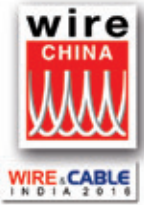


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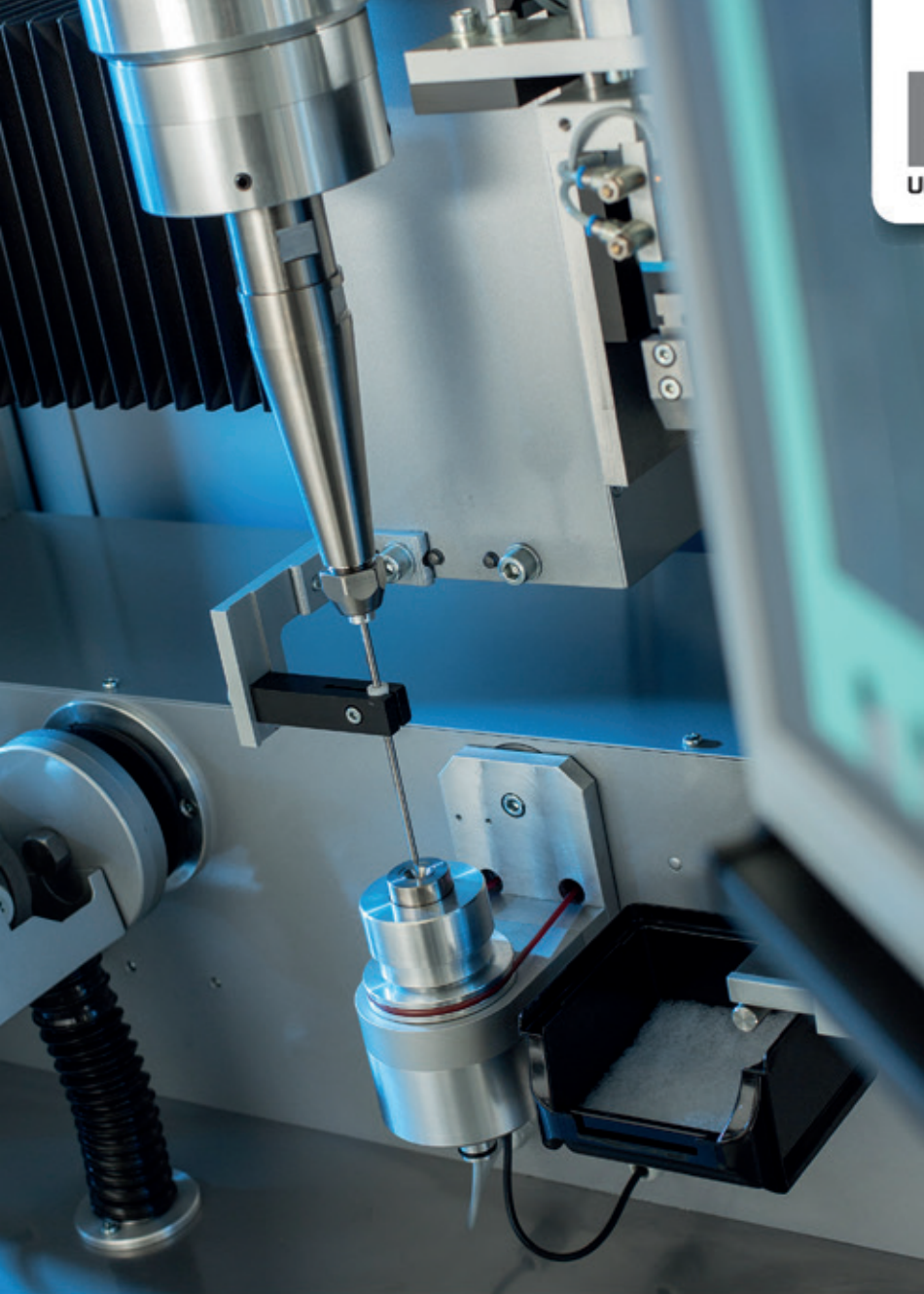
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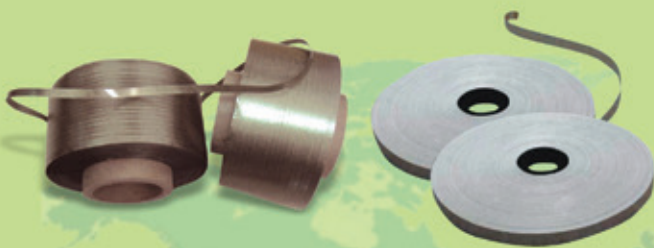


