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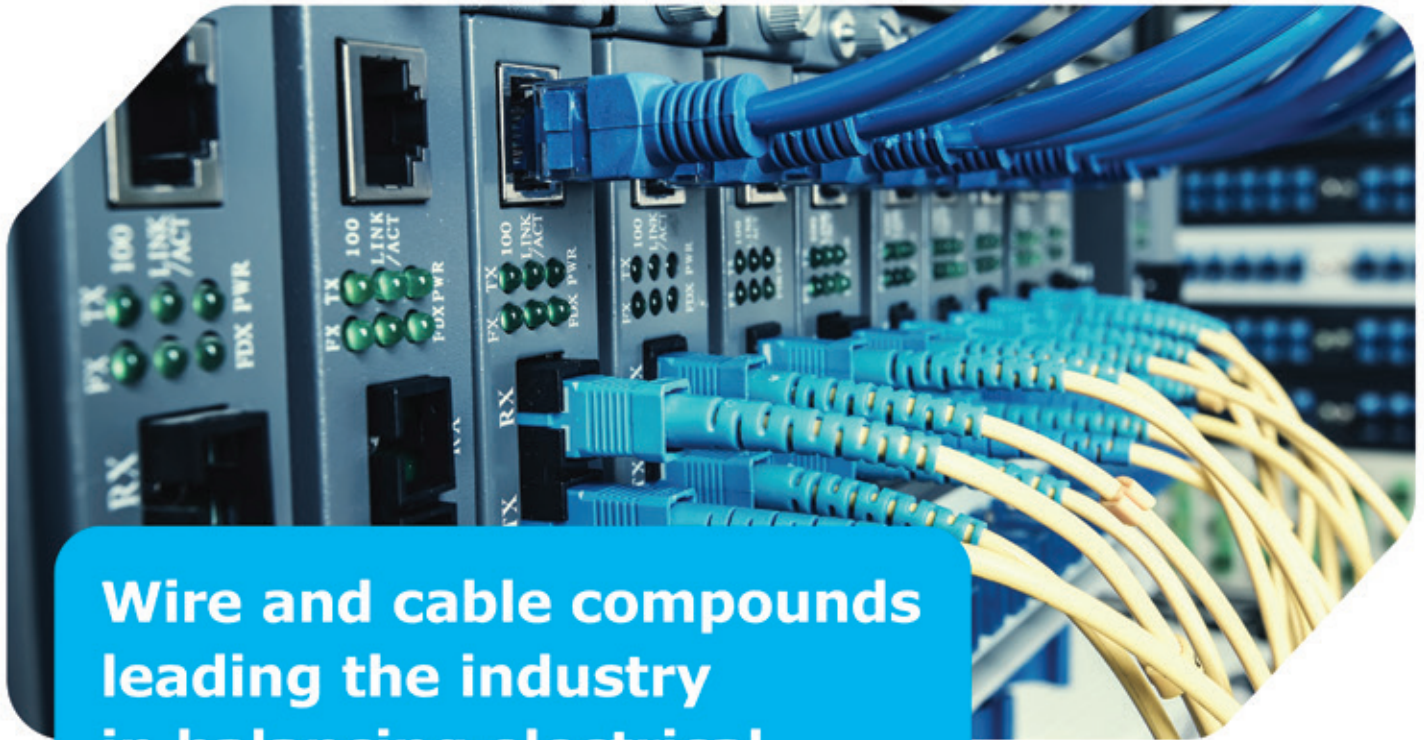
Wire & Cable

September 2015

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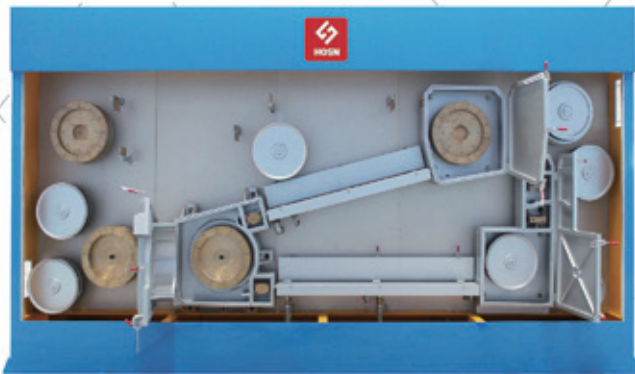
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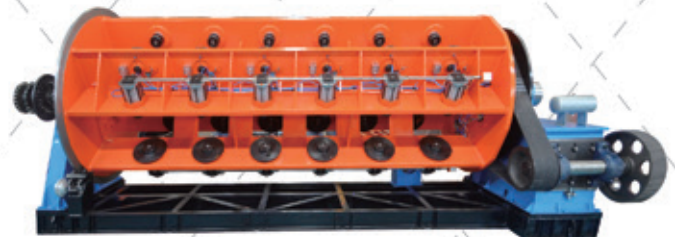


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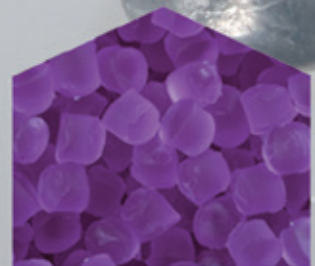
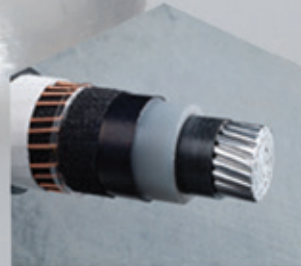
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Contents



8



78

Regulars

- 8** Industry News
36 行业新闻
- 44** Technology News
60 技术与产品
- 66** India Insight
66 印度透视
- 68** Telecom News
70 通信新闻
- 72** From the Americas
76 来自美国的消息
- 78** wire Southeast Asia
- 103** Editorial Index
103 通讯目录
- 103** Advertisers Index
103 广告索引

Next Issue

Getting Technical -

Standardisation of PV wires
and cables 2001-2014

Technical Articles

- 96** Ultra-fast, high resolution,
surface quality measurement
(SQM), for wires, optical fibres
and cables
By Jean-François Fardeau,
Gérald Novel and David Miara,
Cersa-MCI, R&D division,
Cabries, France
- 100** 电线电缆以及光纤的超高速、
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Heading to Bangkok...

A major regional finance and business hub. An economy that is expected to exceed €113.5 billion by the end of this year. Take that, and more than 400 exhibiting companies in a bustling historical and vibrant city, and we have to be talking about wire Southeast Asia.

The biennial show will again be staged in Bangkok, Thailand, from 16th to 18th September, at the city's BITEC – Bangkok International Trade and Exhibition Centre.

One of the highlights of the wire and cable exhibition calendar, wire Southeast Asia provides an ideal opportunity for companies to present the latest innovations and technological advancements and show them off to an eager and enthusiastic audience.

Our coverage starts on page 78 in this issue of *Wire & Cable ASIA*, where you will find the exhibitors listing and editorials from some of the companies showcasing their products.

Please also feel free to stop by stand J01 where you will be able to pick up your free copies of *Wire & Cable ASIA*, *EuroWire* and *wiredInUSA*, as well copies of our sister publications, *Tube & Pipe Technology* and *Tube Products INTERNATIONAL*.

David Bell
Editor



When and where

October 2015

5-8 October:
IWCS Technical Symposium –
conference and exhibition –
Atlanta, Georgia, USA
Organisers:
IWCS
Tel: +1 717 993 9500
Email:
phudak@iwcs.org
Website: www.iwcs.org

October 2015

5-10 October:
EMO –
trade exhibition –
Milan, Italy
Organisers:
EFIM-ENTE Fiere
Italiane Macchine
Fax: +39 0226 255 882
Email: info@emo-milan.com
Website:
www.emo-milano.com

October 2015

6-8 October:
wire South America –
trade exhibition –
São Paulo, Brazil
Organisers:
Messe Düsseldorf GmbH
Fax: +49 211 4560 668
Email:
info@wire-south-america.com
Website:
www.wire-south-america.com

November 2015

3 November:
Cabwire Conference –
conference –
Düsseldorf, Germany
Organisers:
IWMA, WAI, ACIMAF,
CET IWCEA
Fax: +44 121 781 7404
Email: info@iwma.org
Website:
www.cabwire.com



○ Visitors at this year's wire Russia at the Expocentre, Moscow

Defying economic climate

MAY saw the staging of wire Russia 2015 as the leading Russian trade fair for wire, cable and wire-processing industries at the Moscow exhibition centre Expocentre.

Defying the unfavourable economic climate in Russia, the organisers – Messe Düsseldorf and Messe Düsseldorf Moskau as well as their partner VNIKP JSC (All Russian Cable Research and Development Institute) – continued to register high numbers of both national and international exhibitors at the trade fair.

To the tune of 200 exhibitors presented their product and service innovations for four days. This underscores how important this industry platform is for the Russian Federation. 2,500 experts from the wire, cable and wire-processing industries came to wire Russia, the all-encompassing B2B event in Moscow.

Werner M Dornscheidt, president and CEO of Messe Düsseldorf, assesses market opportunities with cautious optimism despite the tight political and economic situation: “Although the current situation is anything but easy I am convinced the outlook for the wire and cable industries on the Russian market is positive in the long run. We have already overcome many global economic challenges.

“This has shown us that those standing their ground on the market even in difficult times are among the winners when business picks up again.”

He added: “The fact that visiting trade fairs abroad has become more difficult for Russian experts benefits local events. We are satisfied with the number of visitors.”

Exhibitors from 25 nations took part in wire Russia 2015 – including big names on the manufacturing side, small specialists, long-standing

participants and first-time exhibitors. Particularly well represented were suppliers from Germany, Italy and Austria. Joint corporate participations came from Germany, Austria, China and Italy.

Numerous international and national trade associations supported wire Russia: IWMA (International Wire & Machinery Association), IWCEA (International Wire and Cable Exhibitors Association), VDKM eV (German Wire and Cable Machine Manufacturers Association), VÖDKM (Austrian Wire and Cable Machine Manufacturers Association), IWCEA France (International Wire and Cable Exhibitors Association), WCISA (Wire and Cable Industry Suppliers Association), ACIMAF (Italian Wire Machinery Manufacturers Association) and SECRI (Shanghai Electric Cable Research Institute).

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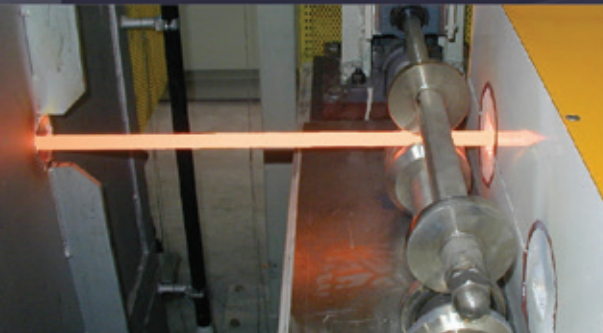


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The healing power of light

MECHANICAL failure along a conductive pathway can cause the unexpected shutdown of electronic devices, ultimately limiting device lifetimes.

Wearable electronic devices, subject to dynamic and vigorous motions, are more liable to suffer from conductive failures compared with conventional flat electronic devices.

To address this problem, various methods of healable electrical conductors have been proposed.

The latest is the result of research by Professor Jung-Ki Park and Hee-Tak Kim in the department of chemical and biomolecular engineering at the Korea Advanced Institute of Science and Technology (KAIST).

The team has developed a light-powered healable electrical conductor. Light-powered healing is implemented via the use of a photochromic soft material (such as an azobenzene material), which can be directionally moved along the light polarisation.

This directionality of the material's movement with respect to light polarisation enables an efficient healing process, regardless of crack propagation directions, light incident angles, and the number of cracks.

By depositing silver nanowires (AgNWs), which are the conducting material used in this study, onto the top layer of the flexible photochromic soft material, this optically healable material has fully functional electrical conductivity.

Notably, AgNWs are found to maintain conformable contact with the photochromic soft material, even during the optical healing process.

AgNWs and the photochromic soft material act as conductive pathways and a light-powered cargo carrier, respectively.

The combination provides rapid, non-invasive and on-demand healing for a flexible electronic conductor, making light-powered healing possible for dynamically deformable wearable devices.

Korea Advanced Institute of Science and Technology (KAIST) – South Korea
Website: www.kaist.ac.kr

OUR COVERAGE OF WIRE SOUTHEAST ASIA STARTS ON PAGE 78

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Profits up, expansion and new jobs

AKSH Optifibre Limited, the New Delhi based manufacturer of optical fibre, optical fibre cables and FRP rods, has announced its results for Q4 and FY 2014-15 results. The company's net profits before exceptional items and tax increased 67 per cent to Rs 31.67 Crores.

The board has approved an expansion plan that will see capacity expansion of over 80 per cent in its OFC business at its manufacturing plant in Reengus, Rajasthan, India. The FRP business is also set for expansion of 75 per cent through its wholly owned subsidiary AOL FZE, Dubai. The company will be investing over Rs 95 Crores for the expansion and setting up of additional manufacturing lines across the two facilities. The expansion is proposed to be funded out of debt and internal accruals.

The board has also taken note for the need to invest heavily in the existing human capital of the company across

its locations and has approved the hiring of fresh talent across all levels to scale up operations. The board feels that to maintain its leadership position as FRP and OFC manufacturer, such investments are required for meeting the demands of the next wave of requirements for telecom gear, not just in India but globally as well.

Mr Satyendra Gupta, chief financial officer, said: "The company has performed exceptionally well over the last fiscal year with strong growth cues across our manufacturing and services divisions.

"With a strong advance order book and a sharp focus on expansion across its manufacturing and services verticals, the company is all set to stride forward towards consolidating its current position and plan for the future."

The company's e-governance arm, 1 Stop Aksh, has also performed well

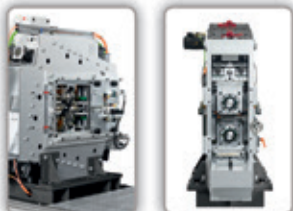
over the last fiscal year with major leaps being taken in Rajasthan, where it is engaged in a public-private partnership (PPP) model with the Government of Rajasthan for delivering over 200 government-to-citizen (G2C) and business-to-citizen (B2C) services through its kiosks spread across the state.

1 Stop Aksh has a plan to setup over 10,000 e-governance kiosks in the state by the end of 2016. The introduction of micro ATM facilities through a strategic tie-up with State Bank of India (SBI), 1 Stop Aksh kiosks are now fully equipped to carry out transactions in the rural parts of Rajasthan, which is being considered as a concrete step towards realising the Pradhan Mantri Jan Dhan Yojana campaign, which aims providing each citizen of the country with a bank account and to achieve financial inclusion and independence.

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First Metalube lubrication academy

MANCHESTER, UK-based lubricants specialist Metalube welcomed guests from Europe, China, Turkey, Egypt and the UAE to its first ever lubrication academy.

The academy was designed to keep both distributors and agents abreast of new and existing product ranges as well as to provide them with essential sales tools.

Douglas Hunt, commercial director, said: "We had a great couple of days and it's been really productive to have so many of our international team together.

"Product knowledge is an essential sales skill and fully understanding our products' features allows our representatives to present the benefits accurately and persuasively.

"We know that customers respond to enthusiastic sales staff who are passionate about their products and



○ Staff and guests at the first Metalube academy

eager to share the benefits with them." Metalube manufactures a range of industrial wire rope lubricants and many other high performance industrial lubricants. The exporter employs 34

people and has offices in China, India and Brazil.

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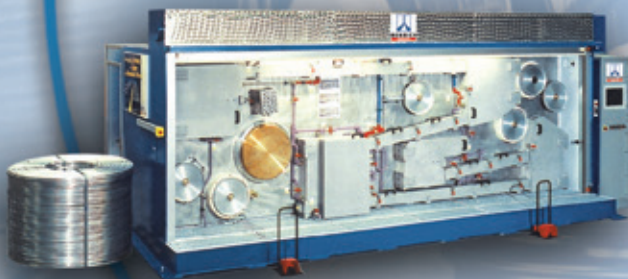


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Data centre's high fibre count

PRYSMIAN Group has supplied the highest fibre density in a high fibre count cable (1,728 fibres in 23mm) to Vocus for a "one shot" install for a data centre in Sydney, Australia.

Vocus, a supplier of telecommunications, data centre and high bandwidth connectivity solutions in Australia and New Zealand, needed a very high fibre count cable for a special customer data centre install. The nature of the installation meant that they needed to install the largest number of fibres that they could fit into the available duct space as it was a "one shot" install.

Vocus has been installing Prysmian's new Flextube™ design cable in Australia for a number of years. This relatively new range of cables has historically had a maximum fibre count up to 720 fibres. Flextube™ is a revolutionary cable design that offers extremely small and flexible cables with faster installation when compared to standard loose tube cables.

The maximum fibre count of 720 was not enough, so Prysmian offered its newly developed 1728-fibre cable for deployment, leveraging on the latest fibre innovation, BendBrightXS 200µm. This innovation has just been granted a Frost & Sullivan 2015 New Product Innovation Award, recognising its strong overall performance.

The newly developed cable is only 23mm in overall diameter, approximately the same size as Prysmian's current 624-fibre standard loose tube cable. It is the largest Flextube™ cable available and has the highest fibre density of any high fibre count cable deployed in the world (4.16f/mm²).

"This is a first for the telecommunications industry, globally," said Alex West, chief operating officer at Vocus. "As part of our commitment to building the fibre network of the new millennium, we've been trialling this Flextube™ fibre cable in smaller formats for three years, and to see a

world first being installed now is very exciting.

"One of the main benefits of this cable is the reduced cost per fibre pair. It costs roughly the same to install a 1728-fibre Flextube™ cable as it does to install a traditional 624-fibre loose tube cable.

"Using the large fibre count 1728f cable more than halves the cost per installed fibre. This is a great advantage in what is a very competitive market."

Installing such a large number of fibres on day one also reduces future truck rolls and increases potential customer connection speed.

"The 1728-fibre Flextube™ cable is a very exciting addition to our cable portfolio," said Alice Codenotti, Prysmian's telecom specialist who worked with Vocus on this project.

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Website: www.prysmian.com

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New network management tool

TO increase the ease, speed and efficiency of collaborating with its partners and to deliver faster and better services to its customers, CommScope is introducing a new management tool for the PartnerPRO™ Network.

The CommScope PartnerPRO Portal is a management software tool for partners that runs on a best-in-class data management technology created to simplify the process of collaboration for customer projects, ultimately providing customers faster access to CommScope technology.

“CommScope is making a significant investment into this new portal because we are committed to giving our partners the best tools and support to serve their customers,” said Stephen Kowal, senior vice president, Global Partners, CommScope.

Customers around the world have already seen the benefits from the

quality and consistency that PartnerPRO Network members deliver. As CommScope evolves to add new solutions to its portfolio, new partners are added to deliver these solutions. The PartnerPRO Portal offers a higher degree of integration for the worldwide PartnerPRO Network to deliver value-added services to customers more efficiently, including:

- Faster access to the newest CommScope technology such as Data Center on Demand™, iTRACS® DCIM suite, Redwood Systems® sensor network and in-building wireless solutions
- Faster access to a highly qualified CommScope partner suited to the needs of the customer
- Simplified warranty processing and archiving, to provide customers the peace of mind of knowing all sites are properly under warranty and documented

The CommScope PartnerPRO Portal

provides more detailed data relating to customers, sales and lead conversations – ultimately streamlining the process to bring CommScope solutions to customers around the world.

CommScope launched the new PartnerPRO Portal management tool to continue developing the PartnerPRO Network with improved communications of project and solution information for partners, along with other benefits that include:

- Easier access to vital financial, technical and sales information through detailed dashboards
- One-stop warranty information and processing centre
- Detailed support for local languages and currency entries
- Simplified access to business development incentive programmes

CommScope Inc – USA

Website: www.commscope.com



The 7th biennial conference returns to Düsseldorf, Germany, home of the wire industry, and is already attracting significant interest.

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To register or for more information visit www.cabwire.com

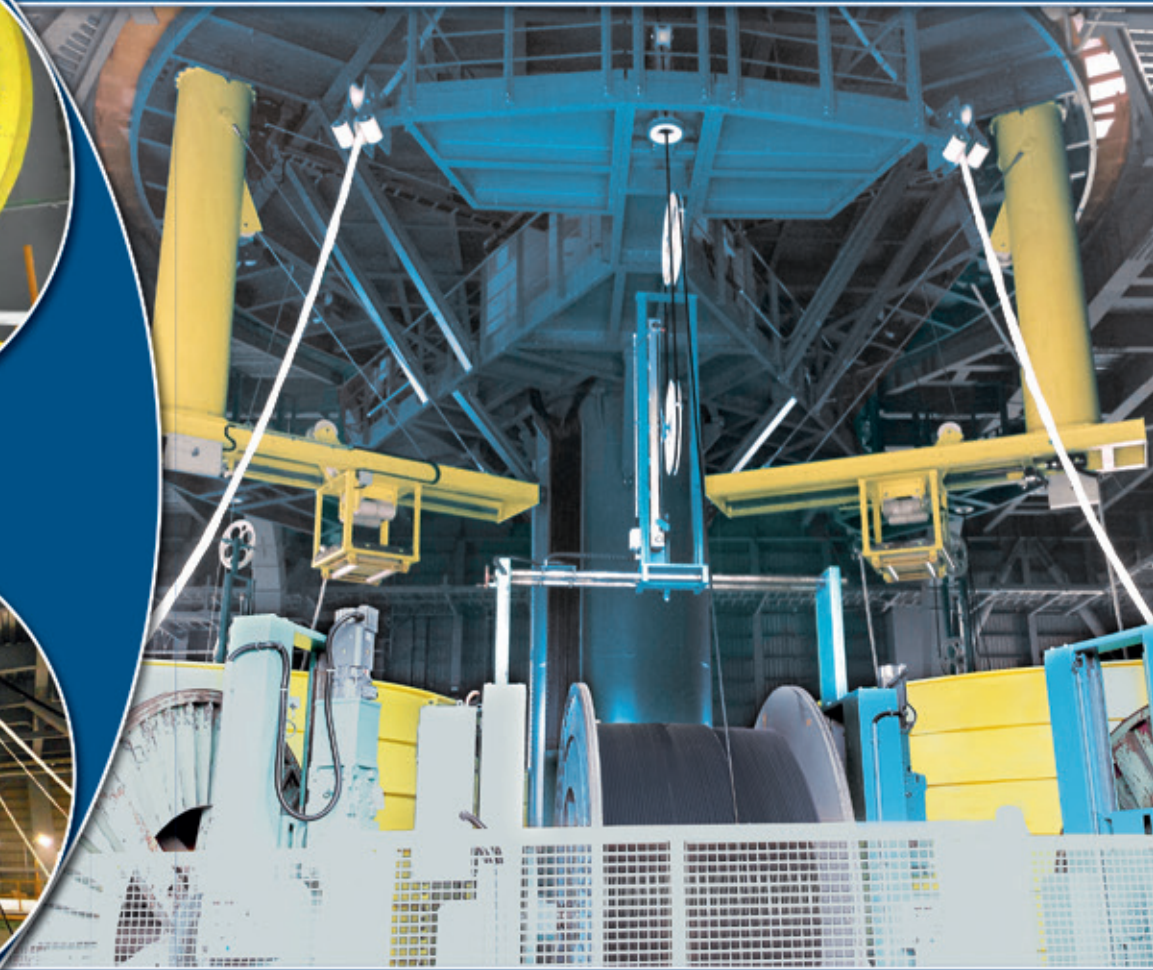


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World's longest HVDC undersea connector

INTERTEK has helped to support National Grid and Statnett in the development of an infrastructure project linking the UK and Norwegian electricity networks (NSN Link) which, when constructed, will be the world's longest high voltage direct current (HVDC) undersea interconnector.

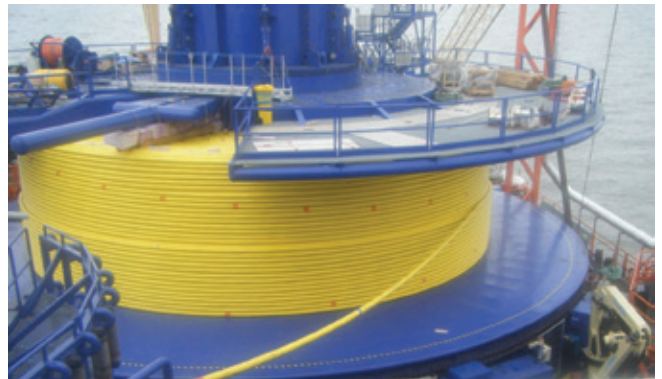
For the past four years, Intertek has acted as marine consultant for the two companies in the NSN project that culminated in successful UK marine consent for the venture in 2014.

National Grid and Statnett recently announced their final investment decision for developing the NSN, a 730km 1,400MW power cable link between the UK and Norway.

The interconnector is planned to be complete by 2021. Once operational, it will supply nearly 750,000 homes in the UK with low-carbon electricity.

Mark Pearce, National Grid's NSN link planning and consents manager, said: "We would like to thank Intertek for its sterling efforts on the project and the professionalism and commitment of the team in helping achieve key milestones on the way to the positive investment decision."

Frank Beiboer, managing director of Intertek Energy & Water Consultancy Services, said: "At Intertek, we are very proud of our successful 15-year track record with National Grid



○ The infrastructure project will link the UK and Norway

involving various interconnector projects and of our key role in helping a project as challenging as NSN through its development phase."

Intertek's specialist technical services and marine planning advice for the NSN project included cable routing constraints and feasibility studies, route engineering, survey management, environmental assessment and stakeholder engagement.

Intertek – UK

Website: www.intertek.com

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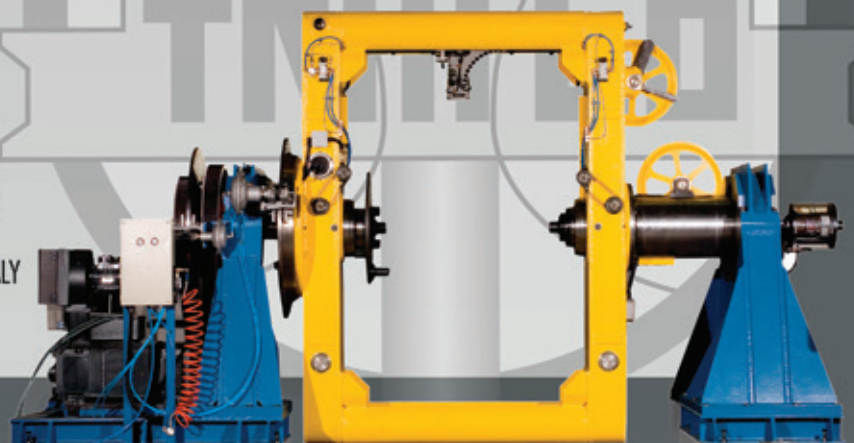
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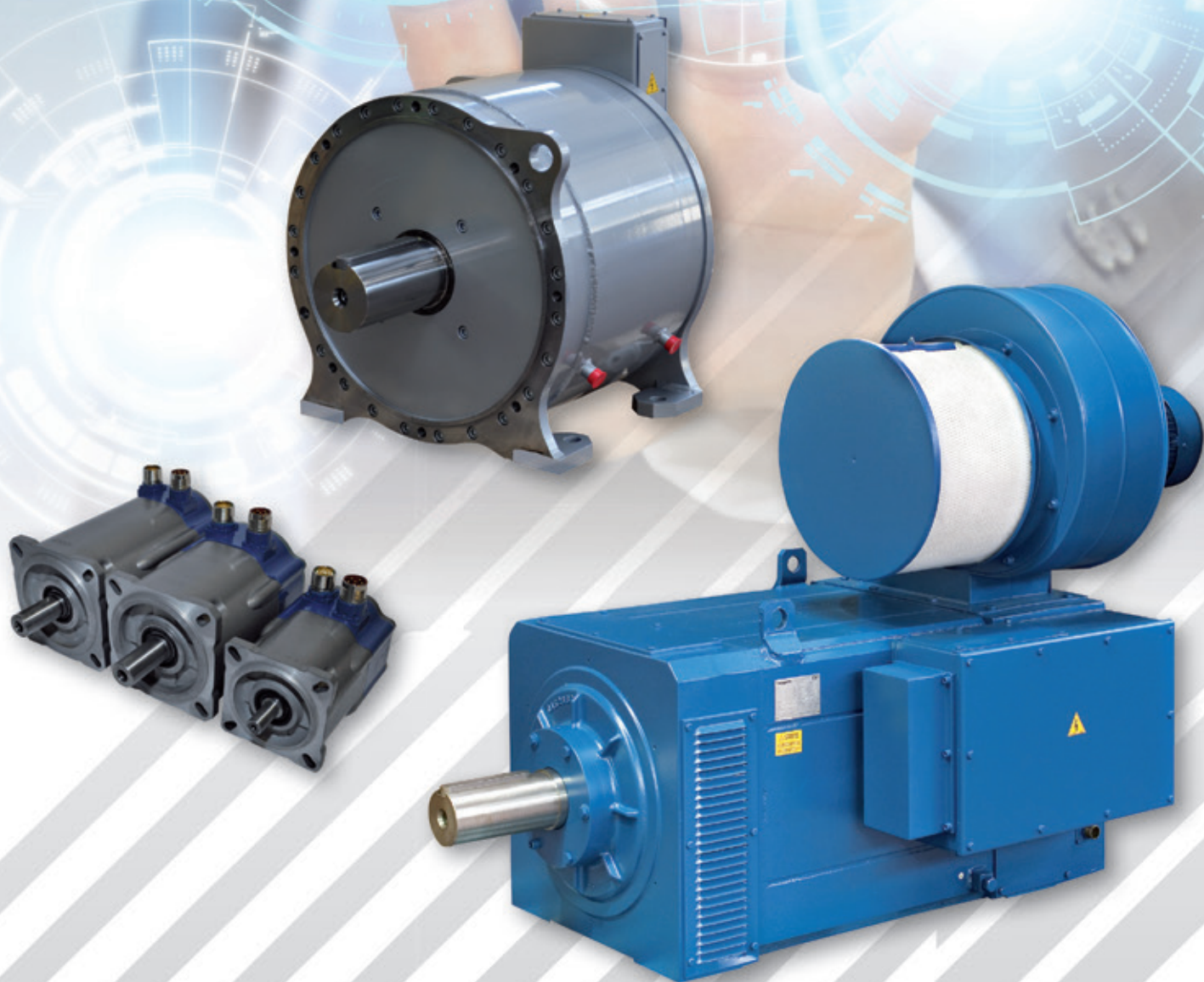


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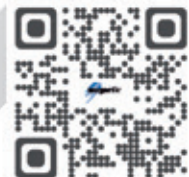


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Open house at new Chinese laboratory

AN open house at Davis-Standard (Suzhou) Plastic Packaging Machinery Co Ltd's lab facility in Suzhou, China, welcomed nearly 60 industry leaders from different companies throughout the country.

The event was the first of many planned at the location. The day's agenda included presentations on feedscrew and extruder design, microbore tube processing, extrusion of FEP resins, ultrasonic technology, parts and aftermarket services, PEBAX extrusion for medical tubing, and a live demonstration on the lab's FPVC and micro bore tubing lines.

Davis-Standard representatives from the USA and China, as well as representatives from Arkema, Dupont and Zumbach, were involved in the presentation.

Lin Jinzong, general manager at Suzhou, said: "The open house was very successful. We plan on having regularly scheduled open houses to share new technology and processes with customers. This is all part of Davis-Standard's commitment to offering the Global Advantage™ to customers in the region."

The Suzhou facility has been a game-changer for Davis-Standard due to regional manufacturing capabilities and the ability to serve every major converting and extrusion coating market in Asia.

The main Davis-Standard products being manufactured in Suzhou and sold throughout the region include extruders up to 90mm, PLC control systems and high-speed FPVC systems for medical tubing.

Additionally, the Suzhou facility can assemble and refurbish gear boxes and control panels, and there are plans to add fabrication and assembly of downstream equipment.

Davis Standard – USA

Website: www.davis-standard.com



○ FPVC medical tubing at the Suzhou plant



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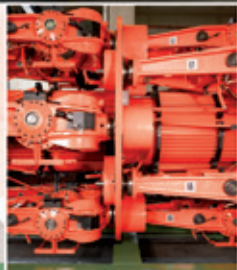
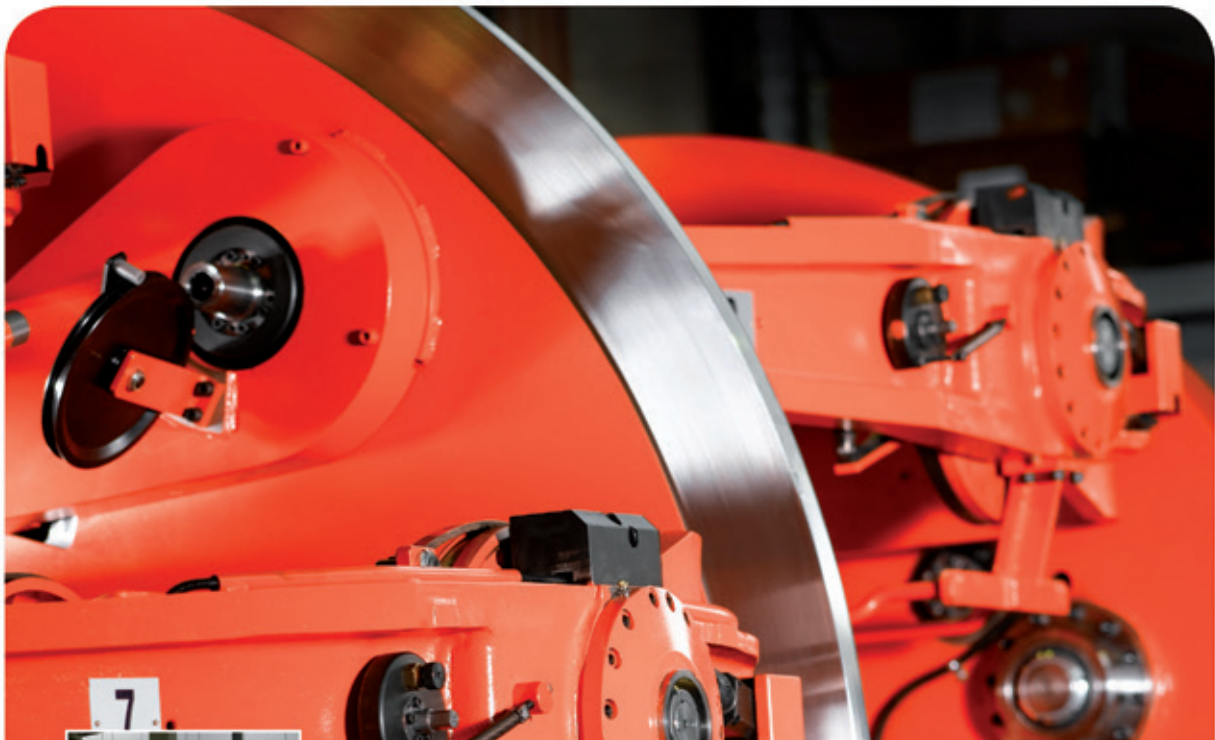
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Wind power in Senegal

AMERICAN Capital Energy & Infrastructure (ACEI) is planning to invest €76m in a 151.8MW wind power project in Senegal.

Believed to be the largest wind farm planned in West Africa, the €305m project is being developed in three phases of 50.8MW over three years, and is expected to reduce the country's dependency on oil-fired power generation. ACEI will work with Sarreole, the project developer for funding development costs and project equity.

The project is in accord with the Senegal government's efforts to diversify the energy mix, as well as to increase the use of renewable energy to meet the energy demand.

ACEI's CEO and co-founder, Paul Hanrahan, said: "The Senegalese government has stated that it is committed to shifting from diesel-based power generation to lower-cost energy sources, such as wind power, to lower the cost of electricity, and has taken steps to further reform its electricity sector in a way that makes it an attractive place to invest."

Societe Nationale d'Electricite du Senegal (Senelec), the national utility company of Senegal, will purchase the power generated from the facility under a 20-year power purchase agreement.

American Capital Energy and Infrastructure – USA
Website: www.acei.com

Optic fibre sees increases

Between January and April 2015, Chinese optical communication companies produced 103 million kilometres of optical cables, an increase of 15.25 per cent year-on-year according to data from a Chinese institution of industry research.

The data shows that the optical cable output from Jiangsu Province ranks first, with a 46.8 per cent share of the national total output. Jiangsu Province's optical cable production reached 48.2643 million core kilometres, an increase of 13.53 per cent year-on-year.

Hubei Province produced the second largest optical cable output, with 17.6539 million core kilometres and a year-on-year increase of 22.27 per cent, accounting for approximately 17.13 per cent of the total amount.

