thin materials and blind applications. All blind rivet nuts and brass inserts are manufactured to Sherex's strict quality control programs and Sherex provides unsurpassed customer service and support before and after the sale. Sherex is ISO/TS 16949:2002 Certified.

For more information contact Sherex Fastening Solutions at 400 Riverwalk Pkwy, Suite 600, Tonawanda, NY 14150 Phone: 866-474-3739, Fax: 716-875-0358 or on the web: [www.sherex.com](http://www.sherex.com).

## GOOSING MARKETING WITH SOCIAL MEDIA continued from page 14

fastener distributors to manage multiple Twitter and Facebook accounts, track conversations and schedule posts – all while monitoring all the activity with analytics and reports.

Another module within the package, Sites, gives marketers the ability to create, design and deploy static, interactive or socially enabled landing pages to support specific marketing campaigns. And still other modules offer enhanced interactivity and monitoring via email and mobile phones.

Similar programs offering all-in-one solutions include Interact Campaign, from Responsys (<http://www.responsys.com/suite/index.php>), and the solutions from the aforementioned Social Studio from StrongMail. Both programs are from long-established email marketing companies.

For some, this fusion of email marketing and social media seems inevitable. The study, "View from the Social Inbox", released earlier this year by Merkle (<http://www.merkle.com>), for example, found that active social networkers are also likely to be avid email users. All told, the study found 42% of social networkers check their email four or more times a day, as compared to just 27% of those who don't socialize online.

As the fusion between the two Web mediums gels, here are some tactics you'll find marketers have already used successfully to combine both, either by using pre-configured programs, or putting together applications of their own:

**\*Get the Most from Testimonials:** Customer accolades look good on company Web sites, but even better on your customers' Facebook pages. Marketers most aggressive in this area start by emailing a customer for a testimonial on a product or service shortly after that product/service is purchased. Customers who respond with glowing reviews, and often a related digital photo, get their testimonial posted to the company Web site. In addition, the authors are emailed again by the business with a request to re-post the testimonial on their Facebook account, or in a Twitter tweet to all their friends. Often, willing participants get a small reward for their service.

**\*Embed Social Network Testimonials in Emails:** Sometimes, spontaneous testimonials about your fastener distribution business can pop-up on Facebook and Twitter without any prodding whatsoever. Such promotional gifts can be easily cut-and-pasted into your next marketing email – along with a grateful nod, of course, to the author.

**\*Reach out to Top Influencers in New Ways:** With the ability to monitor social networking activity like never before, marketers are getting very creative about reaching out and

partnering. Many of the email/social media suites and services, for example, are allowing them to input an entire customer email list, and instantly identify the email addresses on that list owned by people who have hundreds, thousands or even tens of thousands of friends on Facebook and similar social networks. Marketers can then reach out to these people via email, and partner with them on word-of-mouth promotions.

Many of the new programs can also track the referrals these influencers generate, and verify which influencers are ultimately generating the most conversions, in terms of sales or some other desired action. Subsequently, la crème de la crème can be rewarded most substantially, and primed for a series of unfolding word-of-mouth promotions.

**\*Fish Where the Fish Are:** Running an email database through some of these more sophisticated email/social media programs can also yield an interesting picture of where your customers 'hang out.' You may find, for example, that the greatest percentage of your customers are congregating on LinkedIn (<http://www.linkedin.com>), a business networking site, rather than on Facebook.

Consequently, you'll be able to put your digital marketing dollars where they'll reach the greatest percentage of your customers -- -- rather than guessing, and hoping for the best.

**\*Give People a Reason to 'Like' You on Facebook:** Only a few months old, the "Like" button on Facebook has become one of the marketing world's most coveted clicks. When someone 'likes' your fastener distribution business on Facebook, your company becomes quantifiably more important, and more desirable. Many Facebookers click the "Like" button in the hopes they'll get a freebie from the company. Don't disappoint. Always offer, if at all possible, a coupon or some other tangible reward for the endorsement.

**\*Hold Twitter-Driven Contests:** The immediacy of Twitter perfectly

lends itself to time-sensitive contests. Hold an answer-the-question contest once a week rewarding the first person with the right answer with your fastener distribution businesses products, company bucks, or the like, and watch the tweets come in.

**\*Don't Forget Email Social Media Basics:** This is really a critical component in any campaign synthesizing the two mediums, and should be a part of every email marketing campaign, no questions asked. Such optimization is as easy as adding links to the key social networks in your emails, including Facebook, Twitter and YouTube. There's also a ShareThis button (<http://sharethis.com/>) you can add to your email that instantly offers clickable access to dozens of social networking sites. ○

*When someone 'likes' your fastener distribution business on Facebook, your company becomes quantifiably more important, and more desirable.*



Facebook's 'Like' button has become one of the most coveted on the Web by marketers.





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11/32" Hex to  
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(8mm to 101.6mm)

Bushings  
Collars  
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Inserts  
Knurled Parts

Machined Washers  
Pins  
Spacers  
Vents

## Special Nuts



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## Captive Screws



PENCOM manufactures a complete line of captive screws, from the least expensive styles that use a tapped hole to captivate a screw to multiple piece assemblies that are either pressed-in, or swaged-in. Working with the design parameters defined by the customer PENCOM is not bound to “push” a product line but is free to offer the best value solution for each application.

## Ball Studs and Clips



One of the earliest products PENCOM manufactured, ball studs, are still an important product line. PENCOM's ball studs have an undercut behind the thread ensuring that the part will seat flush in any female mating thread. This feature has made PENCOM's parts favored over other standard ball studs. Offered in both steel and stainless steel, distributors and design engineers use PENCOM as their source.

By now PENCOM's rep efforts were beginning to wane, while its distribution and custom design business grew. The years 2001 thru 2005 saw PENCOM acquire Du-All Thermal Products, ( a heat sink manufacturer in Northern California), West Coast ATD (machine shop in



automation system in Salem, New Hampshire).

PENCOM's most daring endeavour to date came in 2005 with the construction of a manufacturing plant in Dongguan, China. In China, PENCOM started with an empty field and

built a factory from the ground up. PENCOM would be learning about permits, dealing with government officials, local contractors, and hiring workers. In the end PENCOM had a world class 50,000 square foot production site.



Quality has always been an important part of PENCOM's commitment to its customers. To this end, it committed to the ISO certification process and since 1995 PENCOM has been ISO certified.







# National Industrial Fastener Show/West

November 9-10, 2010 - Mandalay Bay, Las Vegas





(continued from page 132)

## Fabrication from Customer Drawings—Turning and Milling



PENCOM also offers manufactured per customer print items. This is the area where PENCOM really steps away from the distribution world and enters into the manufacturing arena. Using its CNC conventional and Swiss-type lathe machines, PENCOM can turn diameters of up to 14 inches and lengths up to 24 inches, holding tolerances of  $\pm 0.0003$ . Parts with slots, cross holes, milled flats, male threads, female threads, and broached shapes are finished complete. Materials generally machined are all varieties of carbon steels, stainless steels, brass, and aluminum.

Typical applications are fittings, valves, shafts, housings, connectors, and inserts.



Typical applications are fittings, valves, shafts, housings, connectors, and inserts. Going hand-in-hand with PENCOM's lathes are its CNC milling machines producing parts that range from bow and arrow components to medical pump housings. PENCOM offers customers a choice of low cost manufacturing at its sites in either Nogales, Mexico or Dongguan, China, enabling PENCOM to match customer's delivery needs.

PENCOM maximum part size is 20" wide x 40" long x 15" high, with tolerances being held to  $\pm 0.0003$ . With its CNC mills, PENCOM also manufactures semi-custom product line items such as heat sinks, board stiffeners, and front panels.

(Continued on page 136)

PENCOM is also AS9100 certified, ITAR registered, and CTPAT approved. At PENCOM, one out of every 10 employees work in the quality department. This commitment is supported with over \$750,000 in the latest state of the art inspection equipment.



PENCOM saw that inventory automation was to become the future of VMI programs. With the purchase of New Hampshire start-up, Visible Inventory,

PENCOM now owned the premier inventory automation software and hardware in the market. It was not long before customers started searching PENCOM out, requesting that PENCOM automate their current VMI programs using Visible Inventory.

Today, nearly 30 years after Gardiner first introduced himself as working for PENCOM, the company continues to expand to meet the increasing demand of its customers. 2010 has seen PENCOM internalize the plating requirements of its Nogales Manufacturing plant, investments in manufacturing and inspection equipment, and added logistic support centers. "In the future, I expect our value added assemblies to be our next growth area" explains Gardiner. When asked if PENCOM will leave the Fastener Business, Gardiner's answer is a simple "Never!"



*Pencom's trained assembly technicians.*



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METRIC FASTENERS continued from page 12

## Inch Threads Vs Metric Threads

Inch Bolts	Metric Nuts
10-32	M5 x 0.8
1/4"-28	M7 x 1.0
5/16"-18	M8 x 1.0
3/8"-16	M10 x 1.5
7/16"-14	M12 x 1.75
1/2"-13	M14 x 2
3/4"-10	M20 x 2.5
3/4"-16	M20 x 1.5
Metric Bolts	Inch Nuts
M12 x 1.25	1/2"-20
M18 x 2.5	3/4"-10
M18 x 1.5	3/4"-16
M24 x 3	1"-8
M24 x 2	1"-12

## Property Classes

Metric fastener strengths are named 'Property Class', not 'Grade'. Even so, the Property Classes are roughly equivalent to the SAE Grade system. The following provides some examples.

## Metric Grades

Property Class	SAE Grade
4.6	Grade 1
4.8	Grade 1
4.8	Grade 2
8.8	Grade 5
9.8	9% stronger
10.9	Grade 8
11.9	none
12.9	ASTM A574

The easiest way to tell a metric fastener's Property Class is by looking at the fastener for a numeric designation. These decimal numbers will be marked on the hex head or on the top or side of a socket head fastener.

The fasteners will have the decimal point designation, nuts will not. For example, a 10.9 fastener's matching nut will have the marking of '10', not 10.9.

The US automotive industry developed the 9.8 because there were some sizes of the 8.8 fastener that would not provide the same strength as an SAE Grade 5. It was a combination of fastener strength and head dimension geometry for stress distribution.

One of the largest areas of confusion lies with the property class 8.8 designation. Many have confused this for the equivalent of the SAE Grade 8. The tensile strength difference between 120 ksi and 150 ksi can be catastrophic in a critical application.

Another part to look closely at for proper identification is the metric socket head cap screw. Unlike the US socket head products, which come in only one strength grade of 180ksi up to 1/2" and 170 ksi over 1/2", metric socket head products come in three property classes; 8.8, 10.9 and 12.9. So be very aware of this when repairing European machinery, so the proper strength of socket product is replaced with the same type as was designed by the factory.

please turn to page 137

## Assembly Capabilities



Asked by many customers who were using PENCOM to supply their milled and turned components, PENCOM started an assembly group three years ago. One current program for airplane escape slides requires PENCOM to machine three components, purchase a fourth, then TIG weld the entire assembly together. These parts are now found on all newer Boeing and Airbus aircraft.

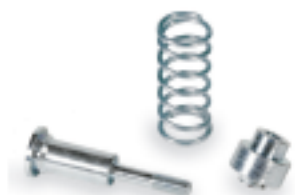
Another example of providing added value is the assembly of a pump rotor for a medical customer. Assembled by PENCOM's China plant, most of the 29 components are turned or milled in house. Component quality and cost are optimized at one location by using PENCOM's wide range of precision turning and milling equipment. Additional components, such as springs and fasteners, are purchased. The final assembly is done by highly trained technicians, following exacting instructions and using dedicated inspection tools. Each part carries a unique serial number with a complete set of inspection results.



