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Cable comes home



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#57 EDITOR

Cicoil can truly say that its technology is out of this world. For the American company has recently taken possession of a flat cable harness it built in the 1960s which was used on the Apollo 9 space walk.

The company bought back the bio-harness assembly in a recent NASA Apollo space program auction. The 26 inch long electrical biomedical harness was worn by Commander Jim McDivitt during the ten-day flight. You can read the full story on page 9.

A little closer to home, many companies are now preparing themselves for the largest exhibition in the wire and cable calendar – wire 2016 in Düsseldorf, Germany, from 4th to 8th April. The week-long exhibition attracts thousands of visitors and exhibitors to what is undoubtedly the largest show in the calendar.

Some of the American exhibitors can be found in our special preview, which starts on page 40. If you are attending and have not submitted your editorial yet, send it to david@intras.co.uk now for inclusion in the April issue of *wiredInUSA*.

David Bell
Editor

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PRODUCTS, MACHINES AND TECHNOLOGY / *The latest news from*

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m machine industries



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DIARY SHOW EVENTS

2016

APRIL

4-8 April 2016
wire Düsseldorf
Düsseldorf, Germany
Exhibition
www.wire.de

JUNE

12-14 June 2016
**Guangzhou International
Exhibition**
Guangzhou, China
www.julang.com.cn

MAY

11-14 May 2016
Lamiera
Bologna, Italy
Exhibition
www.lamiera.net

SEPTEMBER

26-29 September 2016
wire China
Shanghai, PR China
Exhibition
www.wirechina.net

JUNE

7-9 June 2016
Wire Expo
Uncasville, Connecticut, USA
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www.wirenet.org

OCTOBER

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MAKING THE NEWS

Cable comes home

Fifty years after an Apollo space walk, a flat cable harness has returned to Cicoil. The Bio-Harness assembly was built by Cicoil for the 1969 Apollo 9 space flight, and has been bought back by the company in a NASA Apollo space program auction. The harness is said to look in excellent condition, especially considering its age and use.

The 26 inch long electrical biomedical harness was worn by Commander Jim McDivitt during the ten day Apollo 9 flight. The harness was designed to be worn underneath an intra-vehicular constant wear garment when inside the spacecraft, and under the extra-vehicular pressure suit during spacewalk activities.

The assembly enabled continuous monitoring of vital signs, such as blood pressure, respiration, body temperature and pulse rate for each astronaut during flight, orbit and spacewalk operations.

All three astronauts on the flight, Commander McDivitt, and astronauts David Scott and Rusty Schweickart, utilized Cicoil bio-harnesses.

Cicoil's flat cable harnesses were also used by astronauts on the Mercury-Atlas 6, Gemini 4, and Apollo 11 space missions.



Cicoil's space cable flying high for Apollo 9

Cicoil has manufactured cable assemblies for the Mercury and Gemini space missions, Skylab, Mercury Voyager, Space Shuttle, Tri-Athlete lunar vehicle, the Mars Rover, and for space transport rockets and satellites.



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Wind investment

First Reserve, a global private equity and infrastructure investment firm exclusively focused on energy, has acquired the Mariah North Wind power project from Mariah Acquisition. Upon completion, Mariah North Wind is expected to generate 230MW of wind power. The project will also construct and own a 27-mile, 345kV transmission line, and is the first phase of an expected 600MW development.

The acquisition represents a continued expansion of First Reserve's wind power portfolio, which is expected to generate a total of more than 1,100MW upon completion of projects under construction.

The latest acquisition also further geographically diversifies the firm's wind

power exposure, which now spans several states in the United States, as well as Mexico, Spain and Hungary.

Mark Florian, managing director and head of infrastructure funds for First Reserve, said: "We are pleased to be acquiring this construction-ready project backed by a strong, historically consistent wind resource. The Mariah North Wind opportunity represents an extension of the model followed by many of First Reserve's energy infrastructure investments."

The project is expected to be operational by the end of 2016.

Chicago grid

Nexans will design and produce a medium voltage high temperature superconducting (HTS) cable for American Superconductor (AMSC), as part of its resilient electric grid project in Chicago.

The project, part of the US Department of Homeland Security's resilient electric grid program, will use HTS cables to connect substations in downtown Chicago and so improve the resiliency of the electrical grid against extreme weather or catastrophic events.

Cable testing will be carried out at Nexans' Hannover facility, specially equipped to

perform tests on superconducting systems for power grids.

Nexans has completed similar projects in the past including AmpaCity, which involved the delivery and installation of a 1km-long medium voltage HTS cable to the city of Essen, Germany. The Essen system has been in operation for nearly two years.

Frank Schmidt, head of the superconductivity business unit at Nexans, said: "This project for Chicago underlines Nexans' ability to offer solutions for complex urban power transmission challenges."

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The Gerdau-Summit venture is expected to begin manufacturing in 2017. Photograph courtesy of Forgingmagazine.com

Brazilian venture

A joint venture between Sumitomo Corporation and Japan Steel Works Ltd with Gerdau SA is to manufacture and market forgings for wind power projects in Brazil. The Gerdau-Summit venture is expected to begin manufacturing in 2017.

The impetus for the venture is the Brazilian government's policy to increase the nation's percentage of total electric power generated by wind energy systems to 11 percent by 2024 (from six percent in 2015.) This is intended to address the anticipated demand for electricity in the country.

To achieve that goal, the Brazilian government is offering to subsidize new wind power generation projects, and also is promoting domestic manufacturing of the related systems and components. The Gerdau-Summit partners stated that their project is consistent with the country's energy policy.

Gerdau is Brazil's largest manufacturer of steel long products, with capabilities that include hydraulic forging for bars, crankshafts, and other custom parts.

Sumitomo is the holding company that includes Sumitomo Heavy Industries, which among many other activities is a designer and builder of mechanical forging presses. The larger portfolio includes about 900 companies worldwide in manufacturing, construction, electronics, and other major business sectors.

Japan Steel Works is a manufacturer of large dimension castings and forgings for industrial machinery, as well as power generation systems, and is recognized as one of the few manufacturers in the world capable of forging nuclear reactor vessel components.

Welcome aboard

Joanne Hovis, president of CTC Technology and Energy, has been appointed to the FTTH Council board of directors. An attorney with a background in communications and commercial litigation, Ms Hovis directs CTC Technology and Energy's business consulting, strategic planning, market assessment and management consulting work.

"Joanne is a recognized authority on the broadband market, and communities regularly turn to her for her expertise on the evolving role of government and public utilities in the development of communications services and networks," said J Michael Hill, chairman of the

2016 FTTH Council. "We are pleased to welcome her to the board."

Ms Hovis replaces George O'Neal, vice president for network services of GVTC. Mr O'Neal served for six years as a board member, and acted as an executive committee member and treasurer during his tenure.

Chairman Hill and the board thanked George for his service and valued contributions to the advancement of the FTTH Council Americas.

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Rice University scientists designed the cable to save weight for aerospace applications. Photograph courtesy of Jeff Fitlow/Rice University

Nanotube technology lightens the load

A team of Rice University scientists, led by Professor Matteo Pasquali, has developed a nanotube-based outer conductor coating that could replace the tin-coated copper braid that transmits the signal and shields the cable from electromagnetic interference.

Replacing the heavy outer conductor with Rice's flexible coating would benefit aerospace applications where the weight and strength of data cables are significant factors in performance.

Research scientist Francesca Mirri made three versions of the cable coating by varying the carbon nanotube thickness. She found that the thickest, about 90 microns (the width of the average human hair) meets military-grade standards for shielding and is also the most robust, handling 10,000 bending cycles with no detrimental effect on the cable performance.

"Current coaxial cables have to use a thick metal braid to meet the mechanical

requirements and appropriate conductance," Mrs Mirri said. "Our cable meets military standards, but we're able to supply the strength and flexibility without the bulk."

Coaxial cables consist of four elements: a conductive copper core, an electrically insulating polymer sheath, an outer conductor and a polymer jacket. Only the outer conductor has been replaced, by coating sheathed cores with a solution of carbon nanotubes in chlorosulfonic acid. Compared with earlier attempts to use carbon nanotubes in cables, this method yields a more uniform conductor and has higher throughput. Mr Pasquali said: "We obtained better processing and improved performance."

Replacing the braided metal conductor with the nanotube coating eliminated 97 percent of the component's mass, added Mirri.

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Fire safety acquisition

J M Huber Corporation, through its Huber Engineered Materials (HEM) division, has acquired the Martinswerk business of Albemarle Corporation. The Martinswerk portfolio is now officially part of the Fire Retardant Additives (FRA) business unit of HEM.

This is Huber's largest acquisition in over ten years, and includes Martinswerk's manufacturing facility in Bergheim, Germany, with over 470 employees.

"This strategic acquisition is well aligned with HEM's FRA business unit, both from a product and geographic standpoint," explained Jerry Bertram, vice president and general manager of HEM's fire retardant additive business.

"It builds on our existing halogen-free fire retardant offerings, and expands the range of products we can provide to customers around the world."

To ensure a smooth integration, HEM is retaining the current management team at Martinswerk. The FRA business unit will be structured in a regional model with a general manager operating out of Europe.

The Martinswerk acquisition is the latest in a series of investments by Huber in the FRA business, including the acquisition of the Kemgard® product line from Sherwin-Williams in 2010 and the purchase of the assets of the specialty hydrates business from Almatris in 2012. In 2015, Huber purchased the Safire® nitrogen and phosphorous flame retardant technology from Floridienne Group and Catena Additives.

Jerry Bertram added that the addition of product lines from Martinswerk broadens Huber's portfolio of fire retardant additives for use across multiple applications, including the wire and cable sector.

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HVDC upgrade

ABB has received an order from the electric co-operative Great River Energy. The contract, worth around \$130 million, is to upgrade an existing high voltage direct current connection in the USA.

The 700km ± 400 kV HVDC transmission system will provide a significant link for transferring 1,000MW between Underwood, North Dakota, and Buffalo, Minnesota.