Optical cable output from Chongqing experienced the biggest increase compared with the previous year. In 2013, Chongqing SDGI Optical Fiber Cable Co Ltd invested in Fuling New District, to achieve its target of producing 2 million core kilometres of optical cables per year.

It brought new capacity for optical cable production in Chongqing, and a total of 863,700 core kilometres of optical cables were produced in the first four months – an increase of 3,921.84 per cent year-on-year.

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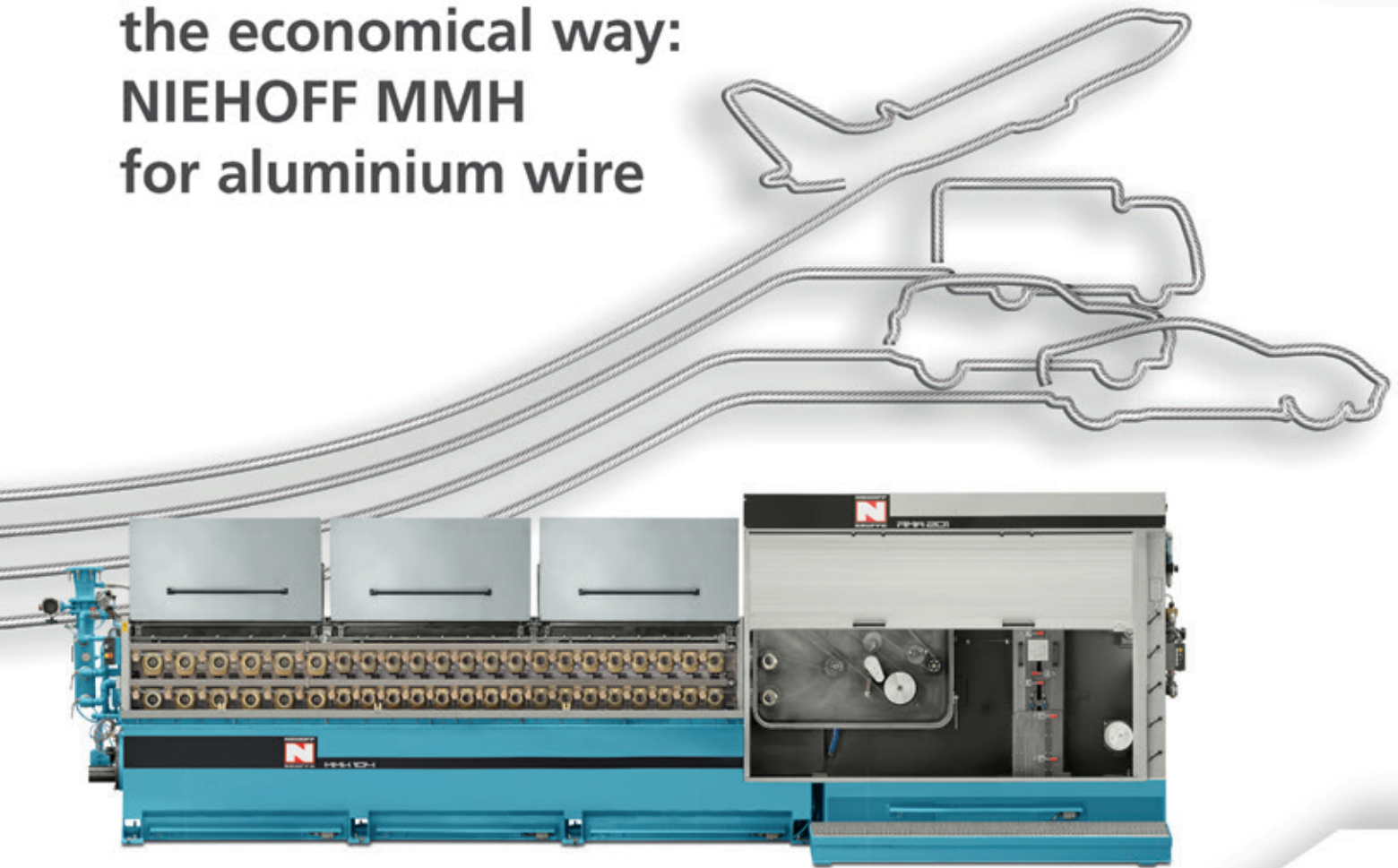
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Gladding acquires Eaton braiding assets

GLADDING Braided Products, a New York state wire braid manufacturer and braided shielding provider, has acquired the braiding equipment assets of Eaton Filtration LLC's Belgium braiding operations.

This acquisition expands Gladding's capabilities for shielding wire over larger cables.

Its expanding technology is now used on cables servicing oil, natural gas, electric utility, and submersible oceanic installations.

Besides its own products, the Belgium equipment will expand Gladding's capacity for overbraid shielding (of wire and textile fibres) via its sub-contact braided shielding operations, doing the work for other cable companies.

As more companies choose to "out-source" their braided shielding (copper, steel, bronze) to Gladding's New York state factory, the company's added capacity will assure faster turn-around times and added capacity.

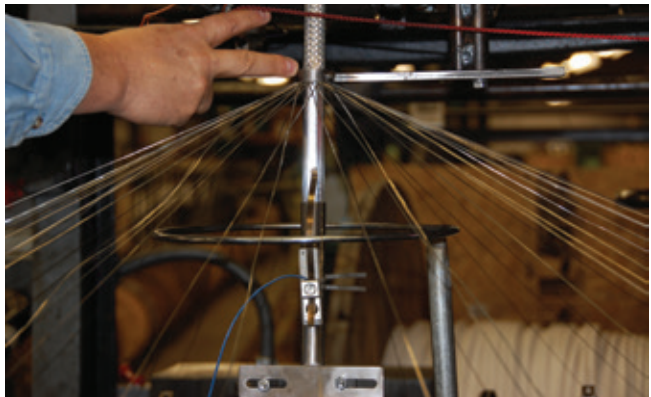
"With this acquisition," explained D H Sparky Christakos, Gladding's president, "Gladding is prepared to further sub-contract for others in the cable industry.

"Cable manufacturers are recognising that outsourcing

their braid work to Gladding saves labour, time, space and manpower. Turn-around time is critical, and this additional equipment from Belgium gives us capacity to offer a one-week turnaround, if needed."

The Eaton machinery has been installed in Gladding's main plant, a 100,000ft² braiding facility in Chenango County, near Syracuse, New York.

Gladding Braided Products – USA
Website: www.gladdingbraid.com



○ The deal will increase capacity and give a faster turnaround



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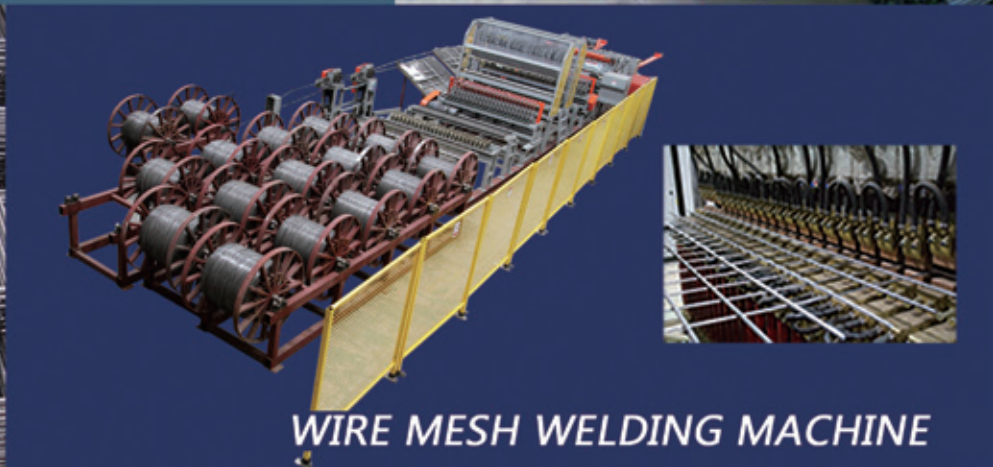
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Equipment is still installed

WIRE and Plastic Machinery has recently acquired wire and cable manufacturing equipment, which is still installed in the western USA.

The equipment is being offered for immediate sale.

Highlights include:

- Northampton 1.8m (1995) and 1.25m (1994) double twist bunchers
- MGS 1.25m double twist buncher (1995)
- Syncro FX-13 rod breakdown machine 400HP DC, F annealer, 30" (760mm) dual spooler
- CWF rod breakdown 8mm–1.6mm, 13 die, F annealer, Bongard 1,050mm drop coiler (1999)
- 560mm (22") Watson 37-wire 6+12+18 rigid strander. AC vector motors and drives
- 560mm (22") Watson 61-wire, 6+12+18+24 rigid strander. AC vector motors and drives
- Two 4½" (114mm) Davis Standard 24L/D sheathing lines
- Two Skaltek MP-360 coiling lines
- 600mm Merritt Davis dual spooler

Others include 1.2m Edmands and 760/630mm Lesmo DT bunchers, 1.5m/1.8m MGS rewind line.

Wire & Plastic Machinery Corp – USA

Website: www.wireandplastic.com

Cable protection

The Shanghai water authority has launched a joint campaign with local police to protect fibre optic cables buried in river and sea beds.

The water authority has dispatched a 50-strong team of officers, with ships, speed boats and helicopters, to patrol the Yangtze River mouth and East Sea near Chongming Island.

The threat to the cables, as also to gas and oil pipelines in the area, is from fishermen's nets and iron anchors. About 90 per cent of damage last year was caused by fishermen.

Shanghai Water Authority – China

Website: www.shanghai.gov.cn



○ Northampton 1.8m double twist buncher, made in 1995

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www.wirexdiamonddies.com

Two new nuclear plants for South Korea

South Korea's government plans to build two nuclear power plants with a combined capacity of 3,000MW, in line with plans to reduce its reliance on coal for power generation and to lower greenhouse gas emissions.

The South Korean trade, industry and energy ministry said that the government has abandoned its proposal to construct four coal-fired power plants.

Part of the state-run utility Korea Electric Power, Korea Hydro and Nuclear Power currently operates 23 nuclear reactors, and plans to construct another 11 units.

Reuters reported that the ministry expects that the two nuclear plants will be commissioned in 2028 and 2029.

With this plan, South Korea will have 36 nuclear reactors by 2029, which will represent 28.5 per cent of its power generation capacity.

The plan comes with domestic electricity usage estimated to increase annually by 2.2 per cent to reach 656,883GWh in 2029.

The country develops a plan every two years to reprioritise and set the ratio of energy sources.

Korea Electric Power – South Korea

Website: www.kepco.co.kr

Karbala Refinery Project opts for Nexans low voltage cables

NEXANS has been awarded a contract by HDGSK Joint Venture to supply a low voltage cable system for the Karbala Refinery Project in Iraq.

Iraq's State Company for Oil Projects (SCOP) will rely on Nexans low voltage (LV) cables for the Karbala Refinery Project.

The contract was awarded by HDGSK, a joint venture of four major Korean engineering, procurement and construction (EPC) companies: Hyundai Engineering and Construction and Hyundai Engineering; GS Engineering and Construction; and SK Engineering and Construction.

As part of the contract, Nexans will manufacture and supply 3,500km of LV cables for the project.

The new Karbala Refinery Project is the largest contract won by Korean EPCs to date, and is worth over \$6bn.

In this framework, HDGSK will build an oil refinery capable of processing 140,000 barrels of crude oil a day into LPG, gasoline, diesel and other petrochemical products in Karbala,

a city 120km south of Baghdad, Iraq. Completion is expected in 2020.

Nexans' LV cable system will be equipped with PVC hydrocarbon resistance which features high performance. Based on its global network of technical know-how, Nexans succeeded in fulfilling the customer's technology requirements.

In-Koo Kang, chief executive officer, Nexans, Korea, said: "We are pleased to be a part of a major overseas project with HDGSK.

"A long-standing relationship with our customer and our solution to optimise the total cost of ownership (TCO) of the installation were the key to winning this contract.

"Committed to customer satisfaction, Nexans has been developing products in response to customer demand."

The cables will be manufactured in Nexans' plants in Korea and Turkey. Delivery will start in January 2016 and is expected to be completed by March 2017.

Nexans – France

Website: www.nexans.com

'Fantastic' start to the year for Cimteq

THE first part of 2015 has seen cable and design manufacturing company Cimteq get off to a fantastic start.

With multiple new business wins under its belt it is easy to see why this rapidly growing company is quickly becoming a leading producer of cable manufacturing technology around the globe.

With large companies such as Datwyler, Northwire and Habia adopting the products during the first quarter of 2015, the company is enabling cable manufacturing to become a more efficient and profitable industry to operate in.

The benefits that Cimteq's products deliver in terms of streamlining the pricing and costing process are attractive to its customers.

Amongst its activities this year the company has provided a bespoke solution for EIS Wire and Cable. The Massachusetts, USA-based company went to Cimteq looking to replace an existing, out-of-date system with a platform that would allow it more functionality whilst streamlining its existing systems into a single operating entity.



○ This year's Interwire helped Cimteq to a busy start to 2015

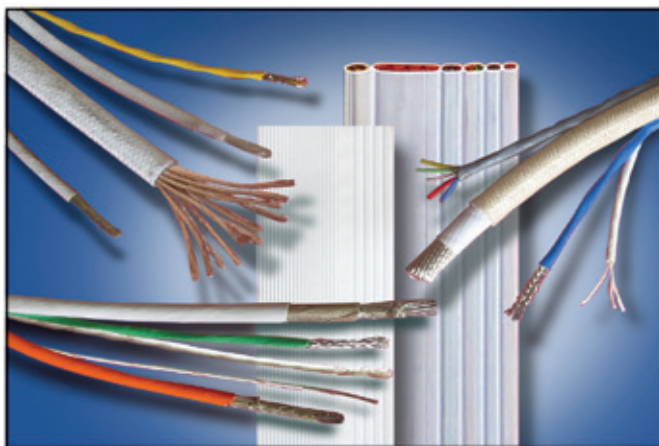
In addition the speciality wire and cable manufacturer Nuhas Oman has recently started using CableBuilder to aid it in product design and manufacturing, particularly in relation to power cables.

The Middle East-based company was attracted to CableBuilder for its ability to automate many steps of its design and costing procedure. The platform can be seamlessly integrated with existing systems, ensuring minimum disruption to production.

Further deals with Habia, located in Sweden, and across Datwyler's Chinese, Swiss and Czech Republic plants, have also been agreed. Both projects will allow Cimteq to transform the productivity, efficiency and, as a direct result, profitability of both businesses.

Habia will see a complete change in the way it works in terms of design and quotations, with several outdated systems being replaced by two streamlined, completely compatible and integrated systems.

Cimteq Ltd – UK
Website: www.cimteq.com



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Testing to all international cable standards

THE British Approvals Service for Cables (BASEC) has announced it will now provide low and medium voltage cable testing to all International Electrotechnical Commission (IEC) cable standards.

It was a common misconception that BASEC only tested cable to British or European cable standards, however the testing and certification body serves reputable cable manufacturers and standards authorities across the world.

When selling cable product worldwide, cable manufacturers need to ensure the product is in accordance with the cable standards set by that country's regulator, which could be British, European or international standard requirements, and even private or sector standards.

Dr Jeremy Hodge, chief executive at BASEC, said: "As our service has become recognised in more territories, we have experienced an increase in the demand for testing to IEC cable standards and therefore we have expanded our cable testing scope to include all low and medium voltage IEC cable standards where previously this was limited to a few key types.

"The benefit to cable manufacturers is where they require multiple testing to cover British and European (BS EN) standards and IEC standards, we can test to both standards at the same time where this is permitted. We can then provide a double test report for one cable, and potentially award two certificates."

One of the most common IEC cable standards BASEC tests to is IEC 60502, which is cable intended for fixed installation indoors, outdoors, underground or in the presence of water.

When a certificate has been issued, a cable manufacturer can list the standards it has been awarded against the cable product it is selling.



○ Low and medium voltage cable testing at BASEC

In this instance, a cable manufacturer may describe its cable product to potential customers together with the equivalent British Standards it has achieved, for example: Low voltage power cables with XLPE insulation and PVC sheathing to IEC 60502-1, BS 5476, and BS 7889 or medium voltage power cables to IEC 60502-2 up to 18/30 (36) kV and to BS 6622 up to 19/33 (36) kV.

"Our message to cable buyers is always specify a recognised standard and an independently approved cable, and check the cable markings on delivery and before installation to ensure it meets the criteria for its intended use. If suspicious cable is found, contact BASEC or your local regulatory authority for advice," added Dr Hodge.

BASEC was recently awarded ISO/IEC 17025:2005 accreditation for its world-class cable testing laboratory based in the UK. This is one of the highest levels of recognised quality any testing or calibration laboratory can attain.

BASEC – UK
Website: www.basec.org.uk



○ A wide range of springs from Leeco Spring International

Leeco springs into action

Leeco Spring International is a full service spring manufacturer that stocks a wide range of both compression springs and extension springs, but also has the capability to custom-make springs for almost any industry or application. The company has an experienced design and engineering staff that can assist with any custom application, and can also offer secondary services and load testing capabilities.

General products include compression springs, clock springs, conical springs, extension springs, flat springs, garter springs, instrument springs, leaf springs, motor springs, precision springs, torsion springs, variable rate springs, Belleville washers, cantilever beams, rings, stampings and wire forms.

Leeco Spring International – USA Website: www.leecospring.com

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Student scholarship

Sri Lanka's Kelani Cables PLC has awarded an educational scholarship to Thashmila Samarasekera of Ratnapura Seevali Central College. Thashmila, who achieved the highest marks in his 5th Grade scholarship examination was presented with the scholarship by Kelani Cables' CEO, Mahinda Saranapala.

The annual scholarship is awarded to children of members of the Kelani Visura Electrician club. Scholarship holders receive financial assistance up to university entrance. Thashmila is the son of Kelani Visura Ratnapura zone society member Upul Rajeewa Samarasekera.

General manager, marketing, Anil Munasinghe said that as a socially responsible company, Kelani Cables always looks to citizens' wellbeing. "We are very concerned about wellbeing of citizens in Sri Lanka in addition to making profits as a company. Thus we engage in various CSR programmes throughout the year. Our loyal customers who endorse the Kelani Cables brand too can be proud of themselves as they too are part and parcel of [our] CSR endeavours," said Mr Munasinghe.

Kelani Cables PLC – Sri Lanka
Website: www.kelanicables.com

New president and CEO for Davis-Standard

DAVIS-STANDARD LLC has appointed James Murphy as president and chief executive officer.

Mr Murphy has been an integral part of Davis-Standard for more than 25 years, progressing through various leadership roles in sales and engineering management.

He is also one of the most respected and active leaders in the plastics industry, most recently serving as chairman of NPE 2015.

Prior to this promotion, Mr Murphy was a member of Davis-Standard's office of the president and responsible for leading the company's sales and marketing efforts. In his new role, he will be supported by a strong leadership team in the USA, Europe and Asia.

"I am honoured by the opportunity to lead Davis-Standard and excited about our future," said Mr Murphy.

"The Davis-Standard family is almost 900 strong and working around the clock to serve customers worldwide. We are a market leader with outstanding employees and industry partners. We will continue to work together to build stronger customer relationships, cutting edge technology, and superior service and support."



○ *New president and CEO James Murphy*

Robert Geckle, a current member of Davis-Standard's board, will support the leadership team as chairman. Mr Geckle has been part of the board of directors for over a year and has significant executive experience with industrial companies and private equity. His most recent corporate position was as president of the Textron Fluid and Power Systems Group. Prior to that, he was president of Branson Ultrasonics, the market leader in plastic joining technology.

Davis-Standard LLC – USA
Website: www.davis-standard.com

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○ 在莫斯科展览中心今年俄罗斯线缆展上的参观者

俄罗斯国际线缆及线材展挑战经济环境

2015年5月俄罗斯国际线缆及线材展，作为俄罗斯和周边地区最受关注的电线电缆和线材加工行业展，在俄罗斯莫斯科Expocentre展览中心举行。

尽管俄罗斯的经济环境压抑，主办方 - Messe Düsseldorf 和 Messe Düsseldorf Moskau以及合作伙伴VNIIPK JSC（俄罗斯线缆研究与发展研究所） - 仍然不遗余力争取更多的国内外参展商前来莫斯科参展。

在为期四天的展会上，多达200家参展商展示了其创新产品和服务。这表明，对俄罗斯联邦来说，该平台是多么的重要。来自电线电缆和线材加工行业的2,500多名专家与会，堪称莫斯科影响最广泛的B2B盛会。

Messe Düsseldorf, 总裁兼首席执行官Werner M Dornscheidt在紧张的政治经济形势下，乐观谨慎地评估了市场机遇，他表示：“尽管当前形势非常不容易，但我相信，从长远来看俄罗斯电线电缆市场的前景是乐观的。我们已经克服了许多全球性的经济挑战。”

“这告诉我们，那些在困难时期仍然坚持下来的，市场一旦回暖，他们就是赢家。”他补充说：“事实上，俄罗斯专家参加国外的展会已变得更加困难，对他们来说这也是非常有利的。我们对这样的参展商人数很满意。”

来自25个国家的参展商参加了2015俄罗斯国家线缆及线材展 - 包括大牌制造商、专家团队、长期的参展商和首次

前来参展的商家。特别代表包括来自德国、意大利和奥地利的供应商。企业组团参展的国家有德国、奥地利、中国和意大利。

此次俄罗斯展得到了多家国内外行业协会的支持：IWMA（国际线材机械协会）、IWCEA（国际电线电缆参展商协会）、VDKM eV（德国电线电缆机械制造商协会）、VÖDKM（奥地利电线电缆机械制造商协会）、IWCEA法国（国际电线电缆参展商协会）、WCISA（电线电缆工业供应商协会）、ACIMAF（意大利线材机械制造协会）和SECR1（上海电缆研究所）。

Messe Düsseldorf GmbH - 德国
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新实验室迎来开放参观日

Davis-Standard苏州塑料包装机械有限公司在其新实验室举行开放参观活动，吸引了来自全国不同企业的60多位行业领导参加。本次活动为苏州公司的诸多规划项目开了个好头。

当天的议程包括展示喂料螺杆挤出机设计、微孔管加工、FEP树脂挤压、超声波技术、零部件和售后服务、PEBAX挤压、医疗管挤压，以及

现场演示实验室FPVC和微孔管生产线。Davis-Standard中美双方代表连同Arkema、Dupont、Zumbach公司代表参加了相关设备和生产线的演示。

苏州公司总经理林金宗(音译)表示：“公司举行的开放参观活动非常成功。今后我们将定期举行类似活动，与客户分享新的技术和工艺。这也是Davis-Standard重要举措之一，致力于

为该地区的客户提供具有全球优势的系列产品。”苏州工厂因其地区制造能力、服务于亚洲这一重要转型与挤压涂覆市场的能力，而成为Davis-Standard公司征服市场的重要角色。

Davis-Standard制造与销售的主要产品包括高达90毫米挤出机、PLC控制系统和用于生产医疗导管的高速FPVC系统。

○ 苏州工厂FPVC医疗导管生产系统



此外，该苏州工厂还能够组装与翻新齿轮箱和控制面板，并计划增加下游设备的制造与组装能力。

Davis Standard – 美国
网址：
www.davis-standard.com

全新的网络管理工具

为了提高与合作伙伴协作的简便性、速度和效率以及为客户提供更快和更好的服务，CommScope将推出适合于PartnerPRO™网络的全新管理工具。

CommScope PartnerPRO门户是一款面向合作伙伴的管理软件工具，它依托于所创建的一流数据管理技术，用于简化客户项目协作的流程，从而使客户可以更快地访问CommScope技术。

“CommScope对此新门户进行大量投入，因为我们致力于为我们的合作伙伴提供最好的工具和支持，以为其客户提供服务，” CommScope全球合作伙伴部门高级副总裁Stephen Kowal表示，“PartnerPRO门户通过多种功能提供一种全新的工作方式，这些功能将从根本上改变我们与合作伙伴的协作方式。”

全世界的客户都已看到PartnerPRO网络成员所提供的高质量 and 一致性服务所带来的好处。随着CommScope为其产品组合添加越来越多的新解决方案，新的合作伙伴也会不断加入，以提供这些解决方案。PartnerPRO门户可以实现全球PartnerPRO网络的更高集成度，从而更高效地为客户提供增值服务，包括：

- 更快访问最新CommScope技术，例如Data Center on Demand™、iTRACS® DCIM套件、Redwood Systems®传感器网络和室内无线解决方案
- 更快寻找到适合于客户需求的高质量CommScope合作伙伴
- 简化质保处理和存档，使客户放心地了解所有站点已有保修并被正确记录

CommScope PartnerPRO门户可以提供与客户、销售相关的详细数据，并引领对话 - 最终实现流程的精简，并高效地将CommScope解决方案向全世界的客户进行推广。

CommScope推出了新的PartnerPRO门户管理工具，以通过改进后的项目沟通和针对合作伙伴的解决方案，以及其他优势继续改进PartnerPRO网络，这些优势包括：

- 通过详细仪表盘更轻松访问重要金融、技术和销售信息
- 一站式保修信息和处理中心
- 本地语言和货币条款的详细支持
- 业务开发激励计划的简化访问

“PartnerPRO网络可以更迅速、更快捷地将客户需求与CommScope多样化资源相对配，” Kowal先生表示。“该全新平台有助于CommScope利用优质的服务灵活地将其解决方案推向市场，而这些优质服务也正是我们的客户对PartnerPRO网络成员的期望。”

CommScope Inc – 美国
网址：www.commscope.com

塞内加尔风电场

American Capital Energy & Infrastructure (ACEI) 计划投资7600万欧元于塞内加尔的151.8MW风电项目。

该项目总投资成本3.05亿欧元，被认为是西非最大的风力发电场。

项目共分三期，每期规模50.8MW，建设期为三年，可大降低国家对燃油发电的依赖。项目由法国公司Sarreole承包，ACEI合作提供开发成本和股权投资。

塞内加尔政府计划将能源结构多元化，并增加再生能源的利用率来提高能源安全性，以满足国内迅速扩张的能源需求。

ACEI CEO兼联合创始人Paul Hanrahan表示：“塞内加尔政府已经声明，政府将致力于转变供电方式，以柴油为主的发电要向低成本能源发电转移，例如风力发电，并已采取措施改革电力部门，使之成为一个有吸引力的投资领域。”

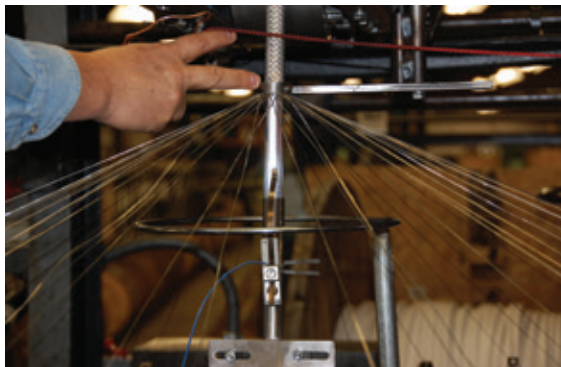
根据一项20年期购电协议，该项目所发的风力将卖给塞内加尔国家电力公司Societe Nationale d'Electricite du Senegal (Senelec)。

American Capital Energy and Infrastructure – 美国
网址：www.acei.com

Gladding Braid收购Eaton Filtration 编织资产

Gladding Braided Products是纽约钢丝编织制造商和编织屏蔽供应商，收购了比利时编织运营商Eaton Filtration LLC公司的编织设备。

此次收购扩大了Gladding较大型电缆屏蔽线的生产能力。Gladding膨胀技术现已应用于电缆，这些电缆广泛应用于石油、天然气、电力和海洋潜水设施。



除了自身产品，比利时设备将通过其转包编织屏蔽业务拓展Gladding的编织屏蔽（电线和纺织纤维）能力，为其他电缆公司提供服务。

由于越来越多的公司将其编织屏蔽（铜、钢、青铜）业务“外包”给Gladding纽约工厂，Gladding新增产能将保证周转时间更快和产能更大。

○ 产能增加，周转更快

“通过此次收购，” Gladding总裁DH Sparky Christakos解释说：“Gladding准备进一步发展转包业务。电缆制造商认识到，将编织工作外包给Gladding将节约人力、时间和空间等成本。周转时间非常关键，从比利时公司收购的额外设备必要时将为我们提供一个星期的周转能力。”

Eaton机械安装在Gladding的主要工厂，该厂拥有10万平方英尺的编织能力，位于纽约锡拉丘兹附近的希南戈县。

Gladding Braided Products – 美国
网址: www.gladdingbraid.com

光的愈合力

沿着导电路径的机械故障可能导致电子装置的意外关机，最终缩短设备的寿命。磨损的电子设备，进行动态和活力运动，与传统的平面电子器件相比，更容易引起导电故障。为了解决这个问题，业界已经提出了各种愈合导电体的方法。

韩国高级科学技术研究院 (KAIST) 化学与生物分子工程系的Jung-Ki Park 和 Hee-Tak Kim教授取得了最新研究成果。该团队开发了一种光动力愈合电导体。通过使用光致变色软材料（比如偶氮苯材料）来实现光力愈合。光致变色材料可以沿着光偏振定向移动。

关于光偏振材料运动的定向性是一种有效的愈合工艺，它不受裂纹扩展方向、光入射角和裂纹数的影响。

通过放置导电材料银纳米线 (AgNWs) 到柔性光致变色软材料的面层上，这种光学愈合材料具有完全的导电性。值得注意的是，AgNWs被发现与光致变色软材料即使在光学愈合过程中都保持整合接触。AgNWs和光致变色软材料分别充当导电通路和光动力承载工具。

该组合为柔性电子导体提供了快速、非侵入性的按需愈合功能，使动态变形磨损设备的光力愈合成为可能。

Korea Advanced Institute of Science and Technology (KAIST) – 韩国
网址: www.kaist.ac.kr

Aksh利润攀升, 拟扩张和新增就业机会

新德里Aksh Optifibre Limited公司是光纤、光缆和FRP棒材的领先制造商，日前宣布了其2014-15财年与季度报告。公司不计特殊项目和税前净利润增长67%至3.167亿卢比。

董事会已批准了一项扩张计划，拟将拉贾斯坦邦Reengus生产工厂的光纤通信 (OFC) 业务提高80%以上。同时，FRP业务也计划通过其迪拜全资子公司AOL FZE提升75%。

公司将投资逾950万卢比，用于两家工厂的扩张和建立额外生产线。此次扩建拟通过筹资和进行内部审计。

董事会还意识到，公司须大力投资于人力资源，批准了各个层面的人才招聘方案，以扩大业务。

董事会认为，我们要继续保持FRP和OFC制造商的领导地位，就必须通过投资，来满足印度以及全球范围内电信设备客户的未来需求。

财务总监Satyendra Gupta先生表示：“公司上一财年表现非常出色，生产和服务部门都具有强劲增长的势头。”

“凭借其强劲的订单预定，并洞察市场，进行生产与服务扩张，这些举措必将助力公司巩固其当前的领先地位和推动未来的发展。”

“中央政府承诺将大力投资于数字印度计划，预计斥资超7000亿卢比，因此，国内OFC市场前景乐观。我们非常高兴能与中央政府和各州政府一起，在全国部署端到端OFC网络。”

公司的电子政务网1 Stop Aksh在过去的一年里表现也非常好，借此拉贾斯坦邦的各项服务实现了质的飞跃，包括公私合作模式 (PPP)，以及通过遍布该州的电子政务信息亭拉贾斯坦邦政府提供超过200项政府对公民 (G2C) 和企业对公民 (B2C) 服务。

1 Stop Aksh计划到2016年底在该州设立1万多个电子政务亭。通过与印度国家银行 (SBI) 建立战略联盟，共同推出微ATM设备，拉贾斯坦邦农村地区的1 Stop Aksh信息亭现已能够进行交易，这被认为是实现国家金融包容性 (Pradhan Mantri Jan-Dhan Yojana) 而迈出的坚实一步，旨在为国家的每一位公民提供一个银行账户，从而实现金融的包容性与独立性。

Aksh Optifibre Limited – 印度
网址: www.akshoptifibre.com

新任总裁兼CEO

Davis-Standard LLC任命James Murphy为公司总裁兼首席执行官。Murphy先生在Davis-Standard供职25年之久，担任过销售和工程管理等领导岗位。他也是塑料行业最受尊重和最活跃的领导人之一，最近还担任了NPE 2015主席一职。

○ 新总裁兼CEO James Murphy



在此晋升之前，Murphy先生是Davis-Standard总裁办公室的成员，负责领导公司的营销工作。担任新的角色后，他将获得美国、欧洲和亚洲强有力领导团队的支持。

“我很荣幸能有机会领导Davis-Standard，同时，我对公司的未来也充满了无限期望，”Murphy先生说。“Davis-Standard差不多是900强，公司员工日以继夜地努力工作，为全球客户提供最好的服务。我们是市场领导者，拥有优秀的员工和行业合作伙伴。我们将继续携手合作，以建立更稳固的客户关系，为客户提供尖端技术和卓越的服务与支持。”

Robert Geckle, Davis-Standard董事会现任成员，被委任主席职务，支持管理团队。Geckle先生担任董事会成员已一年多，拥有丰富的与工业企业和私募基金的行政经验。他最近的公司职位是Textron Fluid and Power Systems Group总裁。在此之前，他担任Branson Ultrasonics总裁，该公司是塑料连接技术的市场领导者。

Davis-Standard LLC – 美国
网址: www.davis-standard.com

强化领先地位

Numalliance收购了EMS (Electro Mécanique Saverne)。EMS专业设计与制造无屑终端成型机器和用于管道的刀片切割机。

这次收购后，Numalliance拓宽了其管道加工范畴，为各行各业提供服务。事实上，公司提供的解决方案广泛应用于汽车（座椅框架，排气装置）、购货点（超市手推车，展示货架）、家具、农业应用等。

Numalliance本身就是三家公司合并而成的：Macsoft、Latour和Satime，其中最古老的拥有超过140年的悠久历史。公司实力雄厚，主要依托其机电专长：力学杂化和用户友好软件的内部开发，因此得以开发国际认可的数控机床。

2013年10月，Numalliance成功与Silfax整合，Silfax是世界著名的管道弯曲专家，在航空业享有声誉。

EMS成立于1949年，位于法国斯特拉斯堡附近，将获得Numalliance中国、德国、印度、墨西哥、美国以及斯洛伐克等子公司的支持，另外，还将通过其国际销售代理商和销售工程师网络为其提供帮助。公司在全球的工作人员有225人，销售额超过4500万欧元，产生的销售收入92%来自法国以外，50%来自欧洲以外。

“通过此次收购，我们不断扩大我们的能力，以互补、兼容的产品为我们的客户提供全球性的、全面整合的解决方案。”首席执行官Joël Etienne表示。

“EMS的加盟非常契合公司的动态运作和持续发展。今年我们制定的内、外部增长目标都比较高，”他补充说。

Numalliance – 法国
网址: www.numalliance.com

重建与升级电线 电缆制造机器

德国Queins Machines利用多年的生产经验重建与升级广泛系列的电线电缆制造机器。二手设备可完全剥离和重新制造。易损件如轴承、皮带、刹车、气压/液压元件都可以被更新，新的电气线路和“一种必备的”全新电气控制使用最新技术和添加节能数字驱动和现代化的PLC控制。其他服务包括升级机器性能，例如修改综合生产线的构成以及新旧部件混合生产线，保证成本合理，产出最高。

Queins Machines GmbH – 德国
网址: www.queins.com

保护电缆

上海水务局与当地警方联合开展了一项关于保护水下、海底光纤电缆的行动。水务局已派出一个50人的强大队伍，并配备有船、快艇和直升机，在崇明岛附近的长江口和东海巡逻。渔民的渔网和船铁锚已经威胁到了该地区电缆、天然气和石油管道的安全。中国电信运营部副主任吴明珍(音译)透露，去年大约90%的损坏是渔民造成的。渔船被要求离开部署有电缆的禁区，水务局副局长沈逸云(音译)说道。80%以上的通信电缆和互联网埋设在该区域，将连接中国与全球200多个国家和地区。

Shanghai Water Authority – 中国
网址: www.shanghai.gov.cn

有助于降低客 户成本

CILS专业打印条形码、序列号和批号，为所有工业应用提供即时、定制的打印标签。CILS是高性能“即时应用”条形码和“可变数据”标签的领先制造商，拥有3,500多种特定应用耐用标签材料/胶粘剂组合，可抵抗各种恶劣工业环境，包括极端温度(+388°C)、化学品/溶剂、磨损、石油/燃料等。制造的标签尺寸、形状和颜色各异，并且可预先印有公司标志。CILS在全球范围内提供即时同一天的生产和运输服务。