*Fully assembled pump rotor.*

## APPLICATION REVIEW

### Collaboration Tools Used to Design Custom Heat Sink Retaining Screw

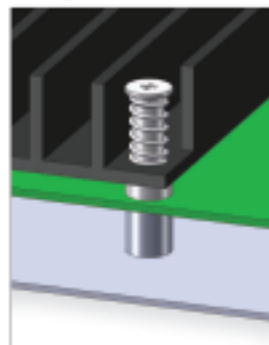


Designing a heat sink retaining screw can be a challenging and sometimes tedious process. Normally several trial-and-error calculations are required to determine the optimal combination of spring rate and diameter, screw travel and height, and resulting spring compression load while mitigating load deviations due to tolerance stack up. A custom heat sink retaining screw and mating shouldered spacer designed and manufactured for arguably the world's largest supplier of telecommunications equipment illustrates Pencom's commitment to providing complimentary design assistance and the benefit of centralized service and manufacturing capabilities.

The customer's specifications required that a threaded fastener and spring apply a prescribed load at four corners of a heat sink to create optimum thermal transfer from the mating heat-emitting device. The fastener must pass through a spacer attached to a pc board, preferably with a shoulder to prevent lateral movement of the heat sink during assembly, and thread into a standoff below the pc board. Various space constraints from adjacent board-level components created numerous design obstacles.

Using 3d CAD modeling software, Customer and Pencom Engineers were able to collaborate simultaneously on the design despite being in three different US time zones. The customer imported the screw and spacer models directly into their assembly model and then discussed needed design changes with Pencom Engineer, Gregg Summers.

Within minutes revised models were sent back to the customer for re-evaluation in the assembly. Pencom Account Manager, Arianne Ito, was integrated throughout the design process so that immediately upon customers' approval, order fulfillment transitioned seamlessly to Pencom's Hayward, California factory for prototypes. Production subsequently transferring to China to support the CM locally.



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## METRIC FASTENERS continued from page 135

### Thread Length

The DIN 931 and DIN 960 are essentially the same as the ISO requirement for thread length; two diameters plus 6mm for fasteners up to 125mm in length.

With the DIN 933 and DIN 961, however, the fastener is fully threaded to the head regardless of length.

### Wrench Sizes

Many mechanics have complained about the fact that they have had to use two wrenches to tighten the head and nut of the same sized fastener. Fortunately, this only occurs in a couple of sizes. It is due to a basic disagreement between DIN and ISO. The width across the flats (WAF) of DIN fasteners is 1mm larger on the M10, M12 and M14, while it is 2mm smaller on the M22.

Both types are available and sold in the US. So it depends what specification the manufacture uses and who distributes them. A company buying from several distributors may end up with different sized nuts and bolt heads in the same storage bin.

### Metric Wrench Sizes

Nut	DIN 934	ISO
M10	17mm	16mm
M12	19mm	18mm
M14	22mm	21mm
M22	32mm	34mm

### Metric Torque

Metric torque is expressed as a Newton – meter (N-m). The Newton is a commonly used term in physics for force, named after the scientist Sir Isaac Newton. A Newton equals 0.2248 pounds of force. Shifting the decimal point three places to the right, we have a kilo-Newton (KN) or 224.81 pounds.

### Fastener Strength


We have learned what the different property class designations are, but how do they relate? Instead of using 'pounds-per-square-inch' (psi), metric terminology uses the term Pascal for its strength unit. Since these units become large, they use a prefix 'Mega' to form 'Mega Pascal' or MPa.

Therefore, 1 MPa is equal to 145 psi.

$$\text{MPa} \times 145 = \text{psi}$$

$$\text{Psi} \times 0.0069 = \text{MPa}$$

It is also interesting to note that the property class numbers actually relate to the strength of the fastener. For example; an 8.8 fastener has the strength of 830 MPa and the 10.9 is 1040 MPa. The metric designation number is actually its tensile strength.

It should also be noted here that while there are still nuts on the market with an '8' on it for use with the 8.8 fastener, ASTM A563M is only recognizing the property class 9 nut for use with the 8.8 and 9.8 fasteners. Naturally, it has a minimum proof load stress of 900 MPa. 

## OUTLOOK 2011 continued from page 26

**U.S. Employment**

American job creation is expected to improve somewhat during 2011. However, a modest improvement in net monthly job creation will do little to trim the nation's unemployment rate, which has been at or above 9.5% for 15 months, the longest such period since the Great Depression.

Greater clarity from Washington DC in regard to income tax rates, combined with progress toward more affordable government spending, would go a long way toward boosting business sector confidence. In a nutshell, rising confidence levels would enhance employment creation.

**Inflation**

Sluggish U.S. economic performance, soft home values, and major slack in labor markets have led inflation to extremely modest levels in recent months. One measure of consumer inflation recorded its lowest 12-month rise in 53 years!

While inflation is expected to remain mute during 2011, longer-term views remain split between sharply higher inflation and the perils of deflation. The former camp is buying gold and commodities. The latter camp is buying longer-term fixed-rate U.S. Treasury and high-quality corporate debt securities.

**The Federal Reserve**

This nation's central bank has drawn extensive criticism in recent weeks for its current program to boost the economy with another \$600 billion of newly created money. Such funds are being used to purchase U.S. Treasury notes and bonds, with the intent of pushing longer-term interest rates lower.

Despite such massive bond buying, bond yields (returns) have actually risen in recent weeks, reflecting concern about the Fed's latest venture and expectations in some camps of stronger economic growth than the consensus view. The Fed's most important monetary tool, the federal funds rate, has been at a historic low target range of 0.00%-0.25% for nearly 24 months, with little expectation of change any time before the latter part of 2011.

**Housing & Home Finance**

Most forecasters see average U.S. home prices stabilizing around mid-2011, with only modest gains in home values in subsequent years. Millions of homes in, or

potentially to enter, foreclosure remain the fly in the ointment.

Average conventional mortgage interest rates have risen roughly 0.25% during the past few weeks, after plunging to their lowest levels in 50 years. For those interested in refinancing a mortgage, or financing a new home or foreclosed property, the timing remains outstanding.

**Global Pivots**

Our Tea Leaf issue dated February 17, 2010 entitled "A Shot Across the Bow" discussed the unfolding Greek national debt situation at that time.

The article noted, "The greatest threat regarding the current Greek debt solvency debate is the possible domino effect involving other nations. A Greek default on its debt, or a painful plunge in the value and marketability of Greek debt securities, would likely be followed by similar debt issues for other nations. Such a domino or cascade effect would be difficult to stop once the process had begun."


The article also noted that "any financial support provided for Greece by the Germans and the French would effectively be seen as a similar level of support, if necessary, for Spain, for Ireland, and for Portugal, with Italy and Belgium possibly not far behind."

The article also noted that if the contagion did spread to these other nations, it "should also be taken seriously by larger nations, including the United Kingdom and the United States."

As is well documented, other European nations and the International Monetary Fund (IMF) did ultimately come to the aid of Greece. In addition, larger European nations set up an enormous financial fund to deal with additional problems in other nations, should they arise.

Ireland bit the dust in recent days, with an agreement to accept a \$113 billion bailout package from other euro nations and the IMF. The Irish had already enacted painful spending cuts and tax increases as a means to address a massive annual budget shortfall.

Financial market pressures continue to build on Portugal and Spain. Pressures are also building to tear apart the fragile 16-nation euro currency and euro community mechanism, with a viable chance that one or more nations will opt out of euro membership during 2011 or 2012.

The other major pivot is China. Its efforts to battle inflation and runaway bank lending should see the world's second largest economy slow during 2011. 

*What we now call the Great Recession enters the history books at 18 months in duration, officially running from December 2007 to June 2009.*

*Effective steps to reduce future growth rates of U.S. government spending are mandatory to getting this nation's financial house in order.*



## distributor news

**PennEngineering®** has launched a newly designed, enhanced, and expanded website ([www.pemnet.com](http://www.pemnet.com)) offering unprecedented functionality and a wider range of user-friendly tools for design engineers and the customer marketplace. The upgraded site marked by bolder graphics and visuals opens a bright and easy-to-navigate window for access to the company's entire line of fastener products, fastening technology solutions, and engineering and technical support.

The multi-language website is equipped with dedicated tools enabling quick searches of the site, in general, or tailored to specific product family or type. Other standing features include a new global locator for representatives and distributors and calendar of upcoming tradeshows for all regions worldwide.

Especially noteworthy is an enhanced multi-capability Product Selector tool delivering these capabilities, among others: 2D and 3D drawings for download, direct insertion, or emailing; a "compare products" feature; product search string showing a clear navigation path; keyword and part number search; product-specific printable pages and PDF options; 2D customer drawings integrating product and installation data; user-tracking; and complete back-end administrative functionality.

The site retains popular sections, including "Commonly Asked Questions," "Glossary of Terms" for fastener products, and complete product literature available for download. These are in addition to the site's CAD Library, RoHS compliance lookup tools, product spec conversion charts, online tutorials, video and animation library, and the latest product news.

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#### SPIRALOCK - INNOVATIVE FASTENER AND THE OIL INDUSTRY continued from page 38

Instead, the Spirallock self locking thread provided vibration and temperature resistance without the cost or complexity of a lock wire and special bolt. This also shrunk the fastener footprint so it could fit a little more compactly into confined spaces, easing serviceability and operation. After testing and development, the RCD was successfully deployed in the field, and has contributed to improved production uptime.

"Traditional fastening methods leave room for improvement," says Jeff Jungmann, a Spirallock Engineering Manager. "For instance, locking wires require a special bolt and take time to wire together; chemical adhesive application can be inconsistent and don't work well in high temperature; and deformed threads can gall during initial assembly or lose effectiveness in later disassembly and reassembly."

While Spirallock tapped holes and locking fasteners are used in a range of oil industry equipment from drill collars, cutting tools, and high pressure valves to down hole tooling and even mining shakers and separators for oil sands operations, engineers often become aware of its use in mission critical applications in other industries. It has been used in extreme fastening applications with virtually no chance of recall: from the main engines of NASA's Space Shuttle; to the Saturn Cassini orbiter and Titan Huygens probe; to medical implants, artificial limbs, and heart pumps.

Besides being used in high vibration, high temperature diesel engine applications, the Spirallock locking fastener has been validated in published test studies at leading institutions including MIT, the Goddard Space Flight Center, Lawrence Livermore National Laboratory, and British Aerospace.



*An Assortment of Spirallock fasteners*

"Spirallock tapped holes and locking fasteners perform well in a high shock, heat, and vibration environment, particularly in the hard-to-cut super alloys like Inconel, P550, and MP35N, which are increasingly needed in deeper, more demanding well bores," says Jungmann. "Since the locking component comes from its internal thread form, there's no need for chemical adhesives or secondary locking features. It works with standard bolts and screws, which simplifies application and

maintenance."

Production changeovers to the self locking fasteners are typically quick and seamless, often requiring just an exchange of traditional nuts, wire inserts or simply drilling out and re-tapping existing parts stock. For resistance to corrosive salt water environments stainless steel fasteners are available, as is specialty tooling for super alloy materials.

For detailed test data, including comparative graphic loading characteristics or photoelastic analysis/load vector comparison animation, visit [www.spiralock.com](http://www.spiralock.com); email [slinfo@spiralock.com](mailto:slinfo@spiralock.com); call (800) 521-2688.; fax (248) 543-1403; or write to 25235 Dequindre Rd, Madison Heights, MI 48071. 

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## distributor news

A major restructuring program designed to energize and expand Lee Spring's European operations has been put in place by Chris Petts, who was appointed Managing Director of **Lee Spring Limited**, on August 1, 2010. Lee Spring Limited, based in Wokingham, Berkshire, UK serves as headquarters for Lee Spring's operations in Europe, Africa and the Middle East.



In the driver's seat, the new team at Lee Spring Europe  
Left to right: Andrew Durston, Accounts Controller; Kay Stott, European Marketing Manager; Matthew Thomas, Customer Service Supervisor; Chris Petts, Managing Director; Dharminder Ghatora, Application Engineer and Philip Bennett, Purchasing Manager.

