

PRODUCT HIGHLIGHTS

Welding and Bolting Products

AMERICAN TECHNICAL FASTENING SYSTEMS

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Amtechfs is a new company dedicated to providing the metal-construction industry with fastening solutions in design, quality, value and service. Using rapid development and production techniques, Amtechfs offers a family of standard-duty and long-life systems for roof and wall applications, providing fasteners for every construction challenge. The new MB/Delta Drill Screw uses advanced production techniques to produce a sharp, fast-drilling, milled-point fastener. Amtechfs also offers a complete range of structural bolts in all grades, and anchor bolts ready for shipment.

APPLIED BOLTING TECHNOLOGY

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squirters@appliedbolting.com
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Squirter-Twist® bolts are twist-off bolts that DO NOT twist off—We removed the shear groove! Squirter-Twist bolts look like TC bolts but they have a hex head. With their TC spline drive, installation is always one person from one side, with a standard TC wrench. Unlike TC bolts, Squirter-Twist bolts do not break off at a certain torque. Tension is accomplished when the operator sees the DTI squirt.

There is no factory-set torque/tension relationship with Squirter-Twist bolts, so job-site storage and exposure are less important. Dry or rusty bolts can be re-lubricated on the job. Heavy plies can be drawn-up without the end twisting off. No touch-up of the zinc coating at the break-off is needed. The hex head allows a spud to be placed on the bolt head if problems develop or the bolt needs to be removed.

ARC MACHINES, INC.

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Arc Machines Inc., founded in 1976, manufactures automatic orbital tube, pipe and tube-to-tube sheet (GTAW) welding systems. Industries like semiconductor, food, dairy, biotechnology/pharmaceutical, aerospace, ship building and power generation use our line of equipment. Our tube-welding system is centered on the Model 207 Power Supply and line of Model 8 and 9 Series Weld Heads, which accommodate diameters from 0.093" (2,3mm) to 7.5" (190,5mm) O.D. Our newest tube-welding head, the Model 4, is designed for high-duty cycle-welding of tube sizes up to 1" O.D.

ARCON WELDING LLC

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ARCON Welding manufactures "The Workhorse" welder line. Workhorse welders weigh about 80 lb, use SCR inverters for long life, and have fiberglass-reinforced cases. The Workhorse product line includes the Lift-start Stick/TIG 300S, the 575-Volt Workhorse 300S for deep mining, the MIGweld 300MS CC/CV, the 700VDC-powered Ironhorse 300, the Capacitor-discharge TIGweld 300ST, and the 1200 Amp Studhorse. Options include the Seahorse version for protection against corrosion and the Warhorse version where "dirty" voltage and spikes are extreme. All Workhorse machines include a limited three-year warranty and operator manual. Free tech support is available to Workhorse owners during the warranty period.

ESAB WELDING & CUTTING PRODUCTS

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ESAB's PowerCut®-1250 Plasmacut™ cutter delivers power and fast-cutting speeds in an 86-lb. package. You can make plasma cuts up to 1 1/4" (sever 1 1/2").

The composite fiberglass case is suitable for harsh environments like construction sites. The machine fits through manholes and tight spaces. A power-line conditioner lets it operate with poor power lines. The PowerCut-1250 arrives ready-to-cut and includes the PT-32EH torch. ESAB's Coreshield® 6 and Coreshield® 8 are for bridge and structural fabrication in seismic areas. These self-shielded, flux-cored wires meet FEMA 353 Specification. Coreshield 6, an E70T-6 wire, is for horizontal applications. Coreshield 8, an E71T-8 wire, is for all-position welding.

FABSCO CORP

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Fabscocorp is a 42-year-old company located in Calumet Park, IL, near Interstate 57. Fabscocorp manufactures anchor bolts: full and specialty-threaded rods in various material grades made from domestic steel, with threading capabilities from 3/8" diameter to 6" diameter. Fabscocorp also specializes in special packaging, vendor-managed inventory programs, and welding and rebar cage assemblies.

HAYDON BOLTS, INC.