Within the project scope, ABB will upgrade the converter valves, valve cooling systems, control and protection systems, and other related equipment at the converter stations. The modernization is intended to improve grid reliability and efficiency.

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Enhanced relationship

Enhanced Telecommunications (ETI) has extended its relationship with Cincinnati Bell to provide its solutions through 2017, including a complex migration of commercial subscribers from T1 copper to fiber.

“ETI already provides automated provisioning for our fiber network that enables Fioptics Internet and entertainment service availability at nearly 400,000 addresses in our footprint,” said Ron Beerman, vice president of network operations at Cincinnati Bell. “ETI’s software solutions will now manage a growing portion of the commercial side as well.”

The T1 circuit management module allows Cincinnati Bell to automatically re-provision T1 copper records to its existing FTTH technologies.

“This design and assign functionality gives Cincinnati Bell the power to provision and manage its inventory in a simple yet powerful manner,” said Chris Beisner, ETI vice president of product management.

The two companies have worked together on several projects that have helped Cincinnati Bell grow its fiber network capabilities, including video, voice and data provisioning via multiple interfaces.

“We are gaining market share because we have invested in the technology and support that we need to offer leading-edge products to both our commercial and residential customers,” said Beerman. “Our history of success with ETI is why we continue to turn to them.”

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Fasteners firm acquisition

Illinois Tool Works (ITW) will acquire ZF TRW's fasteners and components division for around \$450 million. ITW anticipates that the deal, expected to close in the first half of this year, will result in a slight increase in per-share earnings in the first year of ownership.

ZF TRW was formed by ZF Friedrichshafen AG's acquisition of TRW Automotive Holdings Corporation in 2015, creating the world's second-largest automotive supplier by sales.



Image: Schneider Elec. Perkins + Will, arch

Showcasing power systems

Schneider Electric is to build a microgrid system at its Boston One campus to develop, test and demonstrate its microgrid energy management solutions. The system will include a 400kW photovoltaic system, and is expected to begin generating by fall of this year.

The microgrid will be deployed using a new business model that does not require any capital investment. Beyond saving the company nearly 5 percent on electricity costs at the site in its first year, the microgrid will offer power resiliency in the event of a power loss from the local utility.

“The Boston One campus was built to showcase the connectivity, sustainability, efficiency, reliability and safety innovations at the heart of Schneider Electric,” said Laurent Vernerey, president and CEO of Schneider Electric’s North American operations. “Deploying

Schneider Electric technologies across the Boston One campus creates a living laboratory at our North American R&D hub that will drive global innovation in efficiency and energy management solutions.”

The system uses Schneider Electric photovoltaic inverters that convert direct current, from the solar modules, to alternating current that can be used by the facility for power. It will store electricity using EcoBlade, the company’s energy storage system powered by lithium-ion batteries. EcoBlade can be integrated into Schneider Electric solutions for electricity using the StruxureWare™ suite of cloud-based software.

Joining the team

Allied Wire & Cable has introduced Russ Lawson to its Merrimack, NH, sales team. Mr Lawson brings 20 years of wire and cable industry experience. Starting with Manhattan/CDT in 1995 he worked his way through the ranks of the sector, holding positions in warehouse operations, sales, and supply chain roles.

Following his career with Manhattan/CDT, he spent seven years in inside sales with A E Petsche Co, eventually becoming an onsite buyer/seller with the company before moving to Allied in January.

Mr Lawson brings an all-round wire and cable resumé to Allied. The company is excited to add Russ to the team and to be a part of his continued success in the wire and cable industry.



Rising son

Robert Kepes, son of founder George Kepes, has assumed the position of president of Tensor Machinery Ltd. George, who passed away in January aged 86, founded Tensor Machinery in 1984. Robert is a lawyer with 30 years of experience in the tax, business and commercial area.

“My father was a brilliant mechanical engineer and machine designer who helped make Tensor Machinery a global success,” said Robert Kepes. “I am happy to bring my 30 years of experience in business to the company, and look forward to working with the senior management team, our employees, and our esteemed customers from all around the world. Going forward, it will be business as usual.”

“Robert brings valuable business experience and insight to Tensor Machinery, and we are excited about building a new chapter for the company with him,” said Ken Luterbach, director of sales at Tensor.

Tensor Machinery Ltd manufactures equipment for a wide range of wire and cable applications.



Coated conductor

Oklahoma Gas & Electric (OG&E) has awarded the conductor portion of its Cimarron to Mathewson transmission project to General Cable. The project is a new network upgrade, consisting of a 345kV transmission line to increase capacity, enhance reliability and system stability for the state's largest urban region. OG&E will construct and own the line as part of the regional transmission plan developed by the Southwest Power Pool.

General Cable will apply its E3X™ technology to the TransPowr® 1,590kcmil ACSR Lapwing bare overhead conductor that will interconnect a new transmission line within OG&E's Canadian County Oklahoma service territory.

E3X technology is a thin, durable coating applied to the surface of any General Cable overhead conductor. The coating is engineered to improve grid efficiency by lowering operating temperature, reducing power losses, and increasing power carrying capacity.

Joshua Katzman, vice president of sales, General Cable electric utility products, said: "General Cable is pleased to partner with OG&E to add electric transmission capacity and enhance grid reliability by using our E3X technology."

EUROPE NEWS

ONBOARD FIBER REPAIRS

An Airbus team has been recognized for developing an efficient new method to repair fiber optic cables.

Lighter than traditional metallic wiring and offering much higher bandwidths, fiber optic cables are applied throughout the company's modern commercial jetliners – integrated in taxi aid cameras, cockpit systems and many other key components. However, when non-conformities are discovered in a cable during installation, the repair is a costly and time-consuming process.

Project co-leader Laetitia Mennebeuf, a fiber optics specialist from Airbus's systems engineering department, explained: "Before, if damage was found, the entire cable and surrounding harnesses needed to be removed so that the repair could be performed in a shop outside of the aircraft. This took ten hours to do, and in removing the harness, other cables and wiring could get damaged."

She added: "One of the more common non-conformities concerns the contacts at the two ends of a cable. If the contacts were deficient, they had to be cleaned and polished or remanufactured at the shop floor laboratory."

"Working with our supplier, AVOptic, we developed new, portable tools that re-polish the contacts," explained fellow project co-leader Nadège Brunaud-Martinerie, an engineer from Airbus' manufacturing engineering department.

"Because they're portable – and battery-powered – the new tools can be brought on board the aircraft and repairs made without disturbing the other installers. We use the same processes and get the same results and quality as before, but...repair time is cut from ten hours to two hours."

The 18-month project received a 2015 award for excellence from Airbus.



High wind

Wind power engineering specialist K2 Management is predicting heights of up to 170m for future turbine towers, using new construction techniques and materials. This compares to the tallest towers of 150m at present.

Tower heights have increased steadily over the last decade as operators seek stronger wind speeds higher in the atmosphere.

According to K2 Management wind resource experts, a 3MW turbine located in a forest area, for example, with an average wind speed of 6m per second, will meet 13 percent more wind speed if the turbine height is doubled from 70m to 140m. Annual energy yield prediction would increase by almost 30 percent because of reduced surface aerodynamic drag and the viscosity of the air. Therefore, going up to 170m from 70m will boost energy yield prediction by 35 percent on average.

K2 Management CEO Henrik Stamer said: "170m towers could become a common sight in the near future in markets like the USA and Germany as part of a new renewable skyline. We expect to see more of these mega designs as we help our clients get the most out of their wind projects."



Data center

Aqua Comms has selected Interxion to provide data center services in Ireland. Interxion's data center will offer the connectivity options that Aqua Comms requires to meet clients' needs.

Dublin-based Aqua Comms provides a link between Ireland and America through the AEConnect transatlantic fiber optic cable from New York to London. AEConnect features the latest technology of 130x100Gbps per fiber pair and is designed to meet the exponential surge in bandwidth demand from carriers, global data centers, financial services companies, and cloud and content providers.

The fiber optic cable was deployed in cooperation with Equinix.



Securing supply

Siemens has a contract to be a part of the COBRA link between the Dutch and Danish power grids.

Siemens will supply the two HVDC converter stations at both ends of the DC power line, routed as a subsea cable through the North Sea. The scope of the order covers two 700MW converter stations for a DC voltage of $\pm 320\text{kV}$. The two converter stations will be linked by a 325km DC power cable.

“We are extremely pleased to drive forward the development of a high-performance, European interconnected power system together with Energinet dk, TenneT and Prysmian [suppliers of the HVDC cable]”, stated Jan Mrosik, CEO of the Siemens energy management division.

TenneT CEO Mel Kroon said: “One main purpose of the COBRA cable is to promote competition in the northwest European energy market, which will ultimately benefit consumers. Because we are directly linking the Dutch and Danish power grids, the security of supply for businesses and consumers in both countries will also increase. Plus the Netherlands will be able to import more renewable electricity, generated mainly by Danish wind turbine farms.”

The link is scheduled to begin commercial operation in early 2019.

Call for cable back up

The Gozo University group (GUG) is calling for a second fiber optic cable between Malta and Gozo to safeguard Gozo businesses. The group claims that businesses are vulnerable with only a single cable between the islands, and that this is proving an obstacle for foreign investment.

GUG states that Gozo is in need of fresh opportunities for the current and future generations: “It’s a well known fact that the majority of graduates, who are the heart and future of Malta’s sister island, look elsewhere for a career. Not by choice, but it’s because it’s the only option available,” adding that it should be of common interest to address every possible obstacle to foreign investment.

A meeting with Dr Alfred Sant, MEP, was held to discuss the possibility of EU funds for the establishment of a second fiber optic cable. Dr Sant explained that this is highly possible, but the government needs to apply for the funds. GUG appealed for this to be made a priority.



Summing up the solar market

First estimates by SolarPower Europe indicate that European countries connected around 8GW of solar power systems to electrical networks during 2015. Demand for solar power systems in European countries increased by around 15 percent, year-on-year, compared to 6.95GW of new grid-connected solar power capacity in 2014.