New roles have been created in purchasing and customer service and new staff have been added to head up Sales, Marketing, and Finance. As well as offering a catalog selection of over 16,000 springs, Lee Spring has a reputation for engineering excellence and its technical staff work closely with customers from a wide range of industries to provide precision custom designs. The company has invested in its customer care service to make sure that customers have the springs they need just when they're needed.

Lee Spring strives to be the supplier of choice for springs, wire forms and related products by providing innovative customer-centric solutions based on expert design, world class quality, focused manufacturing and integrated global distribution. Lee Spring is an ISO 9001 Certified manufacturer of stock and custom mechanical wire springs, servicing diverse manufacturing markets in the United States and throughout the world. They have locations in the United States, Mexico, Europe, and China. The company offers over 16,000 stock springs and a complete custom spring service for the supply of precision springs, wire forms, washers or stampings. Lee Spring's online catalog available at [www.leespring.com](http://www.leespring.com) features user friendly product search engines as well as ecommerce options. Print catalogs are available through the website at [www.leespring.com](http://www.leespring.com) or email [sales@leespring.com](mailto:sales@leespring.com) or [sales@leespring.co.uk](mailto:sales@leespring.co.uk).

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## REVIEW OF THE FASTENER COMPANY ACQUISITIONS COMPLETED IN 2010 continued from page 42

- On February 4, 2010, Birmingham Fastener & Supply Inc. purchased the T-bolt manufacturing operations of NSS Technologies Inc., a wholly-owned subsidiary of Precision Castparts Corp. (NYSE: PCP). The operations sold by NSS Technologies have manufactured T-bolts for the North American waterworks industry for more than 30 years and are located in Gadsden, Alabama. Birmingham Fastener manufactures and distributes a broad range of fasteners for the construction, transportation, waterworks, agricultural equipment and general industrial markets. The privately-owned company was founded in 1980 and is headquartered in Birmingham, Alabama. Birmingham Fastener has seven distribution branches in Hanceville, Alabama; Huntsville, Alabama; Mobile, Alabama; Grand Prairie, Texas; Omaha, Nebraska; Shreveport, Louisiana; and Jacksonville, Florida. Purchase price: not available

- On February 26, 2010, Wilhelm Böllhoff GmbH & Co. ("Böllhoff") purchased Armstrong Precision Components Ltd. ("APC") from Caparo plc. APC manufactures helically-wound, wire thread inserts under the ArmaCoil brand name and brass inserts under the ArmaSert brand name. APC is located in Kingston-upon-Hull, England and employs approximately 60 people. Böllhoff is a manufacturer and distributor of specialty fasteners and assembly systems for metal and plastic applications. The company's product range includes threaded fasteners, rivets, inserts, quick-release fasteners and related installation tooling. Böllhoff, a privately-owned company founded in 1877, is headquartered in Bielefeld, Germany and has more than 2,000 total employees at 32 locations in 21 countries. Purchase price: not available

- On March 1, 2010, Black & Decker Corporation (NYSE: BDK) purchased Fastener Innovation Technology Inc. ("FIT"). FIT, founded in 1979 and located in Gardena, California, manufactures externally-threaded fasteners for the aerospace market. The company's diverse product offering ranges from high-strength, hot-forged engine, structural and landing gear bolts to non-structural, cold-headed screws for cabin, instrument panel and avionics applications. FIT is a qualified supplier to numerous aerospace OEMs including Boeing, Honeywell, General Electric, Pratt & Whitney, Embraer and Gulfstream Aerospace. Following the transaction closing, FIT became an operating unit of Emhart Technologies, the wholly-owned fastener manufacturing subsidiary of Black & Decker. This acquisition marks the entry of Emhart Technologies into the aerospace fastener marketplace. Purchase price: not available

- On March 2, 2010, Mountz Inc. purchased Mr. Metric Inc. Mr. Metric, founded in 1980 and located in San Jose, California, is an importer and stocking distributor of metric fasteners. The company sells to other distributors, OEM & MRO end-users and hobbyist / DIY users. Mountz designs and manufactures torque control products including torque testers, torque sensors, torque wrenches, electric screwdrivers and various assembly verification products. Mountz is headquartered in San Jose, California and has distribution / service centers in Foley, Alabama and Chihuahua, Mexico. Following the transaction closing, the operations of Mr. Metric were consolidated into the nearby operations of Mountz. Purchase price: not available

- On March 12, 2010, The Stanley Works (NYSE: SWK) purchased Black & Decker Corporation (NYSE: BDK) via a stock swap approved by the shareholders of both companies. Black & Decker is a manufacturer and marketer of power tools, hardware & home improvement products and fastening systems. The company recorded net sales of \$4.8 billion in 2009, of which \$536.6 million was derived from its fastener business (the Emhart Technologies subsidiary). Stanley Works is a manufacturer and marketer of industrial hand tools, mechanical & electronic security products and construction & DIY hand tools, fasteners & storage systems. In 2009, Stanley Works recorded net sales of \$3.7 billion. Pursuant to the merger agreement, each share of Black & Decker common stock was converted to 1.25 shares of Stanley Works common stock. Upon completion of the transaction, Stanley Works shareholders owned 50.5% of the combined entity, which was renamed Stanley Black & Decker Inc. Purchase price: \$5.2 billion

- On March 24, 2010, A. Agrati SpA purchased four automotive fastener manufacturing plants and a distribution center (all located in France) from Acument Global Technologies Inc. ("Acument"). The French operations purchased by Agrati include manufacturing plants in Amiens, Fourmies, Vieux Condé and La Bricolère, along with a distribution center near Paris. The acquired operations manufacture screws, bolts, washers and specialty stamped parts for the European automotive market and generated net sales of ?97 million (US\$121 million) in 2009. Agrati is a privately-owned company founded in 1939 and headquartered in Veduggio con Colzano, Italy. Agrati is a multi-national manufacturer of fasteners and assembly components for the automotive and general industrial markets. The company generated net sales of approximately ?190 million (US\$237 million) in 2009 and employs more than 1,000 people worldwide. A co-investment of ?17 million was made by an agency supported by the French government (The Fund for the Modernization of Automotive Equipment Manufacturers or FMEA) to partially fund the acquisition and subsequent required investment. Purchase price: not available

- On March 24, 2010, EACO Corporation purchased Bisco Industries Inc. via a reverse merger transaction. Bisco, a privately-owned company founded in 1979, is a distributor of fasteners and electronic components with 37 sales offices and six distribution centers spread across the United States and Canada. Bisco is head-quartered in Anaheim, California and generated net sales of \$84.3 million in 2009. EACO is a Florida corporation and its shares are traded on the Over-the-Counter Bulletin Board (OTC-BB: EACO). EACO was essentially a "publicly-traded shell corporation" and its principal assets were real estate associated with a restaurant business which was sold in June 2005. Prior to the reverse merger, the owner of Bisco controlled 73.4% of the voting shares of EACO and that ownership position increased to 98.9% upon completion of the transaction. The overall purpose of this transaction was: i) to achieve a public listing for Bisco; and ii) to enable Bisco to realize the potential benefit (at some point in the future) of EACO's net operating losses (tax loss carry-forwards). Due to the lack of meaningful trading data for EACO common stock, we could not determine a realistic valuation for this transaction. Purchase price: not available

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### REVIEW OF THE FASTENER COMPANY ACQUISITIONS COMPLETED IN 2010 continued from page 143

• On March 29, 2010, LISI - Link Solutions for Industry (Euronext Stock Exchange: FIL) purchased two automotive fastener manufacturing plants in France from Acument Global Technologies Inc. ("Acument"). The two plants sold are located in Bonneuil-sur-Marne (plastic fasteners & components) and La Ferté Fresnel (clip fasteners, nuts, washers & specialty stampings). The two plants in France generated net sales of EUR40 million (US\$50 million) in 2009 and employ approximately 350 people. LISI, headquartered in Belfort, France, is a multinational manufacturer of fasteners and assembly components for the aerospace, automotive, medical and cosmetics markets. LISI generated net sales of EUR695.1 million (US\$869 million) in 2009 and employs 6,596 people worldwide. Purchase price: not available

• On April 8, 2010, Active Screw & Fastener Inc. purchased Action Threaded Products LLC. Action Threaded Products is a stocking distributor specializing in stainless steel and non-ferrous fastener products. The privately-owned company operates from a 21,000 square foot warehouse located in Countryside, Illinois (a suburb of Chicago). Active Screw & Fastener, a privately-owned company headquartered in Skokie, Illinois, is a fastener distributor specializing in providing vendor managed inventory (VMI) services to its OEM customer base. Active Screw & Fastener operates branch warehouses in

Charlotte, North Carolina and Tucson, Arizona. Upon completion of this transaction, Action Threaded Products was renamed Active Action Threaded Products. Purchase price: not available

• On April 27, 2010, John Perine Company Inc. purchased Danforth Screw & Bolt Co. Inc. ("Danforth Screw"). Danforth Screw, a privately-owned company located in Tracy, California (east of San Francisco), specializes in providing vendor managed inventory (VMI) services to its OEM and MRO customers. Danforth Screw was founded in 1967 and employs 17 people. John Perine Company, a privately-owned company located in Seattle, Washington, specializes in providing VMI services to its OEM and MRO customer base. John Perine Company was founded in 1937 and also owns Fasco Fasteners Inc. located in Alsip, Illinois. Following the transaction closing, the combined entity was renamed Perine Danforth Company LLC. Purchase price: not available

• On May 20, 2010, Jergens Inc. purchased MicroTorq LLC. MicroTorq, located in Traverse City, Michigan, is a designer and manufacturer of precision fastener installation systems, including a popular line of electric, transducerized screwdrivers. MicroTorq will become part of the ASG Industrial division of Jergens and its revolutionary screwdriver system will be branded as

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**REVIEW OF THE FASTENER COMPANY ACQUISITIONS COMPLETED IN 2010** continued from page 145

X-PAQ (for eXtreme Precision, Accuracy and Quality). Jergens, a privately-owned company headquartered in Cleveland, Ohio, is a diversified manufacturer with four operating divisions: Specialty Fasteners; Assembly Solutions (ASG Industrial); Workholding Solutions; and Lifting Solutions. The best know business unit within Jergens' Specialty Fastener division is Acme Industrial Company, which manufactures threaded inserts, precision bushings and keylocking studs. Following the transaction closing, the operations of MicroTorq were relocated to Cleveland. Purchase price: not available

- On May 21, 2010, NORMA Group purchased R.G.Ray Corporation. R.G.Ray, a privately-owned company headquartered in Buffalo Grove, Illinois (a Chicago suburb), develops and manufactures heavy duty, highly-engineered clamps for a broad range of engine, commercial vehicle, pump / filtration and general industrial applications. Founded in 1972, R.G.Ray operates two manufacturing plants - one at the headquarters location and the other in Juarez, Mexico. NORMA Group, headquartered in Maintal, Germany, is a global manufacturer of hose clamps, pipe connections, fasteners, plug-in connectors, hose couplings and fluid management systems. The company generates annual net sales of EUR430 million with more than 3,400 employees worldwide. NORMA Group operates 12 manufacturing facilities worldwide and owns such well-known brand names as ABA®, BREEZE®, NORMA®, Serflex®, Serratub®, TERRY® and Torca®. NORMA Group is a portfolio company of 3i Group plc, a London-based private equity firm with £13 billion under management. 3i Group shares are traded on the London Stock Exchange (LSE: III). Purchase price: not available