CILS – 英国
网址: www.cils-international.com

数据中心部署最高密度光纤电缆

Prysmian Group为Vocus交付了最高密度的光纤电缆（23毫米中有1,728根光纤），用于澳大利亚悉尼一座数据中心的一次性安装。Vocus是澳大利亚和新西兰领先的通信、数据中心和高带宽互联解决方案的供应商，需要一条高密度光纤电缆用于一个特殊客户数据中心部署。部署的实质意味着需要安装能够适合可用导管空间的最多数量的光纤，因为这是一次性安装。

Vocus已在澳大利亚安装了Prysmian新的Flextube™设计电缆很多年。此前，这一新型电缆的最大光纤数可达到720根。Flextube™是一种变革式的电缆设计，能够供应极其细小和弹性的电缆，与标准松套管电缆相比，更快速地完成安装。

因为720芯的最大光纤数并不够，所以Prysmian提供了新开发的1728芯，即BendBrightXS 200µm的最新光纤创新。考虑其强大的整体性能，这一创新刚获得Frost & Sullivan 2015新产品创新奖项。新开发的电缆外直径仅23毫米，和Prysmian目前的624芯标准松套管电缆的尺寸差不多。这是迄今可用的最大Flextube™电缆，也是世界部署的最高密度光纤电缆（4.16芯/平方毫米）。

“这是全球通信行业的首例。” Vocus首席运营官Alex West表示。

“作为我们致力于建设新世纪光纤网的一部分，我们已经在更小幅度中试验了这种Flextube™光纤电缆三年，见证了世界首批安装的是非常令人兴奋的。”

这种光纤电缆的主要益处之一是每组光纤对削减的成本。安装一条1728芯Flextube™电缆的成本和安装一条传统624芯松套管电缆的成本差不多。这在激烈竞争的市场中是一大优势。在第一天安装如此大量的光纤数还能减少未来的服务成本，提高潜在用户连接的速率。

“1728芯Flextube™电缆是我们值得骄傲的产品，” Prysmian电信专家Alice Codenotti表示，他在该项目中与Vocus合作。

“能够为我们的核心客户供应世界最高密度的光纤电缆是我们的荣幸，这也为客户带来更高的设计弹性和潜在成本节约。我们是全球电缆供应商，澳大利亚是全球第一个国家接受了这种新设计和收获其益处。”

Prysmian Group – 意大利
网址: www.prysmian.com

弹簧品种最全



○ Leeco Spring International生产的广泛系列弹簧

Leeco Spring International是一家提供综合服务的弹簧制造商，公司拥有广泛的压缩弹簧和拉伸弹簧，并且能够根据某种行业或某个应用需求定制弹簧。

公司拥有一支经验丰富的设计与工程人员团队，可协助任何自定义应用并提供辅助服务和负载测试能力。

一般产品包括压缩弹簧、表簧、锥形弹簧、拉伸弹簧、板簧、紧弹簧、仪器弹簧、钢板弹簧、电机弹簧、精密弹簧、扭力弹簧、可变速率弹簧、贝氏弹簧垫圈、悬臂梁、环、冲压件和线材成型。

公司现货供应超过8,000种不同设计的压缩弹簧、模具弹簧和拉伸弹簧。

Leeco Spring International – 美国

网址: www.leecospring.com

Metalube创建首个润滑油研究院

英国曼切斯特工业润滑油专家Metalube近日迎来了欧洲、中国、土耳其、埃及和阿联酋的客人到其创建的第一个润滑油研究院参观学习。开设研究院的目的是要让分销商和代理商及时了解新的和现有的产品范畴，以及为他们提供必要的销售工具。商业部主任Douglas Hunt表示：“我们将拥有了了不起的几天，能够真正有效地和我们的国际团队在一起。”

“掌握产品知识是一个重要的销售技巧，充分了解我们的产品特点能够让我

们的销售代表准确、有说服力地向客户呈现产品优势。我们知道，客户倾向于对热爱自己产品和渴望与他们分享利益的热情销售人员作出回应。”

Metalube制造一系列工业钢丝绳润滑油和许多其他高性能工业润滑剂。

这一经验丰富的出口商聘用了34名员工，在中国、印度和巴西设有办事处。

Metalube Ltd – 英国

网址: www.metalube.co.uk



○ 公司员工和客人在迄今开设的第一个 Metalube 研究院

根据所有国际电缆标准提供测试

British Approvals Service for Cables (BASEC) 公司宣布, 现可根据所有国际电工委员会 (IEC) 电缆标准提供中低压电缆测试。

○ BASEC 提供中低压电缆测试



这是一个普遍的误解, 认为BASEC只根据英国或欧洲电缆标准测试电缆, 事实上, 该测试与认证机构为世界范围内的优质电缆制造商和标准机构提供服务。

如果电缆制造商要将电缆产品销往全球, 他们就需要确保其产品符合相关国家的电缆标准, 包括英国、欧洲或国际标准的要求, 甚至是私人或某个领域的特定要求。

BASEC首席执行官Jeremy Hodge博士表示: “由于我们的服务在更多地区得到了认可, 这使得IEC电缆标准测试业务的需求迅速增长, 因此, 我们扩大了电缆测试范围, 包括所有的中低压IEC电缆标准, 在此之前, 仅限于少数几个关键类型。”

“给电缆制造商带来的好处就是, 当他们需要多种测试, 涵盖英国、欧洲 (BS EN) 标准和IEC标准, 我们能够同时允许根据两种类型的标准进行测试。我们也可对同一根电缆提供双重测试报告, 并有可能颁发两个证书。”

BASEC最常见的IEC电缆测试标准是IEC 60502, 电缆通常固定安装在室内、室外、地下或水下。如果获得了该证书, 电缆制造商就可以将该标准标注在电缆产品上。

在这种情况下, 电缆制造商就可以连同获得的类似英国标准向潜在客户推介其产品, 比如: 符合IEC 60502-1、BS 5476和BS 7889标准的交联聚乙烯绝缘或聚氯乙烯护套低压电力电缆, 以及符合IEC 60502-2标准高达18/30 (36) kV和符合BS 6622标准高达19/33 (36) kV的中压电力电缆。

“我们传递给电缆买家的信息是, 指定一个公认的标准, 然后独立认证电缆, 交付时和安装前检查电缆标记, 以确保达到预定应用的标准。一旦发现问题电缆, 请联系BASEC或当地监管部门,” Hodge博士补充道。

BASEC位于英国的世界级电缆检测实验室最近获得了ISO/IEC 17025:2005认证。这是测试与校准实验室能够达到的最高水平之一。

BASEC - 英国
网址: www.basec.org.uk

卡尔巴拉精炼项目选择Nexans低压电缆

合营企业HDGSK授予Nexans一项合同, 为伊拉克卡尔巴拉石油项目供应低压电缆。

伊拉克国家石油项目公司 (SCOP) 将依赖Nexans低压电缆 (LV) 建设卡尔巴拉精炼项目。这一合同授予由四家韩国工程总承包公司组成的合营企业HDGSK。

这四家韩国公司分别是现代工程建设、现代工程、GS工程建设和SK工程建设。作为合同的一部分, Nexans将为该项目制造和供应3,500千米的低压电缆。

新的卡尔巴拉精炼项目是韩国总承包商迄今为止获得的最大合同, 价值超过60亿美元。按照项目框架, HDGSK将建设一座具备每天把14万桶原油加工成液化石油气、汽油、柴油和其他石油化工产品的炼油厂。卡尔巴拉位于伊拉克巴格达南120公里。炼油厂预计2020年完工。

Nexans低压电缆系统将具有抗聚氯乙烯碳氧化合物的高性能。根据专业技术, Nexans成功满足了用户的技术需求。

Nexans韩国首席执行官In-Koo Kang表示: “我们很高兴参与实施HDGSK的海外业务。与客户保持长期的合作关系, 并且我们的解决方案能够优化部署的总体拥有成本 (TCO), 这是我们赢得这一合同的关键。为满足客户需求, Nexans一直在开发响应客户需求的产品。”

供应的低压电缆将在Nexans位于韩国和土耳其的工厂制造。产品交付将于2016年1月开始, 预计到2017年3月完成。

Nexans - 法国
网址: www.nexans.com

电力基地

韩国政府计划新建两座核电站, 组合发电能力达到3,000MW, 同时减少对煤炭发电的依赖和降低温室气体排放。韩国产业通商资源部表示, 政府已初步决定新建四座火力发电站。

国营公用事业单位韩国电力、韩国水电和核电目前运作23座核反应堆, 计划建设另外11座。

据路透社报道, 资源部希望2028和2029年两座核电站将投入运营。由此, 韩国核反应堆数量到2029年将拥有36座, 占其发电能力的28.5%。

该计划是基于国内用电量预计年增加2.2%, 2029年达到656,883GWh。韩国电力需求基本计划会议每两年举行一次, 决定未来电力需求和如何发展及用何种方式供应电力。

Korea Electric Power - 韩国
网址: www.kepco.co.kr

技术发挥关键作用

Whitelegg Machines公司CFM线材弯曲技术为Multimesh提高生产力发挥了重要作用，Multimesh是全国领先的不锈钢丝、焊丝和丝网产品制造商。

英国Multimesh 成立于1982年，是 Harpscreen Manufacturing的分部，因其创新灵活应对客户需求在业界享有声誉，公司可短期生产特制产品，也可长期批量生产。

以“让线材为您工作”为座右铭，公司30,000平方英尺圣海伦斯工厂拥有50多名员工，服务于不断增长的国内外市场。公司产品包括医疗消毒管和容器，不锈钢的品质能够让这些产品承受反复的高压灭菌。对于餐饮业，产品包括手推车、油炸筐、架和冷却盘 - 这类产品必须承受高温和密集的卫生清洁。

Multimesh广泛系列超声波去污篮被应用于航空业，装配前，关键部件在洁净室条件下被处理。农业、兽医和马术也是重要市场；有趣的是，公司生产脱粒筛来替代收割机，销往国内外市场；另外，还有宠物运输笼和各种特别量身定制的架子和格栅，用于马的运输。

Multimesh相当一部分产品是由新的Whitelegg CFM 850 2D带有自动对焊的线材弯曲机制制造而成的。Whitelegg专业开发和制造成型机已有50余年的历史，销售网络遍布世界各地。最新CFM 50系列采用了先进软件、新的弯头操作和直观的操作控制。

本机具有加工不锈钢的特定附加功能。

在线倒角结合氩气应用系统，生产非常强劲的对焊焊缝，而且没有闪光，因此

否定了二次操作。附加弯头用于非常复杂的或紧成型操作。

机器安装前，总经理Steve Watson对CFM已有所了解，因为他已经从拥有机器的供应商处外购了预成型组件。

决定购买内部CFM后，他联系了Whitelegg Machines。Whitelegg建议他到一客户工厂现场观摩机器的运作，可见证CFM的自动对焊功能。

购买CFM后，对Multimesh产品起到了立竿见影的效果，不仅操作简便了，而且允许操作人员按照屏幕上的图像设置机器。不锈钢线圈供电线穿过三辊输送装置，拉直水平和垂直平面内的电线。这将确保弯头和精确的对焊一致成型。



○ 典型成品

CFM当前能够处理4毫米和6毫米直径的304和316级不锈钢丝。一般情况下，矩形成型和焊接组件每小时产量为700件。

自动化流程的引入通常伴随人力成本的降低，然而购买CFM后，Multimesh不仅大幅提高了生产力，而且销售额和就业人员都有所增加。

Whitelegg Machines Ltd – 英国
网址: www.whitelegg.com

光纤大幅增长

2015年1月到4月间，中国光通信企业生产了1.03亿千米光缆，根据中国工业研究机构的数据显示，同比增长了15.25%。数据表明，江苏的光缆生产量位列第一，占全国总产量的46.8%。江苏省的光缆产量达到了4826.43万芯千米，较去年同期同比增长13.53%。湖北省光缆产量居第二，达1765.39万芯千米，同比增长22.27%，占全国总产量的17.13%。

与去年相比，重庆的光缆产量增长幅度最大。2013年Chongqing SDGI Optical Fiber Cable Co Ltd投资涪陵新区，实现了其年产200万芯千米光缆的生产目标。该公司为重庆光缆生产带来了新产能，前四个月光缆产量达86.37万芯千米，同比增长3,921.84%。

世界上最长的海底高压直流输电连接

Intertek为National Grid和Statnett开发基础设施项目提供帮助和支持，该项目连接英国和挪威电力网络(NSN Link)，建成后，将是世界上最长的高压直流(HVDC)海底内部互连。

在过去的四年里，Intertek一直担任两家公司在NSN项目中的海洋顾问，最终于2014年底确认开发此项目。National Grid和Statnett最近宣布他们最终决定投资开发NSN，这一英国和挪威之间距离730公里的1,400MW电力电缆连接。该互连项目计划于2021年完成，一旦投入使用，将为英国近75万户家庭提供低碳电力。

National Grid公司NSN项目规划与同意理Mark Pearce表示：“我们要感谢

Intertek为项目所做的不懈努力，其团队的专业性和诚信度在我们做出积极投资决策的过程中发挥了重要的里程碑作用。”

Intertek Energy & Water Consultancy Services总经理Frank Beiboer表示：“在Intertek，我们感到非常自豪，与National Grid有着15年的悠久合作历史，很多互连项目我们都参与其中，在像NSN一样具有挑战性的项目中，我们在整个开发阶段都发挥了关键作用。”

Intertek在NSN项目中提供的专业技术服务和海洋规划咨询包括电缆布线约束和可行性研究、路线

设计、调查管理、环境评估和利益相关方参与。

Intertek – 英国
网址: www.intertek.com

○ 基础设施项目将连接英国和挪威





○ *Redesign work from Frigeco has been extensive*

Frigeco engineers redesign extruders

WHILE the extruder is the melt supply device in most extrusion processes, the basic design has not evolved much over the last few years. Its purpose is to supply molten material at a constant melt temperature and at a constant volumetric rate.

The typical extruder is made up of three geometric sections: The feed section or solids conveying, the transition or melting section, and the metering or pumping section.

Frigeco has redesigned a number of areas on the Frigeco extruder, including the feeding zone; extruder barrel and screw profile; thermoregulation; stable and reactive electronics; and increased output and lower energy consumption.

The actual melting takes place in the feeding zone. Most plastics are poor conductors of heat and are melted by shearing the material against the barrel rather than by heat conduction.

Consistent flow of material into the extruder barrel is obtained by controlling the temperature of the feed throat.

However, you cannot rely on plant water supply which can vary from 38°F (3°C) in the winter to 75°F (24°C) in the summer. These fluctuations in temperature will affect melt temperature and cause product variations.

Therefore, controlling the temperature of the feed throat is essential to constant solids conveying. The Frigeco grooved feed throat, integral cooling jacket and closed loop water temperature control circuit provide a constant feeding zone temperature. The next section is the transition zone, where a large amount of heat will be generated.

Much of the heat necessary to plasticise the material comes from the rotation of the screw. The faster the screw rotates, the higher the surface speed of the screw, the greater amount of shear in the material and therefore an increase in melt temperature.

The combination of rotational speed, adequate cooling and accurate temperature control will keep the shear rate down and prevent localised overheating.

Frigeco – Italy
Website: www.frigeco.com

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First contact-less, handheld optical micrometer

AEROEL has launched HWS.1 – Handy Wire Scanner – a fully portable optical micrometer for non-contact measurement of wires, cables and other similar products.

Developed using LED and CCD technology, it uses two crossed linear sensors to automatically compensate positioning errors (patent pending).

Thanks to a powerful single chip microprocessor, the micrometer is linearised and compensated to obtain the maximum precision in the entire field of measurement, regardless of an accurate positioning of the wire.

The measurement is started by pressing the trigger, which takes only a fraction of a second. The display provides the operator with interactive information to place the wire in the useful measurement area and displays the measurement result.

All measurements are saved in the memory of the scanner, associated with the date, time and the number of machine. Through a USB connection, data can be downloaded to any PC.



○ The HWS.1 from Aeroel

The battery is charged via the USB connector with the supplied power supply. Battery life, with the micrometer always active, is approximately four hours.

The scanner has been designed to fit into a special holder to be fixed on a machine, and this contains an RFID tag that identifies the machine, and which is read by the instrument at the time of measurement.

The support allows the easy and quick placement of the scanner, and for the measurement of moving products, guaranteeing the maximum precision of measurements.

It is therefore possible, mounting a support on each line, to periodically monitor the production of all machines with just one micrometer.

The new micrometer HWS-1 enables an intermediate solution that can dramatically increase the frequency of checks inside a coil, with the non-contact technology making this possible.

With the measurement of products in motion, there is no need to stop the process or wait for the end of a reel. The number of checks carried out inside a coil can be significantly increased. With small investment it allows you to equip each machine with a specially designed holder, and gives two additional advantages:

- The positioning of the micrometer is greatly facilitated
- At the time of reading the diameter, the micrometer also reads the tag contained in the fixture. This lets you recognise and identify the position or the machine where you are measuring, and then combine the stored results with respective positions/machines

A single operator can monitor several lines/machines. At the end of the shift the stored data can be downloaded to a PC for reports to be checked, and for it to be printed.

In addition to this basic function, which improves the sampling frequency, there are a number of other uses such as the set-up or the diagnosis of the process. An example is the process of enamelling copper wire: the modern lines start from the copper wire drawing and produce the finished product, applying and drying several subsequent layers of enamel, up to the finished wire which is collected in reels.

Even in the case in which the line is fitted with a laser gauge to check the final diameter before the reeling, the handheld optical micrometer can be useful in case problems arise, however readily detected by the on-line gauge. The next question is: where, at which stage of the process the 'anomaly' has occurred that led to the alarm.

Water soluble machining and grinding fluids

Q8Oils has launched Q8 Brunel, its latest revolution in water-soluble machining and grinding fluids.

The Q8 Brunel range has been developed to out-perform all other fluids and has already been successfully tried and tested with manufacturers across Europe.

It is formulated to be fully compliant with the latest European industry legislation, providing a range of products that are free from boron, boric acid, chlorinated paraffin, secondary amine, formaldehyde-releasing biocides and nitrites.

Q8 insists that, subject to customer requirements, significant improvements to tool life and surface finish are achievable, and claims that: "Q8 Brunel is so advanced that it has the potential to reduce the operating costs for every customer."

The result is a revolution in high

performance, water-soluble machining and grinding fluids with advanced safety features.

Thousands of hours have been invested in laboratory testing and field trials to ensure Q8 Brunel is a revolution in soluble metal working fluid technology, and it is fully compliant with European environmental and chemical legislation.

All Q8 Brunel grades comply with TRGS 611 and are suitable for use in hard and soft water where they display low foaming properties.

They are suitable for high speed machining applications and the demanding fluid delivery pressures found on modern machine tools; it is here where significant tool life improvements are achievable.

Q8Oils – Belgium
Website: www.q8oils.com

Aeroel – Italy
Website: www.aeroel.it

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Double twist stranding machine with roller forming



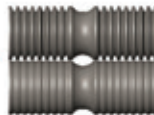
Finished product



Assembly into compact conductor



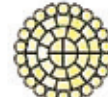
Roll formed profiles



Roll device



Round wire
(Copper, Aluminum and Aluminum alloy)



240mm²
Compressed SIW Schedule
(Copper, Aluminum and AL alloy)



240mm²
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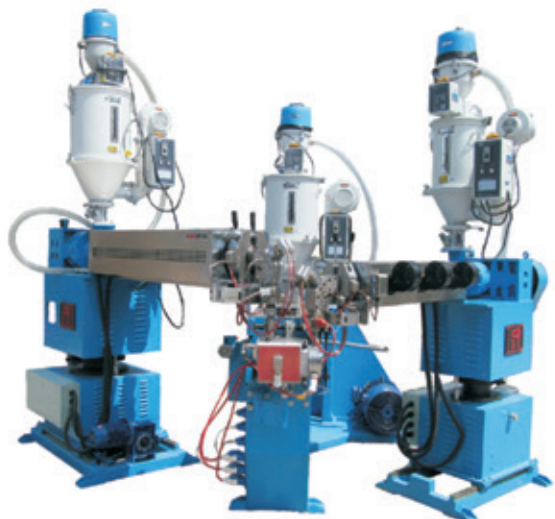
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Three layer co-extrusion extruder



Extrusion line

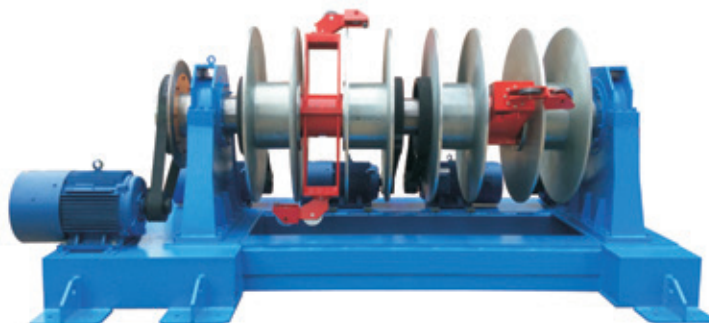
Stacking system

★The labor cost is saved by more than 50%

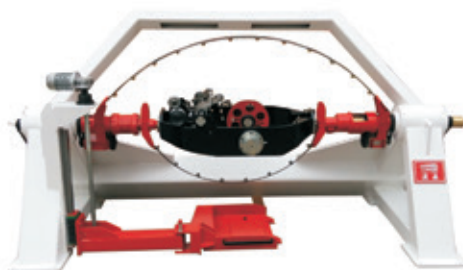


Concentric-lay stranding machine

- ★Single bobbin three core structure
- ★Double bobbin single core structure



Cantilever type single twisting (cabling) machine



Four twist bunching machine



Frame type single twisting (cabling) machine



Concentric core horizontal type taping machine
(Suitable for barreled tape)



Double layer taping machine



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INVENTIONS AND MUCH MORE



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- Aluminium Alloy CCR Rod Lines
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→ WMD

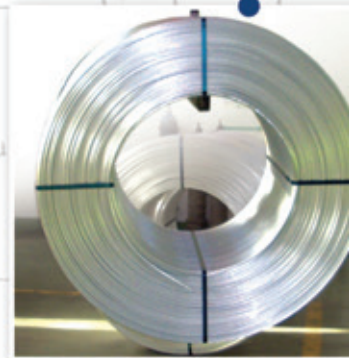
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Degreasing of stranded wires and ropes

ROPE and strand making often requires the individual wires to be properly lubricated before stranding. During stranding the individual wires also work-harden, which makes the strand lose its straightness and causes individual wires to “flower” when the strand is cut.

Often the strands and ropes have to be cleaned and/or stress relieved before they are suitable for further processing or packing. This is common in many applications, for example in strands and ropes for the medical, jewellery, architectural and decorative sectors.

Plasmait has been working with wire manufacturers in these sectors to design an effective solution for heat treatment of stranded products and ropes. The plasma machine allows for an accurate distribution of heat/temperature throughout the cross-section of the stranded construction.

Individual wires are annealed or stress relieved to equal temper/softness, which straightens the strands and prevents the “flowering” of strand ends. Accurate control of heat transfer and thereby resulting mechanical properties can be achieved on a wide range of stranded constructions and materials such as copper, aluminium, stainless steel, plated wire wires and many other materials and their alloys.

The annealing/stress relieving process is conducted in a



- The plasma machine allows for an accurate distribution of heat/temperature throughout the cross-section of the stranded construction

controlled inert atmosphere in low vacuum, which facilitates effective degreasing inside the stranded construction during the annealing process. This is a result of a distinct feature of plasma discharge that is the strongest in the small cavities between the individual wires in the stranded construction. Surface activation can be achieved if extra coating adhesion is necessary in-line with subsequent polymer coating.

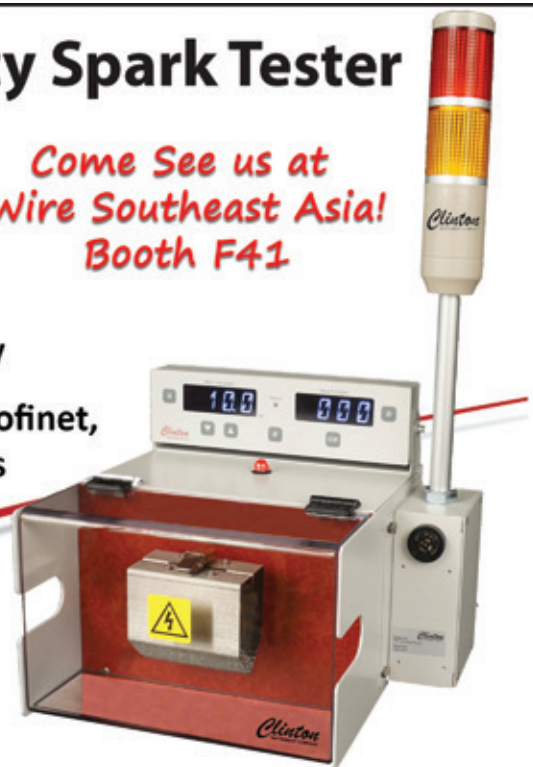
Plasma machines can be used on a wide range of diameters and materials. They are compact machines that use little floor space. Plasma machines can cold start in a few minutes and can be stopped immediately. This avoids the lengthy heating-up and cooling-down times and associated energy costs that are symptomatic of a conventional tube furnace.

Plasmait GmbH – Austria
Website: www.plasmait.com

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New extruder from Japan

JAPAN Steel Works (JSW) has introduced the TEX 25 Alpha III laboratory co-rotating extruder. The new compact 25mm screw diameter machine, for production of compounds and masterbatches in engineering and high performance thermoplastics, is the smallest of seven TEX Alpha III extruders (up to 130mm diameter) available in Europe. Its introduction follows the K 2013 European launch of the TEX 44 Alpha III model.



○ TEX 25 Alpha III

TEX 25 Alpha III series advantages include a new gearbox design combined with enhanced gears and bearings, screw shafts and barrels. The result is a high torque of up to 194Nm per shaft (or 387Nm in total) combined with wider processing windows as well as more powerful kneading and mixing.

material and process changes, as cartridge heaters and a patented barrel clamping mechanism enable easy and rapid barrel section block changes, achieving screw length/diameter (L/D) ratios of 42 with 12 blocks, 52.5 with 15, and 70 with 20 blocks. The machine accommodates vented or closed barrel sections and side feeding of abrasive reinforcements, heat- or shear-sensitive compound additives and materials into the melt via a later barrel section.

A standard torque limiting function stops the screw to protect machinery and operators. A low-noise water-cooled version of the infinitely variable three-phase motor is optional, as is direct drive instead of the standard V-belt drive.

Wear-resistant LSP-2 modified tool steel screws and barrels in N60-S nickel-based alloy made by JSW promise long life of barrel and screw (high wear and corrosion resistance) for various kinds of compounds containing abrasive and/or corrosive materials and additives.

The NIC special kneading barrel invented by JSW achieves good mixing/dispersion at low shear rate and high viscosity without dead zones for good compound material properties, through introduction of several longitudinal grooves of particular geometry on the inside barrel surface for more screw-to-barrel clearance.

JSW's patented TEX-FAN flow analysis network research and development support tool developed for TEX twin-screw extruders analyses polymer melt pressure, temperature, residence time and fill factor with a special dedicated computer developed by JSW.

A TKD twist kneading disc kneading screw element with a twisted tip developed for energy efficiency supports this "tip-clearance technology" by ensuring fast, relatively low-temperature material conveying, while retaining appropriate mixing efficiency. JSW claims such features make the Tex 25 Alpha III the "worldwide highest performance compact twin screw extruder".

The TEX 25 Alpha III comes with the EXANET 64-bit RISC high-speed control system. Its 15" colour LCD touchscreen provides for optimum process control and monitoring, storing thousands of settings and process parameters.

While feed section water temperature control is manual, PID (proportional-integral-derivative, ie closed-loop/feedback) water and heater temperature control is used for other barrel sections. The extruder is suitable for research and development work with frequent

It integrates with ancillary equipment, from JSW compact JSW-TTF 20 and SFT-15 gravimetric feeders and mixers, TSF25 side feeder, through to strand pelletisation and underwater granulation.

Japan Steel Works – Japan
Website: www.jsw.co.jp



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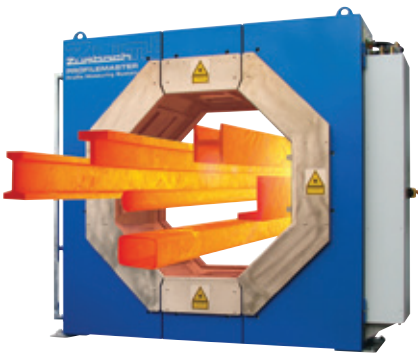
www.witechs.de

New addition from Zumbach

ZUMBACH Electronic has introduced three new additions to its line of profile gauges for steel and metal profiles. The gauges are based on the laser light section technique and by camera vision, often also called "light cut" principle.

Up to eight line lasers 'mark' the contour of the product, and the respective cameras each capture a large number of pixels on the product contour.

Highly developed software adds the four pictures to the true, orthogonal section of the profile. All critical dimensions, angles and radii can be programmed, together with their tolerances.



○ The new line of profile gauges from Zumbach

Operators and supervisors can not only monitor the true profile as a 1:1 section online, but also see irregular faults such as seams, concave or convex shapes, etc. All standard profiles such as H, I, U, L beams, hexagons, squares, flats and any special shapes are measurable.

Depending on the maximum product dimensions, the three new models cover measuring fields up to 200, 400 or 800mm.

Thanks to a unique concept, the Profilemaster® delivers highly accurate and stable readings (which is not 'natural' by this principle, used in many gauges).

A high reliability is guaranteed thanks to a sophisticated, multi-stage protection and purging/cooling system.

Key advantages include:

- With up to eight cameras, modular camera setting, any shape can be captured
- Up to 16,000 points/contour (2,048/camera) = 5,734,400 points/second (with eight cameras)
- High sampling rate of 350 to 500/second (full profiles/second)
- Four different colours of laser at an eight camera system with no interference
- Shape fault detection (SFD)
- Compilation of a 3D model thanks to the high sampling rate
- Trouble-free maintenance with quick and easy access to the maintenance points

Zumbach Electronic AG – Switzerland
Website: www.zumbach.com

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REF#	DESCRIPTION
60A-289	FRIGERIO Steel Rod Drawing Line. 10 X 760 mm blocks with 1250 mm Spooler and 760 mm Coiler. Enter 5.5 to 11 mm, speed 18 m/sec, Year 2000.
21-158	SHANGHAI ENGINEERING 10,000 ton/year Oxygen Free Copper Rod Upcasting Lines. 8 to 12 mm rod, 20 Coil Take-ups, 2 Systems Available.
21-159	OUTOKUMPU Oxygen Free Copper Rod Upcaster, 14,000 tons/year, 15 mm cast rod, 16 lines.
10-235	EBNER Bell Annealing System for Steel wire 62 ton Capacity, Gas Fired, Hydrogen Atmosphere. 800 °C Max temp.
10-233	HENRICH Continuous Resistance Copper Rod Annealer Model ES -01-DR-501-4; 18 - 6 AWG.
39-173	NOKIA MAILLEFER Semi-Automatic Telephone Wire Production Plant. 13 km of cable per 8 hour shift.
32-100	ITO SIN Continuous Lead Sheathing Extruder. 35 kg/min pure lead. 10 to 110 mm Cross Heads.
59A-252	NIEHOFF M85 Copper Rod Drawing, Ent. 8 mm dia. 13 dies, VG85 Annealer, Coiler and Spooler.
58-199	PWM EP500 Kold Butt Welder, 5 to 12 mm diameter.
20-187	NIEHOFF Drop Down Coiler, Mdl. WF-800, 800 mm diameter, with T-400 Dancer.
50-253	BARTELL Tubular Strander, Model 24B64, 10" Diameter.
60A-280	KOCH Steel Rod Drawing Line 8 Blocks, enter 11 mm.

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Mini hybrid cable – first for NGN and NGA networks

DATWYLER has launched the FO Outdoor wbKT Micro Combi, the world's first mini hybrid cable for NGN and NGA networks (Next Generation Networks, Next Generation Access).

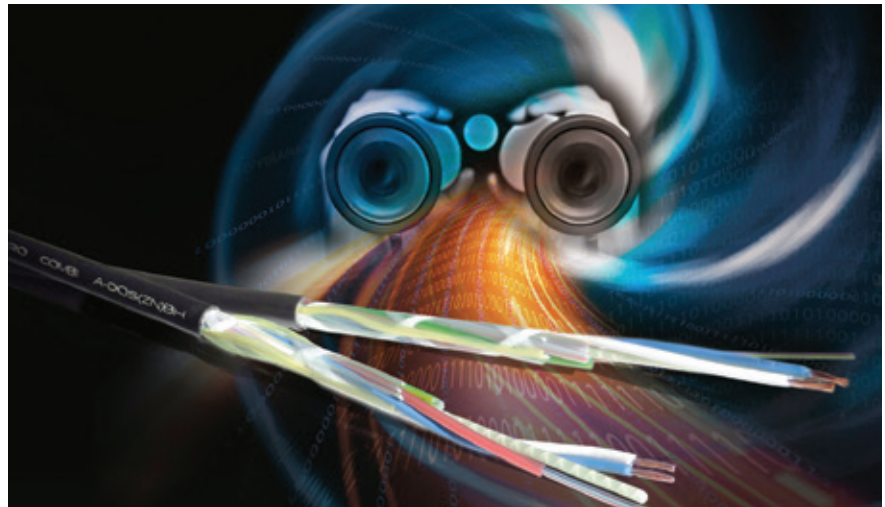
It combines four 12-fibre stranded loose tubes, available in either single-mode or multi-mode fibre, with two stranded copper wires.

Thanks to a small external diameter of only 6.5mm the cable can be retrofitted into existing empty duct systems as well as blown into long sections of microduct system.

The mini hybrid cable with its additional stranded copper wires (0.50mm²) is particularly suitable for use in security-sensitive areas.

In FTTx networks it is a cost-effective alternative to installing two different types of cable and can provide an option for house connections, eg for an emergency supply to fire service telephones in the event of a power failure.

It enables power to be supplied to active remote technology such as street cabinets, emergency telephones, smart grids or data centres, and allows the remote monitoring of connection technology such as cable couplers, distribution frames and access control systems.



○ The new FO Outdoor wbKT Micro Combi from Datwyler

Once installed it is also easy to locate from ground level.

Two coloured, easily identifiable ripcords mean that the cable sheath can be safely opened, and installation is simplified by dry core interstices, which facilitates easy assembly and removal.

The FO Outdoor wbKT Micro Combi complies with all the requirements of IEC 60794-1-2 in respect of lateral pressure, impact, repeated bending and torsion.

Datwyler developed the new cable with reference to the "Catalogue of Safety

Requirements for the Operation of Telecommunications and Data Processing Systems and for the Processing of Personal Data in accordance with §109 of the German Telecommunications Act (TKG)".

The catalogue, effective since May 2013, was drawn up by the German Federal Network Agency in consultation with the Federal Office for Information Security (BSI) and the Federal Commissioner for Data Protection and Freedom of Information.

Datwyler – Switzerland
Website: www.cabling.datwyler.com



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Conductor preheater with integrated temperature measurement and control

MANUFACTURERS of cables, specifically automotive and data cables, require a reliable conductor preheating, to ensure an optimum adhesion of the insulation on the wire, and a controlled foaming.

With the Preheater 6000 TC (temperature controlled) Sikora has an advanced solution for precise conductor preheating, the basis for high-quality cable production and repeatable control of the production.

In only a few applications, it may be sufficient to control the output power of a conductor preheating device only depending on the conductor size and type, the line speed and the required temperature.

However, there are numerous influences on the accuracy of the conductor temperature, such as the ambient temperature, the initial temperature of the conductor and particularly the development of the temperature of the wire guiding short-circuit wheel within the first ten to 20 minutes after starting the production or after an interruption of the production.

Marking innovation and performance

At a time when machine-to-machine communication is proliferating in the industry, Technifor has risen to the challenge with a new range of laser marking machines that are making their mark as a true model of integration – Laser Solution F-Series.

The new electronics offer communication tools natively, allowing continuous and instantaneous interaction with the various workstations integrated into the chain of production. Dedicated and generic inputs/outputs, TCP/IP Ethernet, Profinet, RS232, USB, the configuration, control and data recording options are cutting-edge and allow for remote control.

The new connections eliminate the need for costly adapters and offer the prospect of a single central server managing a factory's entire fleet of lasers.

Ultra-fast, the choice of high-performance electronic components



○ Conductor preheater with integrated temperature measurement and control

The Preheater 6000 TC is positioned before the extruder and inductively heats the conductor to the desired nominal value. The integrated IR camera ensures a non-contact measurement of the wire temperature at the output of the preheating device.