“It is good to see the European solar power sector again on the growth path in 2015,” said James Watson, CEO of SolarPower Europe, the association of the solar power sector in Europe.

After peaking in 2011, demand for solar power installations in Europe declined for three consecutive years. Europe’s solar growth in 2015, however, is primarily based on the strong UK market while demand for solar systems in most other countries stayed flat or declined.

Annual global grid-connected solar rose by over 25 percent in 2015, reaching more than 50GW, from 40.1GW in 2014.

Addressing UK’s power shortfall prediction

EDF Energy has extended the life of four of its nuclear power plants in the UK. The French company has revealed that Heysham 1 and Hartlepool will operate for a further five years, to 2024, while the closure dates for Heysham 2 and Torness have been extended by seven years, to 2030.

The move comes at a time when EDF is delaying a final investment decision on its proposed Hinkley Point C reactor because of shareholder pressure over the cost of the project, said to be \$26 billion.

EDF operates eight nuclear reactors in Britain. Heysham 1 and Hartlepool started generating electricity in 1983 with Heysam 2 and Torness generating from 1988.

The news of the extensions came as EDF revealed its 2015 financial results, in which the group described the performance of its UK nuclear fleet as “exceptional”, reaching an output of 60.6TWh, its highest in the past ten years.



Securing supply with HVDC

TenneT TSO BV and Energinet dk SOV have awarded the contract for an HVDC submarine interconnector to Prysmian Group.

The COBRA (Copenhagen Brussels Amsterdam) cable, linking Denmark and the Netherlands, will make Dutch power capacity structurally available to Denmark and vice versa, increasing security of supply and enabling the further integration of renewable energy into the electricity grids.

COBRA is supported by the European Union through its EEPR (European Energy Programme for Recovery).

Prysmian's contract involves the supply and installation of an HVDC bipole, operating at a voltage level of $\pm 320\text{kV}$ with a rating of approximately 700MW. It will run along a total route of around 325km, including two onshore lengths of 1km, on the Dutch side, and 25km, on the Danish side, to link to the onshore converter stations.

All cables will be produced in Arco Felice and Pikkala, the group's technology centers for submarine cable. The marine cable laying will be performed by the group's own vessels, the *Cable Enterprise*, and the *Giulio Verne*.



Strengthening Norway's supply

Nexans is to provide 170kV XLPE submarine cables to increase power capacity across three fjords, Gimsøystraumen, Nappstraumen and Flakstadpollen, in moves to strengthen the power supply for residents throughout Lofoten, Norway. The improvements will include increasing the current grid capacity from 66kV to 132kV.

Lofotkraft AS is upgrading the submarine cable in all three fjords to extend longevity and increase transmission capacity. Nexans Norway will supply the cables with all transition joints, end terminations and contingency repair joints.

Work on the project is already underway, with supply of the cable scheduled for spring 2017 from Nexans' Halden, Norway plant.

ASIA & AFRICA NEWS



Cable clamps to Hong Kong for UK manufacturer Ellis

HONG KONG A SUCCESS FOR UK DISTRIBUTORS

Ellis has supplied 125,000 cable clamps for installation on the high speed extension of the Hong Kong MTR network.

The Hong Kong section of the rail link runs from West Kowloon to the Shenzhen/Hong Kong boundary, where it connects with the China mainland section of the network. When complete, trains will operate at speeds up to 200km per hour, reducing journey times by 50 percent.

Ellis's one and two hole polymeric cable clamps were specified by CLP Power, through local distributor Wang Yip Hong, and will be used to secure power, pilot and fiber optic cables throughout the tunnels.

Ellis's export sales director, Tony Conroy, said: "CLP is the biggest power utility company in Hong Kong and we are its

sole supplier of cable cleats and clamps – a relationship that speaks volumes for the work done by the team at Wang Yip Hong and why we put so much faith in local distributors when it comes to exporting."

Ellis is represented by local distributors in 30 countries.

"There is no way we could have achieved and then maintained our status as the world's leading cable cleat manufacturer without our distributor network," added Mr Conroy. "They open doors for us that, quite honestly, we wouldn't even have known were there, and as we look to expand our export operation into new territories and further develop our presence in existing markets, its size and importance will continue to grow."



Clean power in Japan

Canadian Solar Inc has started the commercial operation of three solar photovoltaic power plants in Japan, totaling approximately 6.2MW. The portfolio of projects includes the 2.3MW Ashikita solar power plant in Kumamoto City; the 2.2MW Minamishimabara power plant East; and the 1.7MW Minamishimabara plant West in Nagasaki prefecture.

“The completion and commercial operation of the additional three solar projects, totaling 6.2MW, brings our total megawatts of projects in operation in Japan to approximately 21MW,” said Dr Shawn Qu, chairman and chief executive officer of Canadian Solar Inc. “We remain on track to execute on our plan to deliver more clean solar energy to the Japanese market.”

The Ashikita plant and Minamishimabara plant – East achieved commercial operation in December 2015. The electricity generated from the plants will be purchased by Kyushu Electric Power Co under 20-year feed-in-tariff contracts.

Power from the Minamishimabara plant – West, will be similarly purchased by Kyushu Electric Power Co under a 20-year feed-in-tariff contract.

A bar to rebar

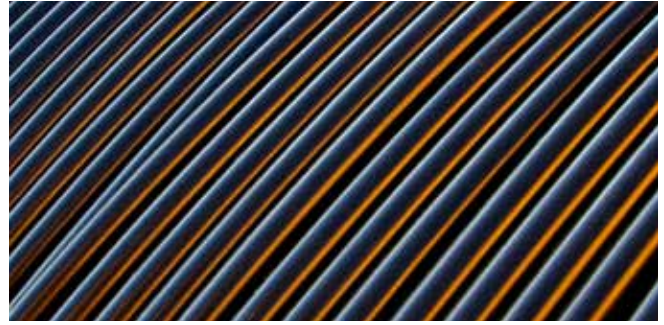
In a move that reflects the concern at over-capacity in Chinese mills, an EU commission has imposed tariffs up to 13 percent on Chinese rebar.

Chinese exporters expanded their share of the EU rebar market to almost 36 percent in the 12 months up to March 2015, from 7.9 percent in 2013 and zero in previous years, the commission reported.

The duties are aimed at Chinese exporters of high fatigue performance steel concrete reinforcement bars, which are, allegedly, being sold in the EU at below cost. The targeted companies include Jiangyin Xicheng Steel Co, Jiangsu Yonggang Group Co and Zhangjiagang Shatai Steel Co.

The duties, which came into effect in early February, are initially for six months and may last for up to five years.

With EU anti-dumping protection already in force on Chinese goods ranging from stainless steel and electrical steel to wire rod and steel wires, the new measures reflect European concerns that Chinese mills have the capacity to flood world markets.



Fiber's profit boost

Japan-based fiber optic products manufacturer Furukawa has reported a sharp increase in its annual operating profit. The cable and wire manufacturer has seen a surge of 40 percent in its operating profit, mainly due to the growing demand for fiber optic products in the North American and Chinese markets.

Furukawa's consolidated profit for the last financial year is expected to reach around \$208 million.

Increased data usage by smartphones is boosting efforts to improve transmission speeds, increasing demand for fiber optic cable. The company's North American subsidiary, OFS Fitel, a fiber optic manufacturer, is among the group's best performers, with operating profit more than doubling. More efficient production has helped raise the unit's profitability. Operating profit in the overall fiber optic cable operations is widely expected to surpass 56 percent.

Conversely, operating profit in the electronics and automotive systems segment is expected to drop. In North America production costs have risen for parts aimed at new model cars, while demand is slumping for wire harnesses for cars made in Japan.

Cold heading venture

Nippon Steel and Sumitomo Metal Corporation (NSSMC) is to establish a new company called Nippon Steel and Sumikin Cold Heading Wire Indiana Inc (NSCI), to manufacture and sell steel wires for cold heading and forging for the automobile industry in Indiana.

NSCI will be established through joint investment from Matsubishi Metal Industry Co Ltd, Nippon Steel and Sumikin Steel Processing Co Ltd, Miyazaki Seiko Co Ltd, Sanyu Co Ltd, Toyota Tsusho Corporation, Nippon Steel and Sumikin Bussan Corporation, Metal One Corporation, and Sumitomo Corporation.

Steel wires for cold heading and forging are mainly used for automobile fasteners and parts, and are produced by adding a secondary process (such as pickling, coating, wire drawing or heat treatment) to steel wires. Most uses are for important safety-related parts and the quality requirements, such as materials and dimension accuracy, are extremely high. In order to satisfy these requirements strict quality management is necessary for wire rods and secondary processes.

NSCI will be the twelfth member company of NSSMC's SteelInC® bar and wire rods business brand.



Combination mill for stainless bar and rod

Yongxing Special Stainless Steel Co Ltd has selected Primetals Technologies for the supply of a new combination bar, bar in coil, and wire rod mill in Huzhou, China. The new mill will produce 250,000 tons per year of stainless valve steels, nickel-based alloy steel and several stainless grades, including austenitic, ferritic, dual phase and hardening steels, for applications in the aerospace, energy, medical, automotive and petroleum industries.

The contract scope for the mill includes the provision of a reversing sliding breakdown mill; straight bar equipment, including cooling bed run-in table with brake slide, cooling bed, bar handling with hot saws and optical bar counting, bar bundling and binding system; bar in coil equipment, with pouring reels, coil quenching tanks, and coil handling with rod outlet; and rod outlet equipment, including a 680 shear, 10-stand Morgan Vee No-Twist mill, 4-stand Morgan reducing/sizing mill, Morgan high speed laying head, stepless coil reforming station, vertical stem pallet coil handling system, vertical coil compactor, and an inline annealing furnace for wire rod products.

Joint venture springs into life

Japanese steel mill Nisshin Steel has announced that the company plans a joint venture with the Taiwan stainless mill Jie Jin Material Science Technology and Marubeni-Itochu Steel.

Taiwan Nisshin Precision Steel Co Ltd will manufacture and sell precision rolled stainless steel spring material, with production beginning in September this year.