- On May 28, 2010, Oak Hill Capital Partners LP, in partnership with existing senior management, purchased The Hillman Companies Inc. ("Hillman") from Code Hennessy & Simmons LLC. Hillman, founded in 1964 and headquartered in Cincinnati, Ohio, is a supplier of fasteners, key duplication systems, engraved tags and related hardware to more than 20,000 retail customers in the United States, Canada, Mexico and South America. The Company offers more than 40,000 SKUs from eleven distribution centers spread across the US and Canada. Hillman's customer base includes home improvement centers, mass merchants, hardware stores, pet supply stores and other retailers. The Company's largest customers include Walmart, HomeDepot, Lowe's, Sears, Tractor Supply, PetSmart, PETCO, True Value and Ace Hardware. In 2009, Hillman generated net sales of \$458.2 million and EBITDA of \$73.2 million. Oak Hill Capital Partners is a Stamford, Connecticut-based private equity firm with more than \$8 billion under management. Code Hennessy & Simmons, with a direct co-investment by the Ontario Teachers' Pension Plan, acquired Hillman in March 2004 from its founder. Purchase price: \$815 million

- On August 3, 2010, Asia Trading Company Ltd. purchased the Avdel and Global Electronics & Commercial ("GEC") divisions of Acument Global Technologies Inc. ("Acument"). Based in London, the Avdel division manufactures and markets blind rivets for industrial

applications to customers around the world. The GEC division, based in Singapore, manufactures and markets a broad range of fastener products for electronics, construction, automotive, industrial and commercial applications. The operations sold by Acument include six manufacturing plants located in the United States, the United Kingdom, China, India, Taiwan and Malaysia. The principal brand names included in the sale were Avdel® and Elco®, along with their associated product lines and trademarks. Following the transaction closing, Asia Trading Company was renamed Infastech Limited. Infastech is owned by investment funds advised by CVC Asia Pacific Limited and Standard Chartered Private Equity Limited ("SCPEL"). CVC Asia Pacific is a Hong Kong-based private equity firm with more than \$6.8 billion under management. SCPEL is the wholly-owned private equity arm of Standard Chartered Bank (London Stock Exchange: STAN). Purchase price: not available

- On August 31, 2010, AEA Investors LP purchased LS Precision Manufacturing Inc. from Trinity Hunt Partners LP. LS Precision Manufacturing is the holding company for Lone Star PRD Group, the entity formed upon the April 2007 merger of Lone Star Fasteners LP ("Lone Star") of Spring, Texas and PRD Holdings Limited ("PRD") of Wolverhampton, England. Trinity Hunt, a Dallas, Texas-based private equity firm, purchased Lone Star in December 2005 for \$33.5 million and completed four bolt-on acquisitions (including the merger with PRD) during its ownership period. Net sales increased nearly five-fold over this five year ownership period. Lone Star PRD Group is an international manufacturer and distributor of bolting, gasket and sealing solutions for the global energy and heavy engineering markets. Major business units within the group include: Lone Star Fasteners; Walker Bolt / Ameritech; Lone Star Sealing Technologies; LWD Precision Engineering; Grange Gaskets; PRD Fasteners; Eurofast Petrochemical Supplies; and Triplefast International. AEA Investors is a New York-based private equity firm with \$3.6 billion under management. Purchase price: not available

- On September 1, 2010, Supply Technologies LLC, a wholly-owned business unit of Park-Ohio Holdings Corp. (Nasdaq: PKOH), purchased Assembly Component Systems Inc. ("ACS"), a wholly-owned subsidiary of Lawson Products Inc. (Nasdaq: LAWS). ACS, headquartered in Des Plaines, Illinois (a Chicago suburb), supplies fasteners and C-class components to a broad range of OEM customers under value-added inventory management programs. ACS operates 3 distribution centers (in Des Plaines; Memphis, Tennessee; and Lenexa, Kansas) and 9 branches spread across the central United States. In 2009, ACS recorded net sales of \$46.4 million and an operating loss (negative EBIT) of \$3.7 million. Supply Technologies is a global provider of supply chain management services to OEM customers in North America, Europe and Asia. Supply Technologies generates annual net sales in excess of \$320 million with more than 1,500 employees at 50 global locations. Purchase price: \$19 million (\$16 million cash and a \$3 million promissory note).

please turn to page 156



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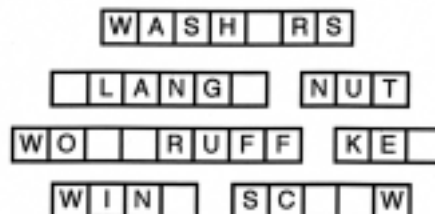
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Place the circled letters here:

Now rearrange the circled letters to spell  
A Type of Bolt:**Fastener  
Word Links**Fill in the missing letters in  
the Fastener Terms below.Now rearrange the letters you  
filled in to spell the name of

A Type of Bolt:



Solution on Page 176

**REVIEW OF THE FASTENER COMPANY ACQUISITIONS COMPLETED IN 2010** continued from page 154


- On September 3, 2010, GRABBER Construction Products Inc. purchased HS Fasteners, a business unit of Hickory Springs Manufacturing Company. HS Fasteners is a distributor and marketer of professional-grade cordless and pneumatic fastening systems and fasteners for construction and industrial applications. Founded in 1982 and located in Conover, North Carolina, HS Fasteners owns the well-respected Pro Proven® brand of collated and bulk specialty nails. GRABBER is an international distributor and manufacturer of premium-quality construction fasteners and fastening systems for wood, metal and drywall applications. Headquartered in Alpine, Utah, GRABBER also distributes a wide range of proprietary tools, accessories, equipment and building materials to the construction industry. GRABBER has sales offices throughout the US and Canada and its products are also sold throughout South America, Europe, Asia and Australia. Purchase price: not available

- On September 30, 2010, Penn Engineering & Manufacturing Corp. ("PennEngineering") purchased QRP Inc. QRP is a privately-owned company located in Leland, North Carolina. QRP specializes in the manufacture of standard and custom-designed quick release pins, latches, lanyards and access fastener products for military, aerospace, automotive, marine and high-end industrial applications. PennEngineering is a global developer and manufacturer of brand name and proprietary fasteners for numerous industries, including electronics, computer, data/telecom, medical, automotive, marine, aerospace and general manufacturing. Penn Engineering has manufacturing facilities and sales offices in North America, Europe and Asia and is supported by a worldwide network of authorized distributors and engineering representatives. Founded in 1942 and headquartered in Danboro, Pennsylvania, PennEngineering is a portfolio company of Tincum Capital Partners II LP, a New York-based investment partnership. Purchase price: not available

- On October 27, 2010, B/E Aerospace Inc. (Nasdaq: BEAV) purchased the OEM Aerospace Fastener Distribution division (the "OEM Division") of Satair A/S (Copenhagen Stock Exchange: SAT). Satair's OEM Division is a leading supplier of fasteners and related assembly hardware to Europe's largest aircraft manufacturers and their tier / subassembly suppliers. In the fiscal year ended June 30, 2010, the OEM Division recorded net sales of \$99.2 million and EBITDA of \$6.8 million. OEM Division net sales and EBITDA declined by 16.1% and 53.7%, respectively, in fiscal 2010 and this was a major motivating factor for the sale by Satair. The OEM Division's operations are highly complementary to those of B/E Aerospace and the acquisition significantly strengthens the B/E Aerospace footprint in Europe, where the OEM Division generates 84.3% of its net sales. According to B/E Aerospace, the cash purchase price of \$162 million paid for the OEM Division represents a

multiple of approximately 1.5 times expected 2010 net sales and approximately 10 times estimated 2010 EBITDA. B/E Aerospace, headquartered in Wellington, Florida, is a leading manufacturer of aircraft cabin interior products and a distributor of aerospace fasteners and consumable hardware. The aerospace fastener and consumable hardware division of B/E Aerospace is the largest such business in the world with 2010 net sales (estimated) of more than \$765 million. Purchase price: \$162 million.

- On November 1, 2010, TriMas Corporation (Nasdaq: TRS) purchased South Texas Bolt & Fitting Inc. ("STBF"). STBF manufactures and distributes standard and made-to-print stud bolts, hex head bolts, hex nuts and CNC-machined specials for the oilfield and general industrial markets. STBF, a privately-owned company located in Houston, Texas, generated net sales of \$14.5 million in the 12 month period ended June 30, 2010. TriMas is a highly-diversified manufacturer comprised of five operating segments: Packaging; Energy; Aerospace & Defense; Engineered Components; and Cequent (towing, trailer and cargo management products). Following the transaction closing, STBF will be integrated into Lamons Gasket Company, a business unit within the Energy segment of TriMas. Lamons Gasket Company manufactures and distributes metallic and non-metallic gaskets and complementary fasteners for the petrochemical and general industrial markets. Purchase price: \$18 million

- On December 6, 2010, TransDigm Group Inc. (NYSE: TDG) purchased McKechnie Aerospace Holdings Inc. ("McKechnie") from JLL Partners Inc. McKechnie designs and manufactures aerospace components, assemblies and subsystems for both OEM customers (61% of sales) and aftermarket users (39% of sales). McKechnie operates through four major product groupings: Latches (35% of sales); Electromechanical Components (25%); Rods / Struts (20%) and Specialty Fasteners (20%). The company's fastener business units are Valley-Todeco Inc. in Sylmar, California and Linread Northbridge in Redditch, England. In the 12 month period ended September 30, 2010, McKechnie generated net sales of \$297.1 million and EBITDA of \$101.3 million. The cash purchase price of \$1.265 billion paid for McKechnie represents a multiple of 4.25 times trailing net sales and 12.5 times trailing EBITDA. TransDigm Group is a designer and manufacturer of a broad range of aerospace components and subsystems for use on nearly all the commercial and military aircraft in service today. TransDigm Group is headquartered in Cleveland, Ohio and generated net sales of \$827.6 million in the 12 months ended September 30, 2010. JLL Partners, a New York-based private equity firm, purchased McKechnie for \$855.6 million in May 2007 from Melrose PLC. Purchase price: \$1.265 billion. 



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## distributor news

In a move to continue its growth in the high temperature alloy market, **Aerodyne Alloys** announced that effective November 2010, Robert Jergel has joined the Aerodyne Alloys team as Vice President of Sales. Mr. Jergel will supervise and direct the company's outside sales force and work closely with all customers.

Bob has a BS degree in Business from the State University of New York, Oswego, and has completed numerous management development programs at the University of Michigan and Penn State.

Aerodyne Alloys has been a leading international supplier and processor of high temp specialty alloys since 1979. We are a major supplier of high temperature alloy products including: Nickel, Cobalt, Titanium, Stainless, Alloy Steel, Alloy X and Alloys 718/625. The company maintains facilities in CT, CA, SC and TX. Aerodyne Alloys is privately owned by O'Neal Steel, a family owned business. O'Neal invited Aerodyne Alloys to participate in the O'Neal High-Performance Metals Group, to provide high-temperature, high-performance metals with sister companies with locations throughout the United States.

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### DISTRIBUTION STILL A MARKET CENTERED FUNCTION continued from page 54

Are Americans recognizing that distributions is a fertile field that is not likely to go away to a foreign shore? Take a look at most of your university business schools and you will see that programs and departments have sprung up offering specialties in "supply chain management" which is one of the popular new buzzwords in business education. And, in addition to the basics that have always made up distribution, there are so many new aspects to integrate into this special calling. Integrating traditional skills with e-commerce and computer tracking applications has really made this a science. Where once the wholesaler personnel were a mix of relatives of the owner and warehousemen and truck drivers who learned on the job and then got promoted, there is a new professional class of supply chain managers emerging who have specific training and skills to make effective utilization of the new tools. There are still good jobs here and that fact is finally sinking through to young people and university

placement departments who have overlooked this almost hidden segment of our economy.

Of course, some of the wholesalers' functions are giving way to those which can be done more cost-effectively at a manufacturer's headquarters. The key is to identify redundancies wherever they are and define the core competencies of each player in the supply chain so that they can do what they do best. Those core competencies are capabilities of a company which are valued by the customer, which are hard for a competitor to replicate quickly, and which can be transferable from product to product or to markets to which the distributor expands.