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Haydon Bolts, Inc. offers the Tone M221 swivel-head TC bolt wrench. The head moves 90 degrees left or right of the center axis, to allow installation of TC bolts in hard-to-reach areas. Haydon sells, rents and services Tone TC bolt wrenches and the "Simple Torqon" electric wrench for hex bolts from 5/8" to 1 1/4" diameter. Haydon specializes in custom-manufactured anchor rods, tie-rod assemblies, u-bolts, eye bolts and j-bolts up to 4" diameter and up to 40' long, with either roll or cut threads. Haydon distributes of A325-1, A325-111, A490, A449 and A354-BD hex structural bolts and F1852-1 (A325) and A490 TC bolts.

PRODUCT HIGHLIGHTS

Welding and Bolting Products

INVENTORY SALES CO.
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Inventory Sales Company supplies: A325 TC bolts and hex-headed concrete anchors and shear connectors, anchor bolts, masonry anchors, deformed bar anchors, full line of fasteners, new, used and repairs of shear wrenches and all stud-welding equipment and diesel generators. A fully equipped fabrication shop pro-

vides products like shim plates, connection angles and embedment plates. ISC recently consolidated eight buildings in St. Louis into one 240,000-sq.-ft facility. Along with a fully staffed warehouse in Kansas City, ISC offers a central US location to handle the needs of erectors and fabricators.

PRODUCT CASE STUDY

Huntington Botanical Gardens



More than 10,000 Lindapter Hollo-Bolts provided the answer for cavity steelwork connections at the Huntington Botanical Gardens, San Marino, CA. Approximately 4,600 M12 Hollo-Bolts enabled simple and secure truss connections for a conservatory set in 150 acres of sweeping gardens.

The Hollo-Bolt was chosen because it provides a structurally sound, simple-to-use and cost-effective cavity connection. With the conservatory set in such beautiful surroundings, the overall aesthetic appearance of the new building was paramount, and the Hollo-Bolt's uncomplicated design and attractive finish lent itself to the application. Once installed, only the collar and bolt head is visible, producing a clean and symmetrical-looking connection. An additional 3,800 Hollo-Bolts were used in the connection of ornamental trusses to structural columns.

The Hollo-Bolt provided substantial cost savings for the fabricator and contractor by allowing the cavity sections to be connected without welding or through-bolting. No extra holes needed to be drilled for standard bolting and no field welding was necessary for the connections. The Hollo-Bolt's design allowed the installation to be made with simple hand tools and no special tool purchases. The Hollo-Bolt was rigorously tested to ensure a 5:1 factor of safety for secondary connection.

The conservatory is visually similar to a house on the property built early in the 20th century. The new structure was intended to take the form of a classic wrought-iron glasshouse. The perimeter columns are of square HSS supporting the buttress trusses. Heavy pipe columns support the interior of the main structure. The buttresses and trusses are typically built from laser-cut plate with attached double angles to form the opposing chords and to facilitate connections. Vierendeel trusses surround the building, form tension/compression rings at the dome, and transfer gravity loads to the columns and other trusses. The HSS construction of the vierendeels also provides an interface for most truss-to-truss connections. 280 architectural laser-cut plate knee braces are incorporated into the vierendeel-to-column connections to provide the "wrought iron" look.

"As many as 16, 1/2"-dia. Hollo-Bolts were used at each bracket, creating exact-tolerance hole alignment," said Jeffrey A. Brewsaugh, vice president of AISC-member fabricator G. L. Nause Company, Inc. of Loveland, OH. "The standard reaming of unfair holes was not an option for this project."

Hollo-Bolts were used at all HSS steel splices, truss-to-vierendeel connections, and architectural bracket connections. The HSS 5-by-5 vieren-



deel splices consisted of 32, 5/8"-dia. Hollo-Bolts at each splice. "Hole size and alignment was a must for the bolts to work," Brewsaugh said. "The erection of this frame was a challenge in the fact that the connections had to be pulled tight and clamped before inserting and torquing the bolts."

The center dome consists of three tiers. The lower tier was installed in position, the top tier was assembled on the ground and hung by crane, and the middle tier was installed in between. This relieved construction and cost work up to the 55' elevation.

"It's an erie feeling fabricating 126 tons of architecturally exposed structural-steel laser-cut trusses, compound-radius trusses, and rolled vierendeels, all that are hot-dip galvanized and shipped to the worst seismic zone in the country—and being contracted to install all of the above with 1/2"-dia. expansion bolts," Brewsaugh said. "My hats off to those bolts and to everyone associated with this project. It ran from beginning to end without a hitch."