Nisshin Steel believes that east and southeast Asia will continue to expand the market demand for precision rolled stainless steel products. The joint venture plant will focus on automobile and IT machine sectors.



Reaching into the US market

Korea's LS Cable & System has been awarded contracts totaling \$100 million for undersea cable projects in the US and Canada. The company will provide undersea cables to the New York power authority, and to Canada's eastern province of Prince Edward Island.

The average lifecycle for an undersea cable is between 30 and 50 years, so the company perceives huge potential in the US, with increasing demand to replace the country's older power cables.

"We have a strong foothold in the Asian market, and aim to diversify our revenue channels, not just into North America, but into Europe and Africa too," an LS Cable official said. The company recently won a \$57 million contract to supply 345kV underground power transmission cables to an American company.

LS Cable & System operates what is believed to be Asia's largest undersea cable manufacturing facility in Gangwon Province, where it produces power transmission cables, undersea cables and electrical components.

Oiling the wheels of export

Lubricants developer and manufacturer Metalube is continuing its global expansion with the opening of Metalube Arabia, its new office in Dubai.

The new operation will be headed by Nick Pomeroy, who has worked in the region for the past ten years. He said: "This is an exciting time for Metalube with the launch of a range of new products. One of the key areas in the region that we are focusing on is the oil and gas industry. It is so positive to work with an organization that understands the importance of having a real and physical presence in the countries where it exports."

Metalube manufactures a range of non-ferrous drawing oils and maintenance lubricants, as well as a variety of corrosion protection and forming oils, and already has offices in China, India and Brazil.



wire 2016

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Friday: 9.00am to 4.30pm

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Aztech Lubricants

Booth: 09F06-2

Founded in 2005, Aztech Lubricants offers its customers over 125 years of cumulative expertise in wire drawing and wire lubricating formulation.

Aztech Lubricants provides products and solutions to customers in wire drawing for a variety of industries, including wire drawing, galvanizing, wire forming, agricultural, tyres, automotive, construction, etc.

It is fully committed to making a positive impact on the environment and uses plant-based and renewable sources when feasible. Its product range includes an extensive line of wire drawing lubricants and supplies for wire drawing.

The company specializes in the formulation and production of calcium, sodium and potassium stearate drawing powders, RP oils, ship out oils, drawing oils, and precoats (both enhanced borax and borax free).

Additionally, it can provide customers with products such as galvanizing wiping pads, UV coatings and AZWipe spiral brushes, through established partnerships with the companies that specialize in these areas.

Its global presence consists of international manufacturing and distribution facilities in both Colombia and India.

Situated in the heart of Wayne, Oklahoma, USA, is a 40,000ft² manufacturing facility,

which includes an in-house laboratory for quality control and research and development.

Aztech Lubricants LLC – USA

Website: www.aztechlubricants.com

Bergandi Machinery

Booth: 09B11

Bergandi Machinery designs, manufactures and services machinery for the wire and metal processing industries, in more than 60 countries located in six continents.

Bergandi manufactures equipment for chain link fencing, concertina wire, barbed wire, extruded PVC coated wire, security wire mesh, and various wire products for the construction industry. Domestic fence manufacturers that work for USA military installations, border control applications, municipalities, and many more use the equipment.

The company offers manufacturing capabilities for fencing products utilized in perimeter security, construction, mining and agricultural settings. Bergandi occupies a manufacturing facility located in Ontario, California, USA, approximately three miles from Ontario International Airport.

The company has a long history of research and development activities and presently owns four patents covering equipment specifically designed for the fencing industry.

With over 85 years of experience in designing

and manufacturing machinery, Bergandi offers a wide range of wire forming, processing and welding equipment. Its primary customer base encompasses the fencing, construction, mining and agricultural industries.

Bergandi Machinery Co – USA

Website: www.bergandi.com

Blachford Corp

Booth: 09E02

Blachford Corporation is a wire lubricant and specialty chemical supplier. Based in the USA and Canada, Blachford has been supplying the global wire drawing industry and many of the world's largest wire drawing companies since the 1950s with cost effective, meticulously researched, and innovative wire drawing lubricant programs tailored to the exacting technical specifications of individual wire drawing processes.

When the wire industry needed assistance to reduce and control dust, Blachford responded with chemically modified dry drawing lubricants designed to help address the problem.



▲ A brief glance through the history of Blachford Corporation

Blachford's low dust dry lubricants reduce dust creation in multiple ways. They are more adhesive than standard dry lubricants and therefore are less likely to detach from the wire; more flexible than standard dry lubricants and have a lower tendency to shatter when the wire bends around pulleys or capstans; and the feathers are more cohesive than standard dry lubricants so they have a lower tendency to break up and become airborne.

All of these attributes have been designed into Blachford's low dust dry lubricants to help its customers meet the demands of dust control. This is only one example of Blachford's capability to create innovative products that meet the needs of the overall wire drawing industry.

Blachford Corporation – USA

Website: www.blachford.com

Ceeco Bartell Products

Booth: 09C70

Ceeco Bartell will focus on innovation by featuring its advanced wire and cable production systems. These systems are aimed at improving production efficiencies while producing high quality products.

The systems include:

- High-speed side loading roll form strander, up to 300mm²
- Modularised roll form unit, producing 240mm² compact aluminum at 200m/min
- Backtwist high-speed data cable twinning

- High performance OPGW stranders
- High-speed strip armoring lines, with 300mm² wide coil width
- High-speed 2,200mm single twist roll form strander, up to 500mm²



▲ 1,800 mm roll form strander

Ceeco Bartell has been at the forefront of wire and cable technology and remains a major supplier of rotating equipment.

Bartell Machinery Systems LLC – USA
Website: www.bartellmachinery.com

Chemours
Booth: 17D66

Chemours, a global chemical company will be exhibiting its wide range of fluoroplastics, and additions to the ECCtreme™ ECA family, a class of melt-processable perfluoroplastics which combines the advantageous mechanical, electrical and chemical properties of PTFE with high thermal stability.

For instance, at a thickness of 0.75mm, the material has an RTI (relative thermal index) listing of 300°C according to UL

746B. Thanks to its continuous service temperature of 300°C, ECCtreme™ ECA exceeds the previous upper limit of 260°C for conventional perfluoroplastic insulating materials.

ECCtreme™ ECA grades can be processed on conventional extrusion equipment for high temperature fluoroplastics using standard processing conditions. Downstream heat treatment (epitaxial co-crystallisation) improves the material's thermal resistance and offers beneficial mechanical properties, such as long-term tensile modulus and improved stress cracking resistance.



▲ A wide range of fluoroplastics will be on display from Chemours

The material is suitable for wire and cable insulations which are exposed to extreme service conditions such as very high temperatures, elevated pressures and corrosive surroundings.

Typical fields of application are the oil and gas industry, aerospace, energy generation, semiconductor fabrication and the automotive industry.

“This development is our response

to industry's challenge to offer a high-temperature, melt-processable perfluoroplastic," said Frenk Hulsebosch, global product manager melts fluoroplastics at Chemours Fluoropolymer Solutions.

Further products presented on the booth will include Teflon™ fluoroplastic foam resins (FFR) produced using patented Airquick technology. Cables made with foamed fluoroplastic insulation have a lower signal return loss than conventional data cables, enabling miniaturisation and weight savings thanks to lower density and thinner insulation thicknesses.

One current example is the new KL24 Star-Quad data cable developed for the aerospace industry by Draka Fileca, Sainte-Geneviève, France, which won a DuPont Plunkett Award in 2013. At identical diameter, it is up to 25 percent lighter than previously used quad cables and enables a reduction in aircraft fuel consumption, reducing environmental impact.

Chemours – USA

Website: www.chemours.com

Clinton Instrument Company

Booth: 09E40

The Clinton Instrument Company, specialist in spark test technology for the wire and cable industry and inventor of the high frequency sine wave spark tester, will be exhibiting its newest offering, the model HF-15B high frequency sine wave spark tester, the flagship model of the new B-series.

This new design combines the latest in control technology with the robust and reliable 3kHz spark test platform.

There are many new features of the HF-15B, including a split electrode design for easy string up and digital signal processor (DSP) based voltage regulation and fault detection. The fault detection circuit has been upgraded and test voltage is now monitored directly from the electrode, instead of a transformer winding.

The fault circuitry can now differentiate between four types of fault conditions: simple pinholes, a series of closely spaced pinholes, direct metal contact from the centre conductor to the electrode, and gross lengths of bare wire.



▲ The new HF-15B series from Clinton

The new “RC” controller comes fixed to the unit, but can be detached and mounted remotely up to 60 meters away from the test module/electrode.

It has a large alphanumeric display/user interface and can be rotated in its bracket to accommodate different viewing angles.

The display makes configuration of the equipment easy; all configuration parameters can be changed directly from the front panel menu structure. Once configured, the system can be passcode protected.

In cases where a local display is not required, or centralized process control is desired, the equipment can be configured and controlled directly from PLCs or computers using Modbus RTU (RS-485 full duplex).

Optional communication protocols include Ethernet/IP, Profinet, and Profibus, Modbus TCP and analog communications, making the equipment compatible with previous Clinton equipment with analog control.

When simple control output is all that is required, there are four sets of relay contacts that provide information without requiring advanced programming.

These include “high voltage ON” signals to alert operators of the presence of high voltage, a fault relay which actuates when a fault is detected, a “Voltage Watchdog” which will change state when the test voltage has risen above or dropped below

a preset level, and a “Bare Wire Alarm” which will signal when long lengths of bare wire are detected.

Clinton will also exhibit and demonstrate the STCAL automatic spark tester calibration system. The STCAL system will calibrate high frequency AC, mains frequency AC, and DC spark testers to all major specifications. Calibration is automatically performed and documented on all of Clinton’s new B-Series spark testers and selected A-Series models. Manual or assisted calibration can be performed on older Clinton units as well as equipment manufactured by others.

When paired with Clinton’s model SM sensitivity tester, a complete calibration solution to IEC and NEMA standards is provided.