Distribution getting goods to where they need to be on time - has always been a strength of American business. Not only can it be a key basis for the continuing growth of our economy, but it is still a strength that emerging countries' economies will try to emulate as they serve their own internal markets. 

# FUNDAMENTALS OF TORQUE-TENSION & COEFFICIENT OF FRICTION TESTING continued from page 60

The length and cross-sectional area are strictly taken from the geometry of the bolt or clamped parts and the Young's Modulus is a material property describing elasticity. Based on this the slope of the joint diagram will change when permanent deformation sets in due to possible changes in both length and area.

The bolt elongation can be directly correlated to the angle of turn in a bolt when a torque is applied. The elongation of the bolt is measured in degrees of rotation rather than units of length. Much like the joint diagram the slope of the clamp load-angle curve is only a function of the resilience of the material. The difference being that the slope is a combination of resilience between both the bolt and clamped parts. A permanent deformation of either the bolt or the clamped parts will cause a change in slope in the clamp load-angle curve. The following figure shows a clamp load-angle curve tightened to joint failure.

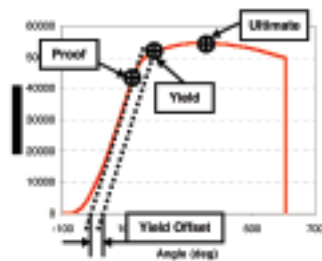


Figure 3 describes the key points on the clamp load-angle curve; the methods to measure the points are as follows:

**Proof Load:** A projection is made tangent to the linear portion of the clamp load-angle curve.

The point at which the slope of the curve deviates from the projection is known as the Proof Load. It is in this linear range that the entire lot of equations regarding fastener tightening and friction are valid. Staying within the elastic range also provides the most consistent torque-tension and angle relationship between common fasteners.

**Yield Load:** The projection made to determine the proof load is offset a given number of degrees (based on the resilience of the joint). The point at which the offset projection intersects the clamp load-angle curve is known as the Yield Load.

**Ultimate Load:** The Ultimate Load is measured as the peak clamp load value.

## Input Torque, Thread Torque, and Underhead Torque

Input torque can be thought of as the amount of work (or energy) applied to a threaded fastener causing the bolt to turn an "x" amount of degrees and in turn stretching the bolt producing a clamp load. The input torque is divided into two factors: thread torque and underhead torque.

**Thread Torque:** The reaction torque to the input torque, or the amount of the torque it takes to keep the nut from turning when an input torque is applied to the bolt head.

**Underhead Torque:** The amount of the input

torque it takes to overcome friction in the bearing surface of the part of the fastener being turned.

By definition the Input Torque is described as:

$$M_A = M_G + M_K$$

$M_A$ : Input Torque  
 $M_G$ : Thread Torque  
 $M_K$ : Underhead Torque

Figure 4: Torques

Figure 5 graphically describes the input torque definition.

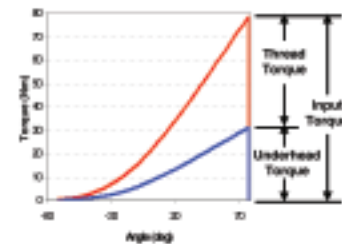


Figure 5: Input Torque Definition

The thread torque is a combination of two factors: thread friction torque, pitch torque.

**Thread Friction Torque:** The frictional portion of the thread torque describing the amount of torque it takes to overcome the friction in the engaged threads.

**Pitch Torque:** The geometrical factor of the thread torque describing the amount of torque that is used to stretch the bolt.

The pitch torque is calculated by the following equation:

$$\text{Pitch Torque} = \text{Thread Pitch} \times \frac{\text{Clamp Load}}{2\pi}$$

The thread friction torque is then calculated by subtracting the pitch torque from the thread torque. Graphically, this makes the input torque definition look like Figure 6.

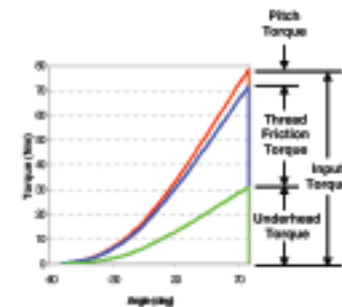


Figure 6: Expanded Input Torque Definition

## Thread, Underhead, and Reference Friction Coefficients

The amount of thread torque and underhead torque present in a given tightening can be described using

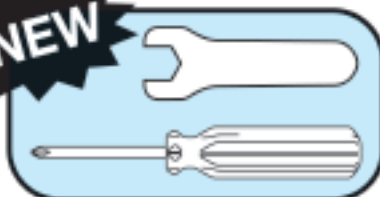
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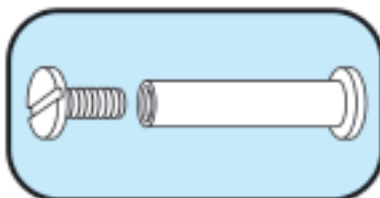
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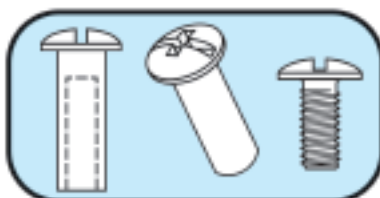
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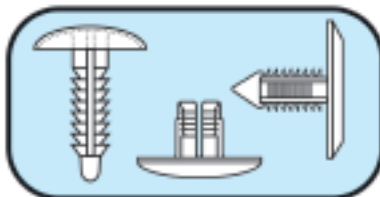
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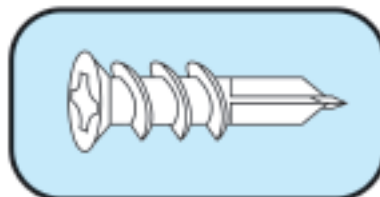
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**FUNDAMENTALS OF TORQUE-TENSION & COEFFICIENT OF FRICTION TESTING** continued from page 160

friction coefficients. Friction coefficients are always described in terms of two materials, platings, coatings, etc., and are defined as follows:

**Thread Friction Coefficient:** The value describing the friction between mating threads.

**Underhead Friction Coefficient:** The value describing the friction between the bearing materials of the bolt and first clamping plate or the nut and first clamping plate (depending on which end of the fastener is being turned).

**Reference Friction Coefficient:** The value describing the overall friction in the joint combining aspects from both the threaded and bearing surfaces.

The friction coefficients are calculated values using the measured input torque, thread torque, and clamp load along with some geometric characteristics. The equations are as follows (from the DIN 946 specification):

**Thread Friction Coefficient ( $\mu_G$ )**

$$\mu_G = \frac{\left[ \frac{M_G}{F_M} \right] - 0.159 * P}{0.578 * d_2}$$

$M_G$ : Thread Torque

$F_M$ : Assembly Preload (Clamp Load)

$P$ : Thread Pitch

$d_2$ : Thread Pitch Diameter

**Underhead Friction Coefficient ( $\mu_K$ )**

$$\mu_K = \frac{2 * (M_A - M_G)}{D_{KM} * F_M}$$

$$D_{KM} = \frac{d_w + d_h}{2}$$

$M_A$ : Input Torque

$D_{KM}$ : Mean Bearing Diameter

$d_w$ : Bearing Surface Diameter

$d_h$ : Through Hole Diameter

**Reference Friction Coefficient ( $\mu_{ges}$ )**

$$\mu_{ges} = \frac{\left[ \frac{M_A}{F_M} \right] - 0.159 * P}{0.578 * d_2 + \left[ \frac{D_{KM}}{2} \right]}$$

Typically, 80% – 90% of the input torque is used to overcome friction in the threaded and underhead regions leaving only 10% – 20% of the input torque left to stretch the bolt producing clamp load. The distribution of which area (thread or underhead) that will take more torque to overcome friction depends on the bearing surface area along with the friction coefficient between the mating surfaces.

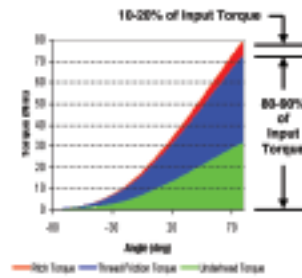


Figure 7: Input Torque Usage

Knowing that pitch torque is directly related to clamp load (for a given bolted joint), if the pitch torque is increased (by lowering friction in the thread or underhead areas) more clamp load will be attained at a given torque value.

Controlling the friction coefficients, in both the thread and underhead regions, will result in more consistent and predictable clamp load values.

### Effects of Varying Friction Coefficients

Consider the example of tightening a certain fastener to 50 Nm and view the effects of changing the friction coefficients have on the attained clamp load. Four test samples of the same lot were tested under different lubrication conditions: no lubrication, lubricated underhead, lubricated threads, and lubricated underhead and threads.

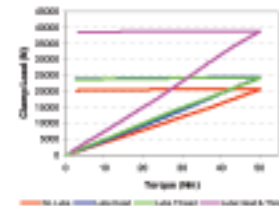


Figure 8: 4 Samples Tightened to 50 Nm

Each sample had the torque separated into its three parts giving the following:

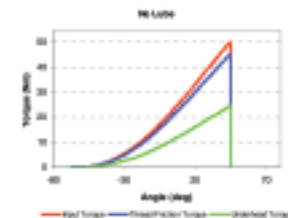


Figure 9: No Lubrication

Figure 9 shows the torque breakdown of the sample with no lubrication. This will be considered that baseline sample. Figures 10 and 11 give the torque breakdown for samples with lubricated underhead and threads respectively.

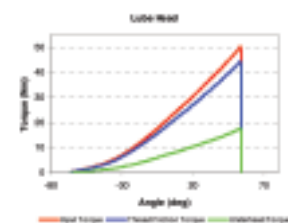


Figure 10: Lubricated Underhead



## IN LOVING MEMORY

Fran Jacoby passed away on January 4th 2011 at the age of 76 years. She was a veteran in the fastener industry. Fran was President of F.J. Sales, Inc. She also served on the Southwestern Fastener Association board of Directors from 1982-1984, 1st as an Officer in 1982, then as Vice President 1983 and finished her duties as President in 1984.

Fran continued her career in the fastener industry until 2005 when she retired from Pac-Fas div. Big H Corporation.

She will be missed.

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## distributor news

Lee Dilks of Lahaska, PA has been promoted to Manager of the Chemistry and Metallography Labs at **Laboratory Testing Inc. (LTI)**. The two laboratories are part of the company's Destructive Testing Department and perform a wide-range of materials testing and failure analysis services.



As Manager, Dilks oversees first-shift and second-shift staffing, processing of orders, department audits and all other operations in Chemistry and Metallography. The Chemistry Lab provides material characterization, element analysis, corrosion analysis, wet chemistry and positive material identification (PMI) services. Microscopic, macroscopic and microhardness examinations, failure analysis, scanning electron microscopy and digital imaging are performed in Metallography.

Dilks has been with LTI for 23 years, holding

positions of increasing responsibility in the Chemistry Department. His most recent position was Chemistry Supervisor for the past seven years. He holds a B.A. degree in Biology from LaSalle University.

Laboratory Testing Inc. of Hatfield, PA specializes in materials testing, nondestructive testing, specimen machining, failure analysis and calibration services. The laboratory is accredited to ISO/IEC 17025 by PRI/Nadcap and A2LA, which complies with ISO 9001 and ISO 13485. Mechanical, chemical, metallurgical and nondestructive testing services are performed on metals, alloys and other materials. Test specimens are machined on-site and failure analysis investigations are conducted to determine the root cause of material failures. The calibration lab provides NIST-traceable dimensional, pressure, force, torque, electrical, temperature, mass and vacuum calibration services, field calibration services, new instruments, repairs and replacement parts.

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## MID-WEST FASTENER ASSOCIATION

2010 SCHOLARSHIP RECIPIENTS continued from page 74

has learned, through her parents, the intrigue of completing projects and the satisfaction she gains from accomplishing set goals. This thought process has led her to pursue business.