The controlling module of the

has resulted in marking equipment that is 50 per cent more time-efficient than the previous generation.

Available in a range of powers from 10 to 50W, the Laser Solution F-Series permits the direct and permanent marking of a wide variety of parts and materials (plastics, metals, ceramics, etc).

From surface marking to deep engraving, it executes 1D and 2D codes, guaranteeing faultless scanning.

These new laser machines offer a real technical advantage to integrators and manufacturers who need to install marking stations on production lines.

Highly compact, the marking head is adapted to industrial constraints: small spaces, extreme conditions of temperature and vibration, it is robust and protected from dust or other splashes (class IP54). The solution can be integrated with no necessity for

Preheater 6000 TC continuously adjusts the power of the preheating with the result that the wire always has the nominal temperature, independently of conductor material, the dimensions of the conductor and the line speed. No further setting is necessary.

LED displays directly on the Preheater 6000 TC show the measured temperature at different perspectives. The integrated, non-contact temperature control makes the Preheater 6000 TC unique. It is available for temperatures up to 250°C, for a product diameter of 0.32 to 4.5mm (0.08 to 16mm²) and for a line speed of up to 2,500m/min.

Three device models are available for the power range of 10, 20 and 30 kW. A power calculator at www.sikora.net/powercalc helps choose the optimal device.

The Sikora temperature measuring system is also available as the stand-alone system Wire-Temp 6000.

Sikora AG – Germany
Website: www.sikora.net

filtration or additional enclosure and it is immune to electromagnetic interference.

Designed to minimise installation costs and time, the equipment is easily interfaced with a PLC thanks to pre-programmed controls.

A control screen with integrated HMI displays the operations in progress and offers self-diagnostic capabilities: machine status, event history, backup files and maintenance messages are accessible in real time.

Benefiting from a wealth of application experience with major car and automotive parts manufacturers, in precision mechanics, aeronautics, medical and other leading-edge sectors, Technifor delivers end-to-end equipment meeting its customers' expectations.

Technifor – France
Website: www.gravotech.com



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Connector with built-in fast connection technology

HELUKABEL has launched its new Profinet plug connector, the Helukat RJ45 Cat5 IP20, which has built-in fast connection technology.

The fieldbus-compatible plug comes in a linear and angled design. It is well-suited for industrial use in tight installation spaces.

Helukat has coloured contact elements which prevent the installer from committing connection errors. The clear labelling matches the wire sequence of the Profinet standard, whose four single wires can be quickly connected.

The metal housing enables it to be used in industrial applications. Transmission rates are up to 100 MHz Cat 5.

The shielded plug connector comes in a linear 180° version and an angled 90° version. Designed to protection grade IP 20, it can withstand operating temperatures of -4°F to 158°F (-20°C to +70°C).

The Helukat RJ45 Cat5 IP20 is compatible with AWG 22 and AWG 24 cables, and designed to be used with both bunched and solid wire conductor types.



○ The new Profinet plug connector from Helukabel

The Profinet plug connector can be easily and quickly installed without the need for tools.

The single wires must be arranged in accordance with the colour coding of the RJ45 plug and, in the folded-up guide element, inserted into the contact points up to the stop.

To achieve a full connection, the user presses the guide element downward

to the stop, closes the housing cover, and fixes the front screw cap with a quarter rotation.

The development of a 145°-angled version as well as an eight-pin variant is currently in the planning process, and will expand the product range once successfully completed.

Helukabel GmbH – Germany
Website: www.helukabel.de

Clutches and brakes suitable for tension and torque control

Magnetic particle clutches and brakes are suitable for tension and torque control. Clutches are used for rewind tensioning, and torque limiting. Brakes are used for unwind tensioning.

Performance, accuracy and life are greater than friction clutches and brakes, since magnetic particle units have no friction plates to wear or give off dust.

Slip torque is smooth and infinitely adjustable. Torque is varied from near zero to maximum by varying input current.

Units from 1oz inches to 300lb-feet, with heat dissipation up to 1,900 watts continuous duty are available from stock.

The DC constant-current power supplies power the clutches, with output current controlled manually with a potentiometer, or by a 0-10 volt signal voltage from a computer or PLC.



○ Tension and torque control from Placid Industries

The Placid Industries follower potentiometer or ultrasonic sensor connects directly to the power supply to make a constant tension unwind system. As the roll diameter decreases, the current energising the brake is decreased to keep tension constant.

Placid's hysteresis brake produces torque without physical contact, ensuring torque is very precise and repeatable, and providing a very long life.

Applications include torque and tension control for web handling (unwinding), and load simulation for testing motors and drives.

Torque can be varied from three per cent to 100 per cent by varying input current. This also provides a very wide RPM range while the cog-buster automatically decogs (eliminates torque ripple) with one revolution.

Placid Industries Inc – USA
Website: www.placidindustries.com

Pneumatic and battery driven roll pushers

RENOVA has introduced the new powerful and reliable Moviroll roll pushers – pneumatic and battery driven. Renova's Moviroll systems allow the operator to effortlessly manoeuvre both large and small cylindrical loads on a flat surface and then place them on the roll stand shuttle cart.

Compact, heavy-duty, fast and with low or no maintenance requirements, the new Moviroll roll pushers allow the movement of the load in a continuous and regular way and are suitable for handling wire and cable rolls, corrugated, paper and tissue rolls in a simple and safe manner.

All Moviroll models are designed and made in Italy.

Pneumatic model: The MR pneumatic Moviroll uses the power of a pneumatic gear motor that is powered by pressurised and lubricated air at 6 bar (90 psi).

Two models, each with two different handle configurations (straight handle or curved 'S' handle) comprise the range:

- Models MR100/MR100 S have a thrust force of 10,000kg (22,000lb) and a lift force of 2,500kg (5,500lb)
- Models MR200/MR200 S have an increased thrust force of 20,000kg (44,000lb) and a lift force of 5,000kg (11,000lb)

Battery model: The new MRE battery-powered Moviroll offers the advantage of free movement without the constraints of pneumatic connections or electrical cables.

It is equipped with a 24V DC IP 44 sealed brushed motor powered by a 24V battery and a sophisticated electronic system that supervises the operating parameters of the motor and battery, and intervenes to safeguard the Moviroll when they exceed those eligible.

In case of anomaly a flashing LED allows you to identify the problem and solve it. The high performance battery is housed in an 8mm chassis and ensures the operator to

move from 60 to 120 rolls with only a battery charge. The MRE Moviroll is provided with a second battery (optional). The plug and play batteries allow quick changes of the battery without interruption during operation. The intelligent charger autonomously decides on the duration of the recharge, depending on the state of the battery charge.

Great importance has been given to the system design. The ergonomic handle and throttle have been designed in such a way as to simplify the Moviroll handling during both the forward gear and reverse gear. The throttle is equipped with a speed command that allows variable speed to suit any operator needs. The oversized rear wheels are designed to overcome obstacles such as holes, chains and shuttle cart.

The battery Moviroll is available in three models, each with two different handle configurations (straight handle or curved 'S' handle).

- Models MRE100/MRE100 S have a thrust force of 12,000N (26,450lb) and a lift force of 3,000kg (6,600lb)
- Models MRE200/MRE200 S have a thrust force of 16,000N (35,300lb) and a lift force of 4,000kg (8,800lb)
- Models MRE300/MRE300 S have a thrust force of 20,000N (44,100lb) and a lift force of 5,000kg (11,000lb)

Renova Srl – Italy

Website: www.renova-srl.it



○ New Moviroll roll pushers from Renova

WEILLY DIAMOND 威力鑽石工業股份有限公司
INDUSTRIAL CO., LTD.

Shaped PCD Dies Regular and Irregular


異形鑽石模 規則形 不規則形
最小的異形模有多大?
Shaped dies - How small can it be?

Hexagon
Square *ultra-fine* 0.10x0.10mm
Rectangle
Flat the thinnest 0.10x2.0mm for enameling wire
Triangle
Oval
Ultra-fine Irregular *any shape you want*


六角形
方形 最小尺寸0.10x0.10mm
長方形
扁方形 最薄尺寸0.10x2.0mm 專包平角鋼線用
三角形
橢圓形
極細不規則形 任何需求形狀

Other main product
ND and PCD wire drawing dies
Tinning dies
Nipple for plastic coating of wire
Compacting or bunching dies
Others


其他產品
天然及聚晶鑽石拉線模
鍍錫拉模
挤出內模
拉線拉線模
其他用途鑽石模具




Hexagon 六角形



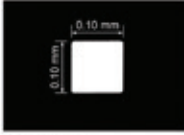
Oval 橢圓形



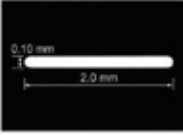
Rectangle 長方形



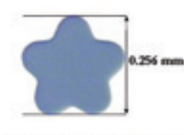
Triangle 三角形



Square 方形



Flat 扁方形



Ultra-fine Irregular 極細不規則形

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○ Frigeco重新设计工作已全面展开

Frigeco工程师重新设计挤出机

在大多数挤压过程中，挤出机是熔体供给装置，在过去的几年里，基本设计没有多大进展。

其目的是在恒定的熔融温度和恒定的容积率下提供熔体材料。

典型的挤出机由三个几何部分组成：送料段或固体输送、过渡段或熔化段以及计量或抽吸段。

Frigeco在许多方面重新设计了Frigeco挤出机。

- 进料区
- 挤出机桶和螺杆型材

- 温度调节
- 稳定和反应性电子产品
- 增加产量和降低能耗

实际熔化发生在进料区。大多数塑料是热的不良导体，对着筒剪切材料进行熔化，而不是热传导。通过控制进料喉的温度，材料稳定流入挤出机机筒内。

但是，你不能依靠工厂供水，因为冬天只有38°F (3°C)，而夏天达到75°F (24°C)。这些温度的波动会影响熔融温度和导致产品变形。

因此，必须控制进料喉的温度，进行恒定的立体输送。Frigeco沟槽进料口、集成冷

却夹套和闭环水温控制环路实现了一个恒定的进料区温度。下一段是过渡区，这里将产生大量的热。

塑化材料的大多数热量来自于螺杆的旋转。螺杆旋转越快，螺杆的表面速度越高，材料的剪切量更大，因此提高了熔体温度。旋转速度、足够的冷却和精确的温度控制相结合，保持适度的剪切率和防止局部过热。

在这一领域，Frigeco工程师们做了最充足广泛的研究和设计。

Frigeco – 意大利
网址: www.frigeco.com

第一台非接触式手持光学测微计进展顺利

Aeroel公司推出了一款完全便携式光学测微计——HWS.1便携式线缆扫描仪，用于电线、电缆和其他类似产品的非接触式测量。

该仪器采用LED和CCD技术开发，使用两台交叉线性传感器自动补偿定位误差（专利申请中）。

强大的单芯片微处理器使该测微计被线性化并被补偿至获得整个测量领域最大的精度，而且不管线缆的精确定位如何。只需要按下触发器就可以开始测量，而这只需要一眨眼的功夫。显示器可以为操作者提供交互式信息，使线缆置于有效的测量区域并显示测量结果。

所有测量数据都保存在扫描仪内部存储器中，有相关的日期、时间和机器数量。通过USB连接，这些数据可下载到任何一台电脑上。电池可用供电电源通过USB连接头充电。电池寿命在测微计一直工作的情况下可持续约四小时。

扫描仪的设计适合安装在固定在机器上的专用支架上，这包含能识别机器的RFID射频识别标签，仪器可以在测量的同时进行读取。



来自Aeroel的HWS.1

支架可以帮助快速方便的放置扫描仪。用以测量移动产品，确保测量精度最大化。因此可以在每条线上安装一个支架，这样仅用一台测微计就可以定期监控所有机器的生产。

这台新的测微计HWS-1可以使中间解决方案能大大增加每个线圈内部的检查频率，而非接触式技术使这成为可能。

在测量移动产品时，不需要停止过程或等待线盘到达末端。这可大大增加线圈内部的检查数量。这个小小的投资就可以为每台机器配备专用的支架，而且还增加了以

下两大优势：

- 测微计的定位更加方便；
- 在读取直径的同时，测微计还能读取夹具中包含的标签。这样能够识别和确定你测量的位置或机器，然后再将位置/机器各自的存储结果结合起来。

这样一个操作员可以监视几条线/机器。在轮班结束时，存储的数据可以下载到电脑上生成报告用于检查，并打印出来。

除了这个基本功能，可以提高采样频率，还有更多其他用途，比如设置或过程诊断。比如漆包铜线的过程：现代生产线从铜线拉拔开始，然后生产出成品，并涂上几层漆并等待干燥，直到产品线缆收集到线盘上。

即使是遇到生产线配备了激光测量仪在卷取前检查最后的直径时，这种手持式光学测微计也可以使用，以防出现问题，但是这很容易被在线测量仪检测到。

接下来的问题时：在哪里，在哪个阶段这种“异常”发生并导致报警。

Aeroel - 意大利
网址: www.aeroel.it

Rope-Tek符合VGP标准

Metalube很高兴宣布，Rope-Tek™ WRD40现已符合美国政府对于船体长度79英尺以上的所有商业航运进入美国海域所规定的VGP(船舶通用许可证)标准。达到VGP标准后，Metalube被授予EU EcoLabel。公司许可证号为UK/027/015。Rope-Tek™ WRD40是一种全新的高性能生物降解润滑剂，由再生原材料专门设计而成。Rope-Tek™ WRD40设计用于保护在航运中直接与海水接触的钢丝绳，主要应用于石油、天然气和捕鱼等行业。

关于EcoLabel，商务总监Douglas Hunt表示：“拥有符合VGP标准的钢丝绳润滑剂，Metalube将进入一个全新的市场。我们非常高兴能有这样一个好的机遇，因为市场越来越关注在海洋环境中使用环保润滑剂。”公司生产一系列工业钢丝绳润滑剂和许多其他高性能工业润滑油。这位经验丰富的出口商拥有34名工作人员，在中国、印度和巴西设有办事处。

Metalube Ltd - 英国
网址: www.metalube.co.uk

张力和扭矩控制的理想选择

磁粉离合器和制动器是张力和扭矩控制的理想选择。离合器被用于复绕张紧和扭矩限制。制动器用于放卷张力。

性能、精度和寿命显著优于摩擦离合器和制动器，这是因为磁粉设备没有摩擦片磨损和不会产生粉尘。

滑动扭矩是光滑的，可无限可调。扭矩可通过改变输入电流在接近零到最大之间变化。

设备从1oz英寸到300lb英尺，散热达到1,900瓦特，可连续工作，目前可现货供应。

直流恒定电流供电给离合器，输出电流通过电位器手动控制，或者通过计算机或PLC的0-10伏信号电压进行控制。

Placid Industries跟随电位器或超声波传感器直接连接到电源，创造一个恒定张力放卷系统。

随着辊径减小，通电制动器的电流下降，以保持张力不变。

Placid磁滞制动器产生扭矩没有物理接触，从而确保扭矩非常精确和可重复，并



Placid Industries制造的张力与扭矩控制设备

提供一个很长的使用寿命。具体应用包括网络处理（放卷）扭矩和张力控制以及测试电机和驱动器的负载模拟。扭矩通过改变输入电流在3%到100%之间变化。

这也提供了一个宽泛的转速范围，以保持流畅的打滑力矩（消除转矩脉动）。

Placid Industries Inc - 美国
网址: www.placidindustries.com

来自日本的新型挤出机

Japan Steel Works (JSW) 推出研发机 TEX 25 Alpha III 同向旋转挤出机。新的紧凑型25毫米螺杆直径机用于生产工程和高性能热塑性塑料化合物和母料，在欧洲市场上，这是七款TEX Alpha III挤出机中最小的（最大直径达130毫米）。该机器是继K 2013欧洲推出后TEX 44 Alpha III上市的。TEX 25 Alpha III系列产品优势包括新的变速箱设计以及强化的齿轮、轴承、螺杆和机筒。结果，每轴扭矩高达194Nm（总共387Nm），处理窗更宽，捏合和混合更加强大。

一个标准的扭矩限制功能停止螺旋以保护机器和操作人员。低噪音水冷无极变速三相电机可选，直接驱动，而不是标准的V型皮带驱动。JSW研发的NIC特殊捏合筒在低剪切率和高粘度下混合/分散效果都特别好，无任何死角，能够保证良好的化合物性能，当然公司还针对螺杆和机筒的间隙，推出了几种筒内表面特殊几何形状的纵向槽。

TKD带有扭曲尖端的扭捏盘捏合螺杆元件具有能源效应，通过确保快速相对低速材料传输来支持这一“尖端间隙技术”，同时保持适当的混合效率。JSW声称，这些特征使得Tex 25 Alpha III成为“世界最高性能的紧凑型双螺杆挤出机”。



TEX 25 Alpha III 挤出机

进料段水温控制是手动的，PID（比例-积分-微分，如闭环/反馈）水和加热器温度控制用于其他筒体段。该挤出机非常适合于频繁材料和工艺变化的研究开发工作，这是因为筒形加热器和专利筒夹装置能够方便快速进行筒段的变化，从而实现螺杆长度/直径（L/D）比率42: 12, 52.5: 5和70: 20。机器可容纳通风和封闭筒段，通过后面的筒段侧面馈送增强磨料、热或剪切敏感化合物添加剂和材料到熔体。

JSW使用N60-S镍基合金制成的耐磨LSP-2改良工具钢螺杆和机筒承诺使用寿命更长（高度耐磨和耐腐蚀），适用于各种含有碾磨或腐蚀性材料和添加剂的

化合物。JSW公司专利TEX-FAN Flow Analysis Network研究开发支持工具，用于TEX双螺杆挤出机分析聚合物熔体温度、停留时间和JSW开发的特殊专用计算机填充因数。TEX 25 Alpha III配备了EXANET 64-bit RISC高速控制系统。另外，15英寸彩色液晶触摸屏提供最佳的过程控制和监控，并存储数以千计的设置和历年的工艺参数。TEX 25 Alpha III集成了辅助设备，包括JSW开发的紧凑型JSW-TTF 20 & SFT-15重力式喂料机和搅拌机以及TSF25侧面送料器，用来绞合粒化和水下造粒。

其他JSW配件包括换网机、SFD25脱气侧喂料机、带有插头的液体注射喷嘴、机筒冷却水装置、真空注液和齿轮泵、绞合冷却槽、颗粒输送机 and 压实工具。JSW于2014年2月签署了一项合同，即由比利时安特卫普Stork Technical Services为西欧JSW挤出机提供维护、大修、升级与强化，未来在整个欧洲扩展到安装、调试和维护TEX双螺杆挤出机。JSW在比利时奥佩尔特拥有技术中心，在那里先推出了K 2013，继而展示了TEX 44 Alpha III挤出机。

Japan Steel Works – 日本
网址: www.jsw.co.jp

Datwyler新推微型混合电缆

Datwyler推出世界首款微型混合电缆FO Outdoor wbKT Micro Combi, 用于NGN和NGA网络（下一代网络，下一代接入）。

该电缆结合四个12芯绞合松套管，可为单模或多模光纤，两根绞合铜线。由于电缆外部直径只有6.5毫米，因此，能够被改装

用于现有的空管系统和进入微管系统的长剖面。具有附加绞合铜线的(0.50平方毫米)微型混合电缆特别适用于安全敏感领域。

在FTTx网络中，它是一个成本经济的替代产品，安装两种不同类型的电缆，为住宅

连接提供一个备选，比如在电源故障情况下，为消防服务电缆提供应急电源。

该产品将电力供应给主动远程技术，例如街边机柜、紧急电话、智能电网或数据中心，并允许远程监控连接技术，比如电缆耦合器、配线架和接入控制系统。安装后，很容易从地面定位。

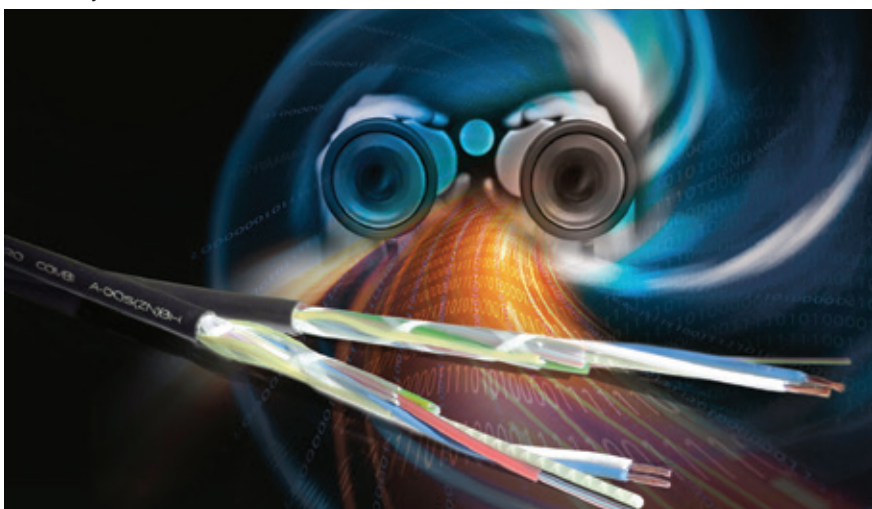
两种颜色，易于辨认升降绳，这意味着电缆护套可以安全地打开，通过芯的空隙安装方便，拆卸也简单。

FO Outdoor wbKT Micro Combi符合IEC 60794-1-2各个方面的要求，包括侧向压力、冲击、反复弯曲和扭转。

Datwyler参照“电信数据处理系统操作的安全要求目录和按照德国电信法§109 (TKG) 个人资料的处理”开发了这款新产品。该目录自2013年5月生效，由德国联邦网络局、联邦信息安全办公室(BSI)和联邦专员数据保护和信息自由共同磋商制定。该新电缆自9月份开始批量生产。

Datwyler – 瑞士
网址: www.cabling.datwyler.com

Datwyler公司新产品FO Outdoor wbKT Micro Combi



Zumbach又添新产品

瑞士Zumbach Electronic系列型材测量仪新增三款产品，该系列测量仪主要用于测量钢铁和金属型材。这些测量仪基于激光切片技术，通过相机视觉，通常也被称为“光切”原则。

多达八个线激光器“标记”产品外形轮廓，各个摄像机捕获产品轮廓上大量的像素。高度发达的软件增加四张图片到型材真正的正剖面。所有关键尺寸、角度和半径，连同公差，都可进行编程。

操作者和管理者不仅可以在线1:1监控型材，而且可以看到不规则的故障，比如看起来凹凸的形状等。

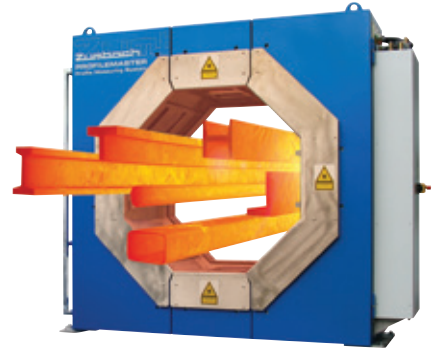
所有标准型材如H、I、U、L梁，六角形、四边形、扁平形和任何特殊形状的材料都可以测量。

根据产品最大尺寸，三种型号机的测量范围最高达200、400或800毫米。

由于采用了独特的设计理念，Profilemaster®提供高度精确和稳定的读数（并非“自然”法则，而是适用于多个测量标准）。复杂的多级保护和净化/冷却系统保证测量高度可靠。

主要优势包括：

- 借助多达八个摄像头和模块化摄像设置，任意形状都可以被捕获
- 高达16,000点/轮廓 (2,048/摄像头) = 5,734,400 点/秒 (八台摄像头)
- 高采样率 350...500/秒 (完整的型材/秒)
- 八摄像系统上四个不同颜色的激光→无干扰
- 形状故障检测 (SFD)



○ Zumbach生产的新系列型材测量仪

- 由于高采样率，3D模式编图
- 无故障维护，方便快捷访问维护点

最大产品尺寸：圆形高达600mm；方形500 x 500mm
相机模块数量：一个多达八个
重复性测量：优于0.01mm

Zumbach Electronic AG – 瑞士
网址：www.zumbach.com

绞线与股绳脱脂与消除应力

钢丝绳和钢绞线在绞合前单独的线材通常需要进行适当的润滑。

在绞合过程中，单独线材也需要加工硬化，使得绞线失去其直线度，钢绞线被切割时，单独的线材就会“开花”。

一般情况下，钢绞线和股绳在进一步加工或包装前必须进行清洁或消除应力。这在许多应用中是很常见的，比如应用于医疗、珠宝、建筑和装饰领域的绞线和股绳。

Plasmait一直与这些领域的线材制造商紧密合作，为绞合产品和绳索的热处理设计有效的解决方案。Plasma机器允许在整个绞合结构的横截面精确分布热或温度。

单独的线材被退火或消除应力达到均等的温度和柔软度，可矫正绞线和防止绞线



○ Plasma机器使整个绞合结构横截面热或温度分布精确

端“开花”。精确控制传热，广泛系列的绞合结构和材料，如铜、铝、不锈钢、镀钢丝线和许多其他材料以及它们的合金都将由此得到良好的机械性能。

退火和应力释放过程在低真空、受控的惰性气体中进行，这有利于在退火过程中绞合结构内部有效去脂。

这是plasma排放的一个显著特征，即在绞合结构中单独线材间的小腔内是最强大的。如果额外涂层粘合以及与之一致的随

后聚合物涂层是必须的，那么可以实现表面活化。

Plasma机器适用于大范围的直径和材料。它们是紧凑型机，只占用很小的地面空间。Plasma机器可以冷启动和在几分钟内迫切停止。这省去了冗长的升温 and 冷却时间，并节约了能源成本，也适用于常规管式炉。

Plasmait GmbH – 奥地利
网址：www.plasmait.com

水溶性加工与磨削液的一场革命

Q8Oils推出最新水溶性加工与磨削液Q8 Brunel。Q8 Brunel系列产品性能优于其它所有溶液，欧洲的制造商们已成功进行了试用。Q8 Brunel系列产品的配制完全符合欧洲最新行业立法，不含有硼、硼酸、氯化石蜡、仲胺、甲醛释放杀生物剂和亚硝酸盐。

推出新的 Q8 Brunel 系列产品之后，Q8Oils产品线经理Stuart Duff表示：“经过广泛的研究和实验室、实地试验测试，我们彻底推翻了业内加工水溶性金属加工流体化学物的老方法，开发了全新的方

法，专注于三大关键客户需求 - 产品性能、环境保护和用户健康。”他坚信以客户需求为中心、显著改善工具寿命和表面光洁度的目标都可以实现，并声称：“Q8 Brunel如此先进，很有可能为每一个客户节约运营成本。”

因此，这是高性能、水溶性加工磨削液包含高级安全特征的一次革命。我们投入数千小时在实验室测试和实地验证，以确保Q8 Brunel在水溶性金属加工流体技术方面取得革命性的成果，并且完全符合欧洲环保和化学品的相关法规。

所有的Q8 Brunel等级都符合TRGS 611标准，适用于硬水和软水中，呈现低发泡性能，是高速加工应用和现代机床中要求苛刻的流体输送压力的理想选择。同时，有助于显著提高工具的使用寿命。

此外，所有等级都适用于硬水和软水中，具有低发泡的特点，Q8 Brunel金属加工液非常适合于高速加工应用和现代机床上苛刻的流体传输压力使用。

Q8Oils – 比利时
网址：www.q8oils.com

导体预热器集成温度测量与控制



集成温度测量与控制的导体预热器

电缆制造商，特别是汽车和数据电缆制造商需要可靠的导体预热，以确保电线上绝缘层最佳的粘附性和控制发泡。

Sikora 的6000 TC (温度控制) 预热器是导体精确加热的高级解决方案，这也是生产高质电缆和重复控制生产的基础所在。

在仅有的几个应用中，只根据导体尺寸和类型、线速度及所需的温度来控制导体预热装置的输出功率也许是有效的。然而，导体温度的精确度将受到很多因素的影响，如环境温度、导体的初始温度，尤其是启动生产后或生产中断后的10 到 20分钟内导丝短路轮温度的变化。

6000 TC预热器定位在挤出机前的位置，给导体感应加热到所需的标称值。集成IR 摄像机在预热装置的输出口保证无接触测量线材温度。6000 TC预热器控制模块根据结果连续调整预热功率，因此，线材独

立于导体材料、导体尺寸和线速度，一直保持标称温度。不需要进一步的设置。直接安装在6000 TC预热器上的LED显示器显示不同角度的测量温度。

集成的、非接触式温度控制使得6000 TC预热器别具一格。它可应用于温度高达250°C、产品直径范围0.32到4.5mm (0.08到16mm²) 和线速度高达2,500m/min。

可提供三个设备型号，适用于10、20和30 kW的功率范围。公司网站www.sikora.net/powercalc上有功率计算器，帮助您选择最佳的设备。

Sikora温度测量系统也可作为独立系统 Wire-Temp 6000。

Sikora AG – 德国
网址: www.sikora.net

气动和电池驱动辊推进器

Renova推出新型强大可靠的Moviroll辊推进器 - 气动和电池驱动。Renova Moviroll系统允许操作者在一平面上轻松操纵大、小型圆柱载荷，然后把它们放在辊架穿梭车上。

Moviroll辊推进器具有结构紧凑、重型、快速、低或无维护需求等特点，允许载荷连续或正常移动，是理想的电线电缆卷筒、瓦楞纸和抽纸卷筒解决方案，操作方便安全。

所有的Moviroll型机均在意大利设计生产。

气动型: MR气动Moviroll使用气动减速电机动力，在压力6巴 (90磅平方英尺) 时，通过加压和润滑空气提供动力。

两种型号，各有两种不同的手柄配置(直柄或S型弯柄)，具体如下:

- MR100 / MR100 S 型: 推力10,000kg (22,000lb), 升力2,500kg (5,500lb)
- MR200 / MR200 S 型: 增加推力达到20,000kg (44,000lb), 升力5,000kg (11,000lb)

电池型: 新的MRE电池供电Moviroll具有自由移动的优势，没有气动连接电缆的限制。

Moviroll配备有24V DC IP 44密封有刷电机，由24V电池和先进的电子系统提供动力，监督电机和电池的运行参数，并进

行干预，一旦越过规定，为Moviroll提供保护。在异常情况下，闪烁的LED灯提醒你识别和解决问题。

高性能电池置于8毫米的底盘上，确保操作员从60到120辊间移动，而且只有一个电池充电。

MRE Moviroll提供第二个电池 (备选)。

即插即用电池允许运作过程中无中断快速更换电池。智能型充电器根据电池充电状态自主决定充电时间。系统的设计备受重视。

手柄和油门符合人体工程学的设计，以简化Moviroll处理行进挡和倒车档。

油门配备有速度指令，允许速度可变，适应操作者的需要。超大后轮设计用于克服如孔、链条和梭车这样的障碍。

电池型Moviroll有以下三个型号，每种型号都有两个不同的手柄配置 (直形手柄或S弯形)。

- MRE100 / MRE100 S 型推力为12,000N (26,450lb), 升力3,000kg (6,600lb)



Renova 制造的全新Moviroll 辊推进器

- MRE200 / MRE200 S 型推力为16,000N (35,300lb), 升力4,000kg (8,800lb)
- MRE300 / MRE300 S 型推力为20,000N (44,100lb), 升力5,000kg (11,000lb)

Renova Srl – 意大利
网址: www.renova-srl.it

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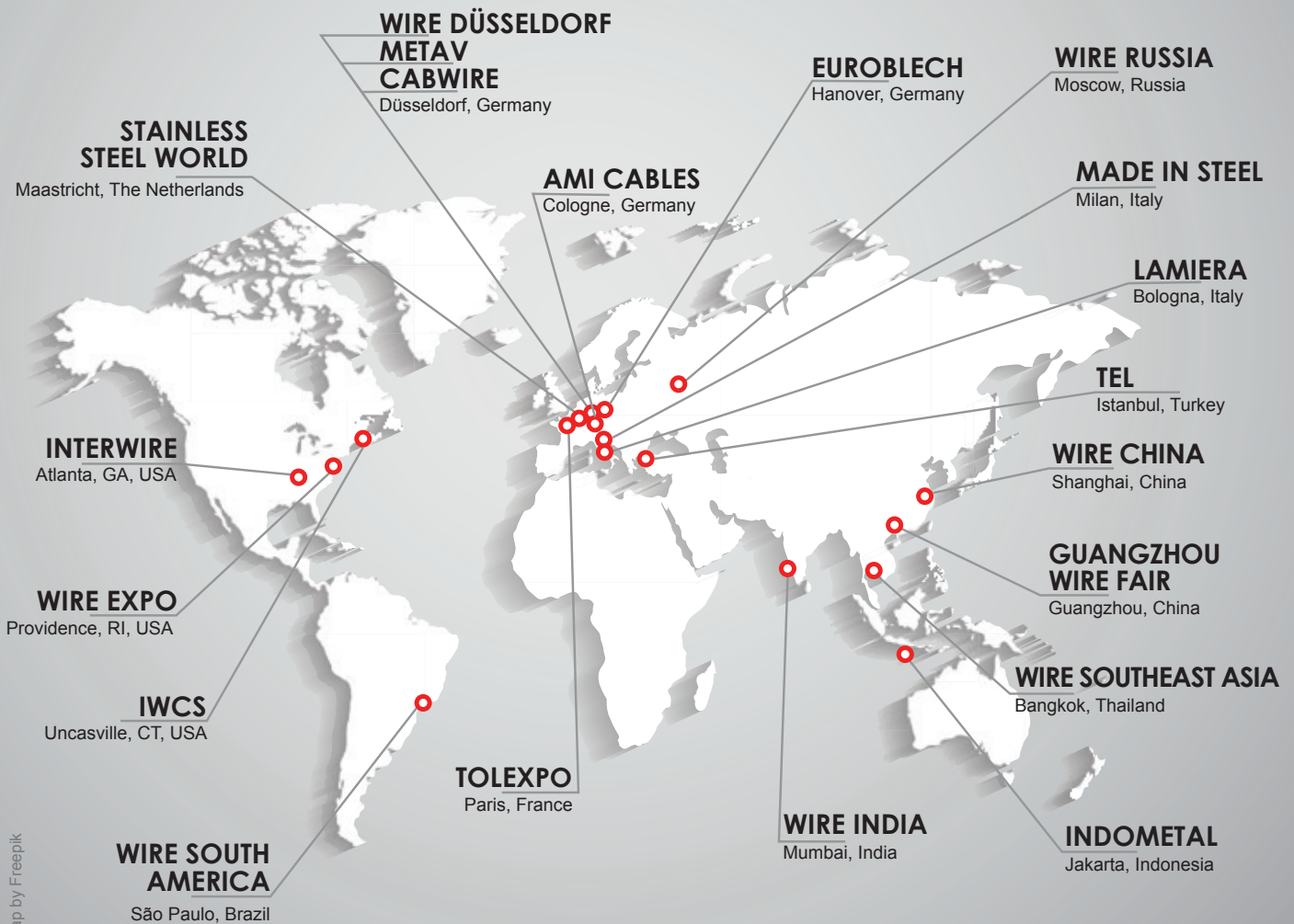
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Map by Freepik

India Insight

Capacity expansion plans for Sterlite

STERLITE Technologies is to invest in further capacity expansion, targeting a major part of the BharatNet project.

The national optical fibre network (NOFN) or BharatNet, forms the backbone of the Digital India initiative, which aims to extend high speed broadband throughout India.

"This [BharatNet] is a basic thing. Fundamentally, it is to connect India. There is a huge opportunity," said Anil Agarwal, non-executive chairman of Sterlite Technologies.

On capacity expansion, company CEO Anand Agarwal said: "Our facility is global. We already have a capacity of about 22 million kilometres, which we are going to take in stages to 30 million kilometres."

Sterlite has already expanded capacity in anticipation of the demand for more Internet, he added.

"We are seeing that this demand is proportional to data propagation, and has been increasing, year-on-year, in the last two to three years.

"It was almost doubling every year, the amount of data which was going through the network," he said.

"Capacity expansion for us has largely happened. Three years ago we were 12 million kilometres, now we are 22 million kilometres. So, for us, capacity is not the issue in terms of supply optical fibres."

Of the optical fibre cable requirement for the BharatNet project, Mr Agarwal said: "Total OFC requirement for BharatNet will be around 50 million kilometres, which will largely be done by us."



○ Chief executive Anand Agarwal. Photograph courtesy of Sterlite Technologies

Sterlite Technologies – India
Website: www.sterlitetechnologies.com

Helping save space

When transmission utility KPTCL planned a modern multi-voltage transmission line in Yelahanka capable of bearing both 220kV and 66kV lines through multi-circuit towers, the project would have necessitated ten hours of shutdown every day. The alternative to regular shutdown was to use even more expensive 66kV underground cables.