Clinton Instrument Company – USA

Website: www.cicsparkers.com

Davis-Standard

Booth: 09A19

Davis-Standard will feature its latest wire and cable technology.

Davis-Standard’s take-ups and pay-offs integrate simplified engineering and cost efficiency. With a smaller overall footprint and excellent operator ergonomics, these machines have been well received since their introduction in early 2015.

Machine sizes range from 1,250mm to 5,000mm (48” to 195”) with the greatest concentration within the 1,800mm to

2,500mm (70" to 98") size range. For international customers, machines are equipped with a Siemens AC drive, PLC (programmable logic controller) and HMI (human machine interface) with a Mitsubishi servo drive.



▲ Cable take-up from Davis-Standard

For North American customers, machines feature a Yaskawa A-1000 AC drive and Allen-Bradley/Rockwell components that include a servo drive, PLC and HMI. Technology is available as "stand-alone" (running in torque control) with a dancer or with an accumulator.

Davis-Standard has also seen on-going demand for its caterpillar capstan and HPE extruder technology. The company supplies multi-pass, linear and belt wrap capstans for the full range of wire and cable applications. The HPE offers a compact design and is one of the industry's most widely used extruders. It is known for a fast delivery and rugged design that is energy efficient and easy to maintain. Advantages for wire and cable applications include

increased torque capacity for high viscosity resins and custom options.

The ability to address market demand in terms of performance and cost efficiency is just one aspect of Davis-Standard's Global Advantage™ in wire and cable. Another is the company's experience in supplying extruders and associated wire and cable equipment for more than 70 years.

Applications include aerial cable, building wire, coaxial and composite cable, video pair cable, tray cable, CATV, THHN and THWN wire among others.

Davis-Standard LLC – USA

Website: www.davis-standard.com

Die Quip

Booth: 09D06-01

The goal of making more wire per die is easily reached with a Die Quip die finishing machine. As a global manufacturer, the company has established a line of machines to grind, polish and size dies in a quick, efficient, accurate process, eliminating operator error and guesswork.

Better dies pull more wire and cause fewer production problems, so Die Quip has designed stand-alone machines for finishing dies in all sizes. For larger production runs it builds work cells to keep maximum efficiency and eliminate downtime from size changeovers.

Its approach to a modern die shop brings benefits to the whole production process

by implementing a workflow system that sets procedures and incorporates training to maximize each machine's capabilities.

The company has designed extensive training options and on-site consultations that teach operators how to use its equipment, choose diamond tooling for maximum results and use different methods of making dies.

Its technicians will spend time in the facility designing a program customised to meet its customer's production needs and provide reference materials such as the exclusive die training handbook.



▲ The Die Flex MA from Die Quip

Customer service does not end with the purchase order. Die Quip supports its customers through installation, training and troubleshooting for the life of the machine.

Die Quip Corporation – USA
Website: www.diequip.com

Fil-Tec

Booth: 09E52

Fil-Tec offers a complete line of performance yarns for application in power cables, copper and fiber optic telecom and specialty cables. Products on display include: Binder yarns with water blocking, non-wicking, flame retardant/low smoke finishes; core yarns; ripcords; filler yarns; marker yarns; and fiberglass reinforcement yarns.

Its newest products include:

- Dry core yarn for dry core cable designs
- Virtually dustless water blocking binder yarns for high speed
- New line of water blocking yarns for power cable applications



▲ Performance yarns from Fil-Tec

Fil-Tec's water swellable binder and core (wrap around the FRP) yarns offer the following benefits:

- Very low dust, extends life of bearings and other moving parts of the equipment
- Less downtime due to mechanical maintenance related to SAP dust problems

- Less clean up time
- Cleaner working environment for the operator

The company's technology produces a water swellable binder with higher yield, meaning lower cost per kilometer of cable produced. It also produces a package that offers:

- Excellent integrity and balance
- Can run at 5,000 rpm without unwanted vibration
- More meters per package, meaning longer runs without a break and a more efficient stranding process overall

Fil-Tec also offer various swell factors, affording design engineers the flexibility to choose the size yarn and swell factor that best suits the cable.

Fil-Tec Inc – USA
Website: www.fil-tec.com

Fort Wayne Wire Die
Booth: 12A27

Wire manufacturers looking for solutions to maximize profitability and remain competitive in the current global economy are encouraged to visit the Fort Wayne Wire Die booth.

Along with showcasing its full line of diamond wire drawing dies, FWWD will have staff on hand to provide details about the company's die-inventory management programmes, X-ray orientation for single crystal diamond dies and superior surface

finish on polycrystalline diamond dies. On display on the booth will be FWWD's complete product line, including:

- Wire drawing dies – single crystal diamond, Poly-D[®] polycrystalline, Dual-Draw[™] and tungsten carbide
- Extrusion tips and dies
- Shaped profile dies
- Poly-Strand[™] stranding, bunching and compacting dies
- Di-Pro[™] diamond powder and compound
- Miscellaneous wear parts



▲ Some of the products on display from Fort Wayne Wire Die

Visitors can also find out more about the company's full line of equipment for die maintenance, measuring and inspection.

Fort Wayne designs and manufactures high-precision wire drawing dies and hard-material components for the wire and cable industry. For more than 75 years, FWWD has been a source for wire drawing dies that offer a multitude of value-added advantages.

Fort Wayne Wire Die – USA
Website: www.fwwd.com

Gem Gravure

Booth: 16A41

GEM is the exclusive distributor for KBA-Metronic product identification equipment in the United States and Canada. GEM staff will join KBA-Metronic staff for the exhibition, where there will be an opportunity to see the latest in continuous ink jet printers suited for wire and cable applications.



▲ Gem Gravure macro wire printing

The Gem team will be available to discuss the latest ink innovations. WTG7160 ink, launched late last year, has improved adhesion on LDPE, MDPE and XLPE with rub resistance when printed at room temperature. WTG7160 adheres to EPDM for bright codes that resist rubbing.

Gem's new WTG6460 alcohol-based white ink is designed for marking on tires during the production process. Codes can be removed before shipment without damaging the tire's surface.

WTG4560 white ink can be successfully printed from the alphaJET pico, using a 42-micron nozzle.

Gem Gravure is a member of the Wire Association International (WAI), International Wire & Machinery Association (IWMA), and Wire & Cable Industry Suppliers Association (WCISA).

Gem Gravure Co Inc – USA

Website: www.gemgravure.com

Keir Manufacturing

Booth: 09C69

Keir Manufacturing is USA-based manufacturer of high-purity 99.8 percent alumina ceramic guides, the Frontiersman™ line of air wipes, and composite flyer bows, serving the global wire and cable industry. The company is dedicated to making products that enable manufacturing processes to run more efficiently and productively through the application of leading-edge materials. Its solutions are focused on continuous process improvement, energy savings and longer operating life.

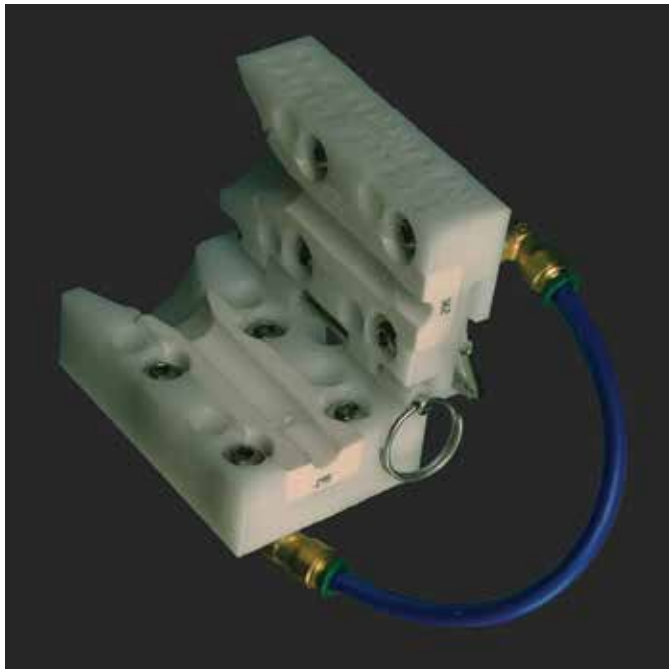
Keir's patented SureShot and SplitShot air wipes provide a more effective drying method that does not depend on high-volume air consumption.

The efficient design yields effective drying using a very low volume of compressed air and lasts longer than other brands due to the rugged ceramic insert lining the wire path.

This equates to over 25 percent reduction in compressed air usage and an operating life of years versus months.

The company's triaxially braided composite standard and BackBone™ flyer bow constructions are claimed to have greater durability than layered/laminated designs, allowing them to take more hits and endure higher stress, yielding increased operating life and less machine downtime.

The Rotomac® rotary is designed for ease of use and superior performance in detecting seam type defects in small diameter wire and bar, including lines with continuous wire operations such as drawing, spring-making, parts forming, or in straight and cut.



▲ Keir's clamshell-style SplitShot air wipe

The more aerodynamic BackBone™ design functions at lower power consumption and higher TPM with improved wire quality and a further reduction in bow breakage. Up to 40 percent less energy is used along with a decrease in wire scrapped.

Setting up distance compensation, a critical feature for testing ovate wire, is straightforward, and quick twist-on bushings and dial in diameter adjustments add to the convenient operation of this rotary. MAC's Multimac® eddy current instrumentation, with two test channels, completes the system.

Also featured will be the single channel, compact, full feature Minimac® 55. This versatile eddy current instrument includes software controls for all functions including phasing, filtering and sensitivity, all while operating at speeds over 4,000 fpm.

Keir Manufacturing Inc – USA
Website: www.keirmfg.com

The test results are displayed in full-color polar and linear mode showing real time, true waveform signals for easy review on a separate on-site monitor or at remote locations.

Magnetic Analysis Corp
Booth: 11J14

The track screen depicts the test product's length, with data on line speed, end suppression, flaw tracking, piece count and alarm routing.