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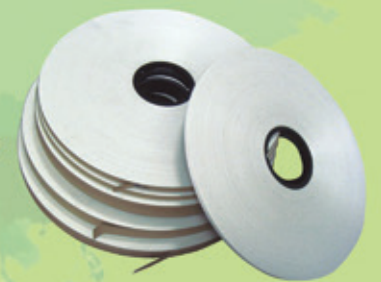
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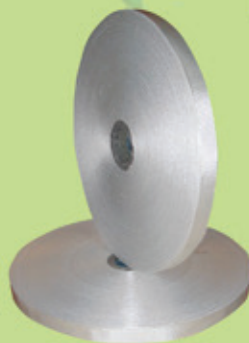
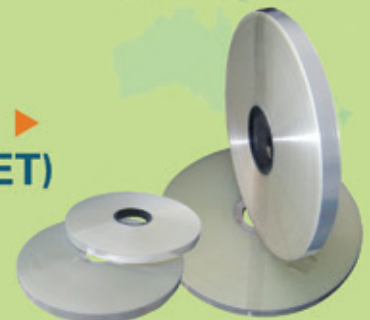
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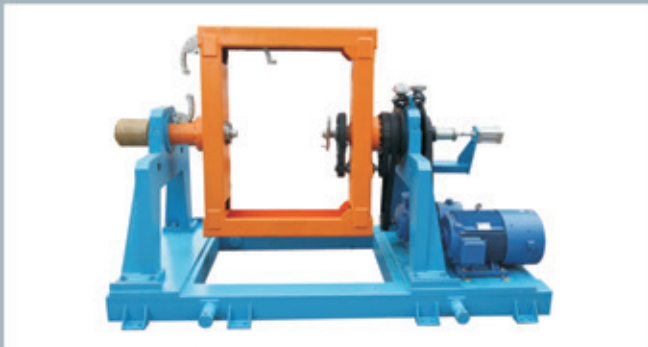
JCΦ35-Φ80 High efficiency extrusion line



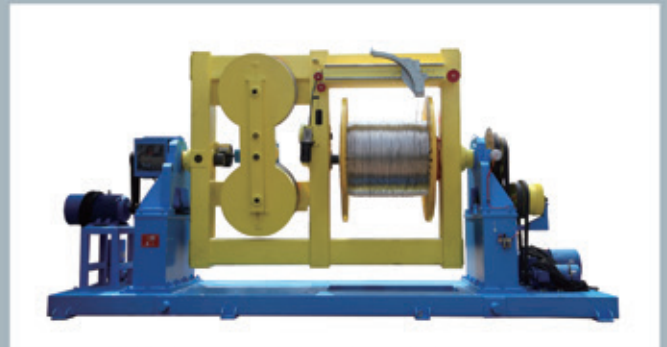
XBΦ500-Φ2500 Cantilever type single twisting machine



SJΦ1000-Φ2500 Double twist stranding machine



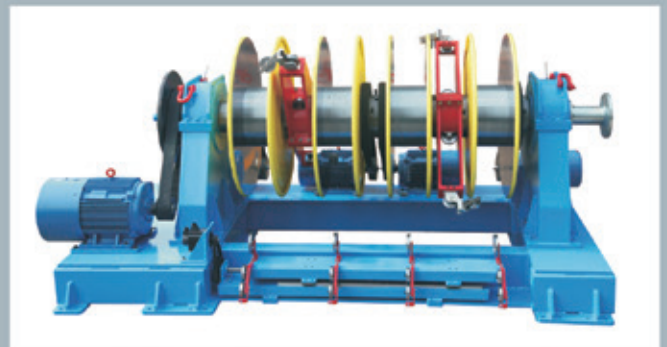
DJΦ630-Φ2500 A type Single twisting machine



DJΦ1000-Φ2000 Single twisting machine



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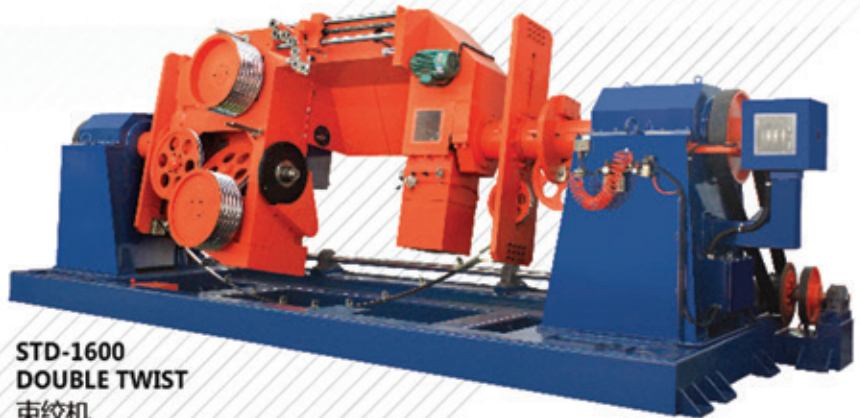