The conservatory was featured in the film *American Wedding*, which premiered in theaters during the summer.

V&S Columbus Galvanizing, Columbus, OH galvanized the structure's steel, and the project won the American Galvanizing Association's 2003 award for Excellence in Hot-Dip Galvanizing in the "Artistic" category. ★

PRODUCT HIGHLIGHTS

Welding and Bolting Products

JACKSON PRODUCTS

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NexGen™ EQC® Auto-Darkening Welding Helmet offers 3N1™ technology for three modes of operation: weld, grind or torch; Intellisense™ technology detects welds less than 5 amps; SmartView™ LCD for fingertip control information; a two-year warranty; and Clear View Light State keeps the

lens down to reduce eye strain and fatigue. The ShadowAire II™ Powered Air Purifying Respirator offers industrial-strength construction; flame-retardant, crush-resistant hose; airflow standards exceed NIOSH by more than 25% and meets OSHA requirements; audible alarm for low battery and low airflow; adjustable belt with lumbar support; NiMH battery is 40% lighter than the NiCad battery; ShadowAire II PAPR w/EQC NexGen and P3 Filters; two four-hour batteries and a fast charger, and an eight-hour battery and overnight charger.

LEJEUNE BOLT COMPANY

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LeJeune Bolt Company supplies fasteners, weld studs, anchors and equipment to the construction, utility and OEM markets. Construction and industrial fasteners are shipped to distributors and end users across North America and beyond. LeJeune has a company-wide commitment to timely delivery, quality products and exceptional service.

THE LINCOLN ELECTRIC COMPANY

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www.lincolnelectric.com



The Vantage™ 500 is a welder featuring stainless-steel roof and side panels, simple controls and Lincoln's patented Chopper Technology™. It offers multi-process capabilities, including

Stick, TIG, MIG, Flux-Cored and Gouging. The machine provides 500 amps of welding power at 100-percent duty cycle or 575 amps at 50-percent duty cycle. It produces up to 12,000 watts of AC generator power.

LINCOLN STRUCTURAL BOLT

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Structural fastener distributor specializing in domestic products with full certifications and rotational-capacity testing at no additional charge. More than 2500 SKU's including: A325 plain, HDG, Mechanical Galv., type 3 and TC's; A490 plain, TC's and type 3; A307, Grades 2, 5 and 8; socket capscrews; threaded-rod and anchoring products.

MULTIQUIP INC.

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Multi-Quip's range of portable welder/generators provide consistent welds with a welding output range of 180 amps to 500 amps and 3 kW to 14 kW as generators. The Scorcher and WhisperWeld lines both have weather-resistant housings and are suitable for outdoor applications. The WhisperWeld DAW-500S is for large jobs requiring simultaneous operation of the

welder and generator by two or more operators. The unit delivers up to 500 amps of DC welding power and 3,000 watts of AC power to operate tools and lights. The Scorcher line features the SDW-225SS diesel-powered and SGW-250SS gas-powered units. Both are multi-purpose welder/generators with CC and CV welding capacity.

NELSON STUD WELDING INC.

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Nelson Stud Welding manufactures concrete anchors and deformed bar anchors for the pre-cast industry. For bridges and high-rise construction projects, Nelson manufactures shear connectors in standard length and extra-long lengths. These shears tie bridge decks or floors to the structural-steel frame for composite design. Many products go to safety-critical applications such as nuclear containment vessels, missile silos, fuel-rod storage facilities, and tunnels. Studs and materials are manufactured, tested and certified in compliance with AISC, AASHTO, AWS D1.1, D1.5 and other ISO and EN codes. Nelson also manufactures threaded studs, refractory anchors, collar studs and others for the electrical and mechanical trades, and is ISO/QS9000 certified.

NUCOR FASTENER DIVISION

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Nucor Fastener manufactures grades A325, A325 Type 3, A325-T, A325M, A490, and A490 Type 3 heavy hex bolts. The A325's are offered in several finishes.