Magnetic Analysis Corp will be introducing a new high-speed Rotomac® rotary eddy current tester, and will display the new affordable Minimac® 55 high performance eddy current instrument.

Linear strip charts and complete test data, as well as an unlimited number of settings, can be stored, annotated and recalled from a library on the internal storage device or network.

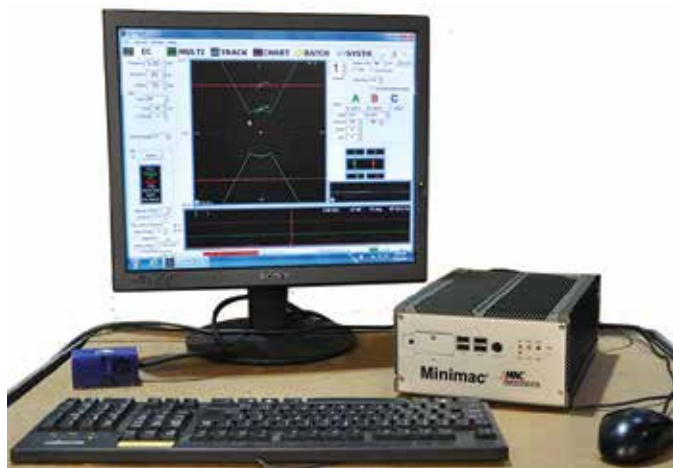
When networked, multiple instruments can share the same library to ensure correct settings in multiple test lines

Setup and monitoring can be handled through a computer network, and reports with customer, product information, defect location, time, amplitude and phase can be stored locally or on a network server for quick follow up and quality assurance.

Used to find flaws such as laps, slivers and cracks, and some subsurface defects, Minimac 55 is well suited for dedicated, continuous production line testing where simple setup, without constant operator adjustment, is desirable.

Once optimum settings are set, a lockout mode can prevent unauthorised changes.

Minimac® 55 can also check continuity and locate welds in single and multi-conductor insulated wire and cable.



▲ The Minimac from Magnetic Analysis

MAC's new ceramic long-life encircling coils and bushings will also be featured. The coils are especially effective for testing critical wire applications without damaging the material's surface.

These coils and MAC's broad range of encircling and sector test coils are available for use with the Minimac® 55. Coil platforms, including those with DC saturation for testing magnetic material, are offered.

Magnetic Analysis Corp – USA

Website: www.mac-ndt.com

Mathiasen Machinery

Booth: 12A55

Mathiasen Machinery Inc (MMI) buys and sells used wire and cable machinery internationally. Machinery is purchased for inventory or it can be sold on an exclusive basis. MMI has interest in locating individual machines, complete lines or entire plants.

Consignments, warehousing, appraisals and liquidation services are also offered. MMI has buyers seeking all types of good quality used wire and cable machinery, and serves the domestic and international ferrous and non-ferrous wire machinery markets. The booth will display photographs of a wide variety of second hand machinery. Customers are encouraged to bring their surplus machinery list and photos for evaluation.

Mathiasen Machinery Inc – USA

Website: www.mathiasen-machinery.com

Metal Forming Systems

Booth: 15A45

Metal Forming Systems Inc (MFSI) develops and supplies process design software and finite element analysis simulation software for the metal forming industry. It also

provides a three-day intensive class on the fundamentals of cold forging.

Nagform is a unique program for determining the forming sequence for cold or hot forged and sheet metal formed parts. It utilises forming rules and design logic to create alternative ways of forming a part.

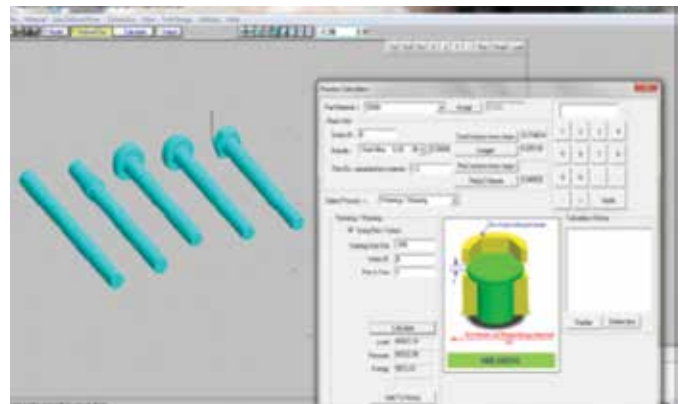
Reusable templates can be created for part families such as hex bolts, rivets and spark plugs. All the results can be exported into various 2D/3D CAD programs.

Nagsim.2D and 3D are FEA forging simulation programs for simulating cold, warm and hot forging processes. These programs predict the metal flow, formation of laps, under-fill conditions, elastic stress in the tools, load stroke curve, grain flow, etc. The latest versions of Nagform and Nagsim include many advanced features that allow the user to design and validate forming of complex parts.

Recently developed products include:

- NagformLite is a lower-cost version of the Nagform program. It has the full modeling capability of Nagform with the ability to create progression designs manually. The program output includes part volume, surface area, forming strains, forming load, pressure calculations and 2D/3D CAD drawings. Templates of most IFI standard parts, SolidWorks/STEP interface and tooling component library are also available.

- NagformSheet is a knowledge-based software program for designing forming sequences of sheet metal parts. It is also available as a stand-alone program for sheet metal parts or as an add-on module to the Nagform program. Doing this allows comparative studies of parts that can be alternatively formed by cold forging, as well as sheet metal forming processes.
- Nagsim.2D is a bimetal version of the Nagsim.2D FEA simulation program that simulates forming of two deformable materials.



▲ NagformLite from Metal Forming Systems

Metal Forming Systems Inc – USA

Website: www.nagform.com

Miltec

Booth: 09E06-6

Miltec UV, a manufacturer of both arc and microwave UV systems, will be featuring the release of the new Xtrema ECO UV system. The patented Xtrema ECO is claimed to be the first significant UV curing advancement in over 30 years and is designed specifically for the optical fiber, wire, coloring and FRP coating markets.

Optical fiber manufacturers continually pursue new ways to increase line speeds and efficiency while reducing operating costs, and Xtrema ECO is one solution. Miltec has partnered with industry leaders to gain advancements in optical fiber UV solutions.

Its optics provide more UV output concentrated at the fibre. The Xtrema ECO system is designed to provide faster line speeds and easy maintenance, reducing line downtime.

With significant energy and operating savings, eg increased draw tower production speeds, the result is an attractive return on investment for new lines, or replacing existing equipment.



▲ The new Xtrema EVO UV system from Miltec

“This year’s wire show provides the perfect platform and audience for the introduction of our ground-breaking new technology,” said Miltec president Bob Blandford.

“The Xtrema UV system can be easily retrofitted to enhance or replace existing equipment and is designed with the flexibility to meet your growing needs.

Targeted, advanced optics concentrate UV output, delivering effective, efficient

curing, with lower heat output for cooler fiber temperature.”

All Miltec systems incorporate very high peak irradiance technology to provide customers with improved manufacturing productivity, enhanced end-product quality, reduced energy and maintenance costs, and additional operational savings associated with UV chemistry and long-term system reliability.

For over 26 years the company has continued to innovate, develop and support high-performance arc and microwave UV curing systems, both domestically and globally, serving more than 30 diverse manufacturing market segments. It provides custom-designed UV systems, a wide range of replacement consumable parts, service and support teams, and a testing lab.

Miltec UV – USA

Website: www.miltec.com

Nano-Diamond America

Booth: 11B03

Nano-Die America’s sole purpose is to bring a special application of nanotechnology and coating technology to the benefit of the cable and wire industry.

The Nano-Die™ utilises what is claimed to be the hardest, smoothest configuration of nanocrystalline diamond on the die market today. The company continues to expand and supply throughout over 50 countries by offering solutions in innovative,

new-generation compacting and drawing dies.

Led by Christopher Thornton, the company will continue on its mission, bringing the benefit of this technology to wire and cable markets worldwide. The Nano team took part in wire South America in Brazil last year and will be at wire 2016 in April. The company is currently recruiting new team members to take the business to a new level in the coming years.



▲ Nano-Dies from Nano-Diamond America

Nano-Diamond America is planning to expand its shaped die capacity from simple shapes to more sophisticated shapes.

This will enable shaped wire manufacturers to obtain better control of the shape and better finish on the wire, as well as longer die life compared to the TC dies that are commonly used.

Nano-Diamond America Inc – USA

Website: www.nano-die.com

NDC Technologies

Booth: 11D68

NDC Technologies will exhibit the latest Beta LaserMike products for in-process dimensional monitoring and automated quality cable testing. The new line-up delivers higher accuracies, production

efficiencies and savings for profit-minded wire and cable manufacturers.

NDC will be introducing the latest addition to the AccuScan 6000 Series 4-axis diameter gauge family: the new AccuScan 6050. Like the AccuScan 6012 gauge which was released last year, the AccuScan 6050 provides a comprehensive measurement coverage around the product's circumference to instantly detect changes in product diameter.

The AccuScan 6050 measures products up to 50mm, while the AccuScan 6012 measures products up to 12mm.

Both gauges perform ultra-fast diameter and ovality measurements at 9,600 scans per second and are claimed to offer the highest single-scan accuracy in the industry, with single-scan repeatability down to 2 micron with the AccuScan 6050 and down to 1 micron with the AccuScan 6012.

In addition, both gauges improve ovality accuracy up to 100 per cent and provide the highest flaw detection accuracy with 25 percent improvement over three-axis measurement methods.

The new DCM SCS-700 efficiently tests Cat 5e/6/6a cables to 700MHz and offers a low-frequency option to test cables down to 100Hz. Dual-frequency testing is performed with a single connection to significantly reduce set-up and testing time. Automated four-pair switching platform enables operators to perform cable testing in less than three minutes. Easy-to-use

testing software offers complete test management and reporting capabilities.

- LaserSpeed® length and speed measurement system



▲ The new AccuScan 6050 and 6012

In addition, the next generation of process controllers will be previewed at the show. The new InControl™ system brings an advanced level of graphical user interface, functionality and ease of use to operators for increased productivity.