**Kelly Amoresano**, Daughter of Patricia Amoresano of Kanebridge Corp. Kelly is a freshman at Marist College in New York. She is pursuing her bachelors, and eventually masters degree, in Secondary Education for mathematics. Kelly has always enjoyed math more than any other subject and shared her knowledge by tutoring underclass students. She plans to eventually teach H.S. Math.

Amanda Senkbeil, daughter of Monica Senkbeil of RCS is a sophomore at the University of Wisconsin-Whitewater, WI. She graduated H.S. ranked number one. Her plans are to pursue her Bachelor and Master Degrees in Accounting with the hopes of becoming a certified public accountant. She is also pursuing a minor in German in preparation for study abroad in Germany.

**Jenae Nichols**, daughter of Joyce Nichols of Sems & Specials is a senior at Northern Illinois University. She is pursuing a degree in Linguistics/Teaching English as a second language. She currently volunteers her time as a student leader in NIU's chapter of Inter Varsity Christian Fellowship. She intends to use her degree to work with disadvantaged immigrant communities in the United States.

**Rushil Patel**, son of Garish Patel of SWD. Rushil is a sophomore at Loyola University where he is majoring in Biology/Pre Med. He had just recently made the change from Pharmacy to pursuing an education allowing him to become a doctor. Once becoming a doctor, he would like to spend some time doing humanitarian work, in poverty stricken countries. In his family excellence is an expectation, not a reward-Rushil continues to excel as he prepares for his future.

**Jacob Thayer**, son of Pamela Thayer of RCS (Rehabilitation Center of Sheboygan). Jacob graduated number one in his H.S. graduating class. He is currently a junior at Marquette University pursuing a bachelor degree in nursing with additional pre-med studies credits. His ultimate goal is to complete medical school. He is especially interested in surgery and pediatrics.

**Michael LoSchiavo**, son of Todd LoSchiavo of Arlington Fastener. Todd is a sophomore at Purdue University where he is currently in the Biology program. He plans to, later, enter med school to pursue a degree in medicine and become an anesthesiologist. He is person who sets goals and achieves to accomplish them. He enjoyed four successful years in H.S. and looks forward to his next goals. His future plans allow him to study biology, which he finds fascinating and work towards helping others.

**Tyler May**, son of Peter May of Cleco Industrial Fasteners. Tyler is finishing up his senior year at Fenwick H.S. He is very involved in school activities and service in


his community. He recently completed a trip to Peru visiting an orphanage and medical clinic. Prior to his trip he collected 25 boxes of supplies to ship to the clinic. He also volunteers coaching a hockey team for kids with developmental disabilities. He plans to attend a small university and pursue a career in science, possibly in health-care or research.

**Michelle Pekark**, employee of Associated Fastening Products. Michelle has been employed at Associated Fastening Products for four years, as a buyer, while attending classes at the college of Dupage and now National Louis University. She is pursuing her BA in Business Management as well as taking APICs courses for certification in Inventory and Production Management. She continues to strive for more opportunities and to stay at the forefront of new products and trends in the market. She looks forward to graduation in February of 2011.

**Erin Kondrat**, daughter of Tom and Ellen Kondrat of Screws Industries. Erin is a freshman at Indiana University-Bloomington. After achieving several successes in H.S. she has moved on to pursuing a major in business (co-major in marketing and international business) with a minor in Spanish. This major comes with several opportunities which Erin hopes to take part in; honors business program, study abroad programs and numerous volunteer and internship opportunities.

**Julia Levis**, daughter of Ruth Levis of Innovative Components. Julia is a senior in H.S. who is still making a decision on a college choice. Her love of art leads her to plans to become a children's book illustrator. A trip to South Africa has made her realize the importance of gaining exposure to different cultures. She is confident she has the talents and emotions of an artist and will be able to inspire children with her art.

**Kelly Maffei**, daughter of Mark & Julie Maffei of Androck Hardware. Kelly is a sophomore at Marquette University where she is majoring in Speech Pathology and Audiology. She plans to obtain her Master's in Speech Pathology specializing in language and d literacy. She plans on working with children with Autism ages 3 through 10. She was able to work in this area last summer which confirmed her desires for her career which will utilize her love for children, compassion and unfaltering patience.

**Briana McCaughn**, daughter of P.J. McCaughn of Innovative Components. Briana is a freshman at the University of South Carolina where she plans to major in Psychology and eventually receive her doctorate. Her goal is to work with the elderly leading into the Geriatric field. She went through a period believing her sports awards were better than any school award but quickly learned otherwise. After diving full force into her scholastics, she was able to graduate H.S. early. She now looks forward to her college career preparing her for a future working with the elderly. 



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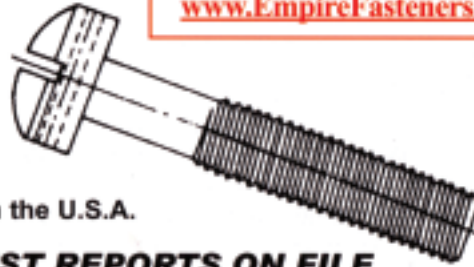
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The MacLean-Fogg Company is a worldwide enterprise with 23 North American manufacturing facilities, 11 international facilities, annual sales of \$800+ million, and a worldwide workforce of more than 3,000 people. The Company provides engineered metal and plastic components to the industrial, automotive, military and aerospace markets, and unique devices used in the transmission and distribution of power.

## MacLean-Fogg Company, Family-Owned, Worldwide Enterprise, Celebrates 85 Years


Through wars and recessions, the MacLean-Fogg Company has grown into a worldwide enterprise with facilities throughout Europe, North America and Asia, and sales of \$800+ million annually. This year, the privately-held enterprise celebrates 85 years in business while maintaining impressive growth by strictly adhering to its initial principle, "Help the industry and we will help ourselves. Solve the customer's problem at a fair price and on time."

Today, Barry L. MacLean, President and CEO of the MacLean-Fogg Company, is responsible for building a successful global business through innovative product development and selected acquisitions, with 3,000 employees and 34 locations, held tight with a bond of personal integrity and the highest performance standards. The MacLean Family's Legacy involves an innovative working environment, an open and honest culture, diverse and quality products, and superior customer education and service.

"For 85 years, we have successfully developed a portfolio of products for the vehicle, industrial and utility markets, by building and acquiring our product lines. It has been a wonderful trip. I'm looking forward to celebrating 100 Years!" commented MacLean.

In 1925, John A. MacLean Sr., former executive of the Boss Nut Company, took advantage of an opportunity and started his own locking fastener business, offering one lock nut to North America's

railroads. In 1927, John MacLean Junior left his stock and bond position and joined the company. John MacLean III joined the company in 1957, and worked alongside his father to develop new products. In 1959, the MacLean family bought out silent investors and, in 1961, Barry L. MacLean, mechanical engineer, joined the firm. MacLean-Fogg holds hundreds of patents on inventions that range from innovative products to unique means and methods of constructing products. Barry MacLean stated, "We will continue to develop our capabilities to truly be a global company, a global manufacturer and a global supplier with an infrastructure that enables us to call on customers everywhere."

The MacLean Family Enterprise has grown through acquisition, building up factories, consistently keeping the idea of focused factories, not getting too big in one place while also investing in the future of people, giving them skills, and encouraging them to go to school to help train themselves. Says MacLean, "It is important to keep each location small and focused to optimally serve employees and customers. Believing in people is our most important asset." Barry's son, Duncan MacLean, is President and CEO of the MacLean Vehicle Systems business, Tom Smith is President and CEO of the MacLean Power Systems (MPS) business and daughter, Margaret MacLean, is a Vice President at MPS. 

## MID-WEST FASTENER ASSOCIATION

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When it opens in June, FASTENER TECH™ '11 will include several seminars, meetings and activities of interest to fastener manufacturers, distributors, users and industry suppliers, all which will complement the two-day exhibition:

- Heat Treating High Strength Steel Fasteners (Grades 5 & 8) by Professor Richard D. Sisson, Jr., Worcester Polytechnic Institute, Daniel H. Herring, "The Heat Treat Doctor", The HERRING GROUP, Inc., and Fred R. Specht, Midwest Regional Manager, Ajax-Tocco Magnethermic.
- Fastening Technology Workshop, Presented by the Fastener Training Institute® and taught by Bengt Blendulf, President/Principal Lecturer, EduPro US, Inc.
- WIFI (Women In the Fastener Industry) Meeting moderated by Mary Lou Aderman, President and Owner of the Aderman Co., Inc.
- Fastener Surface Finishing track of seminars and keynote speech organized by The National Association for Surface Finishing.
- Dozens of Fastener Buying Tips from a panel of fastener suppliers, organized by GlobalFastenerNews.com.
- Fastener Distributor Strategies to Boost Sales & Efficiencies seminar by software experts from DDI System.
- All Industry Reception.

FASTENER TECH™ '11, the third staging of the unique concept in fastener industry trade shows, is scheduled to take place in Rosemont (Chicago), IL, USA, June 13-15, 2011. The exhibitor registration forms are available online at [www.fastenertech.com/fastenertech](http://www.fastenertech.com/fastenertech).

SUR/FIN, the annual conference and trade show

organized by the National Association for Surface Finishing, [www.nasf.org](http://www.nasf.org), is co-locating its 2011 event with FASTENER TECH '11 at the Donald E. Stephens Convention Center in Rosemont. Attendees and exhibitors can attend both exhibitions.

Described as "The All-Fastener-Industry Event in the Heart-of-the-Fastener Industry," FASTENER TECH™ '11 offers attendees and exhibitors a valuable, cost-effective and easy-to-attend event that provides benefits to fastener manufacturers, distributors, users and suppliers. FASTENER TECH™ is a biennial event. SUR/FIN 2011 is the surface finishing industry's premier event, and it is a good fit for fastener industry professionals.

As a trade event, FASTENER TECH™ '11 will be unique on several fronts, including the following: the relatively lowcost and ease-of-exhibiting at and attending the show, the all-industry focus, the heart-of-the-industry location, and a high level of participation from fastener industry associations and publications. Turn-key exhibit spaces start at \$1600.

FASTENER TECH™ '11 is being produced by Fastener Technology International magazine, Akron, OH, USA, and the Mid-West Fastener Association (MWFA), Lake Zurich, IL, USA. As was the case for the 2007 and 2009 shows, numerous trade associations and industry publications from around the world and different segments of the fastener industry will be involved in organizing, promoting and executing FASTENER TECH™ '11.

The most recent FASTENER TECH™ was held in June 2009 at the Donald E. Stephens Convention Center in Rosemont (Chicago), IL, USA, and it provided its visitors



**FASTENER TECH '11 EXHIBIT APPLICATION AND CONTRACT**

DATE: \_\_\_\_\_

The undersigned (hereinafter called the Exhibitor) hereby applies for space in the FASTENER TECH '11 Exhibition scheduled for June 13-15, 2011 at the Donald E. Stephens Convention Center in Rosemont (Chicago), IL USA. The Exhibitor understands that this becomes a valid contract when accompanied by the exhibit fee (shown below) and upon the receipt of FASTENER TECH '11's acceptance of the application. Furthermore, the Exhibitor acknowledges receipt of and agrees to exhibit under and comply with the rules and regulations printed on the second and third pages of this contract.

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**EXHIBIT SPACE SELECTION & FEES (includes carpet, base furniture, pipe & drape, sign, exhibit passes)**

\_\_\_\_\_ 10'x10' unit: \$1600 if reserved by Jan. 31, 2011; \$1800 after Jan. 31, 2011.

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## MID-WEST FASTENER ASSOCIATION

FASTENER TECH '11 continued from page 166

with direct supplier access, networking opportunities, business intelligence, social programming and technical education related to making, distributing and using all types of mechanical fasteners—including nuts, bolts, screws, rivets, rings, clips, washers and nails.