Instead, KPTCL has chosen a Swedish technology called covered conductor. KPTCL has erected the first 66kV line in Yelahanka alongside the modern 220kV/66kV multi-circuit multi-voltage line carrying power from Hoody to the 220kV station in Yelahanka.

Energy minister DK Shivakumar said in a statement that the government will use the technology wherever it has right of way issues. "This is the first such initiative in India, and we adopted this innovative technology because it would minimise our land requirement for transmission lines as well as save on land purchase costs," he said.

"Usually we need 18 metres of right of way to build a 66kV line, but the covered conductor would make the project possible in a corridor of 7 to 9 metres width. In fact, in Yelahanka's case, the central power research institute (CPRI) has said seven metres could be sufficient," said S Sumanth, KPTCL director (transmission), overseeing the project.

"Once the multi-circuit, multi-voltage line is ready, the industrial, commercial, educational and residential suburbs around Yelahanka will not have any power supply disruptions," he added.

KPTCL – India
Website: www.kptcl.com

New steel venture

ArcelorMittal is to enter into a joint venture with the Steel Authority of India Ltd to establish an automotive steel manufacturing plant in India.

In the meantime, the company is to idle its wire rod mill in Georgetown, South Carolina, and reassess its other USA holdings, especially finishing facilities, to offset record imports, increased competition and high legacy costs. The Georgetown closure will result in the loss of 226 jobs.

ArcelorMittal recently reported a \$103 million first quarter operating loss for its North American division, with its USA holdings showing a loss of almost \$1.5 billion over the last five years.

The Indian joint venture will involve building a cold rolling mill and other downstream finishing facilities that will offer technologically advanced steel products to India's rapidly growing automotive sector. India is anticipated to become the world's fourth largest automobile manufacturing nation by 2020.

In response to the level of demand, and supported by the Indian government's "Make In India" programme, designed

to transform India into a global manufacturing hub, ArcelorMittal said automotive manufacturers are establishing an increased presence in the country.

ArcelorMittal – India
Website: www.arcelormittal.com

Steel Authority of India Ltd – India
Website: www.sail.co.in

New panel plant

India's Sterlite Technologies is to establish an LCD panel manufacturing plant in the country, with the potential to create 50,000 jobs. The company is also working on a project to connect defence establishments in Jammu and Kashmir through optical fibres.

Anil Agarwal, the head of mining giant Vedanta Resources Plc, said at the inauguration of Digital India week: "Sterlite Technologies will play a responsible role in being a part of Digital India. We are already working on a project in [Jammu and Kashmir] to connect the defence establishment through optical fibres."

He said the LCD panel facility would help to reduce the imports of electronic goods into the country. However, he did not specify the timeline of investment or for establishing the plant.

Sterlite Technologies – India
Website: www.sterlitetechnologies.com

Dual-purpose poles

The Andhra Pradesh government has approved a plan to use existing electric poles, stretching over a distance of 23,000km, to carry broadband connectivity to thousands of towns and settlements.

All the electric poles will be geo-tagged (providing geographical identification information) to help officials in connecting the poles with fibre cable. The state anticipates cost savings by utilising the network of electric distribution lines.

Andhra Pradesh is also planning to establish the AP Fibre Corporation. The state government has approved the fibre grid project, promising delivery of between 10MB and 15MB to households, and speeds of 100MB for businesses.

The AP fibre grid project will be responsible for laying the fibre cable along the poles. Areas covered by eastern and southern power distribution companies will be the first to be operational.

In a similar cost-saving move, neighbouring state Telangana is to utilise the water grid's water-laying trenches for its own optic fibre network.

Andhra Pradesh Government – India
Website: www.aponline.gov.in



With an ambitious plan to bring consumer-world digital services to industry and business, Huawei renews its fealty to Europe

Huawei in mid-June reaffirmed its European commitment by emphasising its partnerships with operators, car manufacturers, and others, and stressing Europe-based research and development. Editor Anne Morris of *FierceWireless:Europe* identified the China-based equipment vendor's broader purpose: to help Europe establish a leadership position in future technological developments in business and industry.

At its annual innovation day in Munich, Huawei announced a new alliance with Britain's Vodafone to develop cloud-based and Internet of Things (IoT) services for enterprises. Ms Morris also reported Huawei as underscoring existing alliances with other large operators including BT and Deutsche Telekom; car manufacturers such as Audi; IT specialists including SAP; research organisations such as Germany's Fraunhofer Institute; and projects supported by the European Commission, such as Horizon 2020. "Europe is one of most important markets for Huawei outside China," said William Xu, the company's chief strategy marketing officer. He added that Europe "is at the frontier" of the vendor's innovation work and collaboration with partners. Huawei has already established 19 joint innovation centres with its partners in the region, as well as 18 R&D centres of its own in eight European countries.

Ms Morris wrote: "Both Huawei and Deutsche Telekom also said they believe Europe is leading the way to what is being termed 'Industry 4.0' – a German concept that essentially refers to the transformation of industry through new technology and 'digitisation.'" ("Huawei Vows To Put Europe In Vanguard For New Digital Industrial Era," 17th June). Dieter Wegener of the German standards organisations VDE and DKE explains Industry 4.0 as an effort to bring what is already happening in the consumer world to the industrial and business world. Specifically, he told *FierceWireless:Europe*, to transform products into services and to make use of wireless sensors, cloud-based services, and the IoT to "digitise the value chain."

Although in Ms Morris's view Industry 4.0 "is still very much a vision," she reported the insistence of leading proponents of the concept that Europe take the lead here. Even as US companies such as Amazon, Google and Facebook are shaping the consumer world and driving its consumption of digital services and content, Europe is seen as well positioned to lead the charge as business and industry go through a similar revolution.

- Mr Xu summarised what he termed a 1-2-1 strategy for Industry 4.0, with a notable contribution from Huawei. "The first '1' refers to a single unified IoT platform. The '2' refers to two access modes – wired and wireless – via industrial switches, industrial Wi-Fi, or eLTE. The last '1' refers to LiteOS, Huawei's own IoT operating system."

Two announced subsea fibre optic projects will establish links between Europe and Latin America, and Africa and Europe

- The European Commission has said it plans to invest some \$28 million in a submarine fibre optic cable, tentatively named eulaLink, which will link Lisbon, Portugal, with Fortaleza, Brazil. As reported by *TeleGeography* (12th June), the

EC disclosed that its participation is by way of the Building Europe Link to Latin America (BELLA) project spearheaded by European research network DANTE and its Latin American counterpart RedCLARA.

The EC noted that Latin America currently relies on undersea cables to the USA to transmit almost all (85 to 90 per cent) of its communications with Europe. The sole existing cable between Latin America and Europe – the 5,280-mile Atlantis-2, which went

into operation in February 2000 – is outdated and used only for voice transmissions.

The eulaLink cable, scheduled for commissioning by 2017, will be built by a consortium led by Brazilian state-owned telecom infrastructure provider Telebras and the Spanish cable operator IslaLink. The declared aim of the initiative is to promote research, innovation and education, as well as business exchanges, by reducing connectivity costs and ensuring very high-capacity bandwidth.

- On 10th June, *Investir au Cameroun* reported that mobile operator Orange Cameroon had signed an agreement with the government at Yaoundé for the operation of the African Coast to Europe (ACE) submarine cable, slated for completion by the end of this year. The business journal quoted CEO Elisabeth Medou Bandang as saying that Cameroon's third submarine cable – after the SAT3 and WACS cables – would enable Orange to manage growth in data usage in the country.

While details were not forthcoming, it was previously reported that Yaoundé in March issued a call for expressions of interest (EoI) in the construction of a cable landing stage in Kribi and a 404-mile fibre optic branch to the ACE connecting point. *TeleGeography* noted that the 10,560-mile ACE high-speed cable, connecting the west coast of Africa with France, is in the second phase of its rollout to additional destinations on Africa's Atlantic coast. The first phase, ended in December 2012, saw the network go live in 13 countries.

A Wi-Fi antenna adapted from a standard fluorescent light tube could spell the end for "dead spots"

Researchers at Malaysia's Universiti Teknologi MARA have used ionised gas in a common fluorescent light tube to create an antenna for a Wi-Fi Internet router, the science news

service Phys.org reports. ("New Wi-Fi Antenna Enhances Wireless Coverage," 1st June)

Reviewing the article for *FierceWirelessTech* on 2nd June, editor Monica Allevan noted that the invention is designed to address the coverage problem "dead spots." These occur most often in areas where Wi-Fi is in high demand, such as conference centres whose walls or appliances block a router's signal or degrade it to the point that it becomes too weak for a phone or tablet to be used reliably. ("Report: Researchers Use Fluorescent Light Tube to Create New Wi-Fi Antenna," 2nd June)

The prototype antenna developed in Malaysia consists of a fluorescent tube that connects to the router through a tuned wire coil in a sleeve slipped over one end. The coil passes the router's radio signal through the glass of the fluorescent tube and into the plasma. According to the research team, the plasma found in a standard 62-centimetre light tube is highly conductive; and signal measurement testing shows that it is strong and stable, Phys.org reported. Plasma happens to compare favourably with standard metal Wi-Fi antennas for transmitting and receiving.

Plasma also has conducting properties comparable to a common metal radio antenna, allowing an attached router to send and receive radio signals through the light tube on the standard 2.4-gigahertz Wi-Fi frequency in the same way as through a regular antenna. The router's radio waves can ionise the gas in the tube, enabling it to act as an antenna whether the light is in On or Off position.

An example of a possible application could involve outdoor billboard lights. With the Malaysian technology installed, each plasma antenna array would then be integrated with a Wi-Fi router to provide large-scale, system-wide wireless communication.

➤ Ms Allevan said there is no word on whether the technology "or something akin to it" might be considered for deployment in the USA. Back in 2013, she recalled, a common fluorescent light fixture in a hair salon in San Antonio, Texas, was identified as the source of interference for a nearby AT&T LTE cell site.

Ms Allevan wrote: "An FCC agent used a spectrum analyser and handheld antenna to confirm that the salon's overhead light fixture emanated a stray signal at 705 MHz, causing interference to AT&T's Band Class 17 LTE network."

Elsewhere in telecom . . .

➤ Vendors Alcatel-Lucent, NEC and Nokia Networks, and operators Deutsche Telekom, Orange and Telefonica, are members of a 13-strong consortium with a brief to promote innovative thinking around mobile network architecture for 5G. Richard Handford of *Mobile World Live* reported that the 5G NORMA (Novel Radio Multiservice adaptive network Architecture) group – a part of the 5GPPP initiative – would work for a period of 30 months after its July launch.

"5G NORMA is also about acquiring a leadership position for Europe in 5G," wrote Mr Handford (1st July)

The announcement of its formation declared that NORMA "breaks away from the rigid legacy network paradigm" to attempt to adapt network usage to changes in traffic demand and network topology. The group will also evaluate the value to the mobile industry and its customers of the services enabled by the proposed architecture.

➤ The British Bankers' Association (BBA) said on 14th June that banking by smartphone and tablet has become the preferred way for Britons to manage their finances, as mobile banking overtakes bricks-and-mortar branches and the Internet in popularity.

According to new research commissioned by the BBA, in excess of eight million consumers downloaded mobile banking apps over the previous 12 months and two million signed up to the 'Paym' service that allows payments to be made to mobile phone contacts.

The British are now transferring more than £2.9 billion a week via apps.

The BBA reported that its customers will use mobile devices to tend their current accounts 895 million times in 2015, as compared with 427 million interactions at local branches. It forecast that by 2020 customers will use their mobiles to manage their current accounts 2.3 billion times a year – more than Internet, branch and telephone banking taken together.

"Technology is changing our lives and banking is no different," said CEO Anthony Browne of the BBA, which represents more than 240 member organisations and has a presence in 180 countries. "The rapid take-up of apps and mobile banking appears to be a real game-changer for the British public."

➤ After almost two years of sometimes heated discussion among lawmakers, the European Union on 30th June arrived at agreement on a telecommunications law to take effect in June 2017. It provides for the end of roaming charges – for voice, text and data – in EU member countries, with mobile phone users on the move paying what they do at home; plus new net neutrality rules designed to protect the right of all Europeans to access Internet content without discrimination.

By enshrining for the first time the principle of net neutrality into EU law, the agreement ensures that Internet users will not be closed out or otherwise hampered. Paid prioritisation will not be permitted.

"Access to a start-up's website will not be unfairly slowed down to make way for bigger companies," declared the EU in a statement. "No service will be stuck because it does not pay an additional fee to Internet service providers. There won't be gatekeepers to decide what you can and cannot access."

At the meeting in Brussels, the European Commission, the European Parliament and the Council of Europe, reached also a compromise on an EC proposal for a single telecom market. The agreed measures are to be finalised in 2016 in a broad overhaul of EU telecom rules, including a more effective spectrum coordination process.

意在将消费者领域数据服务带入工业和商业，华为公司向欧洲再抛橄榄枝

6月中旬，华为公司重申其向欧洲市场做出的承诺，强调其与运营商、汽车制造商以及其他行业间的合作伙伴关系，并将加强其在欧洲地区的研发活动。

《FierceWireless: Europe》的编辑安妮-莫里斯（Anne Morris）进一步解释了这中国设备供应商的扩张目的：为将来欧洲在商业和工业的技术研发领域奠定领导地位。

在其慕尼黑年度创新发布日上，华为公司宣布将与英国的沃达丰公司（Vodafone）达成新的合作事宜，为企业开发物联网（IoT）云服务。莫里斯女士还强调了华为现有的合作公司包括：英国电信（BT）和德国电信（Deutsche Telekom）等大型运营商；包括奥迪（Audi）在内的汽车制造商；德国软件公司 SAP 等信息科技公司；德国弗朗霍夫研究所（Germany's Fraunhofer Institute）等研究机构；以及由欧盟委员会资助的项目，例如Horizon 2020。华为首席营销官威廉姆·徐（音译）说：“欧洲是华为在中国境外最重要的市场之一。”他补充说，欧洲正站在在供应商项目创新和建立合作关系的“最前沿”。华为已在欧洲与其合作伙伴一同建立了19座合资创新中心，并在八个欧洲国家建立了18座自己的研发中心。

莫里斯女士写道：“华为和德国电信公司都坚信欧洲正在领航“工业4.0”——这一概念来源于德国，特指通过新技术和‘数字化’来进行工业转型。”（“华为承诺将助欧洲成为新数字产业纪元的先驱，”6月17日）德国标准组织——德国电气工程协会（VDE）和德国电工委员会（DKE）的迪特纳-威戈纳（Dieter Wegener）解释道，“工业4.0”旨在将消费者领域内正在发生的变化引领入工业和商业领域。他还告诉《FierceWireless: Europe》，工业4.0注重将产品转型至服务，并利用无线传感器、云端服务以及物联网将“产业价值链数字化”。

尽管在莫里斯女士看来，工业4.0目前“还只是一个虚幻的概念”，但是她表示人们坚信欧洲占有主导地位。尽管包括亚马逊、谷歌和脸书在内的美国企业正在构建消费者领域，并且在努力推动数字服务和内容使用，但是由于商业和工业正在经历一次相似的改革，欧洲依旧占据着先驱的位置。

徐先生总结了他命名为“工业4.0 1-2-1”的战略，这一战略来源于华为公司。“第一个‘1’代表独立统一的物联网平台。‘2’代表两个接入模式——有线和无线——通过工业交换机、工业无线网络或主轴电机。最后一个‘1’代表华为自己的物联网运营系统LiteOS。

两个已宣布的海底光纤项目将建立起欧洲与拉丁美洲、非洲与欧洲间的通信纽带

欧盟委员会宣布其将投资2,800万美元用以建设一条海底光缆，暂时命名为“欧拉光缆”（eulaLink），将里斯本、葡萄牙和福塔雷萨、巴西联系在一起。根据《电信地理》（TeleGeography）于6月12日的报道称，欧盟委员会称其将参与欧洲至拉丁美洲的连线建设项目（BELLA），该项目将由欧洲调研网站DANTE和其拉丁美洲合作方RedCLARA牵头建设。欧盟委员会注意到，目前拉丁美洲主要依靠通往美国的海底光缆完成大部分（85%至90%）与欧洲间的通信。拉丁美洲和欧洲间唯一现存的电缆是长5,280英里的亚特兰蒂斯2号，该电缆于2000年2月投入使用，但已过于陈旧仅供语音通信使用。

“欧拉光缆”计划将于2017年投入试运营，将由巴西国有电信基础设施供应商——巴西电信公司和西班牙

牙电缆运营商IslaLink合作建设。发起该项目的初衷在于通过降低通信成本的同时，保证大容量带宽，从而促进欧拉在研究、创新、教育以及商业间的交流。

同样在6月10日，《喀麦隆投资家》（Investir au Cameroun）报道称，手机运营商橙色喀麦隆（Orange Cameroon）已与雅德温政府签署了一项协议，用以运营非洲海岸至欧洲（ACE）的海底光缆，准备于今年年底完工。这一商业杂志援引首席执行官伊丽莎白·米豆·班当（Elisabeth Medou Bandang）的话说，继SAT3和WACS两条光缆之后，喀麦隆的第三条海底光缆将助橙色喀麦隆公司发展其在国内的数据利用。尽管还未获得详细信息，但是在之前的报道中，雅德温已于三月发布了一份项目意向书（EoI），用于铺设克里比的电缆平台以及通往非洲海岸至欧洲电缆连接点的光纤分支（长404英里）。《电信地理》指出，长10,560英里的非洲海岸至欧洲高速电缆将连接非洲西海岸和

法国，目前该电缆正处于第二建设阶段，将增加其通向非洲大西洋海岸的线路。第一建设阶段已于2012年12月完成，13个国家内的通信网络已上线使用。

灵感来源于荧光灯管——无线网（Wi-Fi）天线将终结“信号死角”

据科技通讯社Phys.org的报道，马来西亚玛拉工业大学（Teknologi MARA）的研究人员利用普通荧光灯管内的电离气体，制作了一个适用于无线网络路由器的天线。（“新型无线网络天线将扩大无线网络覆盖面积，”6月1日）在回顾《FierceWirelessTech》于6月2日的报道时，编辑莫妮卡-阿勒文（Monica Allevan）指出，这项发明旨在解决无线网络覆盖的“信号死角”问题。“信号死角”问题通常发生于对于无线网络需求集中的区域，例如会议中心，这些区域的墙壁或电器会阻挡路由器的信号，又或者削弱信号而使手机或平板电脑无法稳定使用网络。（“报告：研究人员利用荧光灯管制作新型无线网络天线，”6月2日）

马来西亚研发的天线模型装有一根连接至路由器的荧光灯管，两者通过一端套管内的调节线盘连接。线盘通过荧光灯管玻璃将无线电信号传递入等离子体。研究团队发现，标准62厘米灯管的等离子体传导性能最佳；Phys.org报道称信号测量测试表明网络信号很强并且稳定。在发射和接收信号方面，等离子体毫不逊色于金属无线网络天线。

等离子体还具备可比拟普通金属无线天线的传导性，这使其可以凭借与普通天线同样的方式，令连接的路由器通过灯管以2.4千赫兹的无线网络标准信号传输和接收无线电信号。路由器的无线电波能将灯管内的气体离子化，使其无论在点灯开启还是关闭的情况下，都可以发挥天线的作用。该项发明有可能应用于户外广告牌上的照明灯。通过安装这个马来西亚研发的技术，每个等离子体天线阵都可与一个无线网络路由器相结合，从而提供大规模、全系统的无线通信服务。

阿勒文女士说，毫无疑问美国将计划部署该项技术“或与之类似的技术”。回顾2013年，阿勒文女士说，一家位于德克萨斯州圣安东尼奥市的美发沙龙的普通荧光灯管都会被认为干扰到附近美国电话电报公司的LTE基站信号。阿勒文女士写道：“一位联邦通信委员会的代理人通过光谱分析仪和手持天线，确认沙龙架设的灯管会发射出品牌为705兆赫兹的杂散信号，从而干扰到美国电话电报公司（AT&T）17号频段类别的LTE网络。”

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Automotive

NAFTA almost 22 years on: united under the trade agreement, the USA, Canada and Mexico are fierce rivals over automotive investment and jobs

"Mexico is the auto industry darling. Canada is struggling to retain a manufacturing footprint. And the USA is a house divided, with most of the new automotive investment and jobs headed south of the Mason-Dixon line."

Alisa Priddle and Brent Snavely of the *Detroit Free Press* did not have to go into the relative fortunes of the parties to the North American Free Trade Agreement (NAFTA) over the years, with Mexico usually odd man out. But a shift has taken place. Right now and for the foreseeable future, the automotive reporters observed, "the farther south you are located, the better." ("Why Mexico is winning the auto jobs war," 14th June)

South here refers to both the southern USA and Mexico. "[They] are winning the battle," the *Free Press* was told by Dennis DesRosiers, president of the Canadian firm DesRosiers Automotive Consultants. "Over half the capacity and 80-90 per cent of investment dollars are going to the US South or Mexico."

A united trading block under NAFTA – which took effect on 1st January 1994 – the USA, Canada and Mexico present highly individual characters to auto executives who must decide where to invest in the latest equipment and additional jobs. And these officials have made their preference abundantly clear.

Of the vehicles built in North America last year, Mexico produced about one in five, or double the rate from 2004. WardsAuto, which tracks production data, expects that rate to increase to one in four by 2020.

Conversely, Mr DesRosiers sees the Canadian auto industry dwindling over the next decade or two, to five automakers with a single assembly plant each – or about half its current manufacturing footprint.

According to WardsAuto statistics for 2004, 11.6 million vehicles were built in the USA, or 74 per cent of the 15.8 million NAFTA-zone industry total.

Canada built 2.7 million units, accounting for 17 per cent. Mexico contributed only 1.4 million vehicles, or nine per cent.

In 2014, signs were strong that the tide had turned. Mexican production had more than doubled to 3.2 million units, or 19 per cent of the 16.9 million industry total.

The advance came at the expense of the USA, which dipped to 11.4 million units, or 67 per cent. Canada was down to 2.4 million vehicles, or 14 per cent.

Wards sees a continuing trend. It forecasts new plants adding 1.2 million units of capacity in North America by 2020 – but in an uneven distribution.

'Massive untapped' Mexican market

In 2020, Mexico is expected to build one in four vehicles in a North American industry producing 18.6 million units. The USA will hold its own at two-thirds of the output, or 12.2 million vehicles. Canada will be the big loser, down to 1.6 million vehicles and nine per cent of the output. The quality of the supply base in Mexico has also improved, the WardsAuto industry analyst Haig Stoddard told the *Free Press*. In a reference to Toyota's strict standards, he said: "The litmus test was when [the Japanese automaker] said it would build there."

Now, virtually every automaker is adding capacity in Mexico – among them General Motors, Ford, Toyota, Honda, Volkswagen, Audi, BMW, Hyundai and Mazda. In the view of Mr DesRosiers, the Canadian automotive consultant, Mexico is itself a "massive untapped market" that could grow by another one million to two million vehicles a year.

Ms Priddle and Mr Snavely of the *Free Press* are aware that all this manufacturing activity would not mean much if Mexico were not prepared to follow up once the cars roll off the assembly line. But they pointed out that it is. The domestic market continues to grow, and Mexico's ports and its trade agreements with 45 countries have helped establish it as a strong export hub to Europe and South America as well as the rest of North America.

By contrast, wrote the reporters: "The US has about 20 trade agreements, and Canada also has but a fraction of Mexico's pacts."

"Mexico bested us on trade agreements," said Sandra Papatello, a former Canadian politician who now oversees business development for PwC Canada, in Toronto, as well as the Windsor-Essex Economic Development Corporation. "They quietly have been negotiating trade agreements with the world."

South Korean automakers make 'astonishing' strides in latest J D Power initial quality survey

"The astonishing thing is the improvement rate of the Koreans. It's a clear shift in the quality landscape. It's changing the pace that you need to be at in order to be ahead."

What so impressed Renee Stephens, vice president for United States automotive quality at the market research firm J D Power, was the performance of South Korean automakers in the initial quality study released in mid-June. While the industry overall improved by three per cent in a year, the South Korean companies improved 11 per cent.

Japanese brands as a whole improved at a rate of one per cent, while the domestic automakers and European automakers improved by three per cent, Ms Stephens told the *New York Times*. The initial quality study measures problems experienced by buyers and lessees of new vehicles in the first 90 days of possession. J D Power then ranks brands by the number of problems reported per 100 vehicles. The lower the number of problems, the higher the ranking.

More than one problem can be recorded per vehicle. This year's study included 215 models and 33 brand rankings.

South Korean brands led the industry in initial quality by the widest margin ever, averaging a score of 90 problems per 100 vehicles. For the first time in this study, European brands, with a score of 113 per 100, surpassed Japanese brands, with 114. American makes, with 114, equalled the Japanese for only the second time.

The *Times's* Cheryl Jensen noted that communications technology continues to be the biggest problem category, with voice recognition again leading the complaints. The majority of models equipped with voice recognition systems had ten or more problems related to that feature per 100 vehicles. And the number of owners reporting voice recognition problems increased to 67 per cent in the 2015 study from 57 per cent in 2013.

The German luxury brand Porsche was ranked most reliable for the third consecutive year. After Porsche, with a score of 80 problems per 100, rounding out the top 10 were Korea's Kia, 86; Jaguar (British), 93; Hyundai (Korean), 95; Infiniti (Japanese), 97; BMW (German), 99; Chevrolet (American), 101; Lincoln (American), 103; Lexus (Japanese), 104; and Toyota (Japanese), 104. ("Kia and Hyundai Show Improvement in J D Power Quality Study," 18th June)

🔍 This year's study is based on responses from 84,000 owners or lessees of 2015 model year vehicles. It put 233 questions about possible problems including mechanical defects and malfunctions as well as design issues.

Elsewhere in automotive . . .

🔍 At last count, the death toll from faulty ignition switches in small cars made by General Motors had risen by two to 111, and GM had paid \$200 million to settle claims filed with its administrator Kenneth Feinberg. By the 31st January deadline Mr Feinberg's compensation fund had received 4,342 claims, of which 88 per cent were deemed deficient or ineligible. Some four per cent remain under review.

The families of victims are being offered at least \$1 million each. In addition, GM has agreed to offer payment to 220 people who were injured in crashes caused by the switches.

GM acknowledged it knew about problems with the switches for more than a decade, but recalled 2.6 million of the older-model cars only last year.

🔍 In other news of General Motors, on 25th June its chief accounting officer told analysts that GM expected to take a \$600 million charge against second-quarter earnings due to devaluation of Venezuela's currency, the bolivar. Declaring that the charge would not impact operating income, Tom Timko said, "Despite the impact of this, the Venezuelan market remains very important to us."

As noted by Greg Gardner of the *Detroit Free Press*, Venezuela is not a large market for any automaker. But the South American country's economy has suffered from declining oil prices and runaway inflation, and bondholders

had begun to express concern about a possible default on debt. In a filing related to its first-quarter results, GM said that it is changing the way it values assets and liabilities denominated in non-US currencies. Ford Motor said in January that it would take an \$800 million charge deriving from the difficulty of converting bolivars to dollars.

Business

Chinese-owned companies, on the rise in the USA, could generate up to 400,000 new jobs over the next five years

A recent report on Chinese business firms operating in the United States found that the number of American workers employed directly by such companies increased more than fivefold in the past five years. The number of US employees of Chinese-affiliated firms jumped from fewer than 15,000 in 2009 to more than 80,000 in 2014.

The analysis was conducted by the research firm Rhodium Group and the National Committee on United States-China Relations, both New York-based. The committee, a non-profit that promotes sound dealings between the two nations as serving vital US interests, has former US secretary of state Henry A Kissinger as a vice-chairman.

Andy Szal of *Manufacturing.net* briefed down the report, which said 1,583 Chinese firms were established in the USA at the end of last year. The spending of the Chinese employers grew along with their numbers: to nearly \$46 billion between 2000 and 2014.

Although the bulk of Chinese investment in the US over that period stemmed from acquisitions, new establishments contributed to the total. ("Report: 80,000 US Workers Now Employed by Chinese Companies," 26th May)

"Fears that Chinese acquirers could systematically move acquired assets and related jobs back to China have not materialised," the report asserted. "Instead, new Chinese owners have, in most cases, sustained and expanded local employment after they acquired US assets."

Larger manufacturing and service industry projects were found to have increased significantly in the 18 months previous to publication of the report. The authors believe that direct US investment from China is only at the beginning stages and could generate up to \$200 million in spending and up to 400,000 new jobs over the next five years.

The report acknowledged that "perceived trophy assets" – such as the famed Waldorf-Astoria hotel, in New York – dominate the headlines about Chinese acquisitions in the USA. But it stressed that the "benefits of Chinese capital are distributed nationwide."

According to the report, North Carolina and Illinois lead the states in foreign direct investment from China. As to the distribution of the Chinese-owned firms, they operate in more than three-quarters of congressional districts across the USA.

Energy

Firmly in agreement on the importance of the smart grid, the USA and China commit to promoting industry engagement

Smart grids and smart cities were very much on the agenda during the seventh round of the US-China Strategic and Economic Dialogue (S&ED), which ended on 24th June in Washington, DC. Chaired by special representatives of US President Barack Obama and China's President Xi Jinping, and attended by senior officials from across the two governments, the Strategic Track signalled a renewed mutual intention to build on earlier progress in grid-related teamwork.

Barbara L Vergetis Lundin, the energy editor of *FierceMarkets*, reported that, with the aim of expanding institutional capacity for smart grids in the USA and China, the two sides will place greater emphasis on industry engagement and technical assistance. Additionally, the US Trade and Development Agency (USTDA) will sponsor a second study tour on smart grid this year, building on the success of the first study tour of October 2014 that attracted delegates from American electric utilities and the National Energy Administration. ("US, China Leaders Give Green Light to Further Smart Grid Cooperation," 25th June)

The top-heavy project and agency titles with which the Washington meeting abounded could not obscure real forward motion in the joint enterprise. Progress was noted on four collaborative efforts by the Climate Change Working Group (CCWG) Smart Grid initiative. These included the Irvine (California) Smart Grid Demonstration project, which showed 60 per cent-plus savings in energy usage and 80 per cent-plus reductions in electricity costs for zero-net-energy homes with smart grid technologies; and the development of functionality and application scenarios for four subsidiary projects in the China-Singapore Tianjin Eco-City.

Ms Lundin wrote: "The United States and China also decided to enhance their cooperation on grid modernisation, supporting the China Electricity Council and the State Grid Corporation of China as they conduct a feasibility study and pilot project on big data analytics for the electricity grid." This project will demonstrate the use of big data analytics to provide run-time tracking and optimisation of power distribution, consumption, and outage management on the smart grid.

🌐 The last round of the S&ED produced another noteworthy instance of Sino-American cooperation. The US Federal Energy Regulatory Commission (FERC) and the National Energy Administration of China (NEA) pledged to share information about regulatory experiences and practices in a series of digital video conference discussions.

Topics will include power industry planning, electricity pricing, electricity markets, renewable energy integration, distributed energy development, regulations for network technologies, and – of course – the smart grid.

Two controversial visas

The EB-5 programme for foreign investors in US businesses is criticised as an unfair method of allocating 'green cards'

With the next American presidential election more than a year away, opinion for and against the contenders need not detain us now. But an article this spring in the *Milwaukee Journal Sentinel* on Wisconsin Gov Scott Walker, a presidential hopeful, contained information of more than usual interest on an immigrant investor programme that puts foreign nationals on the path to US citizenship if they commit at least \$500,000 to an American commercial project that generates or saves ten jobs over two years.

Known as EB-5, the programme is much favoured by Mr Walker despite his strong anti-immigration sentiments. In the view of Daniel Bice, the *Journal Sentinel's* political watchdog columnist, Mr Walker's embrace of the "deeply troubled" programme is itself troubling, as well as contortionist. Because immigration policy bulks so large in public discourse on the USA, EB-5 warrants a closer look.

As noted by Mr Bice, critics have called the "abuse-riddled" programme a device for easing the way to permanent US residence for the affluent and their families, with more than 80 per cent of those in the programme coming from China. ("Critics Call Visa Programme a 'Scam' That Sells Green Cards," 17th May)

The programme has support from politicians in both parties. David North, a fellow with the conservative Center for Immigration Studies, told the *Journal Sentinel* that it is not unusual for there to be financial links between local politicians and those benefiting from or directing EB-5 regional centres. He said: "That's the way it works around the country."

Mr North cited scrutiny and criminal probes into EB-5 in Illinois, Louisiana, California, Texas and South Dakota. In December 2013 the Office of Inspector General for the US Department of Homeland Security, in a scathing critique of the programme, noted incidentally that its administrators were "unable to demonstrate the benefits of foreign investment into the US economy."

Another critic, University of Chicago law professor Eric Posner, called for an end to the "ludicrous" immigration programme. "It's the worst combination of bad economics, political cronyism, and unfairness," Dr Posner wrote for *Slate*. "Among other things, it's almost impossible to figure out whether a specific investment generates jobs rather than reshuffles them from one place to another."

🌐 Beyond that, in the view of Mr North, the programme is flawed in its premise. He said: "I think it's immoral, fattening, and otherwise unattractive to sell visas, which is what we're doing now."

It is difficult to quarrel with that assertion. As observed by the *New York Times*, the federal government puts applications from EB-5 investors on a fast track to the green card that enables a foreign national to live and

work permanently in the US. In general, it takes about two years to obtain a green card through EB-5. The wait is much longer – sometimes decades longer – under other visa programmes.

🌐 Created by the US Congress in 1990, the EB-5 programme remained all but dormant until the recession of 2008-2011 made it more difficult for American developers to finance their projects through banks and other traditional lenders. Wealthy foreigners seeking US residency for themselves or their families presented a ready alternative source of financing.

Abuses are alleged in the H-1B programme created to meet labour demand in the USA information technology sector

“It hardly needs saying that immigration policy should not undermine Americans’ jobs, wages, or working conditions. The problem is that what some companies want – cheap, exploitable, disposable labour – is exactly what the system can be twisted into giving them.”

If the EB-5 programme described in the previous item centres on investors, the H-1B programme that drew the indignation of the *New York Times* editorial board centres on workers: those displaced by others from overseas under what the board members see as a flawed reading of US law. (“Workers Betrayed by Visa Loopholes,” 15th June)

The H-1B programme, which provides up to 85,000 visas a year to foreigners, mainly highly skilled technical workers, was created by Congress to enable companies to fill work-force gaps with specialised employees unavailable in the United States. But the *Times* asserts that companies both in the USA and overseas “ruthlessly” exploit loopholes in the law – notably one permitting outsourcing firms to fill the openings with their own workers – to slash their payroll costs.

On 16th June the Labor Department announced it was investigating two of the largest companies that supply H-1B workers, Infosys and Tata Consultancy Services, both based in India. Senators of the two principal political parties asked for the inquiry after reports that Southern California Edison, the utility company, turned to Infosys and Tata for H-1B workers even as it was laying off 540 workers – many of whom said they were required to train their replacements.

While importing workers to do the jobs of Americans they displace is clearly not what Congress intended, the *Times* editorial board noted that, despite common perceptions, H-1B does not require companies to recruit American workers before looking overseas.

It called for a reform of the programme, including added protections for H-1B workers who themselves are vulnerable to exploitation because of their dependence on their employers.

An earlier call for H-1B reform appeared in a Senate bill for comprehensive reform of the USA immigration system. That bill died, killed by hard-liners in the House who objected to

provisions deemed too partial to unauthorised immigrants. The *Times* called that “a tragedy” for the 11 million unauthorised immigrants seeking legal status to live and work in the USA.

🌐 With no immediate possibility of an immigration overhaul, the editorial board wrote, opportunistic tech companies are pursuing their own narrow agenda, pushing for vast increases in H-1B visas: “That might help their recruiting problems, but leave much of the system as dysfunctional as ever.”

Rising enrolment in computer programming “boot camps” signals keen interest in high-paying technology jobs

While the labour shortage in the American IT sector mentioned above (“H-1B programme”) may persist, graduates of domestic computer coding schools will more than double in number this year.

According to data from *Course Report*, a website that enables students to rate the schools, over 16,000 people will graduate from programming boot camps – up from 6,740 in 2014. The intensive two- to six-month programmes train students in the creation of websites and mobile apps.

Citing government statistics, John Lauerman of *BloombergBusiness* reported that computer-related jobs are expected to grow faster than the US median for all occupations through to 2022. Average starting salaries for computer science graduates top \$65,000, and elite schools including Harvard University are hiring teachers to keep up with demand. (“Coding Boot Camp Enrollment Soars As Students Seek Tech Jobs,” 8th June)

Again according to *Course Report*, the tech boot-camp industry is less than four years old and graduated only about 2,000 students as recently as two years ago. Graduates do not receive diplomas or certificates. Their credentials are the software programs that they coded while in school.