Other products on display include:

- Latest high-speed AccuScan 5000 Series two-axis diameter and ovality gauges
- New LN Series three-axis lump and neckdown detectors
- Innovative LayScan lay length measurement system
- CenterScan eccentricity measurement system
- Preheaters and spark testers
- CapScan capacitance measurement system
- SRL Pro structural return loss prediction software

NDC Technologies – USA

Website: www.ndc.com/betalasermike

Paramount Die Company

Booth: 10B38

Paramount Die is more than just a die company, with its sales engineers averaging over 20 years of experience in the wire industry. In addition to helping its customers with their die needs, Paramount offers expertise in all areas of the wire drawing process.

Several wire industry trends have shaped the company's development over the past five years. Perhaps the most dramatic has been the ever-growing trend for wire drawers to outsource their finished die requirements.

This shift has caused wire drawers to become somewhat more dependent on die suppliers, placing great pressure on the company to increase capacity for die finishing, to reduce finished die costs, and to improve lead times.

Realising these trends and consistently aiming to meet customers' needs, Paramount has been able to reduce die costs in two ways. The first is by standardising on cost-effective carbide inserts.

The second is by improving quality and increasing capacity through automation.

Many of the company's highly automated machines run on lights-out operation, meaning that they will continue to produce as long as there is raw material being fed into the system.

The automated production equipment combines high volume speed and efficiency with accuracy and repeatability. Because of its investment in immediately available inventory, average lead times have been reduced from three weeks to less than a few days.

As the company continues to grow globally as a high volume producer of carbide drawing dies, it becomes very important for it to continually invest in new manufacturing technology.

Paramount is also a supplier of eco-friendly products to the wire industry as its die design allows the carbide insert to be easily recycled.

Thousands of kilograms of used inserts are returned to Paramount each year to be graded, sorted and transformed into good-as-new condition.

The company will exhibit a full line of wire drawing dies and related equipment. Products featured include the TR-Series carbide drawing inserts, shape dies, extrusion dies, polycrystalline diamond dies, ParaLoc™ pressure and non-pressure holders, as well as accessories.

Paramount Die Company – USA
Website: www.paradie.com

Rad-Con

Booth: 09506-5

Rad-Con is a designer and manufacturer of Bell type furnaces for spheroidize annealing of wire rod for the production of cold-heading quality wires (CHQ). Many of the largest fastener manufacturers are using Rad-Con equipment.

The company is headquartered in the USA, and operates globally, with more than 75 percent of turnover outside America. It specializes in one type of Bell type furnace, one type of process annealing, and has very specific knowledge in spheroidizing while producing a clean surface that is free of decarburization.



▲ *Annealing from Rad-Con*

Rad-Con supplies capital equipment and software, along with related services, to manufacturers in need of a high-quality batch annealing process that is part of their manufacturing of hot and cold reduced strip and wire metal coils.

The bell-type batch annealing furnace (BAF) uses a protective atmosphere of 100 percent hydrogen, and it also increases

efficiencies of existing annealing facilities through software models.

The company's worldwide references and global reach were recognized by the US Commerce Department in 2010 with the Presidential E-Award.

Rad-Con Inc – USA
Website: www.rad-con.com

Refractron
Booth: 09D06-3

Are you willing to benchmark your ceramic or carbide supplier for their impact on your wire quality, operational efficiency and total costs? Refractron works with wire manufacturers every day to help them improve the performance of their critical components by providing precise, reliable, zirconia-based ceramics and ceramic-metal assemblies.



▲ An example of the Izory products that will be on display

The USA factory in New York is ISO 9001:2008 certified. It includes the critical equipment to make Izory from raw powders. The powder processing expertise and proprietary firing cycle allows its engineers and scientists to ensure Izory has the best material properties.

These properties, the surface finish specifications and critical dimensions that are important to making the best wire at the lowest cost are guaranteed by a rigorous quality program.

The Izory products on the booth will include rod rings, step cones, multi-wire rolls, spooler guides, enameling dies, annealer pulleys, air wipes and eyelets.

Refractron – USA
Website: www.refractron.com

RichardsApex
Booth: 09F06-05

RichardsApex, a global manufacturer of wet lubricants for wire drawing and hot-rolling applications, provides semi-synthetic and synthetic compounds for wet drawing of non-ferrous and ferrous wire as well as protective coatings, cleaners, corrosion inhibitors and oil-form lubricants for all non-ferrous and ferrous alloys for both wire and tube applications.

Its core products can be made at all of the company's manufacturing locations in the USA, Europe, Australia and Mexico. With over 114 years of history, RichardsApex has an established global sales network to service customers throughout the world, including on-site support and technical sales assistance.

The company has subsidiaries located in both the UK (RichardsApex Europe) and Australia (RichardsApex AustralAsia), and representatives in Canada, China, Greece,

India, Italy, Japan, Korea, Malaysia, Mexico, Peru, Poland, Russia, Taiwan, Thailand, Turkey, Venezuela and Vietnam, with many other countries serviced by the subsidiaries and representatives.

RichardsApex Inc – USA

Website: www.richardsapex.com

Rockford Manufacturing Group

Booth: 15H41

Rockford Manufacturing Group (RMG), Fastener Engineers and Lewis Machine's integrated in-line wire processing solutions are the epitome of lean manufacturing. Customers quickly realise reduced inventory, improved productivity, greater flexibility and reduced total cost.



▲ *The Model 500 in-line wire drawer*

In-line wire drawing provides numerous benefits for fastener and wire products industries, including:

- **Lower material costs:** By using hot-rolled rod (for any wire diameter 0.218" (5.5mm) and larger and/or semi-finished wire against bright basic
- **Utilize just-in-time inventory:** An in-line wire drawer at the point of wire consumption is the ultimate in JIT inventory management. By careful selection of parent diameters and drawing many different sizes from a few stock sizes, inventory dollars can be reduced
- **Provide exact diameter control:** An in-line wire drawer provides the perfect diameter at the point of use, consistently, eliminating any coil-to-coil variation. Consistent volume control depends upon exact diameter control
- **Improve metal formability:** Freshly drawn wire is easier to form and the heat generated by the drawing process improves the cold forming process. Many difficult cold-headed specials cannot be produced without utilising a wire drawer
- **Improve tooling life:** Parts produced using freshly drawn wire require less forming force, thereby improving tooling life. In addition, consistent volume control means consistent heading tonnage which, in turn, consumes fewer tools
- **Improved wire surface conditions:** The surface of wire drawn in-line has no chance to oxidize or deteriorate. Additionally, the quality, type and

amount of wire lubricant can easily be controlled in the production process

- Eliminate short feeds before they occur: RMG's Autodraw speed control system matches the consumption rate of the production machine. All tension is removed from the feed rolls. Also, Startgard, Slipgard and Tanglegard sense any problem with the process and stop the production machine before a shortfeed occurs
- Eliminate wire kinks: Wire drawn in-line is always smooth and straight with a natural cast and with no kinks
- Employ any coil size or weight: An RMG wire drawer does all the work of turning the coil and unwrapping the wire, thereby eliminating the load on the feed rolls, regardless of coil size
- Increase overall performance: When considering the improvements associated with an RMG machine it is easy to understand why a header line utilising an RMG in-line wire drawer will outperform a header line that does not in both cost and consistency of product

The in-line wire processing equipment is used by many manufacturing processes including fastener production, nail making, wire bending, concrete products, steel bar processing, welded wire products, screw machine parts and wire straightening and cutting. On display will be the Model 500 in-line wire drawer.

Rockford Manufacturing Group – USA

Website: www.rmgfelm.com

Spirka Schnellflechter and Wardwell Braiding

Booth: 09B33

The Type DF braiding machines are used for screening of coaxial cables and other conductors and cables with copper or galvanized steel wires in a diameter range of 0.05 to 0.3mm. The DF 16 A on display will be configured for braiding of fine wires in range of 4x.05mm.

This will also be demonstrated with a new control system, which provides the following features and advantages to customers:

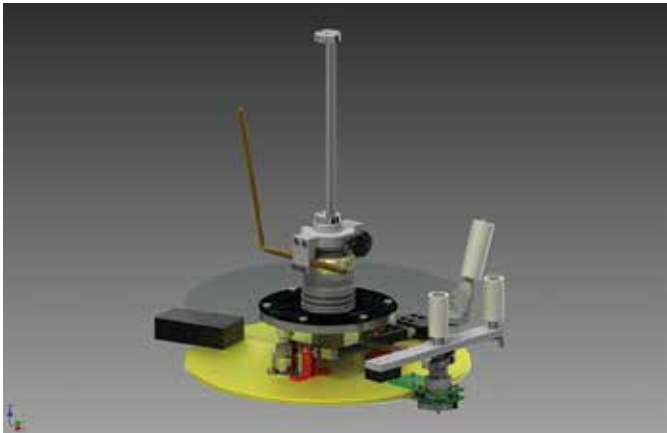
- New generation of PLC, HMI and drives
- Optimized and user-friendly operating system
- Expanded pitch range
- Optional energy and temperature measuring system
- Optional remote control and diagnostic system
- Upgraded empty bobbin detection system

The machine will be presented with options for pay-off and take-up to demonstrate the flexibility of the system for different application ranges and cable specifications.

This braiding line offers a wide range of applications and increased flexibility in screening processes. The integrated concentric taper features optimized regulation for precise pre-setting of tape

tensions and a harmonized brake system for fine tuning.

The Wardwell RS 16 is suited for braiding of super fine wire as small as 0.02mm (52awg). The RS 16 reduces the footprint of traditional lever arm machines by 30 per cent, allowing a more efficient use of floor space.



▲ The DF 16 A braiding machine from Spirka Schnellflechter

New applications require new approaches. The RS 16 braids super fine wire over cables, mandrels and tubes such as mini coaxial cables, micro coaxial cables, special cables and medical catheters.