An online survey of 2009 exhibitors yielded the following results: Considering the total costs and efforts involved in exhibiting at the show, a solid majority of the exhibitors were satisfied with the results of FASTENER TECH™. In addition, 88% liked the “All-Fastener-Industry” focus of the show, 94% liked the exhibit location and the turn-key pricing for exhibit space, and 82% of exhibitors would recommend FASTENER TECH™ to other fastener industry professionals.

Fastener Technology International is a bimonthly international technical magazine for manufacturers, distributors and users of all types of fasteners—the print edition is delivered to over 13,000 subscribers in more than




90 countries, and the digital edition is available around-the-clock at [www.fastenertech.com](http://www.fastenertech.com).

The Mid-West Fastener Association

(MWFA) has been representing and serving all segments of the fastener industry for more than half-a-century. MWFA members include fastener manufacturers, distributors, importers and industry suppliers. Details are available at [www.mwfa.net](http://www.mwfa.net).

For details on exhibiting at FASTENER TECH™ '11, contact Nancy Rich of the MWFA at [mwfa@ameritech.net](mailto:mwfa@ameritech.net) (+1847-438-8338) or Tom Hutchinson of Fastener Technology International at [tlh@fastenertech.com](mailto:tlh@fastenertech.com) (+1 330-864-2122).

Editorial Contact: Mike McNulty of Fastener Technology International, [mcnulty@fastenertech.com](mailto:mcnulty@fastenertech.com) (+1-330-864-2122). 



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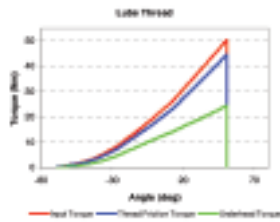


Figure 11: Lubricated Threads

Figure 12 shows the sample with both the underhead and thread regions lubricated.

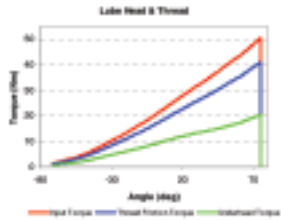


Figure 12: Lubricated Underhead and Threads

Reviewing Figures 8-12 it can be seen that increasing the pitch torque by lowering the friction coefficients will cause an increase in clamp load.

Table 1: Example Data (Samples Tightened to 50 Nm)

Sample	Clamp Load	Pitch Torque
No Lubrication	20752 N	5.0 Nm
Lubricated Underhead	24425 N	5.8 Nm
Lubricated Threads	24235 N	5.7 Nm
Lubricated Underhead & Threads	38953 N	9.2 Nm

## Friction Coefficient Ranges

It is important to note that for each coating/coating, material/material combination there is a range of values that define the frictional characteristics. These ranges are determined by calculating the  $\pm 3$ -sigma friction coefficient values from a particular lot of samples tested. Using the calculated standard deviation (n-1 formula) of the lot tested and assuming a normal distribution of results the  $\pm 3$ -sigma friction values can be calculated using the following equations:

Standard Deviation ( $\sigma$ )

$$\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

x: Data Value

$\bar{x}$ : Mean of Data Values (average)

n: Number of Samples

Mean ( $\bar{x}$ )

$$\bar{x} = \frac{\sum x}{n}$$

$\pm 3$  Sigma Values ( $\pm 3\sigma$ )

$$-3\sigma = \bar{x} - 3 \cdot \sigma$$

$$+3\sigma = \bar{x} + 3 \cdot \sigma$$

Typically a test lot with 10-30 samples will be tested to determine the friction range. The  $\pm 3$ -sigma values estimate the range limits that the entire population will fall into based on the small number of samples tested. The model will allow for 99.73% of the population to fall within the limits. The following figure graphically describes a normal distribution with the calculated values.

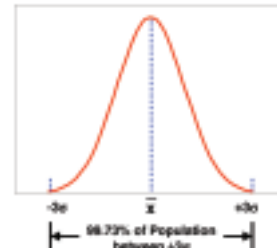


Figure 13: Normal Distribution

**Note:** The larger the sample size the better the distribution model will be. The increase in the confidence of the model becomes negligible after 30 samples.

With geometric parameters assumed constant and using a highly capable tightening tool, the  $\pm 3$  sigma clamp load range at a given torque value will be directly proportional to the  $\pm 3$  sigma range in the friction coefficients (from the variances in the three torque factors).

Some friction ranges will be wider than others resulting in wider clamp load ranges at a given torque. The following two figures describe both a wide range and thin range of friction coefficients.

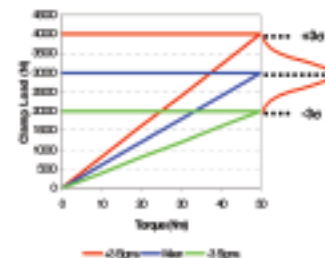


Figure 14: Wide Friction Range at Given Torque

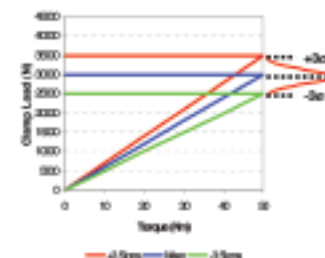


Figure 15: Thin Friction Range at Given Torque



## distributor news

**Distribution One Inc.**, provider of powerful ERP software for wholesalers and distributors, announced its merger with Integrated Systems Technology. Integrated Systems Technology (IST) has provided software solutions for distributors and manufacturers for over 27 years.

This merger with IST is part of Distribution One's continued growth strategy to become the leading provider of ERP software for wholesalers and distributors. Integrated Systems Technology fastener and industrial market expertise combined with Distribution One's V2 software suite create a comprehensive solution for wholesalers and distributors.

Distribution One is a company with a singular focus -- Wholesale Distribution. To this end, we provide powerful software applications to help Wholesalers and Distributors run their businesses efficiently and profitably.

Distribution One offers the following software solutions, V2 ERP, V2 Fastener, V2 Industrial and V2 Retail Fulfillment. The solutions are information management applications systems designed specifically for wholesalers and distributors. It includes: Order Entry, Accounts Receivable and Payable, CRM, Inventory Management, Point of Sale, General Ledger, Purchasing, Sales Analysis, plus many other modules. [www.distone.com](http://www.distone.com)

Integrated Systems Technologies Inc. (IST) has been serving the information technology needs of the wholesale distribution industry since 1982. Our commitment is to create software solutions that assist distributors in achieving higher levels of productivity and profitability. IST also provides superior supply chain software and information systems for our e-commerce economy. Recognized for top features and customer support, IST provides a comprehensive answer to the automation needs of today's wholesalers and distributors. [www.istserve.com](http://www.istserve.com)

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## NATIONAL INDUSTRIAL FASTENER SHOW - WEST

VEGAS FASTENER EXPO ATTRACTS 4096: Buyers and Sellers Happy with Show continued from page 52

### Exhibit Awards Presented for Best of Show

Handsome, engraved glass awards were presented to the following companies for having the most outstanding exhibits in their respective categories: Best of Show – Single Booth Category, Binder Metal Products, Inc., Gardena, CA; Best of Show – Double Booth Category, NBS Corporation, Vernon, CA; and Best of Show – Multiple Booth Category, Rotor Clip Company, Somerset, NJ.

### 2011 Expo Announces New Dates, New Location, New Name, New Features

"We are now looking ahead to 2011 when just about everything about our 31-year old event will be new. The October 19-21 dates are much earlier, keeping us well in advance of and avoiding any conflict with STAFDA. The earlier dates will also afford our exhibitors more time to follow up on Show-generated leads before the holidays.


Our new location at the Sands Expo & Convention Center will put us in the very heart of the Las Vegas Strip and open up a variety of hotels with different price points ranging from luxury at the Venetian and Palazzo to economy at Harrah's.

We have also changed our name to National Industrial Fastener & Mill Supply Expo to reflect the addition of many multi-line distributor products such as abrasives, air tools,



*Grandeur Fasteners booth at the 2010 NIFS/West Show*

cutting tools, drills, hand tools, safety & plant maintenance supplies and more. Finally, our Machinery & Tooling section has been greatly expanded to accommodate more exhibitors and larger machinery", inform Jim Bannister & Mike McGuire, General Partners.

For additional information contact National Industrial Fastener & Mill Supply Expo, (614) 895-1279, email [info@fastenershows.com](mailto:info@fastenershows.com) or visit the Expo web site at [www.fastenershows.com](http://www.fastenershows.com). 



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## distributor news

Further enhancing the POPSet® line of Rivet Tool kits, **Emhart Teknologies** announces their newest Plastic Rivet Tool Kit featuring the "60930" manual tool.



Designed with automotive applications in mind, this POPSet tool offers easy assembly from one side and is best used where space and accessibility is limited. The tool is strong, lightweight, non-corrosive, non-conductive and provides secure clamp-up.

The kit features rivets used by automotive manufacturers in a long list of applications. Developed to meet OEM specified requirements, all rivets have a corresponding OEM replacement part number.

According to Russ Brown, Aftermarket Product Manager, "It's long reach and one-stroke setting provides flexibility when repairing such areas as wheel wells, door panels and bumper fascia. Setting rivets is made easy with its universal nosepiece. It gives the user the ability to set all sizes of POP® plastic rivets without ever changing the original set-up."

All POPSet® tools have been designed to offer the best features available in the market today. These tools offer the quality, durability and reliability that is expected from genuine POP® Rivet Tools.

Headquartered in Shelton, Conn., Emhart Teknologies is the global leader in the design and creation of unique assembly technologies, from concept through installation. Emhart's technology-based assembly products and systems are designed to deliver innovative, integrated system solutions to virtually any manufacturing challenge anywhere in the world. From automotive to construction, from computer to appliances, Emhart products and systems are distributed and sold in more than 100 countries. A Stanley Black & Decker Company, Emhart has 3,000 employees within 24 operating facilities worldwide.

For more information, please go to [www.emhart.com](http://www.emhart.com).

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## NEW ENGLAND FASTENER DISTRIBUTORS ASSOCIATION

NEFDA HOLIDAY LUNCHEON AND ASSOCIATION NEWS continued from page 106

efficiently taking advantage of technology.

3. Relative backlog a year ago and now - Backlog has increased as more distributors are buying locally rather than tie up their money buying overseas.

4. Raw material pricing during the recession - The price of raw materials varies by the commodity. It has been up and down depending on the demand and supply of the commodity. China is raising its prices and the cost of freight has risen.

5. Health care cost - The cost of health care is impacting all companies whether you are a manufacturer, distributor or importer. Federal and State mandates are becoming a large cost of doing business.

6. The Impact of industry consolidation - The distributor base continues to consolidate and subside with few or no upstarts.

7. Are any changes occurring in offshore vs. domestic sources of supply? - The Chinese are becoming more and more aggressive in capturing larger market share in the U.S. Domestic suppliers during the recession are doing better because companies do not want to tie up their capital purchasing large quantities from overseas.

8. What is the future and what does the future hold for NEFDA members? The panelists do not see a double dip. They see a gradual increase in business but do not anticipate hiring more people.

### NEFDA Held Holiday Luncheon Meeting On December 2, 2010

For Board & Committee Chairs and Past Presidents by Joe Soja

What has become an NEFDA tradition, past presidents and past board members were invited to attend this meeting. Past presidents attending this year: Tim Cleary, Bill Donahue, Sr., Rick Ferencick, Ed



Otto, Carol Peters, Rick Rudolph, John Sutherland and Bill Wisk.

The past presidents are always interested in learning what is going on within the association as well as the fastener industry. The board conducted its regular meeting and discussed events for 2011. Two educational seminars are scheduled, as well as golf outing and table top show.

At the conclusion of the meeting everyone had a chance to network and reminisce. The tradition lives on for another year.