Mean boot camp tuition is now \$11,063, about 10 per cent higher than a year earlier, and can go as high as \$21,000, *Course Report* said. Total boot camp industry revenue is expected to be about \$172 million in 2015, up from about \$52 million last year.

“We’re still seeing people getting placed,” Liz Eggleston, co-founder of *Course Report*, said in a *BloombergBusiness* telephone interview. “I’d say the market isn’t saturated yet.”

A 2013 graduate of the University of California, Santa Barbara, told Mr Lauerman that he will pay \$17,780 to take classes at Hack Reactor in San Francisco six days a week, 11 hours a day, for three months.

“The programme and curriculum are intense,” said the prospective code-writer, who had studied biopsychology and Spanish in college. “That type of mentality is healthy, and I want to be pushed.”

Dorothy Fabian – Features Editor

汽车行业

北美自由贸易协议颁布近22年：贸易协定成员国——美国、加拿大和墨西哥在汽车行业投资和就业方面竞争激烈

“墨西哥是汽车行业界的宠儿。加拿大正努力维持其在制造业的业务范围。而与此同时，美国正在经历内部分裂，其国内大多数的新兴汽车行业投资和就业都将目标集中于南北分界线以南。”

《底特律自由新闻报》(Detroit Free Press)记者艾丽莎-普利德尔(Alisa Priddle)和布伦特-赛弗利(Brent Snavely)并未对北美自由贸易协议(NAFTA)成员国间的相对财富进行统计，特别是墨西哥通常都在孤军奋战。但是情况已有所改变。这两位汽车行业的记者注意到，在当前和可预见的未来，“投资和就业范围越向南部拓展，行业发展就越好。”(“墨西哥为何能够赢得汽车行业就业战，”6月14日)

这里的“南部”指的是美国南部和墨西哥。“‘他们’正在赢得这场战争，”加拿大德罗西汽车调研公司(DesRosiers Automotive Consultants)总裁丹尼斯-德罗西(Dennis DesRosiers)对《自由报》记者说：“超过一半的产能和80%至90%的美元投资正投往美国南部或墨西哥。”

北美自由贸易协议颁布于1994年1月1日，该贸易协议下的联合贸易集团——美国，加拿大和墨西哥的汽车行业高管们都表现出了极大的个性，他们必须决定最新设备和新增职位的投资方向。同时这些高管们也充分表明了各自的投资偏好。去年在北美地区所生产的汽车中，墨西哥的产量占了20%，比2004年的产量翻了一倍。《沃兹汽车杂志》(WardsAuto)追踪了一系列的生产数据，其预计到2020年为止，墨西哥的汽车产量占比将达到25%。相反，德罗西先生则预计加拿大的汽车产业将在下个10年内逐步萎缩，或将减少二至五家只拥有一家装配厂的汽车制造商——又或者其目前的生产范围将减半。根据《沃兹汽车杂志》2004年的数据显示，美国的汽车生产量为1,160万辆，占北美自由贸易协议区汽车生产总量(1,580万辆)的74%。加拿大的汽车生产量为270万辆，占比为17%，而墨西哥仅生产了140万辆，占贸易协议区生产总量的9%。

2014年有迹象表明这一趋势有所变化。墨西哥的汽车生产量翻了一倍，达320万辆，占贸易协议区汽车生产总量(1,690万辆)的19%。墨西哥生产量的增加则以美国的减产为代价，2014年美国的汽车生产量减少至1,140万辆，占生产总量的67%，而加拿大则降低至240万辆，占比为14%。《沃兹》关注到了持续的走势，其预测到2020年，新建的工厂将为北美增加120万辆汽车的产能，但是增加产能的分布并不均衡。

韩国汽车制造商在最近的鲍尔公司(JD Power)初始质量调查中取得“惊人的”进步

“惊人的的是韩国的优化速度。在质量领域中产生了明显的转换。它正在改变前进所需要的速度。”

蕾妮·史蒂芬斯(Renee Stephens)是鲍尔市场调研公司美国汽车质量调查部的副总裁，该公司于6月中旬发布了初始质量调查，韩国汽车制造商的表现令史蒂芬斯女士印象深刻。行业内的年平均优化率为3%，而韩国企业则达到了11%。史蒂芬斯女士告诉《纽约时报》(New York Times)记者，日本品牌的总体优化率为1%，而本土和欧洲汽车制造商的优化率则为3%。初始质量调查将统计新款车辆的所有者和租赁者在初始90天内所碰到的问题。鲍尔公司将根据每100辆汽车统计到的问题数量对汽车品牌进行排名。统计的问题越少，排名则越高。每辆车可统计到一个以上的问题。本年度的调查包含了215款车型和33个品牌排名。

韩国品牌成为有史以来和其他品牌拉开差距最大的行业领头人，平均每100辆车仅统计到90个问题。欧洲品牌的成绩为平均每100辆车统计到113个问题，首次超过日本品牌(每100辆车统计到114个问题)。美国品牌第二次与日本品牌持平，同为每100辆车统计到114个问题。

《纽约时报》记者谢丽尔·延森(Cheryl Jensen)注意到，通信技术仍为最大的问题，语音识别在投诉内容中占了最大的比例。多数装配有语音识别技术的车型平均每100辆就会发生10个或更多与该功能相关的问题。在2015年的调查中，车主反映的语音识别问题数量增长至67%，而在2013年，这一数值为57%。

德国奢侈品牌保时捷(Porsche)连续第三年获得最可靠品牌的称号。排名在保时捷(得分为每100辆80个问题)之后，跻身前十的是韩国的起亚(Kia)，得分为每100辆86个问题；(以下单位为：个问题/100辆车)捷豹(Jaguar)(英国)，93；现代(Hyundai)(韩国)，95；英菲尼迪(Infiniti)(日本)，97；宝马(BMW)(德国)，99；雪佛兰(Chevrolet)(美国)，101；林肯(Lincoln)(美国)，103；雷克萨斯(Lexus)(日本)，104；以及丰田(Toyota)(日本)，104。(“起亚和现代在鲍尔公司的质量调查中排名上升”，6月18日)

本年度的调查基于84,000位2015年新款车型的车主或租赁者所提供的反馈。该报告显示了233个可能存在的问题，包括机械缺陷、机械故障以及设计问题。

商业

在美的中国独资企业正在增加，将在接下来的五年中提供最多400,000个新就业岗位

在最近一项对于在美经营的中国企业的调查中，研究人员发现在过去的五年中，直接受雇于中国企业的美国员工数量至少增加了5倍。而在中国合资企业工作的美籍员工数量则由2009年的不到15,000人增长至2014年的80,000多人。咨询公司荣鼎集团(Rhodium Group)和中美关系国家委员会一同组织了此次调研活动，对象为在纽约的企业公司。中美关系国家委员会是一家非盈利性组织，旨在推进中美两国间的友好贸易，增加美国收益，该委员会副主席为前美国国务卿亨利·A·基辛格(Henry A Kissinger)。

制造业网站(Manufacturing.net)的安迪·扎尔(Andy Szal)详细分析了这份报告，该报告显示到去年年底为止，共有1,583家中国公司在美国成立。与中国员工一同增长的还有为此所支出的费用：2000年至2014年间花费460亿美元。尽管大部分在美的中方投资用于并购，但是上述支出总额中也包含了建立新公司的花费。(“报告：目前有80,000名美国员工受雇于中国企业”，5月26日)

“人们并不对中方买家可能将并购资产和相关就业岗位转移至中国而表示担忧，”该报告指出，“相反，新的中国企业主在大多数情况下都会在收购美国资产后，维持并扩张当地的雇佣规模。”

在该报告发布前的18个月，研究人员发现大型制造业和服务业项目正在显著增加。笔者们相信中国对美的投资只是一个开始，并将在接下来的五年中，产生近20,000万美金的费用支出和近400,000个新的就业岗位。

该报告表明“感知性战利品资产”——例如著名的纽约华尔道夫阿斯特里亚酒店，正占据着在美国并购项目的头条。但是这也强调了“中方资本的收益遍布于美国各地”。

依据这份报告，北卡罗莱纳州和伊利诺斯州位列接受中国直接投资的首位。而由于中国独资公司的扩张，目前在美国超过四分之一的国会选区内都能见到中国公司的身影。

能源

中美双方高度赞同智能电网的重要性，并协同推进行业协议

6月24日，在华盛顿举行的第七届中美战略经济对话(S&ED)会议上，智能电网和智能城市两项议题占据了会议日程的显著位置。会议由特别代表——美国总统巴拉克·奥巴马(Barack Obama)和中国国家主席习近平主持，两国高级官员也一同出席了会议，这一战略对话显示双方将在前期进展的基础上，重启电网建设的合作意向。

《FierceMarkets》的能源版编辑芭芭拉·L·弗齐迪斯·仑丁(Barbara L Vergetis Lundin)指出，为了能扩展中美两国智能电网的制度能力，双方将行业参与和技术援助放在了首位。除此之外，美国贸易和发展局(USTDA)今年将出资赞助智能电网的第二轮调研活动。第一轮调研活动于2014年10月完成，该研究的成功吸引了美国电力企业和国家能源局的众多代表人。(“中美领导人为智能电网项目的进一步合作亮绿灯，”6月25日)

华盛顿会议上所提及的项目不稳定因素和机构名称都不能妨碍合资企业向前推进计划。气候变化工作组(CCWG)发起的智能电网项目已通过四项合作事宜获得了进展。其中包括了尔湾市(加利福尼亚州)的智能电网示范项目，项目显示装配有智能电网技术的零能源家庭可节省60%以上的能源消耗，并可降低80%以上的电费；还包括在中新(中国-新加坡)天津生态城为四个子项目所进行的功能和应用方案的研究。仑丁女士写道：“美国和中国也决定在电网现代化方面加强合作，用于支持中国电力局和中国国家电网公司为电网大数据分析项目所进行的可行性研究和试点项目。”这一项目将显示如何利用大数据分析追踪运行时间，以及在智能电网上关于电力分配、电力损耗和停电管理的最佳方案。

两份有争议的签证

面向投资美国商业的国外投资者的EB-5签证项目被指责是以不当方式获取“绿卡”

距离下届总统选举还有一年多的时间，我们无需在发表不利于竞争对手的言论上花费时间。但是今年春天，总统候选人之一、威斯康辛州州长斯科特·沃克(Scott Walker)在《密尔瓦基新闻卫报》上发布的一篇文章却赢得民众的关注，该文章内容有关美国的投资移民项目，即外国居民如果可以为美国商业项目投资至少50万美元并可在两年内产生或节省10个工作岗位，那么就可逐步获得美国公民身份。

该项目被称为EB-5项目，尽管沃克先生有很强烈的反移民倾向，但是对于这项计划，他还是表明了支持态度。在《新闻卫报》的政治版面专栏作家丹尼尔·比奇(Daniel Bice)看来，沃克先生对这个“麻烦”问题的拥护根本就是自找麻烦，也可能是个柔性政策。因为移民政策是大众关心的焦点，而EB-5项目的施行仍需推敲。比奇先生写道，批评家们称这个“泛滥成灾的滥用”项目是供富翁和其家人获取美国永久居住证的快捷工具，在这些移民人群中，超过80%的人来自于中国。(“批评家称签证项目是一个贩卖绿卡的‘骗局’”，5月17日)

这一项目获得了双方政治家的支持。保守派移民研究中心的成员大卫·诺斯(David North)告诉《新闻卫报》记者，通常情况下，在当地政治家和EB-5区域中心所带来的收益间都会有一条经济链。他说：“这就是它在这个国家的操作模式。”诺斯先生援引了在伊利诺伊州、路易斯安那州、加利福尼亚州、德克萨斯州和南达科塔州所进行的审查和刑事调查。2013年12月，美国国土安全部检察长办公室对该项计划进行了严厉批评，附带提及该项目

的管理者“根本无法诠释美国经济可从外资投资中获取何种利益。”

另一位批评家，芝加哥大学法学教授埃里克·波斯纳(Eric Posner)发言叫停这一“荒唐的”移民项目。“这是一个低迷经济、任人唯亲的政治体系和不公平待遇的糟糕结合体”，斯纳教授批评道，“其次，要想鉴别一个特定投资项目能否带来就业岗位而不是在两个场所间进行职位重组几乎是不可能的。”

除此之外，诺斯先生认为这个项目在前提条件下就有缺陷。他说：“虽然不实行这个项目就会缺少吸引力。但是我认为是为贩卖签证是不道德和贪婪的行为，然而这正是我们正在做的事情。”这一言论很难进行驳斥。《纽约时报》记者注意到，联邦政府正为EB-5项目投资者的绿卡申请打开快速通道，使国外投资者可以获得美国永久居住权和工作权。通常情况下，通过EB-5项目，申请者需花费两年才可获得绿卡。而在其他的签字项目中，申请者必须等上更长的时间，有时甚至要等多等十年。

EB-5项目由美国国会于1990年提出后一直处于静止状态，直到2008年至2011年间的经济衰退，美国的开发者们很难从银行或其他传统贷款方获得其项目的经济支持。富有的外国居民希望为他们自己和家人获得美国居住权，这成为了替代的经济来源。

用以应对美国信息技术业劳动力需求的H-1B项目被指滥用

“毋庸置疑，移民政策不可破坏美国的工作、薪资或工作环境。问题在于，一些企业所希望获取的可利用、可支配的廉价劳动力，恰恰是这个移民系统可以提供的。”如果说上文的EB-5项目是以投资者为目标群体，那么备受《纽约时报》编辑部指责的H-1B则是以工人为目标群体：本地工人被国外工人所取代。在编辑部成员看来，这是对美国法律的误读。(“被签证漏洞背叛的工人们”，6月15日)H-1B项目每年向外国居民提供最多85,000张签证，其中大多数是高级技术工人，国会旨在以此来弥补美国本土特殊工种人员欠缺的劳动力缺口。但是，《纽约时报》表明美国和外国的公司都“无情地”利用了法律的漏洞——特别是允许外包公司用自己的员工来弥补职位空缺并大幅度地削减工资成本。

6月16日，劳动局宣布其正在对最大的两家可提供H-1B工人的印度公司进行调查，他们是印孚瑟斯(Infosys)和塔塔咨询服务公司(Tata Consultancy Services)。报告显示，公用事业公司之一的南加州爱迪生电力公司(Southern California Edison)在命令其540名工人停工的前提下，还向印孚瑟斯和塔塔公司申请H-1B工人，而那些老员工还被要求培训他们的接任者。两大主要政党的议员在听取报告后，要求做进一步的调查。尽管引入国外工人来代替美国员工的工作岗位并非是国会的目的，但是《纽约时报》编辑部注意到，撇除通常的看法，H-1B项目并未要求公司在寻求外籍工人前，首先雇佣美国工人。《纽约时报》呼吁要对该项目进行改革，包括增加对于H-1B工人的保护措施，毕竟由于倚仗于雇主，他们很容易被企业主剥削。

早先参议院曾提出议案，将对美国的移民体系进行全面的改革，其中也提到了对H-1B项目进行改革。而由于议会中的强硬派反对制定偏向于非法移民的法规，该议案最终搁浅。《纽约时报》将这称为1,100万非法移民的“悲剧”，这些移民都在寻求在美国生活和工作的合法身份。

在没可能立即对移民体制进行改革的情况下，编辑部在文章中写道，投机取巧的技术公司正在安排他们自己的狭隘日程，推动增加H-1B签证的签发数量：“这也许能解决他们的雇佣问题，但是给移民体制埋下了很大的隐患。”

专栏编辑: Dorothy Fabian

16th – 18th September – 11th International Wire and Cable Trade Fair for Southeast Asia

www.wire-southeastasia.com



THE city was once known as the Venice of the East for its intricate waterway system, on or near which most of its population lived. Bangkok is now the beating economic heart of Thailand.

And for just a few days this month, the city's BITEC centre will play host to the wire and cable industry as wire Southeast Asia throws open its doors from 16th to 18th September.

The city became a major regional force in finance and business following the Asian business boom in the 1980s and 90s. The importance of this has not been lost on the wire and cable community.

Continued growth throughout Southeast Asia makes this one of the most important shows in the exhibition calendar, which attracts more than 400 exhibitors across the three days.

Exhibition photos courtesy Messe Düsseldorf Asia • Background image courtesy bigstockphoto.com • Artist Patrick Foto

wire Southeast Asia 2015



The region is home to some 600 million people spread through ten countries, and has long been recognised as a regional manufacturing and production hub.

The region is set to achieve a GDP growth rate of 5.4% per annum between 2014-18. With the region attracting US\$121 billion in foreign direct investment in 2012, the various industries are set to soar to greater heights in the years ahead.

Organiser: Messe Düsseldorf Asia Pte Ltd

Venue: Bangkok International Trade and Exhibition Centre, Bangkok, Thailand

Website: www.wire-southeastasia.com

Opening hours:

16 - 17 September:

10.30am – 6.00pm

18 September:

10.30am – 5.00pm

For enquiries:

Tel: (65) 6332 9620

Fax: (65) 6337 4633

Email:

wire@mda.com.sg

Alphabetical list of Exhibitors

Company	Stand
Acimaf	TBC
Aeroel Srl.....	TBC
Agir Technologies (Mouton - Rivon)	B36
ALMT Corp.....	A01
Anbao Qinhuangdao International Corp.....	C05
Anhui Hairui Electrical & Machinery Co Ltd.....	TBC
Balloffet	B40
Beijing Orient Pengsheng Tech Co Ltd	A33
Bergandi Machinery	K18
Bongard Trading GmbH & Co KG	L25
Britx Wire Rope Ind Corp	G41
Bühler Würz Kaltwalztechnik GmbH	H33
BWE Ltd	J08
Candor Sweden AB.....	F17
Carl Bechem GmbH	K29
Changzhou Obs Insulation Materials Co Ltd	TBC
Cheng I Drawing Machinery Co Ltd	B34
Cheng I Wire Machinery Co Ltd	B19
Clifford Welding Systems Pvt Ltd.....	G36
Comsuc Technology Development Ltd	TBC
Condat Lubricants.....	H07
Conoptica As.....	J35
Construcciones Mecánicas Caballé SA	D36
Continuus-Properti	TBC
CPT Engineered By Properti.....	A35
Daloo	H36
Dem Costruzioni Speciali	TBC
Dong Viet Non-Ferrous Metal & Plastic JSC.....	B18
Dongguan Chuangji Mechanical Assembly Co Ltd.....	TBC
Dongguan Gemwell Electrical Machinery Co Ltd.....	TBC
Dongguan Jingtie Machinery Co Ltd.....	TBC
Dongguan Nanyue Mold Die-Casting Co Ltd.....	TBC
Dongguan Qingfeng Electrical Machinery Co Ltd.....	TBC
DSR	F35
Eder Engineering GmbH.....	TBC
EJP Maschinen GmbH	G19
Enkotec A/S.....	F34
Enshiang Machinery Enterprise Co Ltd.....	TBC
Esteves Group (Shanghai) Diamond Dies Co Ltd	C02
Eurobend GmbH	L26
Eurolls SpA.....	D36
EVG Entwicklungs- U Verwertungs- Gesellschaft mbH.....	TBC
Federal Ministry For Economic Affairs & Energy (BMW)	H19
FIB Belgium SA	B12
FMS Force Measuring Systems	J07
Focus Mechanic Co Ltd	E41
Fort Wayne Wire Die Inc.....	K17
Fuhr GmbH & Co KG.....	K19
Gauder & Co SA.....	H36
GCR Eurodraw	TBC
General Copper Co Ltd	J10
Golden Spot Industry Inc	B20
Golden Technologies Wire & Cable Equipment Co Ltd.....	G33
Goodcomer Co Ltd	B26
H Folke Sandelin AB	H33
Handuk Ultrasonic Co Ltd.....	G40
Hangzhou Superlink Cable Material Co Ltd.....	B07
Hefei Smarter Technology Group Corp	TBC
Henan Yinwang Trade Co Ltd.....	TBC
Henrich Maschinenfabrik GmbH.....	K26
Herkula Farben GmbH	L21
HMP Heinrich Müller Maschinenfabrik GmbH	J20
Ideal-Werk C+E Jungeblodt GmbH + Co KG.....	L19
International Wire & Machinery Association (IWMA)	H01
Intras Ltd	J01
ISA Technology Pte Ltd.....	H39
Ito-Sin (Deyang) Wire & Cable Equipment Co Ltd.....	G17
Jang Ann Metal Work (Shenzhen) Co Ltd	B28
Jiangsu Dasheng Electron Accelerator Co Ltd	B02
Jiangsu Hongyang Steel Wire Products Co Ltd.....	TBC
Jiangsu Qunye Electrical Co Ltd	J02
Junrong Machinery Equipment Co Ltd	B14
Kieselstein International GmbH.....	K21
Knipex-Werk C Gustav Putsch KG.....	K22
Ernst Koch GmbH & Co KG	H25
Liwei Wire & Cable Machines Co Ltd	B17
Locton Ltd	H05
LTK International Limited.....	B01
Lubrizol Advanced Materials	K08
M+E Macchine Engineering	TBC
Madem Gulf Industries Wll	B14

wire Southeast Asia 2015

Maillefer Extrusion OY	C02	Sjogren Industries Inc.....	K13
Mali GmbH	TBC	Sket Verseilmaschinenbau GmbH.....	K25
Maschinenfabrik Niehoff GmbH & Co KG.....	H33	Spring Tooling Ltd	H05
Medek & Schörner GmbH.....	TBC	Stolberger KMB Maschinenfabrik GmbH.....	L20
Metalube Ltd	H11	August Strecker GmbH & Co KG	G20
Microdia SA.....	G25	Suhil Co Ltd.....	G39
Ningbo Kaite Machinery Co Ltd.....	TBC	Suzhou Forever Import & Export Corp Ltd.....	TBC
Numalliance.....	C17	Synergychem Pte Ltd	D35
OMCG	TBC	Tangshan Kaipin Jingzhou Steel Wire Products Co Ltd.....	A31
Ostasia Engineering Co Ltd.....	G01	Taymax Wire Rope Industry Corp Co Ltd.....	G41
Pan Chemicals	TBC	TKT Group.....	TBC
Paramount Die Company.....	L41	Toho International Inc.....	K13
Pengg Austria GmbH	TBC	Traxit International GmbH	K33
Pioneer Machinery Co Ltd.....	B33	Troester GmbH & Co KG	J19
Pourtier SAS.....	H36	UI International Singapore Pte Ltd	D37
Pratto SA.....	K35	Upcast OY	L17
Pressure Welding Machines Ltd.....	H05	Uyar Çelik Endüstrisi San Tic Aş.....	C01
Promostar.....	TBC	Valbruna Stainless Sdn Bhd	B06
Queins Machines GmbH	L20	Verband Der Österreichischen Draht- Und Kabelmaschinen-Hersteller	TBC
Rad-Con Inc	K02	Vietnam Electric Cable Corporation (Cadivi)	G06
Rautomead Limited	F19	Voge Composites LLC	G35
Reber Systematic GmbH + Co KG.....	K29	Wafios AG.....	J33
RIK (Thailand) Co Ltd	A11	Wai Tak Lung Machinery Ltd.....	TBC
Rosendahl Nextrom GmbH	D19	Weihai Hongda Cable Material Co Ltd.....	C06
RSD Technik GmbH	G22	Wellion Wire & Cable Machinery Co Ltd.....	TBC
Saengsawang World Co Ltd.....	G02	Witechs GmbH	H26
Sampat Heavy Engineering Ltd.....	A21	Wuxi Hengtai Cable Machinery Manufacture Co Ltd	TBC
Schlatter Industries AG	A19	Wuxi Pingsheng Science & Technology Co Ltd	TBC
Schnell.....	TBC	Yangzhou Tengfei Electric Cable And Appliance Materials Co Ltd.....	TBC
Setic SAS	H36	Yangzhou Xinhongri Machinery Co Ltd.....	TBC
Shanghai Kechen Wire & Cable Machinery Co Ltd.....	TBC	Zaonee Group Co Limited.....	TBC
Shanghai Kingstrong Special Materials Co Ltd.....	TBC	Zhangjiagang Sanfeng Machinery & Electric Development Co Ltd	TBC
Shanghai Nanyang Electrical Equipment Co Ltd	H10	Zhejiang Harbor Mechanical & Electrical Equipment Group Co Ltd	TBC
Shanghai Resources Industrial & Trading Co Ltd.....	TBC	Zhejiang Rongtai Electric Material Co Ltd.....	E42
Shanghai Rottweil Handyware Printing Technology Co Ltd.....	TBC	Zhejiang Tenglong Stainless Steel Products Co Ltd	TBC
Shanghai Singcheer Technology Co Ltd	TBC	Zhengzhou IW Diamond Co Ltd.....	B05
Shanghai Weiye OFC Equipment	TBC		
Shantou Senyang Wire & Cable Materials Co Ltd.....	G05		
Shaoxing Kaichen Mica Material Co Ltd	TBC		
Siebe Engineering GmbH.....	K20		
Sikora AG	J25		
Sirio	TBC		



Aeroel Srl Italian Pavilion

HWS 1 Handy Wire Scanner is a fully portable optical micrometer for non-contact measurement of wires, cables and other similar products.

Developed by Aeroel with LED and CCD technology, it uses two crossed linear sensors to automatically compensate positioning errors (patent pending). Thanks to a powerful single chip micro-processor, the micrometer is linearised and compensated to obtain the maximum precision in the entire field of measurement, regardless of an accurate positioning of the wire.



○ The HWS 1 from Aeroel

The measurement is started by pressing the trigger and takes only a few seconds, the display provides the operator with interactive information to place the wire in the useful measurement area and displays the measurement result.

All measurements are saved in the memory of the scanner, associated with the date, time and the number of the machine. Through a USB connection, data can be downloaded to any PC. The battery is charged via the USB connector with the supplied power supply; battery life, with micrometer always active, is approximately four hours.

Aeroel Srl – Italy
Website: www.aeroel.it



Ajex & Turner Stand: B11

Ajex and Turner will be showing vitrified nanocrystalline technology for dies and tools, a completely new concept for wire drawing and compacting. This provides more wear resistance, giving an extremely smooth surface finish with very low friction. Dies offered are for a range of 0.8mm to 70mm for copper, aluminium, aluminium alloy, stainless or carbon steel wire, and provide a two to three per cent improvement in raw material use for metal savings. It holds zero tolerance for up to 500 metric tons (stainless steel and carbon steel wire up to 0.6%C) at a price that is lower than PCD dies (depending on bore diameter).



○ The range on offer from Ajex & Turner

The diamond coating is very thin, and it will not peel off as is the case of a thick coating, thus increasing the life of the die and providing better performance. This is evident by the responses of overseas customers who have used these dies for copper, aluminium, stainless steel, aluminium alloy, etc.

Ajex will also showcase its new in-house models of diamond and carbide die polishing and grinding high speed machines and polishing accessories, a new range of masterlube lubricants for copper/alu/CO₂, new pressure die K-340 for high and low carbon, cross heads, buncher bow, die polishing and grinding access.

Ajex & Turner – India
Website: www.ajexturner.com



AWCMA Stand: D32

The AWCMA – Austrian Wire and Cable Machinery Manufacturers' Association – was founded in 1988 and consists of 20 member companies. All members are continuously involved in research and development.



○ Member companies of the AWCMA

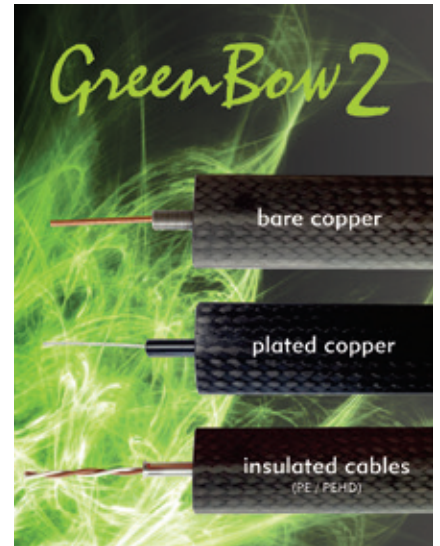
AWCMA will actively take part at wire Southeast Asia with 11 of its member-companies present, all offering leading technology (hardware and software) for the economical production of wires and cables. The Austrian Pavilion in Bangkok, jointly organised with the WKO (Austrian Federal Economic Chamber), will host 12 companies in total and at the AWCMA stand. Information on Austrian companies and their products – particularly of non-exhibiting member companies – will be available.

AWCMA – Austria
Website: www.awcma.com



Bow Technology Stand: H36

With over 500 bow designs on offer (560 to 2,500mm, moulded, flat, closed-design, metallic, rod, special) available for more than 25 well-known brands of machines, the Bow Technology department of Gauder Group helps cable makers to optimise double twist machine operations.



○ Green bow technology from Bow Technology

The division is the patent owner of the power saving and multi-use “GreenBow2” (one bow fibre, three wire paths, an exclusive design enabling up to 30 per cent energy savings on bow motorisation), and recently launched “Basic Bow Technology”, a new range of Niehoff D631, Lesmo DTO-630 and Samp BM630 conventional bows.

Bow Technology – France
Website: www.bowtechnology.com



BWE Stand: J08

BWE's Conklad 315 machine is based on the highly successful and well-proven Conform 315 model.

The Conklad 315 is the smallest machine in the BWE Conklad range but incorporates many of the standard design features found on the larger machines, such as hydraulic shoe opening, feedstock shear, epicyclic gearbox and torque tube.

The Conklad 315 operates in tangential mode, using a single infeed rod, for cladding and sheathing operations. The machine has been optimised for high efficiency production of:

- Aluminium clad steel wire (AS wire)
- OPGW and CATV cables



The Wire Drawing Standard



Paramount Die is the leading designer and manufacturer of wire drawing inserts and tooling systems for the wire drawing industry. For more than 45 years we have been delivering the global wire drawing market with dies and wire drawing solutions that optimize wire drawing operations.

Why Use Paramount Die?

Productivity - Maximize die performance by increasing machine utilization and decreasing production cost.

Speed - Achieve drawing speeds up to 45% faster than conventional cased dies.

Efficiency - Dramatically lower material and shipping costs.

Consistency - Highly efficient and automated production equipment allows us to provide premium quality solutions at a competitive price.



Booth
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PARAMOUNT DIE
DRAWING SYSTEMS FOR THE WIRE INDUSTRY

paradie.com

- Sheathed composite cores
- Reinforced aluminium wire
- Solid aluminium conductor (SAC)

The basic machine construction is based on the proven BWE design, which has a record of reliable operation over many years of service.



○ The Conklad 315 from BWE

Extreme rigidity, the ability to operate at high extrusion pressures, and separately controlled wheel and die temperature ensure that tooling clearances remain optimal throughout long periods of continuous operation. Automatic die heating and wheel cooling systems ensure rapid pre-heat to the correct starting temperature and maintain optimum extrusion conditions during production without operator intervention.

Overall economics are further improved by insert tooling that allows the wearing surface of the main tooling component, the die chamber, to be replaced at minimal cost.

BWE offers a wide range of services tailored to customers' needs, ranging from machine-only supply with customers providing their own ancillaries, to full turn-key systems including plant engineering, training, installation and commissioning.

BWE Ltd – UK
Website: www.bwe.co.uk



CM Caballé
Stand: D36

With over 70 years of experience in the design and manufacture of rotating machinery for the production of power and telecommunication cables as well as steel ropes, Spanish company CM Caballé provides the cable industry with a wide array of stranding, twinning, bunching and cabling machinery. The firm is constantly developing new, high quality equipment to meet the ever-changing needs of the wire and cable industry.



○ Rigid strander for DIN 800 bobbins

The company's portfolio includes the following equipment for:

- Power cables: double twist stranders, rigid stranders, drum twisters, single twist stranders, bow skip stranders, tubular stranders, planetary stranders and SZ stranders
- Telecom and LAN cables: double twist pairing-quadding machines, single twist cabling lines, group twinners, drum twisters, shielding-jelly filling-sheathing lines and SZ stranders
- Steel ropes: double twist stranders, tubular stranders, planetary stranders and bow skip stranders
- Ancillary equipment: pay-offs, take-ups, capstans, caterpillars, taping machines and binders

Caballé will show new developments, highlighting the following products:

- Upgraded rigid stranders and drum twisters for HV energy cables (Milliken conductors, overhead conductors with trapezoidal wires)
- A complete range of double twist stranders to manufacture compacted conductors of Cu and Al up to 630mm²
- A complete range of stranders and closers for steel ropes
- The latest improvements in existing stranders for all types of cables

CM Caballé – Spain
Website: www.cmcaballe.se



Cable Services & Systems
Stand: H36

'C2S', a member of the Gauder Group, is a key partner to maintain, restore or improve cable equipment. The division is being assigned upgrading projects, services for cable makers, and a wide spare parts portfolio (all brands).

C2S is extending its services capability to the Cortinovis range of equipment and also offers services for all brands of machine.

The C2S engineering and commissioning team has recently been reinforced with ex-Lesmo and ex-Cortinovis engineers, and specialises in successfully upgrading Cortinovis lines and other brands.

- Upgrades: Cortinovis, Ceeco, Stolberger, Hamana, Queins, Caballé and Brondel
- Bows: Niehoff, Setic, Samp, Cortinovis and Lesmo
- Spare parts: Pourtier, Setic and Niehoff

Cable Services & Systems – France
Website:
www.cable-services-systems.com



Candor Sweden AB
Stand: F17

Candor will present the latest developments of Copperjet, a high speed copper coating plant, chemical or electrolytic, for high quality welding wires. The plant will copper coat the wire at high speeds up to 25-30m/s with best possible cleaning and coating quality.

A modular design makes it possible to satisfy a wide range of quality demands and applications for CO₂, MIG, FCW and SAW welding wires. The Copperjet is available with optional Candojet HW hot water spray pre-cleaning, high current density spray pickling, and Copperjet copper coating, with looping of the wire or straight wire pass line with Copperjet technology. The plants are available with three- or five-step cascade rinses in various designs.



○ Candor electrolytical copper coating line

With Candor additive Inhibitor E-1 used in the copper bath a fine grain deposit with very good adhesion will be coated on the wire. Further results of using the Inhibitor E-1 are enhanced feedability, less flaking and peel off and a longer lifetime of the copper bath.

The dumped copper baths and rinse water from the copper coating plants can be treated in Candor WWT – waste water treatment plant. Candor cares about the best possible productivity and economical production plants for the customer but at the same time the high

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Visit us at
wire Southeast ASIA 2015
Stand L17

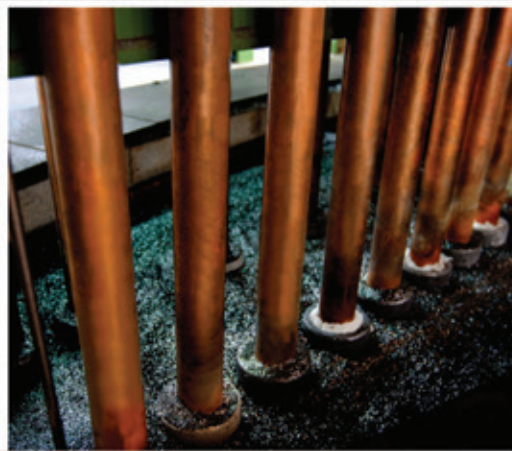
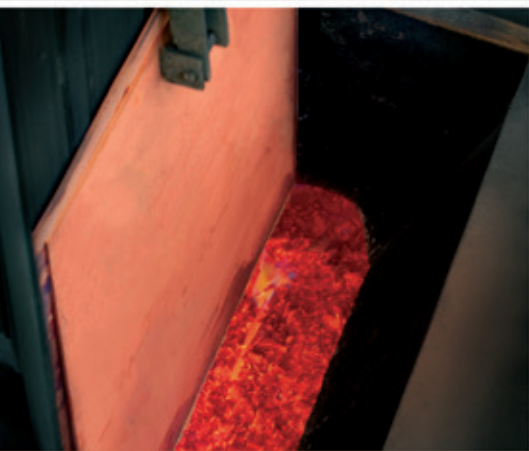


Tube Southeast ASIA 2015
16 - 18 September



Maximum versatility, minimum costs

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UPCAST® - 3rd generation Cu rod casting

With the continuous R&D work the original UPCAST® continuous casting technology has again been taken to the next level: with the new coolers and the latest furnace, inductor, automation and control system designs UPCAST® can now offer even more efficient and reliable Cu rod production process than ever before. Higher speed means more capacity with less costs and improved cast rod quality.

Possibility of using clean Cu recycled material in the process has become more and more important. UPCAST® can design a solution for you! All this is available also for existing customers due to unique upgradability of UPCAST® casting lines.

UPCAST® - Always greener.