Nucor offers an entire line of F1852 (A325) and A490 Tru-Tension assemblies. Standard hex structural bolts are offered in 1/2" through 1-1/4" diameters up to 10" in length. Nucor's Tru-Tension (TC) assemblies are available in 3/4" through 1-1/8" diameters. Nucor stocks structural nuts from 5/8" through 1-1/4" and manufactures sizes 5/8" through 1", and offers ASTM grades C, C3, DH, DH3, and 2H. Nucor Fastener is ISO9000 and QS9000 certified. Containers are identified with lot numbers for traceability from raw material through processing and final inspection.

PRODUCT HIGHLIGHTS

Welding and Bolting Products

RGM STRUCTURAL STEEL DETAILING, INC.

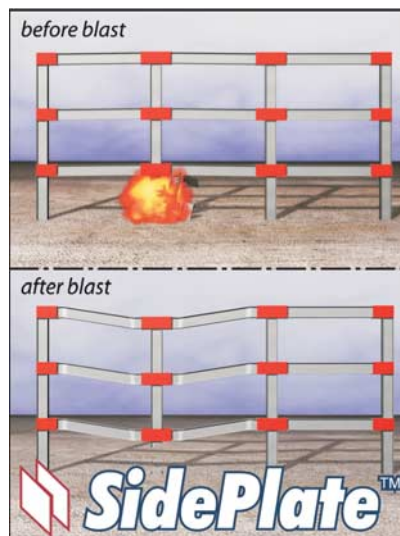
P.O. Box 823
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rverost@worldner.att.net
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The VeRost Bolttable Anchor Plate eliminates the dangerous and costly practice of field-welding to a blind embed in concrete foundation walls. It provides connections for use on pre-cast, tilt-up panels and for structural steel from W4 to W36 beam sizes. Beams are slotted for the normal adjustment allowed for concrete, as well as the outstanding legs of the connection angles. This is a pre-assembled connection made from steel plate and welded studs, which are shot on the plate by machine. The threaded nut bars are seal-welded on. Bolt and nail holes are drilled prior to plate assembly. The plate can be cast into poured-in-place concrete and pre-cast panels. Many sizes available with galvanized or stainless steel for corrosive areas.

SIDEPLATE SYSTEMS, INC.

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SidePlate Systems respond to multi-hazard design challenges with SidePlate™ steel-frame connection technology: a single structural framing system for wind and earthquake resistance; blast and impact hardening; fire attack; and progressive-collapse mitigation. A series of specialty connection applications, including biaxial dual strong axis; braced 'dual systems'; and hollow columns. Fully compliant with current U.S. Gov't. Progressive Collapse Design Standards, SidePlate™ offers discrete beam-to-beam continuity; connection resilience; connection redundancy, proven connection rotational capacity, rigorous determination of connection strength demands, and unlimited prequalification of beam and column sizes, including deep columns.



PRODUCT CASE STUDY



The Toyota Center is the \$200-million new home of the Houston Rockets. The 750,000-sq.-ft multi-purpose center will accommodate up to 19,000 spectators for basketball, hockey and concerts. It includes 102 suites, a club level, separate concourses, and a practice facility.

AISC-members Havens Steel/Fabarco-A Joint Venture fabricated the 3,040 tons of structural steel trusses used on the project, and AISC/SEAA-member Peterson Beckner Industries, Inc. erected them. The bolted-truss design utilized more than 65,000 bolts, mostly 1¹/₈" A490s. Lohr Structural Fasteners' new SMARTEX™ TC Bolt innovative design offered all the benefits of the original Lohr large rivet-head TC design, plus a new conventional wrenching surface for added security and flexibility.

"Our decision to use Lohr Structural Fasteners, was based on their serious commitment to customer service and the many advantages the new SMARTEX™ Bolt offered our project," said Jimmy Kepple, Havens Steel project manager. "Equally important to Havens Steel is fastener quality, product performance, accurate inspection certifications, and on-time deliveries. The Lohr SMARTEX™ meets all our requirements. Their total traceability is the best I've seen in the industry. It's accomplished by the use of an "ID" code stamped on the head of every fastener. This "I.D." code is traceable to the mill certification. The distinct "ID" code allows us

The Toyota Center



to trace an installed bolt back to the manufacturers certification."

Peterson Beckner Project Manager Conrad Hernandez also likes the SMARTEX bolts. "When conventional TC bolts are specified, the detailers often do not consider the size of the TC wrench for clearance, and a standard hex-head bolt is substituted using the turn-of-nut method," he said. "This causes us delays and inefficiencies that are costly, so we prefer the Smarthex TC bolt to eliminate these problems."