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A New Flat Indoor/
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Editorial Assistant
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Design/Production (设计/制作):..... Julie Tomlin
Production (制作):..... Lisa Wright

Translation (翻译经理):..... Tony Zhou
Jianye Yang
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Advertising/Marketing:..... Jason Smith
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Europe (欧洲)

Advertising/Marketing & Editorial

(广告, 营销及编辑部)
46 Holly Walk, Leamington Spa
Warwickshire CV32 4HY, UK
Tel (电话):.....+44 1926 334137
Fax (传真):.....+44 1926 314755
Email (电子邮箱):..... wca@intras.co.uk
Website (网站):..... www.read-wca.com

USA (美国)

Editorial (广告/营销)

Intras USA – Doug Zirkle
Danbury Corporate Center, 107 Mill
Plain Road, Danbury, CT 06811, USA
Tel (电话):.....+1 203 794 0444
Email (电子邮箱):..... doug@intras.co.uk

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Rapid growth and 'green' focus spotlights Asia

Industry 4.0, regenerative power and growth, it seems, are nothing new these days. Changes are happening quickly within the industry – and perhaps nowhere more so than in Asia.

It does seem fitting that the industry turns its attention to both China and India, with the staging of wire China and Wire & Cable India at the end of September and beginning of October.

China's growth seems to have been unparalleled for many years now – and this will again be reflected in this year's exhibition, with a further decade forecast of increasing demand for wind power, solar power and nuclear power, all placing demands on the wire and cable industry.

This is also set against the backdrop of growing awareness for green and energy-saving development. Our coverage of the exhibition starts on page 82.

Just a week or so later, the Indian subcontinent is thrust into the limelight with the staging of Wire & Cable India in Mumbai.

Growing steadily over a number of years, this show in many ways highlights all the advantages available to both domestic companies and investors alike.

This year more than 400 exhibitors from 25 different countries will be heading for Mumbai, some of which can be found in our preview section which starts on page 99.



David Bell
Editor

When and where

2016
2-5 October
IWCS –
symposium and trade
exhibition –
Rhode Island, USA
Organisers:
IWCS
Tel: +1 717 993 9500
Email: phudak@iwcs.org
Website:
www.iwcs.org

2016
5-7 October
Wire and Cable India –
trade exhibition –
Mumbai, India
Organisers:
Messe Düsseldorf India
Pvt Ltd
Fax: +91 112 697 1746
Email: info@wire-india.com
Website:
www.wire-india.com

2016
25-29 October
EuroBLECH –
trade exhibition –
Hanover, Germany
Organisers:
Mack Brooks Exhibitions
Ltd
Fax: +44 1727 814 401
Email: info@euroblech.com
Website:
www.euroblech.com

2017
23-25 March
TEL – trade exhibition –
Istanbul,
Turkey
Organisers:
Voli Fuar Hizmetleri
Fax: +90 212 604 5051
Email:
info@voli.com.tr
Website:
http://tel-fair.com



○ Visitors at the three-day exhibition

Praise for Guangzhou show

WIRE & Cable Guangzhou 2016 drew its curtains amid great praise from both exhibitors and visitors. The fair, which ran in at the China Import and Export Fair Complex in China, was organised by China Southern Power Grid Media Co Ltd, Guangzhou BoYou Exhibition Service Co Ltd, and Guangzhou Guangya Messe Frankfurt Co Ltd.

The three-day show was attended by 350 companies and 18,869 visitors from 25 countries and regions.

The 2016 edition spanned a total exhibition space of 22,000m² and presented an extensive display of South China's latest products and innovations in wires and cables, manufacturing machinery as well as related materials and accessories. Some of the leading brands that were in attendance included Jiangsu Tongguang, Guangdong Huada, Jinglan Cable, Shandong Pacific, Shenzhen Bendakang, Shenzhen Shencable, Yunnan Zhengxiao, Dongguan Gemyoung, Guangzhou Cable Works, and Guangzhou Honghui.

Jinglan Cable Co Ltd, which specialises in power and electrical cables for power

and control applications, joined the fair in hopes of expanding its presence in South China. Mr Sun, a representative from the company, said: "The response we have received from visitors has been overwhelming. In fact, on just the first day, we met potential clients from Saudi Arabia as well as those from within China from cities such as Guangzhou and Guiyang."