### NEFDA Calendar of Events for 2011

Education Seminar at Sturbridge Host Hotel & Conference Center, Sturbridge, MA February 3, 2011 (Snow Date February 9, 2011)

"The State of the Economy as it Relates to the Fastener Industry" Presenter: Dr. Jeff Dietrich, Institute for Trend Research

Education Seminar at Sturbridge Host Hotel & Conference Center, Sturbridge, MA, April 28, 2011

"Doing Business" Presenter: John Graham, John Graham Sales Associates

Scholarship Golf Outing, June 2, 2011, Oak Ridge Golf Club, Feeding Hills, MA

This is our most popular event. Fantastic door prizes will be raffled off.

Table Top Show, October 3, 2011, Sturbridge Host Hotel & Conference Center, Sturbridge, MA

The show will offer technical seminars in the morning by exhibitors. Exhibitors are encouraged to get their requests in early as it will be first come first serve. The seminars will take place from 9:00 AM until 12 noon. The exhibits will open at 1:00 PM -5:30 PM. followed by a cocktail hour and dinner. NEFDA is looking for cocktail sponsors as well as prizes for the raffle which will be conducted all afternoon. 



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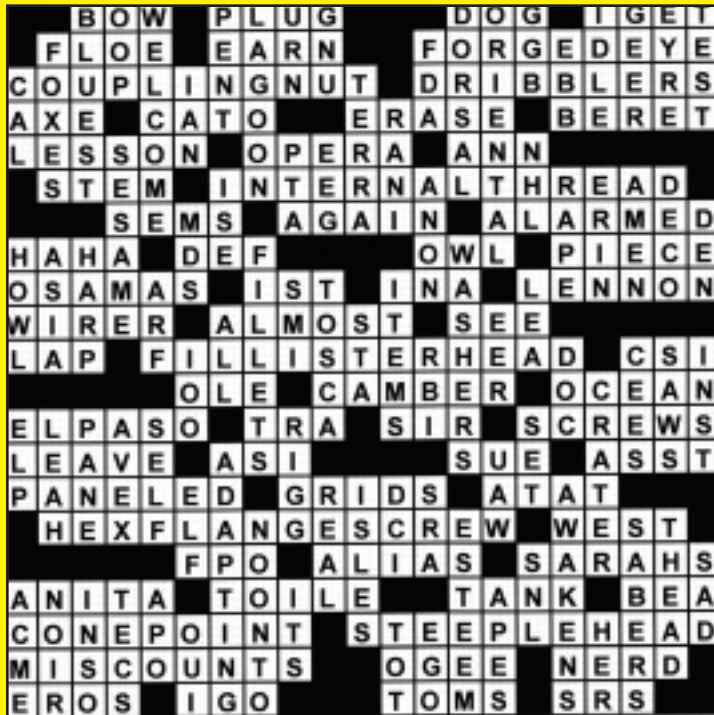
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# FASTENER PUZZLE SOLUTIONS

## Fastener Crossword Solution

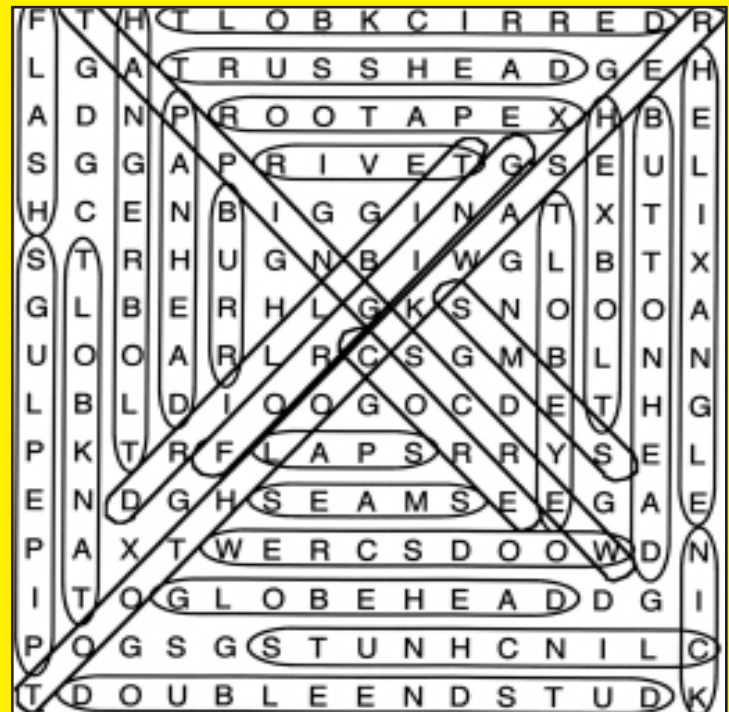


## Word Scramble Solution

Words: Track nut  
U-bolt  
Runout  
Washer  
Zinc

Circled letters unscrambled: Countersunk

## Fastener Wordsearch Solution



## Word Links Solution

### Fastener Terms:

Washers  
Flange nut  
Woodruff key  
Wing screw

### Hidden Letters Rearranged:

Forged eye



# **ACCU-LOAD OPENS UK MANUFACTURING FACILITY** continued from page 72

Whilst generally speaking the heat exchanger is only containing steam the efficiency of the whole plant is reduced by losing a valuable heat source and if the leak is significant part or all the plant may be shut down in order to resolve the leak.

Accu-Load Limited is a specialised manufacturing company based in Elland W. Yorkshire and produces digital and mechanical load sensing bolts and fasteners for industrial applications. There are two principle types. The Max Bolt™ design has a gauge machined into the bolt which provides a measure of the true tension. The gauge has a scale between 0 to 100% and is colour coded to signal to the user when the bolt is correctly tightened in the form of a green zone and red if it is coming loose or it too tight. As an alternative the SPC4™ has a series of mechanical or electronic readers which can be clipped onto the head of the bolt and a signal generated which can be read remotely.

How the SPC4™ works: A bolt is modified by machining a small hole into the bolt head, this minor modification ensures bolt integrity. A gauge pin is inserted into the hole and secured at the bottom. The length and material of the pin is altered depending upon the size and material of the bolt. A datum disc is fitted on top of the bolt head and forms a flat surface with the top of the gauge pin when the bolt is unloaded. When the bolt is tightened, it elongates and the gauge pin is drawn into the bolt away from the datum disc surface. A portable electronic transducer or mechanical dial indicator measures the distance between the datum disc surface and the top of the gauge pin. The elongation of the bolt is then correlated to the tension of the bolt and read out on a hand held electronic or mechanical device. This is ideal where there are multiple bolts which need checking periodically. These types of bolts can be supplied with cut off devices for controlling hydraulic tensioning equipment or relaying a digital signal back to a control room. This is useful in restricted areas on major petrochemical sites or power plants where heat makes it unsuitable for operatives to be present.

This type of system has been widely used in America for over ten years and Accu-Load have recently secured the rights to manufacture and distribute this product in Europe, Africa, Australia and the Middle East. Already Novus Sealing in South Africa have been appointed distributors and have made a number of new enquiries. The customer base is wide and includes manufacturers of industrial pumps, valves, wind turbines, petrochemical and power plants, marine diesel manufacturers. Some of the

keel bolts on the America's Cup yachts have been fitted with the devices as they are quite often operating at the limit of their capability and subject to varying loads and vibration. The larger newer type of wind turbines used offshore now use this type of product.

Mark Neal, Managing Director of Accu-Load comments: "this is an exciting venture for Accu-Load. We first came across the problem of monitoring bolt load accurately on applications when being asked to seal gaskets on large pressure vessels at a number of refineries around the UK. The equipment on site is large and the whole operation is fraught with difficulty because of the size of the equipment being used and the high temperatures and noise levels that everything is working at. Failure of the gasket is expensive in terms of plant efficiency and is all too common. The gasket fails usually because of the inaccurate or uneven tension within the bolts. At the time we tried a number of different ideas to correctly load the bolts and to monitor them.

Most concepts at this level fail because the temperatures are too high and electronics fail or quite simply the devices were not upto the job. They failed simply

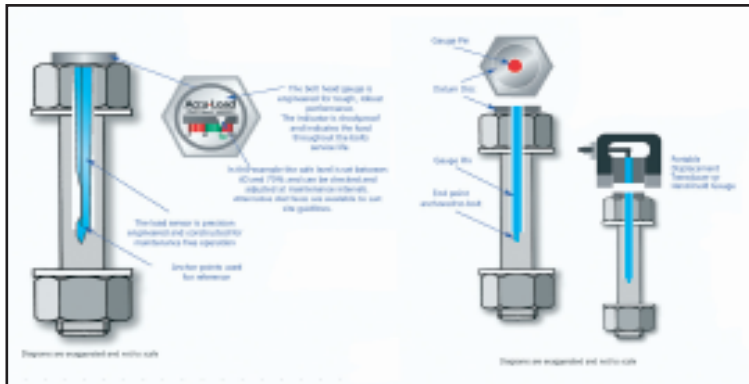
because they were not robust enough in application and were not able to cope with being handled in real life situations. A simple mechanical device was required and I came across the MaxBolt™ and SPC™ bolts being manufactured by Valley Forge in Phoenix, America. We ordered and trialled the sample products within our development facility. I arranged to meet the inventor who came to Leeds and we became confident in the product they had created partly because they had experienced the type of problems that we had in the past a solved it using this product. Using either the MaxBolt™ or SPC™ enables accurate reading of every bolt relatively quickly when being tightened.

Where there are multiple bolted flanges the task is made relatively easy and any operator can monitor at the time of loading the bolts and after a period of time. Whilst hydraulic torque setting the bolts or tensioning is relatively accurate an operator can routinely tighten the bolts by hand as the gauge indicates the desired load. Routine maintenance then becomes easier and preventive maintenance possible. This helps reduce operating costs of the plant and minimises damage to the environment. We hope that this new venture working with our partners in Phoenix, Valley Forge Bolting, will generate a successful local business and employ a number of local people. We have a long way to go but already we are receiving enquiries from a variety of exciting different industry sectors."



**Above: Mobile Digital Load Reader**

**Below: Schematics of SPC4™ and MaxBolt™**



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## FUNDAMENTALS OF TORQUE-TENSION & COEFFICIENT OF FRICTION TESTING continued from page 170

The wider the friction coefficient range the wider the clamp load range will be at a given torque value. It is important to control the friction coefficient range in order to obtain a more consistent bolted joint.

### Torque-Tension Testing

Most torque-tension specifications will require tightening a specified bolt/nut/washer combination to a given clamp load value and returning a torque value. The nut and washer will typically have finish/plating, material, and dimensional requirements, while the bolt will have requirements for the material and dimensions. This reduces all of the variances in the joint to the bolt plating or coating.

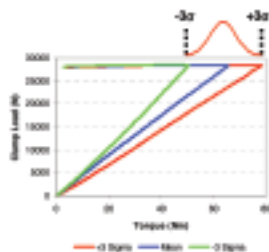


Figure 16: Torque-Tension Test

Figure 16 shows the results of a sample lot being tested and returning the  $\pm 3$  sigma torque values at a specified


tension value. The distribution will be compared to the specified acceptance distribution to determine torque-tension acceptance.

The coefficient of friction values can be calculated using the previously described equations along with the torque-tension data. The calculated data will be compared to the specified acceptance distribution data to determine coefficient of friction acceptance.

### Conclusion

Torque values are strictly based on the friction present in the bolted joint assembly. Variances in the friction will lead to variances in the amount of clamp load/tension attained at a specified torque value.

Friction variances that can affect the tightening of a bolted joint occur in the underhead/bearing area and in the threads. The friction variances are always a function of two materials or platings of the mating parts. Coefficient of frictions can never be given in terms of one material or plating.

Testing of platings/coatings is used to limit the amount of variance allowed in the friction coefficients against a specified material. This allows for the end user to have confidence that the plating/coating being used will have a consistent relationship between torque and tension. 

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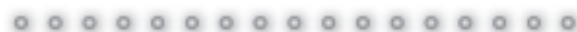
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