This machine is equipped with all standard features, including pay-off and take-up for DIN 355 reels, and offers additional options:

- Braiding pattern 1 x 1
- Multiple pay-off and take-up options
- Empty bobbin detector with positioning system
- Longitudinal tape attachment

Spirka Schnellflechter – Germany

Website: www.spirka-schnellflechter.com

Wardwell Braiding – USA

Website: www.wardwell.com

Teknor Apex

Booth: 09E06-1

A new halogen-free flame-retardant (HFFR) compound for fiber optic cable provides excellent flame retardance while exhibiting significantly lower post-extrusion shrinkage than similar compounds with comparable flame properties.

The new product will be among those featured by Teknor Apex on its booth.

Halguard® 58625 compound has a UL-94 flammability rating of V-0 and an oxygen index of 50 percent, while exhibiting post-extrusion linear shrinkage of only two percent. The new product is an addition to the Halguard family of compounds providing an economical alternative to premium grades because of their innovative flame-retardant formulation.

Low shrinkage is especially desirable in fiber optic applications because it reduces the degree of stress imposed on the sensitive optical fibers during post-extrusion temperature cycling and over time during end use. A low-shrinkage grade introduced in 2015, Halguard 58620, exhibits a Shore D hardness of 54 and shrinkage of 1.3 per cent, with a UL-94 flammability rating of V-1 and oxygen index of 40 per cent.

The company recommends Halguard 58625 compound for cable used in mass transit, data centers, cell towers and other infrastructure applications. For outdoor

uses, the new product exhibits good sunlight resistance when tested per UL-1581.

“Halguard 58625 compound costs less than comparable premium materials while exhibiting little compromise in performance properties,” said David Braun, wire and cable industry manager for the vinyl division.

Typical Properties of Halguard® 58625 Compound

Property	Test Method	Value
Hardness, Shore D, 10 sec.,	ASTM D-2240	57
Specific gravity	ASTM D-792	1.66
Tensile strength, psi (MPa)	ASTM D-638	1,773 (12.2)
Elongation, %	ASTM D-638	140
Flexural modulus, psi (MPa)	ASTM D-790	29,000 (200)
Brittle point, °C	ASTM D-746	-29
Oxygen index, %	ASTM D-2863	50
Vertical flammability rating, 1/16 in.	UL-94	V-0
Post-extrusion linear shrinkage @ 110 °C, %	Teknor Apex	2
Sunlight resistance @ 720 hours, 0.020 in.	UL-1581	Pass
Maximum continuous operating temperature, °C	UL-1581	105

SOURCE: Teknor Apex Company

▲ Property data of the new compound

“It is the newest member of a series of HFFR compounds developed by Teknor Apex to meet a range of customer needs while providing lower-cost alternatives to other Halguard and competing HFFR products in general-purpose applications.”

The new compound is available worldwide.

Teknor Apex – USA

Website: www.teknorapex.com

Wire & Plastic Machinery

Booth: 09E20

As a reseller of high quality second hand wire, cable and optical fiber manufacturing equipment, Wire & Plastic Machinery has a large selection of in-stock machinery.

Machines are offered from individual components to complete lines and can be delivered immediately from eight USA locations, or completely reconditioned by an in-house engineering team.



▲ Inventory located at WPMC's warehouse in Wadesboro, North Carolina, USA

Wire & Plastic Machinery has a comprehensive range of over 30,000 machines in stock for all aspects of non-ferrous wire and cable production.

The company will be showcasing pictures, video and an interactive presentation of its inventory offering.

An enclosed meeting room will be available for detailed private project discussions.

Booth visitors will have access to web-enabled stations for a live product

search with detailed specifications and pictures. Worldwide experienced personnel will be available to assist in selecting the most suitable equipment for your application and process.

Wire & Plastic Machinery Group – USA

Website: www.wireandplastic.com

Wire Lab Company

Booth: 10H42

Wire Lab Company manufactures a comprehensive line of mechanical descaling machinery for steel wire producers, allowing customers to put in place the Wilco mechanical descaling system which most closely matches their wire-drawing requirement.

Wire Lab will be displaying its Model 1250 automatic brush descaling system that allows users to convert wire rod of various qualities into bright drawn wire.

The Wilco automatic rod brushing machine incorporates into the descaling process eight circular wire brushes which are positioned around the rod circumference and aggressively clean the rod surface of secondary scale and red rust, which are detrimental to producing high quality wire products.

Unique to the Wilco wire-brushing machine is the pressure of all wire brushes being

automatically maintained on a real-time basis by the advanced electronic control system.

The operator is not responsible for making manual adjustments to the brush pressure; therefore the brusher will produce a consistently cleaned wire rod. Additionally, when the wire brushes need replacement (typically after processing 300 tons of wire rod) the control system will shut down the Wilco brusher while illuminating an indicator lamp communicating the machine's condition and that the brushes need replacement.



▲ *The 1250 automatic brush descaling system*

Additional models of Wilco descaling systems are available from basic, non-aggressive systems to its full-featured automatic brush descaling system with lubricant pre-coating.

Wire Lab Company – USA

Website: www.wirelab.com

PRODUCTS
MACHINES
TECHNOLOGY



Maintaining tape standards

Sikora will be showcasing its Purity Concept systems at wire 2016 in Düsseldorf, Germany, next month. The systems are equipped with X-ray technology (X), infrared technology (IR) or optical sensors (V) for sample testing during production to identify impurities from 50µm.



▲ The Purity Concept system from Sikora

Films and tapes for the insulation of joints in high voltage cable are produced by using the same XLPE2 material used for the insulation of the cable. The Purity Concept systems with optical sensors are suitable for the inspection and analysis of thin, transparent films and tapes; the systems with X-ray technology are appropriate for

thick, black tapes. The systems ensure that the same quality standards as demanded for cable insulation are used during the production of tapes.

Fire safety cables

UAE-based Middle East Specialized Cables (MESC) took advantage of Bahrain's Gulf Industry Fair to showcase cable solutions designed and manufactured to international standards. The company is looking to reinforce its position in the Bahrain market.

MESC's area sales manager, K V Ramaseshan, said: "MESC is well known in the oil and gas sector, but it has now diversified...into the power and construction businesses since it has a large capacity to produce the required cables and a wider approval."

MESC's own fire performance laboratory conducts rigorous and comprehensive validation of a cable's resistance to fire and propagation in accordance with various international standards.

MESC's cables are already in use in some major projects in its local market. The company is supplying over \$816,782 worth of its armored flexible, single-core and cat 6 data cables to the Sustainable City project in Dubai.

Elsewhere in Dubai, 200km of special flexible and low-smoke halogen-free cables have been supplied to Mohammad bin Rashid City, and its special rubber flexible cable,

CU/EPR/SW4, is being installed in the Neighbourhood One Residences project in Masdar City. These cables have an operating temperature of 150°C.

Commenting on the Bahrain market, Mr Ramaseshan added that MESC has the potential to meet 20 percent of the country's cabling needs.

All-weather fastener

Alcoa Fastening Systems & Rings, Telford Industrial Fasteners Operations, has developed a new Huck® Magna-Lok® 316 A4 stainless steel structural blind fastener with enhanced corrosion resistance.



▲ The new Huck® Magna-Lok® 316 A4 stainless steel structural blind fastener

Retaining all the features of the standard version, the new fastener has a wide grip range to accommodate variations in joint thicknesses. Its internal locking technology enables the pin to be mechanically locked to the sleeve, expanding during installation for joint tightness. The Magna-Lok 316 A4 also features high resistance to liquid penetration.

The new fastener is made from the austenite stainless steel, 316, a marine grade steel containing 18 percent chromium and 12 percent nickel. Unreactive chromium III oxide forms on the component's surface,

and protects the underlying metal from the environment. The addition of nickel further increases the corrosion resistance of the resultant alloy.

Andrew Smith, engineering manager at Alcoa Fastening Systems & Rings, said: "Magna-Lok is the most popular and versatile of our structural blind fasteners. Combined with the demand from our customers for a high performance corrosion resistant fastener, it was the obvious choice to develop a 316 stainless steel version. In addition to offshore applications, we are also looking at its use in food processing machinery, heat exchangers, chemical storage facilities and medical equipment."

Cable management

CABLExpress has upgraded its RSD series high-density fiber optic enclosures to improve cable management and ease of use in structured cabling environments. The new enclosures are said to be 33 percent lighter, with a 19 percent depth reduction (to 13 inches) to save data center rack space.

"The enhancements to our RSD series enclosures have been brought to life based on feedback from our customers," said Peter Belyea, president of CXtec, the parent company of CABLExpress.

RSD series enclosures support high density environments, allowing up to 96 fibers (1U), 192 fibers (2U), and 384 fibers (4U). The enclosures' modular design allows for multiple connector types within each

enclosure, and mixed-media options allow integration with copper infrastructure. A recessed sliding drawer (RSD) is designed for easy access to modules, while internal cable managers maintain proper bend radius.

Fastener surface treatment

The Foreverbolt NL-19 treatment is an advanced corrosion protection, developed to reduce maintenance and repair costs.

The treatment modifies the surface of stainless steel products, producing a brighter finish, greater strength, and higher corrosion resistance, but without affecting the fastener's exterior dimensions.

more than seven times. Not only were we successful in preventing corrosion but after treatment, the fasteners are 1.9 percent stronger.”

ASTM B117 salt spray and hardness-tensile test data for Foreverbolt's NL-19 treated products can be found at the company's website.



▲ *Advanced corrosion protection*

Company founder Patrick Vogel explained: “Under normal conditions ordinary stainless fasteners will corrode and fail, resulting in unwanted replacement and maintenance costs.

“The NL-19 treatment modifies the surface of stainless steel fasteners in a way that increases their corrosion resistance by

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The screenshot shows the wiredInUSA website interface. At the top, there are several article thumbnails with the text 'READ WATCH SHARE IT'. Below the thumbnails is a blue banner with the text 'You can get all the latest news daily'. At the bottom of the banner are two social media links: 'Follow us on Twitter' and 'Like us on Facebook'.



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