Wherever. Better.

wire Southeast Asia 2015

<<< environmental demands for today and tomorrow's production plants. It is very important to take care of the waste generated in the production for a sustainable environment.

Candor offers high-speed ultrasonic and electrolytic cleaning plants for stainless steel welding wire production where cleaning demands are extremely high.

The plant can be placed directly in-line with the drawing machine at high wire speed or as in-line cleaning with annealing furnace. It is very important to have a clean wire surface for stainless materials to prevent carbide build up in the wire surface during heat treatment. It also keeps down the maintenance cost and down-time of the annealing furnace since the furnace tubes will be kept cleaner.

Candor offers single- and multi-wire cleaning and plating lines for ferrous and non-ferrous materials, and all plants are tailor-made.

The company will also present developments for:

- Ultrasonic and electrolytic wire cleaning for round and shaped wires
- Candojet HW – hot water wire cleaning for round and shaped wires

- Electrolytic plating plants for wires such as tinning, coppering, nickel plating, silver plating, and galvanising for all sorts of wire materials

Candor Sweden AB – Sweden
Website: www.candorsweden.com



Clinton Instrument Company
Stand: TBC

Clinton Instrument Company has launched the Model HF-15B series of high frequency AC spark testers. This series replaces the HF-15A, which was first shown at Interwire in 2001. Since 2001 over 10,000 HF-15A units have been shipped worldwide.

In addition to the reliability of Clinton Instrument spark testers, the HF-15B offers customers the ability to utilise many new technologies. New features provide more information, easier integration, and flexible solutions in response to difficult applications.

The HF-15B series features a large adjustable alphanumeric display with multiple view options. Customers can monitor total fault count, specific types



○ The new HF-15B series from Clinton

of fault conditions, and per cent load. The front panel also offers optional password security.

PLC integration is effortless when connecting with Modbus RTU via RS-485 full duplex. Optional Ethernet/IP, Profinet, Profibus, Modbus TCP, and analogue communications are offered as an integrated component with the new series.

LOCTON

Manufacturers of both
'HUSH' & 'LOCK ON'
PULLING IN DOGS



Stand
H 06

For details contact: Locton Limited
Saxon Business Park, Hanbury Road, Stoke Prior,
Bromsgrove, Worcestershire. B60 4AD. UK.

T: +44 (0)1527 570977 F: +44 (0)1527 882423
E: sales@locton.co.uk W: www.locton.co.uk

wire Southeast Asia 2015

New features of the HF-15B series also include:

- Split electrode design for easy string up
- Differentiation between four types of fault conditions including single or multiple pinholes, direct metal to metal contact and gross bare wire
- DSP-based voltage regulation and fault detection
- Voltage watchdog circuit – to ensure the spark tester is always making the preset voltage
- Four relay outputs with selectable functions – including high voltage ON indicator, fault alarm, voltage watchdog, and gross bare wire alarm, with others available
- Removable display can be mounted up to 60m away

In addition to these abilities, the HF-15B series features fully automatic calibration of voltage and sensitivity to EN50356, IEC/CEI 62230 and NEMA standards when using the Clinton Instrument STCAL system.

The HF-15B with STCAL will be shown during the Wire Southeast Asia show in September.

Clinton Instrument Company – USA
Website: www.cicsparkers.com



Condat Lubricants Stand: H07

Condat will be presenting its latest developments in lubricants and products for the wire and cable industry, including:

- Vicafil – a complete range of wire drawing lubricants
- Steelskin – speciality lubricants for the most demanding applications

Condat continues to develop advanced solutions to meet the increasingly stringent requirements for environmental and health and safety regulations:

- Reduction of dust in workshops (OSHA Directive)
- Impending SDS updates (GHS system – June 2015)

The show will be an opportunity for the company to promote several recently developed new products, including:

Vicafil TF 1669: A new and very versatile mixed-basis soap for high-speed drawing of galvanised high carbon steels or phosphated steels.

It may be used in conjunction with another high performance sodium-based soap for the fastest draw speeds.



○ *Environmentally friendly lubricants from Condat*

Vicafil Santale 6 T: A borax-free soap, offering exceptional performance on the most demanding high carbon steel wire applications, such as tyre cord and tyre bead wires, but versatile for a wide range of uses and materials, without leaving an excessive or dusty residue.

Moreover, Condat is developing a more specific offer for the wire and cable



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Stand H 06

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 Tel: +44 (0)1527 876412 E: enquire@spring-tooling.co.uk
 Fax: +44 (0)1527 878990 Web: www.spring-tooling.co.uk

<<< industry (data, telecommunication, energy, aerospace, medical, etc) with the same focus: high productivity processes, easier maintenance and extended lifetime of the wire drawing fluids.

Condat Lubricants – France

Website: www.condat-lubricants.com



Daloo
Stand: H36

Daloo, the Chinese member of the Gauder Group, offers medium-cost machinery with European quality to produce insulated power cable and overhead conductors.



○ Daloo rigid stranders

Rigid stranders, tubular stranders, tapping lines, rewinding lines, pay-offs, take-ups and pulling caterpillars are manufactured under French management following strict criteria, including quality control and critical component sourcing.

Daloo – China

Website: www.daloo-machines.com



DEM
Stand: TBC

DEM Wire Rolling Technology has grown to be a global partner for wire rolling, by cold processing, with a worldwide presence. The technical solutions provided cover profile and flat wire rolling lines, straightening, drawing and cutting lines for concrete reinforcing wire, cassettes for rolling and rope compacting, micro-cassettes for drawing lines, and complete lines for flux cored wire.

This wide range of solutions has been established in almost 20 years of work and experience in processing technologies, with thousands of applications all over the world.

The MTO 760 cold rolling line for coils has been DEM's best-selling machine in Southeast Asia over the last few years. The MTO is an automatic, horizontal-capstan machine; all pulling blocks are independent, equipped with speed dancers that adjust capstan speed via an

electronic signal. Rolled wire, either smooth or ribbed, is wound into coils with a typical weight of 3,000kg. Maximum rolling speed reaches 12m/sec. The unit comes with touch screen panel (Siemens) for operator ease and visual monitoring.

DEM Wire Rolling Technology – Italy

Website: www.demgroup.com



Eder Engineering
Stand: D34

For more than 65 years, Eder Engineering has been offering efficient standard, semi-automatic and fully automatic machines for both the reconditioning and production of ultra-hard precision tools made from tungsten carbide, natural diamond and synthetic PCD, drawing dies, as well as technical assistance for all Eder die-tool working equipment.



○ The USP twin from Eder Engineering

The company will exhibit, in a power-point display:

- Information for machines to work precision diamond/PCD dies
- Information on equipment to work tungsten carbide dies
- Die workshop ancillary equipment
- Diamond powders/pastes/suspensions/grinding pins, etc

Other products and specialties will be displayed in a multi-media show at the stand, and the latest catalogues will be available for visiting customers.

Eder Engineering GmbH – Austria

Website: www.eder-eng.com



Enkotec A/S
Stand: F34

Enkotec staff will be ready to present news within high-performance machinery for nail production.

The company's nail manufacturing machinery offers a large number of advantages, such as high capacity, low production costs, high uniform nail quality, easy maintenance, high process stability, automated manufacturing, clean and low-noise production, all ensuring a

cost-effective production process and a highly competitive end result.

Enkotec has been actively working towards offering in-line nail manufacturing systems, featuring real competitive advantages. Apart from its rotary nail manufacturing machines, its product programme includes high-speed thread rolling machines, collators, cleaning and packaging equipment, supplied as stand-alone units or integrated in in-line systems.



○ Nail manufacturing system from Enkotec

First it developed a high-efficient thread rolling machine, which aroused interest owing to its innovative features, such as a very accurate insertion principle. Then it established a strategic alliance with Baussmann, giving Enkotec exclusive rights to sell and service the German manufacturer's highly efficient wire coil collator worldwide.

Presently, the in-house developed paper stick collator is finishing field-testing, as is the innovative new feeder bowl. The paper collator comes equipped with an integrated cooling system and chiller for the nail heating system based on induction. The machine has a very regular footprint, with all components integrated, and allows easy access to machine maintenance by removable front panels.

Enkotec has recently made another strategic cooperation agreement so it has exclusive rights to sell and service Italian Vibron's nail cleaning systems all over the world.

These strategic initiatives enable Enkotec to supply total in-line nail manufacturing systems from wire to finished nails in a box, thus giving the market the possibility of "one-stop shopping" when it comes to nail manufacturing.

Enkotec A/S – Denmark

Website: www.enkotec.com



Gauder
Stand: H36

Creating solutions together with Gauder grants access to the largest stock of second-hand machines in Europe, with 25,000m² premises housing more than 1,000 machines, as well as a 2,700m² fully equipped workshop for equipment reconditioning and testing before delivery.

wire Southeast Asia 2015



○ Gauder has more than 1,000 second-hand machines

Viewing is immediately available for equipment for the production of non-ferrous and ferrous products in real time at www.gauderonline.com

Gauder also has on offer new Mapré multi-compound extruders ranging from 38 to 150mm with L/D ratio 25.

Gauder – Belgium
Website: www.gauderonline.com

Apart from standard machines, tailor-made machine solutions according to customers' requirements are designed and manufactured. The company has a wide range of different welding solutions and technologies.

Flexibility and quality of the final product are Ideal's long-time standards. With the highest level of engineering and project planning from the first thought up to the final solution, the company provides a complete support service to satisfy the needs of its customers.

The company will present welding solutions for wire products, gratings, wire joining, conductors, cables and automotive applications, in addition to its butt welders for wire and stranded conductors.

Ideal-Werk – Germany
Website: www.ideal-werk.com

size range of 0-2.5mm up to a large dog able to pull from 12 to 30.5mm.

Also on display will be a variety of adaptors, hooks, block pegs, standard chains and chains encapsulated in polyurethane for block protection.

Locton Ltd – UK
Website: www.locton.co.uk



Madem Gulf Industries
Stand: B14

In the first quarter of 2015 Madem Brazil conducted a customer satisfaction survey with 86 wire and cable manufacturing customers in 21 countries. Madem received 56 (65%) responses from customers polled in four categories: bad, regular, good and very good. 99.4% of responses fell into good and very good categories.

Madem polled the following services: claim response, quantities shipped X received, documentation, deliveries, quality inspections, performance and packing.

"We are very proud of our product continuity, considering that we supply

>>>



Ideal-Werk
Stand: L19

Since 1923 the name Ideal has stood for innovation and progress in the production of welding machines and automation.



Locton
Stand: H05

Locton is the manufacturer of both the 'Lock on' pulling in dog and the 'Hush' dog, and will be displaying a range of pulling in dogs from the smallest wire



Bergandi Machinery Solutions

Chain Link Weaver
High Speed Barb Wire
Reverse Twist Barb Wire
Concertina Razor Wire
PVC Extrusion Line
Fuse Bonding Line
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Wire Drawing Lines
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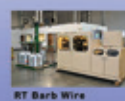


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across 6 Continents



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<<< products to several countries, each with their own special requirements. We are again pleased with the results of the survey, and will continue to work towards 100 per cent customer satisfaction for all our global customers," said Leandro Mazzocato, corporate director of sales and marketing.

Madem Reels – Brazil
Website: www.madem.com.br



Maillefer
Stand: G18

Maillefer has been developing its product portfolio around one central theme – customer value. It is not a new idea, but rather a growing priority. The new ways of working and supporting customers in their everyday manufacturing activity creates a new type of competitiveness for customers. Different levels of improvements for existing lines have been developed side by side with new technology options for uncovered market needs. Maillefer's portfolio is organised into three different solution levels – /Enter, //Extend and ///Explore. These solutions vary in capacity, cost, automation, flexibility, product range, space requirements and maintenance needs.



○ The Maillefer vertical pilot line

There is a perfect match for each market situation – Maillefer can find the winning solution in low-end as well as in high-end categories in almost 20 wire, cable, pipe and tube applications.

Wire and cable production solutions are available for building and automotive wires, dry or jelly-filled fibre optic cables, low, medium, high and extra-high voltage cables, rubber cables, telecom, LAN and coaxial cables.

Maillefer Extrusion OY – Finland
Website: www.maillefer.net



Medek & Schörner
Stand: D30

Medek & Schörner will present the following equipment at wire Southeast Asia.

Cable marking machines:

- High quality gravure printers (LAN cables, control cables, etc) for speeds up to 1,200m/min

- Water misting unit for the application of fine water mist for pre-cooling of the hot wire immediately after the extruder
- Embossing metre markers/hot foil sequential metre markers for highest accuracy of length measurement (power cables, telecommunication cables, optical fibre cables, etc)
- High performance ring markers for marking telephone wires, switch-board wires, automotive cables and LAN cables
- Video system for monitoring the print quality of fast-running cable printing machines, eg allowing real-time inspection for bad quality and/or missing prints
- Laser marking system for cables



○ One of the machines on show from Medek & Schörner

Optical fibre coating systems:

- Top speed optical fibre processing systems
- Optical fibre colour coding up to 3,000m/min
- Ring marking of optical fibres
- Tight buffering up to 1,300m/min
- Fibre ribbon production with excellent ribbon planarity and for speeds up to 1,000m/min
- CFU production of compact fibre units
- Copper wire insulation with UV varnishes (enamelled wire)
- Manufacture of dimension-sensitive precision micro flexible flat cables (FFC) using UV resins

Medek & Schörner GmbH – Austria
Website: www.medek.at



Metalube Ltd
Stand: H11

Southeast Asia is a key market for Metalube, a lubricants manufacturer, and its local agents and distributors will join



○ Southeast Asia is a key market for the UK-based lubricants manufacturer

the management team to welcome visitors to the stand. The company will be hosting a technical seminar for its distributors in the region prior to the show.

Metalube Ltd – UK
Website: www.metalube.co.uk



Maschinenfabrik Niehoff
Stand: H33

Niehoff and its Singapore representative office will show an MSM 85 rod breakdown machine. The electronically driven MSM 85 is designed to produce wires made of copper, copper alloys, aluminium, aluminium alloys and other non-ferrous materials. The machine is capable of drawing copper wires with a maximum inlet diameter of 10mm (or 12.5mm aluminium wires) to a minimum final diameter of 1mm.



○ The MSM 85 rod breakdown machine

The maximum line speed is 40m/s. Additional features include an optimised wire path, and an enhanced wire cooling and lubrication system with reduced consumption. Like all other new machines built by Niehoff, the MSM 85 is operated by the newly designed and standardised NMI (Niehoff Machine Interface), a network-compatible colour touchscreen which features a clear task- and user-orientated navigation structure, and enables an easy, intuitive operation.

The MSM rod breakdown technology developed by Niehoff has been successfully operating in the international wire industry since its market introduction in 1998. The electronically controlled MSM machines, which have seen continuous development since their initial launch, are equipped with the latest controls and drive technology, offering users a vast range of benefits in terms of process technology.

The drive principle enables a minimised slip operation resulting in wire with a very high surface quality, maximum energy

wire Southeast Asia

savings and a long operational life of the drawing tools. Energy savings of more than 20 per cent can be achieved with MSM machines in comparison with conventional rod breakdown machines.

With the help of the individual drives, the wire elongation between the different drafts can be optimised in accordance with the different materials and alloys.

The MSM machines can be combined with the newly developed R 502 continuous resistance annealer, which is designed for an annealing power of 600kW. With Niehoff annealers the wire is homogeneously annealed from zero to full speed operation.

At the Niehoff stand the cold rolling mill manufacturer Bühler Würz Kaltwalztechnik and the lead extruder and cable repair and recovery system manufacturer HFSAB will also be present.

Niehoff Singapore Pte Ltd – Singapore
Website: www.niehoff.de

Maschinenfabrik Niehoff GmbH & Co KG – Germany
Website: www.niehoff.de

Paramount Die Stand: L41

Paramount Die is a manufacturer of wire drawing die inserts and tooling systems for the wire drawing industry. For more than 45 years, the company has delivered dies and wire drawing solutions that optimise wire drawing operations.

Founded in 1968 by two brothers, Douglas and Gil Sarver, Paramount now services the ferrous wire industry worldwide. Known as an industry innovator, Paramount has introduced several products which it claims have become the wire industry standard.

The ParaLoc™ pressure system has contributed greatly to increasing drawing speeds and improving productivity in the wire industry.

The exchangeable carbide drawing inserts have made mass production of wire dies possible and have led to both increasing wire die consistency and decreasing overall die cost.

By producing several million wire dies per year, Paramount has the volume to justify utilisation of extremely proficient and highly consistent automated production equipment to produce its wire drawing dies.

Paramount Die – USA
Website: www.paradie.com

Pourtier Stand: H36

The Pourtier member of the Gauder Group, along with Setic, provides rotating machines for non-ferrous cable, offering a wide range of twisting/stranding solutions to cable makers.



○ Pourtier tubular stranders

Pourtier develops and produces heavy-duty rotating machines for the production of all types of power cable, especially HV and EHV, from overhead cable to insulated cable. The company is also active in the market of submarine and umbilical cables with a complete range of stranding/paper lapping/cabling and armouring machines as well as oil pump cable.

Pourtier – France
Website: www.pourtier-setic.com

PWM Ltd Stand: H05

British company PWM, which has been at the forefront of cold pressure welding technology for more than 30 years, will present its comprehensive range of high-performance manual cold welders.

The versatile M101 will be the largest machine on show. A heavy-duty manual cold welder for joining non-ferrous wire, strip and profile within the range 1 to 5mm, the M101 is one of PWM's best-selling models. Durable, simple to operate and easy to maintain, the M101 can be used on a workbench or supplied with a trolley, enabling the operator to move it to the work area.

The BM10 and BM30 models are durable, low-maintenance machines which provide a reliable weld on non-ferrous wire and strip 0.1 to 1.8mm diameter. Light hand pressure on the operating lever completes the weld in seconds.

Suitable for repairing wire breaks quickly in confined spaces, PWM's M10, M25 and M30 hand-held manual cold welders for wire sizes 0.1 to 1.8mm are comfortable to hold and easy to operate.

Precision engineered in PWM's own UK workshops to stringent quality standards, PWM cold welders produce



www.candorsweden.com

- Electrolytic plating
- Candojet hot water cleaning
- Electrolytic & Ultrasonic degreasing
- Welding wire cleaning and copper coating
- Pickling & phosphating

Steam-cleaning plant



Multi wire cleaning plant



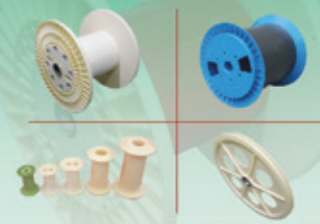
Ultrasonic & Electrolytic

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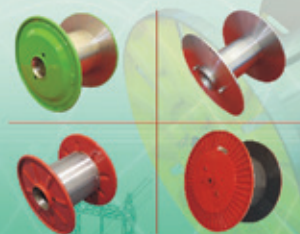
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○ The M101 cold welder from PWM

permanent welds stronger than the parent materials. Standard or custom designed dies for round wire, strip or profile are individually hand-made in matched sets by PWM's skilled engineers.

PWM Ltd – UK
Website: www.pwmltd.co.uk



Rad-Con Stand: K02

Rad-Con manufactures Bell-type furnaces for spheroidise annealing of wire and wire rod for the production of cold heading quality wires (CHQ).

Rad-Con specialises in one type of Bell-type furnace, one type of process annealing, and has very specific knowledge in spheroidising of alloy steel, hot-rolled wire rod and drawn wires, resulting in a clean surface that is free of decarburisation.



○ Bell-type furnaces from Rad-Con

Headquartered in the USA, Rad-Con operates on a global scale with more than half the turnover from outside the USA in the last ten years.

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



Rosendahl Nextrom Stand: D19

Rosendahl Nextrom has focused strongly on extrusion materials with special demands and on advanced manufacturing technology. Those solutions for the production of automotive cables, power cables and fibre optic cables have been further developed.

On display will be the technology for automotive wire insulation with the Rocomat quick colour-change system with possible in-line annealing.



○ Advanced manufacturing technology from Rosendahl Nextrom

For the wide range of power cables, Rosendahl Nextrom offers insulation and jacketing lines. It covers solutions for LV as well as metal tape forming, welding and corrugation lines for MV and HV power cables, with inline jacketing. Visitors will also learn about optical fibre manufacturing solutions, the new high performance secondary coating line, geared up to 1,000m/min, and extrusion and crosshead technology.

Core competencies include:

- Extrusion
- SZ stranding
- Corrugation
- Optical glass making
- Fibre drawing
- Fibre coating
- Ribbon making
- Proof testing

Rosendahl Nextrom GmbH – Austria
Website: www.rosendahlnextrom.com



Setic Stand: H36

Setic, combined with Poutier, provides rotating machines for non-ferrous cable offering a wide range of twisting/stranding solutions to cable makers.

○ Setic double twist bunchers



Setic designs and manufactures high quality double twist bunchers/stranders for the power cable (LV conductors and cables, building wires) and automotive industry, as well as complete solutions to produce special, LAN, control, instrumentation, data and telephone cables with enhanced performance.

Setic – France
Website: www.pourtier-setic.com



Siebe Engineering Stand: K20

Siebe will present its latest innovation, the Siebe colour match system for wires.

Application is inline control of colour during production or colour quality test for harnessing or laboratory control. The device can detect single colour-coded insulation as well as stripe-coded wires, and shows both colours.

Reference colour can be taken from an RAL database or a user-defined database, where new entries are created with a teach-in function.

The result is either the nearest database colour or colour difference to selected reference (in units of Lab-dE). Minimum wire diameter is 1mm (40 mil), and minimum stripe width is 0.5mm (20 mil).



○ The new colour match system from Siebe

Two device types are available: Inline with TCP-IP connection to line PLC or stand alone with touchscreen.

The offline device comes with touch screen and turn mechanism for 360° inspection.

Siebe Engineering GmbH – Germany
Website: www.siebe.de

wire Southeast Asia 2015



Sikora AG Stand: J25

Sikora is a manufacturer and global supplier of innovative measuring, control, inspection and sorting technology for quality assurance in the wire, cable, optical fibre, hose, tube, and plastic industries.

The company will showcase its non-contact measuring systems based on progressive laser and X-ray technology that are suitable for various applications, such as the measurement of the diameter, wall thickness, eccentricity or ovality of cables.

Sikora's product range also includes spark testers for the detection of insulation faults, lump detectors for the detection of faults on the product surface, capacity measuring systems and devices for conductor preheating as well as temperature measurement and control. In addition, Sikora will present the innovative Purity Scanner, a system for on-line inspection and sorting of plastic pellets.

Directly integrated into the production line, Sikora technology ensures continuous product quality and stable as well as repeatable processes.



○ Among others, Sikora will present its innovative high-end gauges for diameter measurement in Bangkok

Sikora AG – Germany
Website: www.sikora.net



Sjogren Industries Stand: K13

Sjogren Industries has introduced a new wire puller that improves operator safety and productivity, and is compatible with a wide range of puller assemblies. The product was developed by the company's in-house engineering and product design team to address real-world problems confronted in wire mills every day, such as reducing risk of operator accident or injury, reducing the time required to perform spool start-up, preventing wire breakage during start up, less frequent replacement of puller components, and preventing damage to capstan surface during start-up.

The new Sjogren Puller incorporates an ergonomic handle which, in conjunction with a locking function that keeps the puller jaws open, enables the operator to easily hold the puller in one hand while inserting the wire with the other hand.

The jaws are locked open by use of a slide plate which retracts the upper jaw. The slide plate can be easily gripped while wearing heavy-duty work gloves, a significantly more efficient (and safe) process than forcing both jaws open manually, as is common with many puller designs.



Wooden Drums

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Manufacturing plants: BRAZIL-SPAIN-BAHRAIN



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Head Office & Technical Dept, Plastic Film



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BRAZIL | Rio Negro, PR
1.500.000 wood reels/year



MADEM SA
BRAZIL | Sorocaba, SP
Assembling and Recycling Warehouse



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800.000 wood reels/year



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<<< A backing on one side of the jaw opening improves the ease of positioning the wire properly. While still holding the wire in position with one hand, the operator can close the jaws with the other by using the one-touch thumb release mechanism located just above the handle. This insertion process is far more efficient and allows the operator to spend less time with set-up.

A very common interruption to the pulling operation is the replacement of worn puller jaws. The jaws of the Sjogren Puller feature precision-machined teeth that provide maximum working life and secure grip of the wire material.

However, the most significant advantage to improving productivity is in the design of the jaws themselves.

The jaws are machined with two different working surfaces, one of which is used when the jaw is in the upper position, and one which is utilised when in the lower position.

Instead of replacing the jaws when they eventually wear down, the operator simply removes the cover plate and switches the position of the upper and lower jaws so that the second, unused surface of each is now ready to be used.

This dual-surface feature virtually guarantees that the jaws of the Sjogren Puller will last longer before requiring replacement than any puller jaw of any other assembly.

Another innovative design feature of the new Sjogren Puller is its pivoting head and the legs which provide optimal puller positioning on the capstan during start-up.

The legs can be fitted with special footings (sized to capstan diameter) that prevent damage to the capstan surface, avoiding possible wire marking problems. At the beginning of the winding operation, the puller head is positioned for in-line pull from the die box.

Once winding begins, the pivoting head tilts down to activate tangential pull on the capstan, which significantly reduces instances of wire breakage. This is particularly valuable in processes which draw brittle material.

This built-in feature prevents the need to add a separate clevis attachment to the puller assembly. Reduced instances of breakage prevents unnecessary re-starts of the winding process and improves overall spindle up-time.

In designing a new wire puller, Sjogren set out to identify all the different ways in which puller design could contribute to a safer, more productive process.



○ *The new Puller from Sjogren Industries*

While much attention was paid to improving the ease and safety of wire insertion and process start-up, the puller's function is not complete until the puller is removed from the wire once winding has been initiated.

It is very common for the puller jaws to be locked closed onto the wire by the force of the operation, making it difficult to remove the puller.

Often the operator must strike the puller with a hammer in order to disengage it, a practical necessity which has the unwanted effect of shortening puller life and/or risking damage to it.

Incorporating a spring behind the fixed lower jaw and having an easily gripped slide plate connected to the retracting upper jaw makes it easier for the operator to remove the Sjogren Puller.

If use of a hammer is necessary, the slide plate can be easily replaced if damaged. Additionally, the chromed finish of the puller's surface makes it easier to clean and helps resist corrosion for maximum working life.

The Sjogren Puller is compatible with a variety of puller assemblies, and is suitable for use on capstans ranging in diameter from 16" to 30"/406mm to 762mm (counter clockwise rotation) and working with wire diameters of 0.06" to 0.25"/1.5mm to 6.3mm.

It has a pull rating of 5,000lb/2,273kg when using 100 roller and safety chain, or 3,000lb/1,364kg when using 80 roller and safety chain.

Sjogren Industries, based in Worcester, Massachusetts, USA, has been producing assemblies, components, and machines for OEMs and wire mills in the wire straightening, drawing and testing industries around the world since 1927.

The new Puller is just one of several innovative product designs it is introducing to help solve the real-world problems that operators encounter on the shop floor which can affect the productivity of an entire operation.

Sjogren Industries Inc – USA
Website: www.sjogren.com



Spring Tooling Stand: H05

Spring Tooling Ltd has been one of the principal manufacturers of precision tools for spring and wire forming machinery for over 35 years.

The company will display a range of tooling in high-speed steel and tungsten carbide.

The tooling manufactured on show will consist of wire guides, coiling points, feed rolls, pitch spacers, cutters, mandrels and a variety of special-purpose tooling for the bedding and seating industry.

Spring Tooling Ltd – UK
Website: www.spring-tooling.co.uk



August Strecker Stand: G20

August Strecker manufactures butt-welding machines for the most varied needs of the wire and cable industry.

The company was founded more than 80 years ago and has enjoyed a good reputation for its machinery and service, given by more than 73 skilled employees.

Strecker welders are well represented in many renowned national and international wire and cable factories. The majority of the company's production is exported to more than 110 countries all over the world.

The company has more than 40 representative offices worldwide assisting customers from the very first contact, eg to choose the right product, and adapt it to individual needs until final delivery, sometimes including commissioning of the machines.

Participating in European as well as overseas exhibitions helps to further promote the trademark of Strecker butt welders.

The production programme includes:

- Buttwelding machines for all kinds of wires, starting at 0.04mm diameter to 60mm diameter for solid steel and about 56mm diameter for solid non-ferrous wires, including welders with automatic deburring cycle. For steel there are various annealing devices available, suiting the needs of the most varied steel grades
- Buttwelders for stranded conductors starting at 0.08mm² to 2,500mm². Welding by means of tubes or without any tubes at all (with automatic deburring)
- Cold pressure buttwelders with automatic deburring cycle

wire Southeast Asia 2015



- *Covering a variety of needs in the wire and cable industry*
- Wide specialised range for the most varied applications, eg butt welding machines for steelcord; battery-operated parting guns for steelcord or steel strands; electric wire butt welding guns; high-output butt welding machines for production of wire-made mass articles; and special-purpose welding machines, tailored to individual customer needs

August Strecker GmbH & Co KG – Germany
Website: www.strecker-limburg.de



Troester GmbH
Stand: J19

Troester GmbH & Co KG is a supplier of machines and complete lines for the cable manufacturing and rubber processing industry, comprising CV lines for XLPE and rubber cables, silane lines, sheathing and insulation lines.



- *The triple extrusion group from Troester*

The company will be presenting its latest technology on:

- High voltage CCV and VCV line concepts for XLPE power cables up to 500kV
- Medium voltage CCV lines (35kV)
- Sheathing lines for medium and high voltage cables

X-Compound, the new company of the Troester Group, will also join the booth to present its kneader technology for the continuous compounding of HFFR, PVC, XLPE, semi-conductive materials and EPR/EPDM.

Troester GmbH & Co KG – Germany
Website: www.troester.de



Upcast OY
Stand: L17

Utilising recycled copper in the process of casting OF-Cu rod has long been the target for manufacturers. The reason is simple and obvious: cost efficiency.

Upcast OY has developed its continuous casting technology and machinery to meet the requirements for using 100 per cent recycled material, or scrap as many operators call it, in the OF-Cu rod process.

Using recycled material in the Cu rod casting process has been very challenging with regard to both the quality control and the mechanical processing of the material.

The casting process itself does not remove the possible metallurgical impurities of the raw material. Therefore, it was recommended to charge only small quantities of recycled material together with the pure copper cathodes.

This required extra manual work from operators, increasing the workforce.

With consistent development work and understanding the importance for the customers Upcast has been able to change the situation.

The first Upcast OF-Cu rod continuous casting line utilising 100 per cent recycled material from the other internal processes was delivered a year ago and has since been successful in operation.

The automatic charging technology of the new line is designed specifically for recycled material. The final product determines the criteria and limit values for the raw material. Thus, the purity of the recycled material is crucial for the process.

Using scrap from other processes of the same manufacturer assures that the material is exactly the kind needed for the casting process.

In the past the charcoal covering the melt in the furnace has caused some problems in the material feeding and melting process of recycled material by preventing smaller pieces from fully sinking into the melt.

This can be prevented by pre-handling of the material, and the new line is also equipped with a hydraulic press forcing all the pieces into the melt. The automated processes together with the new advanced control system have also added to production efficiency.

For example, the automatic transfer of the melt results in less manual work, and the probability of human error is minimised.

The remote access system allows for a very quick fault detection followed by fast repair actions. This is extremely important in order to avoid longer disturbances or breaks in the process.

Furthermore, the system allows the customer to have all the possible process data enabling them to make adjustments for efficiency optimisation.

Upcast OY – Finland
Website: www.upcast.com



Uyar Celik Endustrisi
San Tic
Stand: C01

With more than 50 years' experience Uyar Celik was founded with the aim of fulfilling the need of qualified industrial steel in the global market.



- *The Uyar Celik plant and headquarters*

Sales are made directly from stock from its head office and warehouse in Ikitelli, Istanbul, Turkey, while plants in Europe and Asia, and branches located in Hadimkoy, Istanbul, and Dilovasi, Izmit, are active on hot rolling and cold drawing processes as well as selling directly from production and stock.

The company also imports various types of long steel products which are not produced in Turkey or are produced under limited conditions.

The manufacturing is carried out to EN and ASTM standards, depending on the domestic and international customer demands.

Uyar Celik Endustrisi San Tic AS – Turkey
Website: www.uyarcelik.com

Ultra-fast, high resolution, surface quality measurement (SQM), for wires, optical fibres and cables

By Jean-François Fardeau, G erald Novel and David Miara, Cersa-MCI, R&D division, Cabries, France

Abstract

This project meets a long-time wire, cable and fibre industry requirement for efficient in-line surface quality measurement and defect detection. It was recently allowed by the very latest technology progresses in optoelectronics.

The system works like a ring linear camera around the wires. The fine wire version works from 10 m (0.4 mils) to 2mm (80mils) in two models, fine and ultra-fine. With 64 dots per circumference, about 300,000 circumferences per second (c/s), and a dot size proportional to the wire diameter, it brings surface detection performance far above all present existing technologies at a competitive cost.

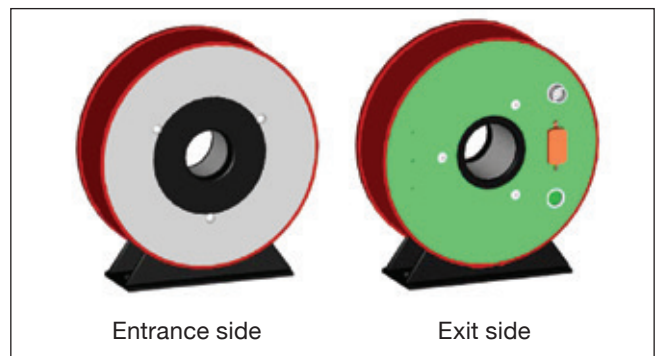
It includes all necessary real-time electronic computing: defect characterisation and selection, and alarms. It connects to external computers for data logging, parameter setting, and image display of the surface on PC screen, statistic computing, production quality reports and maintenance. (International patent July 2004). Other models, for larger diameters and higher resolutions but lower speed, will follow by next year.

Introduction

In applications where surface quality (roughness, flaw, lump, neck) is critical, like special fine stainless steel wires, gold wires, wire plating, coatings or colourings of optical fibres, enamelling of copper wires and broadband cables, there was no instrument for high resolution and high-speed whole-surface analysis.

The existing surface quality instruments are based on standard camera image analysis. The limits for fine wire are the resolution on the wire, the image frequency, and the lighting system for surface analysis.

With the non-contact full circumference imaging, this covers all the surface of the wire at high resolution and high speed.



It becomes possible to evaluate the surface and shape of the defect. At 300,000 circumferences per second and 64 dots per circumference, at line speed of 30m/s (1,800m/min) the axial resolution (pitch) would be 0.1mm (4 mils).

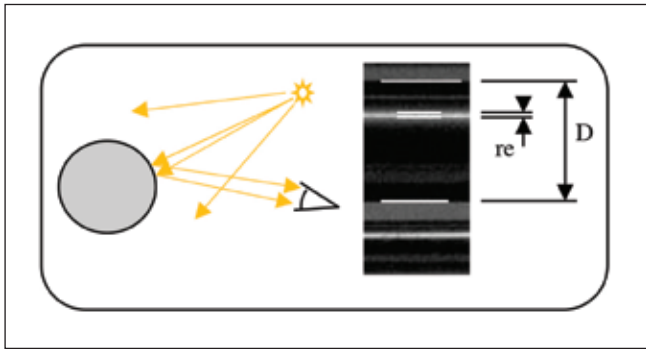
Including the wire feed pulses for wire length and speed measuring, the two dimensions are known: length and circumference. That gives a two-axis image of the wire for defect characterisation. Connected to a PC, this can display local images of the wire surface, especially when there is a defect, for analysis and knowledge.

Using only static components, lifetime is not a problem. Maintenance of optical systems in harsh environments requires specific care.

For low maintenance action, it uses clean air pressure to avoid dust, vapour or particles deposition on the inner glass tube interface.

Principle

The idea came from the gleam of a spotlight on a cylinder. In this image, re/D is about two per cent. Then $re/\pi \cdot D < 1\%$ of the circumference. The size of the gleam depends of the size of the spot source and of the angular aperture of the observer (optic of the sensor).



○ Figure 1

The energy gleamed to the observer (sensor) is strongly modulated by the surface quality; roughness, colour (absorption) and flaw, but also the local shape of the cylinder. Then, rotating the light around the wire axis will also rotate the gleam on the surface referring to a fixed observer.