The genius of SMARTEX™ TC lies in its composite head design. The top half resembles a traditional hex head for all the advantages that ironworkers appreciate: a wrenchable surface, easy removal from connections/test equipment, and extra insurance against unexpected installation problems. The bottom half of the head presents a washer-sized bearing surface equal to that of a hardened flat washer, to eliminate the need for a second washer under the head on slotted and oversized holes.

The 1¹/₈" A490 SMARTEX™ incorporated a 5/16"-thick bearing surface to eliminate the 5/16" washer under the head that is currently required for oversized or short slotted holes on A490s greater than 1" in diameter. Testing demonstrated that it actually performs better than a standard bolt with a separate thick washer. With engineering approval, this means that customers will reap a double savings benefit by eliminating the extra washer cost and using a shorter (and less expensive) bolt. ★

PRODUCT HIGHLIGHTS

Welding and Bolting Products

SIMPSON STRONG-TIE ANCHOR SYSTEMS

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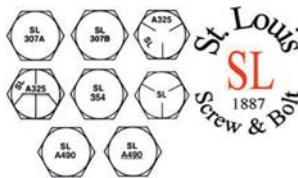


Simpson Strong-Tie Anchor Systems provides anchoring products to meet all applications. The SET epoxy-anchoring system was the first adhesive to be list-

ed for seismic applications by ICBO, and offers high load values. Simpson's Acrylic-Tie adhesive is formulated to flow easily in cold weather and cure down to 0°F, so it can be installed in summer or winter. Both products have been tested in concrete and masonry and feature an array of code reports. The Titen HD anchor for concrete and masonry can anchor fixtures and base plates. It's a heavy-duty screw-type anchor available in 3/8" to 3/4" diameters. The threads on the anchor undercut the base material as it is driven into the hole during installation, resulting in a vibration-resistant high-strength anchor. The length is stamped on the head of the product, and the patented thread design requires less installation torque. The anchor installs using standard drill bits and is removed easily.

ST. LOUIS SCREW & BOLT

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St. Louis Screw & Bolt (SLSB LLC) stocks structural bolts, TC Bolts, anchor bolts, and fabricated rod products. Many grades of domestically produced steels are available for special needs: diameters 1/2" through 4", and up to 40' in length. SLSB is a charter member of the Industrial Fastener Institute (IFI), and an associate member of AISC and NSBA. SLSB's in-house quality lab is A2LA certified and CALTRANS approved. SLSB ships to every state in the USA and any foreign country.

SUPERBOLT, INC.

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Superbolt manufacturers patented Multi-Jackbolt Tensioners, designed to solve bolting problems, save time and money, and eliminate unsafe, time-consuming bolting methods. Products require only hand tools for installation and removal. You don't need expensive tooling (hydraulic wrenches, stud heaters, etc), and worker safety is increased. Visit the web site to see Superbolt's different applications.

TURNASURE LLC

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TurnaSure manufactures Direct Tension Indicators (DTIs), Tension Indicating Washers (TIWs) and Load Indicating Washers (LIWs) for use in the structural, automotive, off-highway, pressure vessel, and anchorage industries. TurnaSure also produces special load-indicating washers for numerous applications in which the engineer needs confirmation that prescribed bolt tension has been achieved in a tightened-fastener assembly. TurnaSure provides on-site product support free-of-charge.

TRU-WELD

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Tru-Weld is a manufacturer of weld studs, stud-welding equipment and stud-welding accessories. Tru-Weld manufactures a full line of weld studs including concrete anchors, shear connectors, deformed bar, threaded studs, and collar studs. Tru-Weld studs can be supplied in the standard boxes or in weather-tight cans, which allows for no-hassle job-site storage.

VERMONT FASTENERS MANUFACTURING

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Vermont Fasteners manufacturers high-strength structural bolting products, including ASTM A325 structural bolts in Type 1, Type 3 weathering steel, mechanical, galvanized and hot-dip galvanized finishes. VFM produces ASTM A490 bolts, and F1852 tension-control structural bolts on both A325 and A490 grades. Vermont also stocks nuts and washers, with products located all over North America.