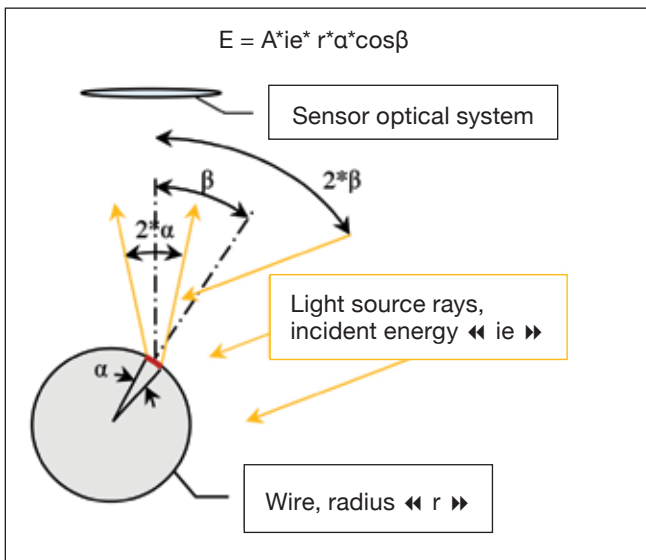
This generates a circumference image. When the wire moves, it develops a complete surface image of the wire. If the design is well made, any small surface defect, colour or shape change will produce locally a significant reduction of the gleamed energy to the sensor. Figure 2 shows the key parameters of the principle:

On the section plan of the wire, the incident light rays are almost parallels. Perpendicularly to the wire axis, each source beam is focused in a narrow line.

$2*\alpha$, comes from the angular aperture of the optical system. It determines the spot size on the circumference of the wire: $r*\alpha$.

$2*\beta$, comes from the angular incidence of the light source.

If "A" is the surface absorption/diffusion factor of the wire, the light energy "E" received by the sensor is:



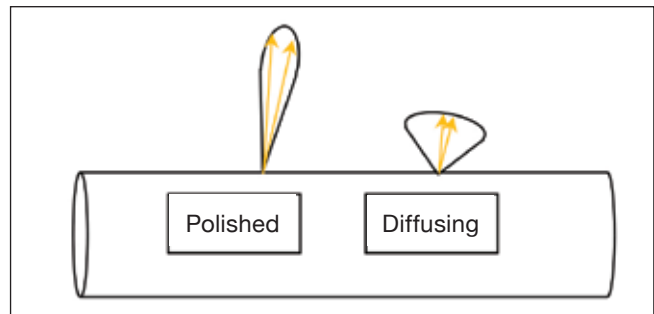
○ Figure 2: Lighting

$$E = A*ie*r*\alpha*\cos\beta$$

The consequences of these relations are:

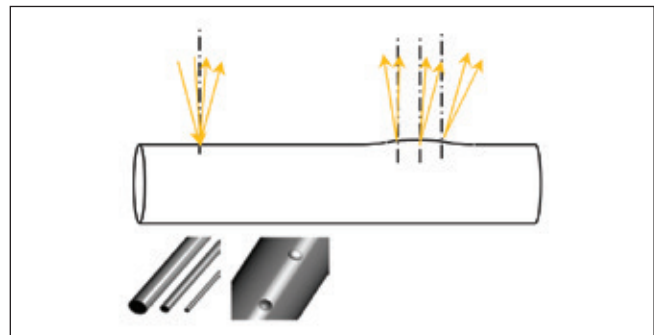
- Spot size ($r*\alpha$) proportional to the wire diameter, which is quite satisfactory, and of the angular aperture of the optical system

- The energy received by the sensor fluctuates with the angular incidence of the light source by $\cos\beta$. Using three sensors, " β " fluctuates within $\pm 60^\circ$ per sensor, generating a signal amplitude modulation by 50 per cent. This is compensated by a correction factor in order to display a flat response. With five sensors, the direct fluctuation falls to 20 per cent
- The energy received by the sensor is also directly proportional to the wire diameter. This means that the incident light source energy " ei " must be adapted accordingly, but also the sensor technology depending of the range of diameters to check. The smallest diameter able to have been checked properly was from a tungsten wire (black colour) of $10\mu m$
- The A factor has a significant impact either by diffusing the energy (roughness) or absorbing the light ray at $850nm$



○ Figure 3: Roughness effect

Another important effect is the shape change along the wire axis (lump, neck, flaw) that deflects the reflected rays out of the angular aperture of the sensor.



○ Figure 4: Shape changing effect. Modelling image

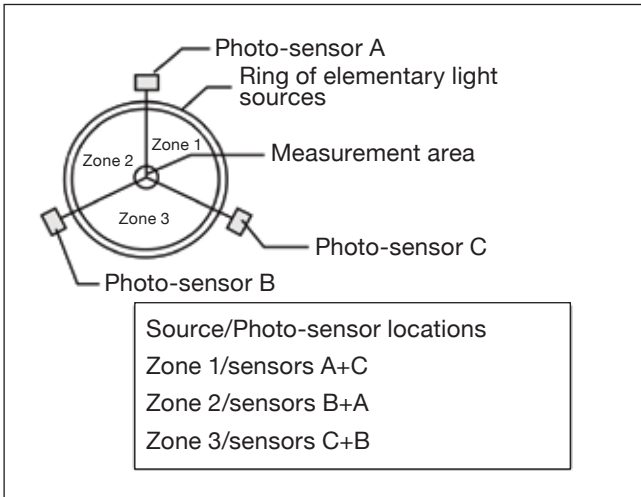
Design

To rotate the lighting point a ring of light sources was made around the wire axis, with only one source light on at once.

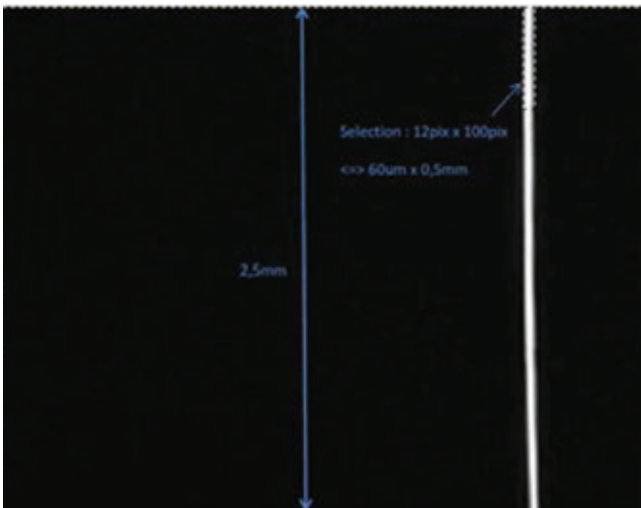
Switching the lighting from source to source generates a rotating light point around the wire. Three sensors at 120° simultaneously check the gleamed energy on the surface of the wire.

The light source system concentrates on each source beam in a narrow line perpendicular to the wire axis. The beam is about parallel to the other plan.

The thickness of the line determines the resolution on the wire axis. Then the sizes of the sources must be small and the optical system good enough for the application.



○ **Figure 5:** Front view of the system



○ **Figure 6**

Figure 6, caught by a CCD matrix at the place of the wire, shows the size of the (white) light line perpendicular to the wire axis.

The Gaussian shape of the energy density in the light line makes the efficient width at about 20µm.

Then the spot size along the wire axis (Line Resolution: LR) is about constant, but on the circumference (Circumference Resolution: CR), it fluctuates proportionally to the wire diameter ($r \cdot \alpha$).

The line resolution on the wire depends only of the light source system, not of the sensor.

To succeed in this development, one key point was the light sources. They must be small and fast, but generate very homogeneous light beams with uniform characteristics. They have been specially and successfully developed for this application.

Another key point was the sensor technologies. For the smallest range, it was necessary to use a highly sensitive sensor but one that was also very fast.

The movement of the wire with the rotation of the light source generates an elliptic scan of the surface and a continuous image on the sensor.

Image computing

The sensor must be able to characterise the size and the shape of the defect according to the requirements of the user.

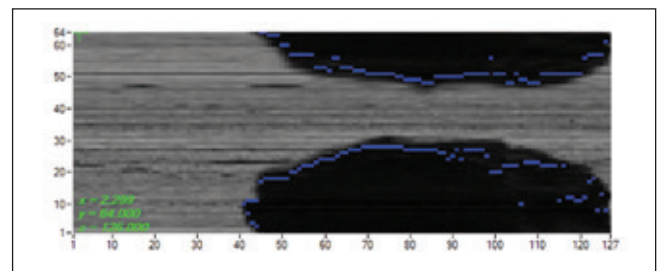
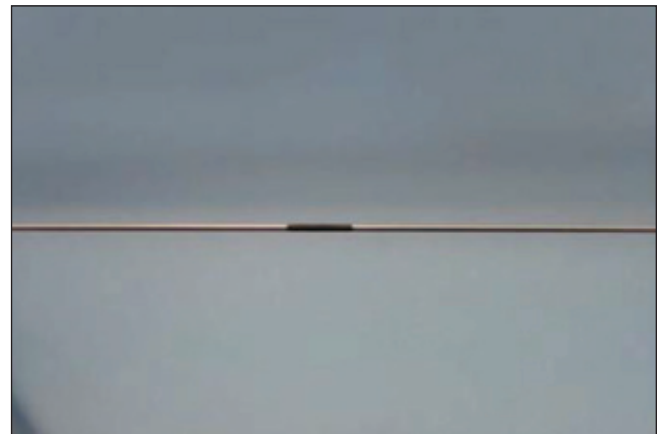
The SQM computes in real time the perimeter (P) and the surface (S) of the defect.

The ratio $R = k \cdot S / P^2$ gives information on the shape of the defect. $k = 4\pi$. In this case, $R = 1$ for a circular defect. It tends toward zero when the defect elongates. Then R and S are two key detection parameters.

In order to have homogeneous resolution, the line speed is measured by the SQM (pulse counting) and the diameter is a user parameter. Then the scanning frequency is adjusted automatically.

Test results

At the time of writing, the authors were just at the start of application and conducting industrial tests.



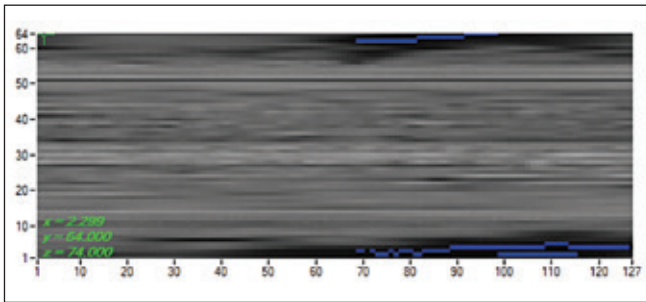
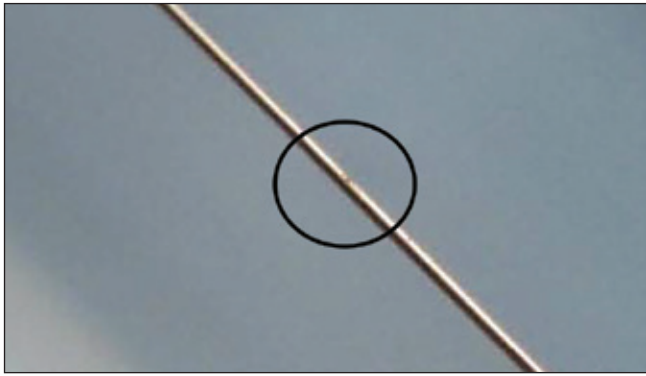
○ **Figure 7:** First case, one large side inked mark. Reading at 25kHz

Still in laboratory conditions, a stainless steel wire 0.38mm in diameter (15mils) was moved and this generated marks or scratches.

In both cases the blue line determines the periphery of the defect. Unfortunately the display is cut right on the top of the wire where the marks are.

Nevertheless, it shows the computing analysis that works all around the wire. The surface quality of the wire can also be seen. Image calibration must be made on a smooth surface of the wires.

This is also a process to develop to be able to deliver the reference wires.



○ **Figure 8:** Second case, one scratch on the surface. Reading at 140kHz

The measurements are not sensitive to the vibration of the wire. Nevertheless, the independency has to be optimised to the position of the wire.

Conclusions

This unique instrument is in its last optimisation phase. All technological issues are solved efficiently.

The expectation once tests are complete is to undertake marketing throughout this year (2015).

Paper courtesy of the 63rd International Wire and Cable Symposium, Providence, Rhode Island, USA, 10th to 12th November 2014.

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电线电缆以及光纤的超高速、高分辨率表面质量测定 (SQM)

作者：法国卡布列斯赛飒-世通公司 (Cersa-MCI) 研发部门
Jean-François Fardeau, Gérald Novel和 David Miara, Cersa-MCI

摘要

此科研项目满足了长期以来电线电缆以及光纤行业关于高效在线表面质量测定和缺陷检测的需求。这一项目近来通过光电子学的最新技术开发而得以实现。

该系统如同一个围绕着电线的环状线性相机。细线版本运作范围可从10微米 (0.4密耳) 至2毫米 (80密耳) 并可以两种形式进行，细线以及超细线。

每周长设置有64个点位，每秒可环绕300,000周 (c/s)，点位大小与电线直径成正比，相比较其他现有的技术，该系统的表面检测性能更佳且具有价格竞争优势。

系统包括所有必须的实时电子计算：缺陷描述、缺陷选择以及缺陷警报。它可连接外部电脑用以记录数据、设置参数、在电脑屏幕上显示图像、计算统计数据、报告以及维护产品质量。(于2004年7月获得国际专利)。明年将开发其他适用于更大直径的型号，该型号的分辨率更高但是速度较慢。

介绍

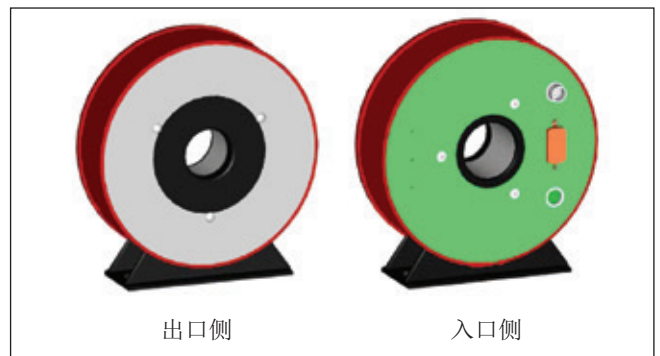
在表面质量非常重要的应用程序中(粗糙程度、裂缝、是否有鼓起、是否粗细不均)，例如特制不锈钢细电线、金制电线、电镀线材、线材涂层或光纤抛光、铜线上釉以及宽带电缆，之前从未有设备可进行全面的高分辨率和高速表层分析。

目前使用的表面质量检测设备基于标准的摄影图像分析基础之上。该技术对于细电线的限制在于电线的分辨率、影像频率以及表面分析的照明系统。

通过非接触式的全围成像，该系统能够兼具高分辨率和高速两项特点全面覆盖到所有电线表层。这使得评估缺陷的表层和形状成为可能。该系统速度为每秒300,000圈周长、每周64个点位，线路速度达每秒30米 (1,800米/兆牛顿)，轴向分辨率(节距)为0.1毫米 (4密耳)。

包括电线长度以及速度测量的送线脉冲在内，已有两个维度的数据得以明确：长度和周长。这为电线的缺陷描述提供了双轴成像。通过连接电脑，可对电线表明进行局部成像，特别是当有缺陷情况出现时，可对其进行理解与分析。

仅使用静态组件，使用期限不成问题。但是在恶劣环境下维护光纤系统则需要特殊的护理。对于维护要求较低的运营中，会使用清洁的空气压力防止在内部的玻璃管接口上沉积灰尘和颗粒物或附着水蒸气。



原理

创意来自于聚光灯投射在圆柱体上的光束。在这张图中， re/D 约等于2%。则 $re/\pi \cdot D$ 小于周长的1%。光束的尺寸取决于光源以及观测器孔径张角(传感器的镜片)的大小。

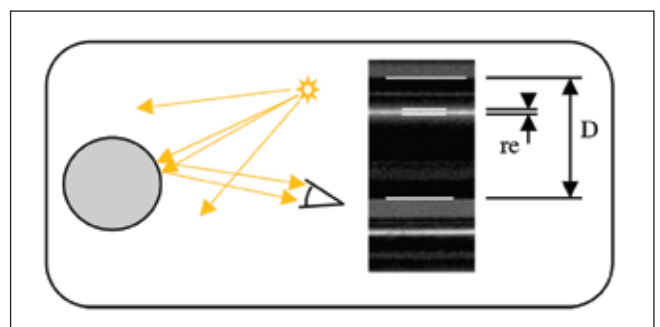
投射至观测器(传感器)的能量很大程度上会受到表面质量的影响；粗糙程度、涂层(吸收程度)、鼓起物以及圆柱体的局部形状。

因此，围绕电线中心轴旋转光源同样也能使固定观测仪上投射到表面的光束进行环绕旋转。由此生成了圆周图像。

当电线运动时，便能形成电线表面完整的图像。如果设计合理，那么电线表面任何缺陷、涂层或形状上的改变都会大幅度减少投射到传感器上的光源。

图2展现了该原理的主要参数：

图1



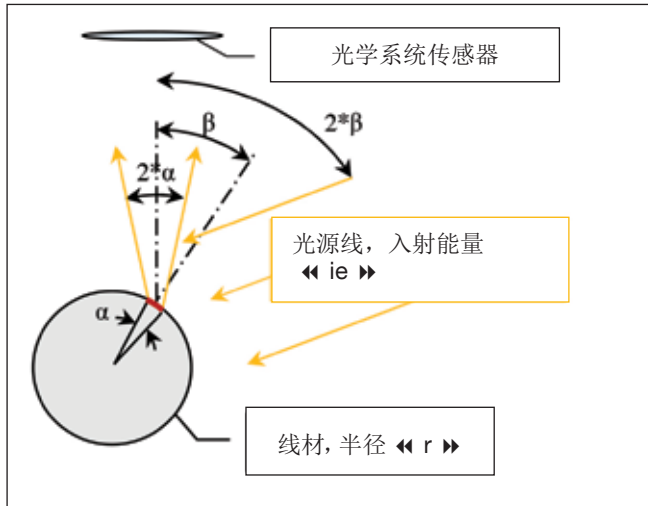
在电线的剖面图上，入射光线几乎都是平行的。与电线中心轴垂直的光源集中在狭窄的路径上。

$2\cdot\alpha$ 来源于光学系统的孔径张角。它决定了电线周长上的光点尺寸： $r\cdot\alpha$ 。

$2\cdot\beta$ 来源于光源的入射角。

假设“ A ”代表电线表面吸收或漫射因数，则传感器接受到的光源能量“ E ”为：

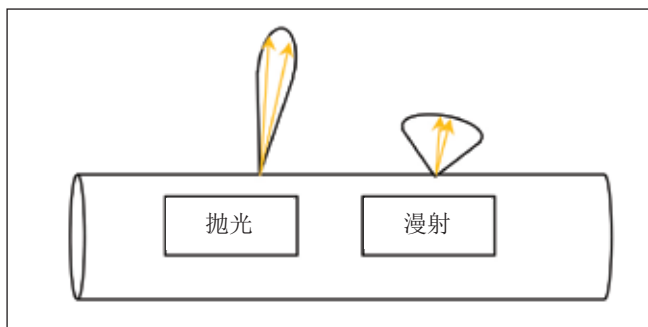
$$E = A \cdot i_e \cdot r \cdot \alpha \cdot \cos\beta$$



○ 图2: 照明

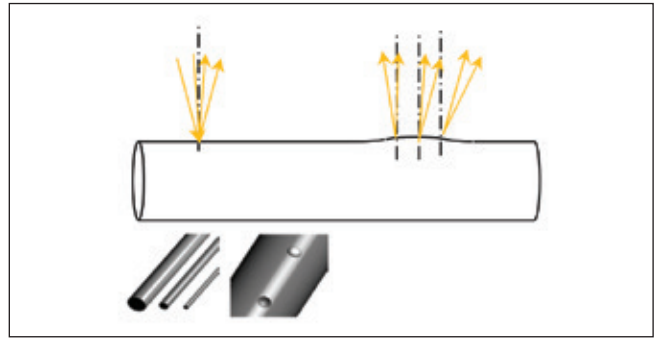
以上因数间的关系结果为：

- 光点尺寸($r\cdot\alpha$)与电线的直径以及光学系统的孔径张角成正比(符合要求)。
- 传感器接收到的光源能量受到光源的入射角角度($\cos\beta$)影响而波动。三台传感器记录的数据显示，每台传感器的“ β ”的波动范围在“正负60度”以内，由此产生50%的信号调幅。这会有一个因数进行补充修正以呈现平坦响应。通过五台传感器协同工作，不可避免的波动被降至20%。
- 传感器接受到的光源能量与电线直径直接成正比。这意味着入射光源能量“ e_i ”也可相应调整，同时需要对不同直径适用的传感器技术进行检测。最小可检测到的直径尺寸来自于10微米的钨丝电线(黑色涂层)。
- A 因数对于漫射光源能量(粗糙程度)或吸收850毫微米的光线都具有非常大的影响。



○ 图3: 粗糙程度效果

另一个重要的影响因素是电线中心线上的形状改变(鼓起物、粗细不均、裂缝)，这些改变会使投射向传感器的反射光束发生偏离，偏离出传感器的孔径张角。

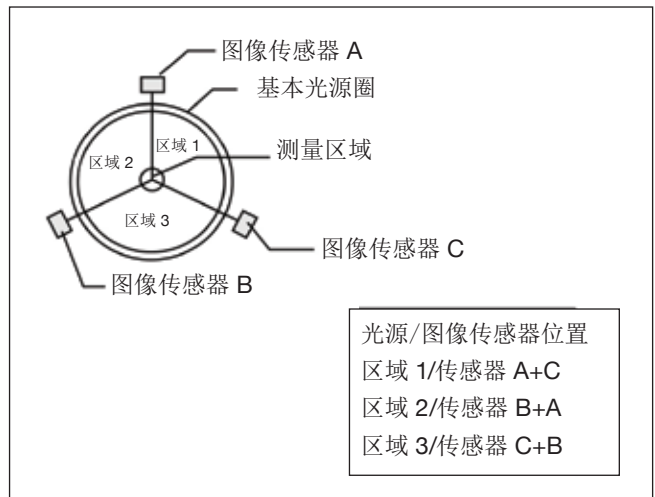


○ 图4: 形状改变效果。模拟图像

设计

为了能使光源作围绕式旋转，我们围绕电线中心轴设置了一个光源环，每次仅适用一个光源。在光源间不停切换即可围绕电线产生环绕光点。120度角上的三台传感器可同时检测电线表面的光源能量。

光源系统将光束聚集在垂直于电线中心轴上的狭窄路径内。其他项目内的光束几乎是平行的。路径的宽度决定了电线中心轴上的分辨率。则光源尺寸必须较小且该光学系统已充分适用于该项目。



○ 图5: 系统的前部视图

○ 图6:

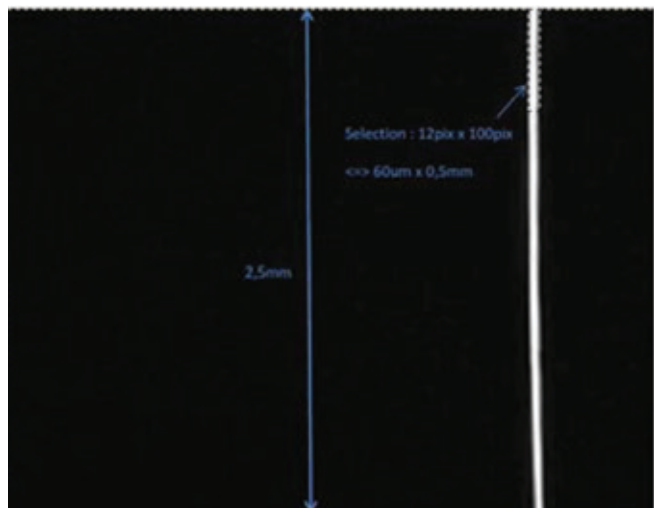


图6是电荷耦合器件 (CCD) 矩阵在电线上捕捉到的画面，展现了垂直于电线中心轴上的(白色)光线的尺寸。光线中能量密度的高斯线型表明最有效的宽度为20微米。

这样电线中心轴上的光点尺寸(线型分辨率: LR)几乎是恒定的，但是圆周上的光点尺寸(圆周分辨率: CR)则会根据电线直径($r \cdot \alpha$)而呈现波动。电线的线型分辨率则仅由光源系统决定，而非传感器。

为了能在此进程中获得成功，一个关键性的因素在于光源。光源必须小而快，但是可以产生具备统一特性的同质光束。适用于这项项目的特制光源已被成功地开发出来。另一个关键因素是传感器技术。在最小的感应范围内，必须采用兼具高速和高敏感度两项特点传感器。

在电线运动的同时旋转光源可对其表面进行椭圆扫描，并在传感器上持续生成图像。

图像计算

传感器必须根据用户的要求对缺陷的尺寸和形状进行描述。表面质量测定系统(SQM)可对缺陷周长(P)和缺陷表面(S)进行实时计算。

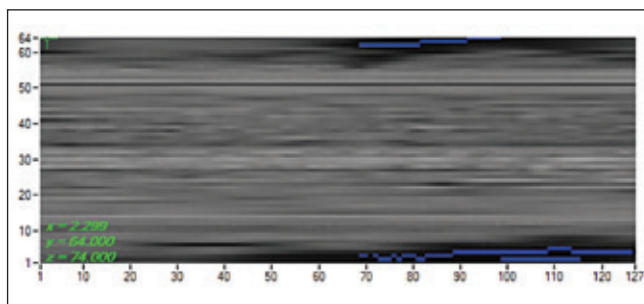
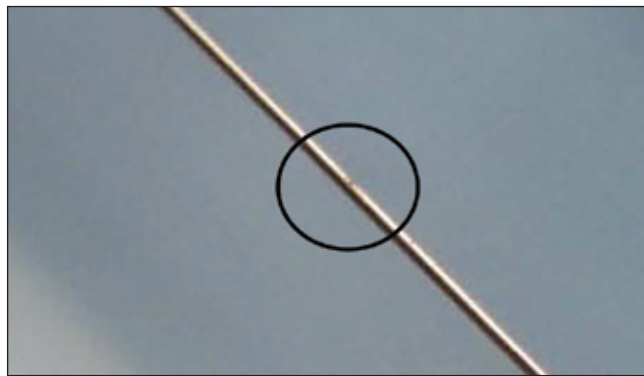
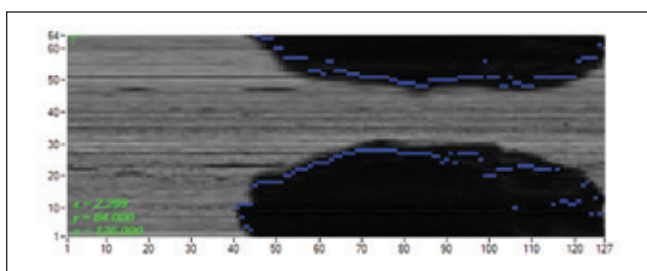
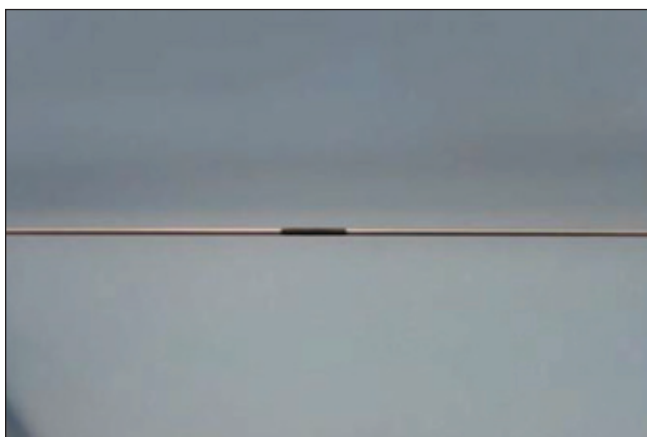
比率为 $R=k \cdot S/P^2$ ，可提供缺陷的形状数据。 $k=4\pi$ 。在这个范例如中，环状缺陷发生时， $R=1$ 。当缺陷延长时，该数值将趋向于0。

则R和S是两项关键性的检测参数。为了能获得同质分辨率，表面质量测定系统(SQM)需测定线型速度(脉冲计数)，同时直径为用户参数。由此扫描频率可自动进行调节。

测试结果

在撰写本文时，笔者刚刚开展本项目并开始进行行业测试。在实验室环境下，一根直径为0.38毫米(15密耳)的不锈钢电线在运动过程中产生了擦痕或被标上了记号。

○ 图7: 第一个范例，一个较大的墨水标记。于调频25千赫兹收听



○ 图8: 第二个范例，表面的刮痕。于调频140千赫兹收听

在两个范例中，蓝线都指明了缺陷的外围。不幸的是，显示在电线顶端，即记号所在处中断了。

尽管如此，试验还是证明了计算分析可覆盖整个电线。电线的表面质量也清晰可见。图像校准必须在平滑的电线表面上进行操作。

这也是一个寻求参考电线的过程。

对于不同的电线，系统测量的敏感度较低。尽管如此，还需优化电线位置的独立性能。

结论

这个独一无二的设备正在其最新的优化阶段。所有的技术问题都获得了有效解决。本年度(2015年)计划在测试完成之后投入市场。

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Aksh Optifibre Ltd	12, 39	Intertek	20, 43	Prysmian Group	16, 41
American Capital Energy and Infrastructure	25, 38	Japan Steel Works	52, 62	Q8Oils	46, 63
Andhra Pradesh Government	67	Kelani Cables PLC	35	Queins Machines GmbH	40
ArcelorMittal	67	Korea Advanced Institute of Science and Technology	11, 39	Renova Srl	59, 64
BASEC	32, 42	Korea Electric Power	30, 42	Shanghai Water Authority	29, 40
CILS	40	KPTCL	67	Sikora AG	56, 64
Cimteq Ltd	31	Leeco Spring International	32, 41	Steel Authority of India Ltd	67
CommScope Inc	18, 38	Messe Düsseldorf GmbH	8, 36	Sterlite Technologies	66, 67
Datwyler	55, 62	Metalube Ltd	14, 41, 61	Technifor	56
Davis Standard	23, 35, 38, 40	Nexans	30, 42	Whitelegg Machines Ltd	43
Frigecco	44, 60	Placid Industries Inc	58, 61	Wire & Plastic Machinery Corp	29
Gladding Braided Products	27, 39			Zumbach Electronic AG	53, 63

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AlphaGary Corporation	Front cover	Magnetic Analysis Corporation	31
Anbao (Qinhuangdao) Wire & Mesh Co Ltd	20	Magnetic Srl	22
ATE Applicazioni Termo Elettroniche Srl	10	Mathiasen Machinery Inc	53
Bergandi Machinery Co	89	MFL Group - Mario Frigerio SpA	24
Blachford Corporation	13	Maschinenfabrik Niehoff GmbH & Co KG	26
Borouge Pte Ltd	9	Paramount Die Co	83
BWE Ltd	23	Pressure Welding Machines Ltd	29
Candor Sweden AB	91	Rosendahl Nextrom GmbH	17
Clinton Instrument Company	51	Samp SpA	Inside back cover
Comsuc Technology Development Ltd	91	Shanghai Hosn Machinery Technology Co Ltd	1
Condat SA	25	Shanghai Nanyang Equipment Factory Co Ltd	37
Continuus-Properzi SpA	50	Sheng Chye Enterprise Co Ltd	Back cover
DeWal Industries	31	Sket Verseilmaschinenbau GmbH	19
Enkotec A/S	3	Spirka Schnellflechter GmbH	47
Eurolls SpA	33	Spring Tooling Ltd	87
FA.IN.PLAST Srl	2	Supermac Industries India Ltd	35
Fortuna Federn GmbH	57	Taiwan Linkigi Metal Co Ltd	14
Fuhr GmbH & Co KG	12	TJK Machinery (Tianjin) Co Ltd	28
GMP Slovakia sro	20	Trafco Srl	21
Guanbiao Electrical Machinery Co Ltd	30	Joachim Uhing GmbH & Co KG	55
Henrich Maschinenfabrik GmbH	15	Upcast Oy	85
International Wire & Machinery Association	18	Weilly Diamond Industrial Co Ltd	59
ITO-SIN (Deyang) Wire & Cable Equipment Co Ltd	104	Wirex Dies & Steel India Pvt Ltd	30
Jiangsu Handing Machinery Co Ltd	48-49	WiTechs GmbH	52
Jiangsu Qunye Electrical Co Ltd	53	Yangzhou Havet Machinery Co Ltd	35
Ernst Koch GmbH & Co KG	45	Yangzhou Jinsen Optoelectronics Co Ltd	16
Lämneå Bruk AB	27	Zumbach Electronic AG	Inside front cover



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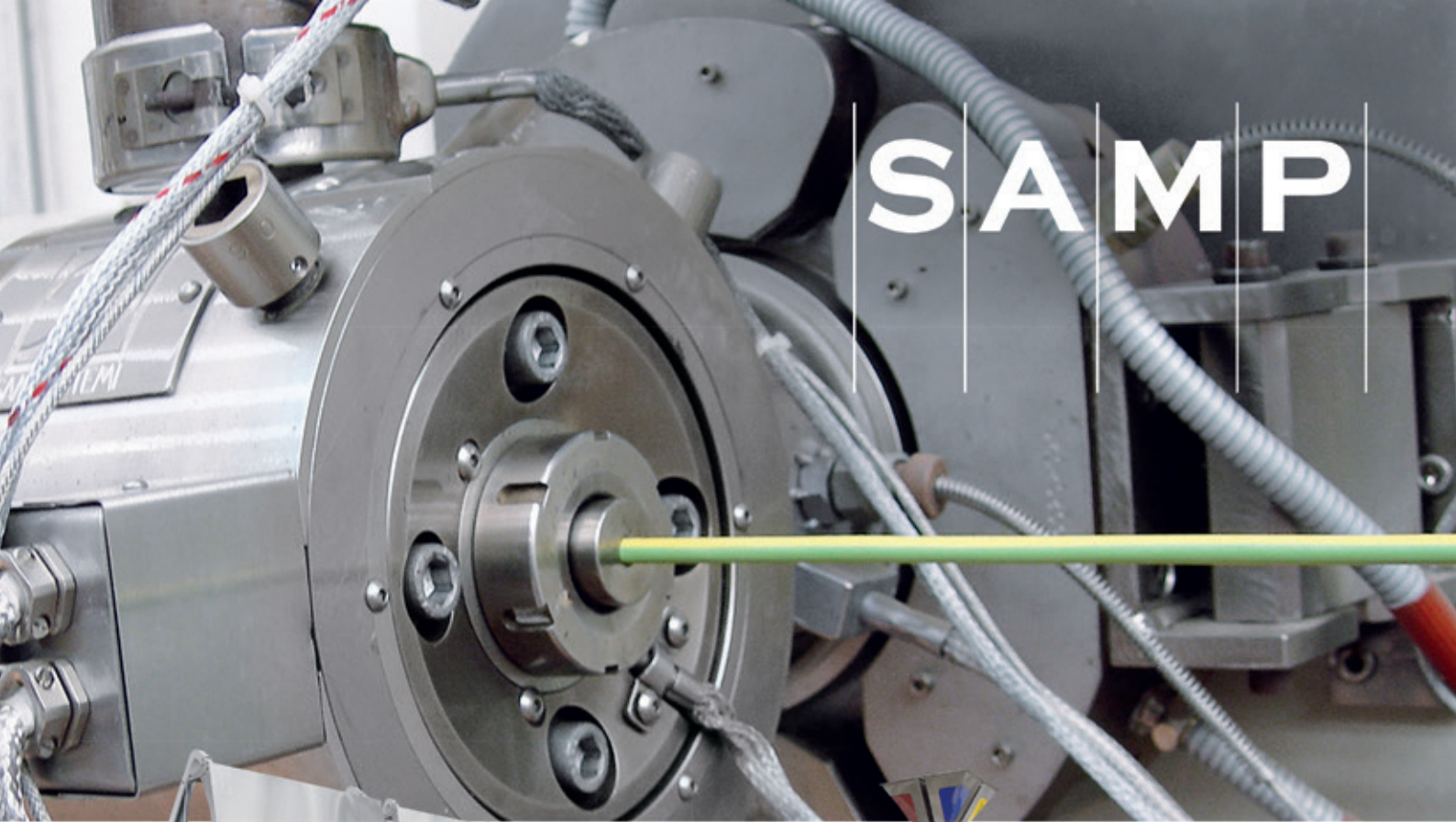
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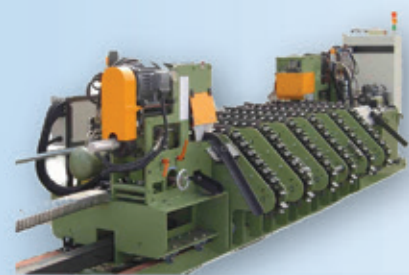
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