Guangzhou Honghui Electrician & Machinery Co Ltd, another exhibitor at the fair, also applauded the effectiveness of the show. Mr Fang Zhi from the company was impressed by the fair's organisation and as well as its results. He said: "We have fetched a number of solid leads from India, Iran, Japan and the USA. Another company from Japan has already placed an order for a few machines from us and we are thrilled by the outcome of our participation."

Some of the buying delegations that were present included the Guangdong Province Electric Power Engineering Enterprise Association, the Anhui Province Power Engineering Association, China Wire & Cable Technology Information Union, Guizhou Power Grid,

Henan Electric Power Construction Enterprises Association, Liaoning Province Power Engineering Association, Zhengwei Technology (Shenzhen), and Zhuhai Power Trade Association.

Mr Bhavesh Modi, CMD of Jaggery Wires & Cables Pvt Ltd in India, praised the quality of the exhibitors and the collection of products and solutions he found at the show. He said: "I am looking for wire machinery and materials from China for our wire and copper cable manufacturing plant. After only a few meetings, we are planning to make a purchase from a machinery supplier I met here today."

The first edition of the Wire and Cable Asia Forum, which ran alongside the exhibition, welcomed more than 700 industry experts. A total of 19 conferences and seminars were held, with topics ranging from government policies to the manufacturing of high-voltage cables and power grid projects to standards for electric vehicles.

Wire & Cable Guangzhou – China
Website: www.wire-cable-china.com

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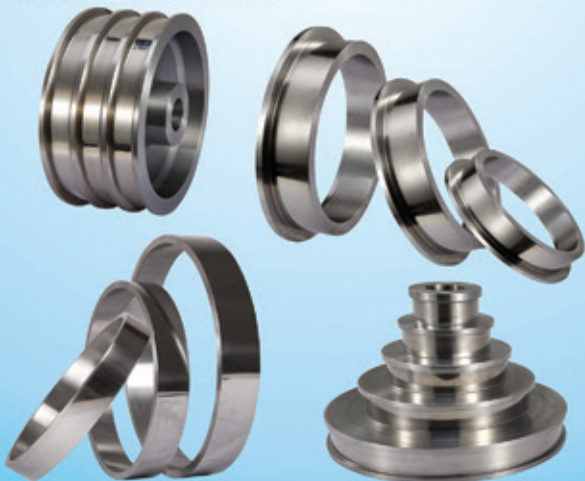
Hall W1, Booth F62



Ceramic coated Cone pulley and roller for in line drawing machines



Tungsten carbide coated cone pulley and steel ring are used for large rod wire drawing machines



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Record highs for Aksh

AKSH Optifibre Limited, a manufacturer of optical fibre, optical fibre cables and FRP rods, and the largest e-governance (e-Mitra) service provider in the state of Rajasthan, India, has announced its results for Q4 and FY 2015-16 in New Delhi, India.

Highlights include:

- Quarterly revenue at Rs 130 Crores, up by 19 per cent QoQ
- Annual revenue at Rs 462 Crores, up by 23 per cent YoY
- Quarterly EBITDA of Rs 21 Crores, up by 32 per cent QoQ
- Annual EBITDA of Rs 74 Crores, up by 34 per cent YoY

The global optical fibre demand has reached 392 million fibre-km from 334 million fibre-km, registering a year-on-year growth of 17 per cent as of 31st December 2015, and the OFC market is expected to reach \$12 billion by 2020 from the current valuation at \$7 billion.

With rapidly changing communication requirements and shift to 4G/LTE and 5G enabled devices coupled with continuous need for high-speed broadband connectivity, not only in metros but also in rural and remote areas of India, the demand for optical fibre cable is on the rise. In India during the last year alone, over 16 million fibre-km of OFC has been consumed.

The vision of the present Indian government is to place India high on the digital platform of technology. With all large scale national connectivity plans like Bharat Net and Network for Spectrum (NFS) now in the final stages of commissioning, the demand for the next phase of last-mile OFC connectivity is on the horizon.

With the vision of the government to provide good and transparent governance, e-governance is playing a pivotal role in delivering services through a digital platform to increase their reach and provide citizens with effective governance.

With improved performance in the existing business and with a view to mitigate business risk to ensure sustainable growth the board has approved CAPEX of Rs 85 Crores for the diversification of its product portfolio to manufacture 200,000 pairs of ophthalmic lenses per day in phased manner to be funded by debt and internal accruals.

The company has initiated steps for shareholders' approval for amendment in objects clause of Memorandum of Association.

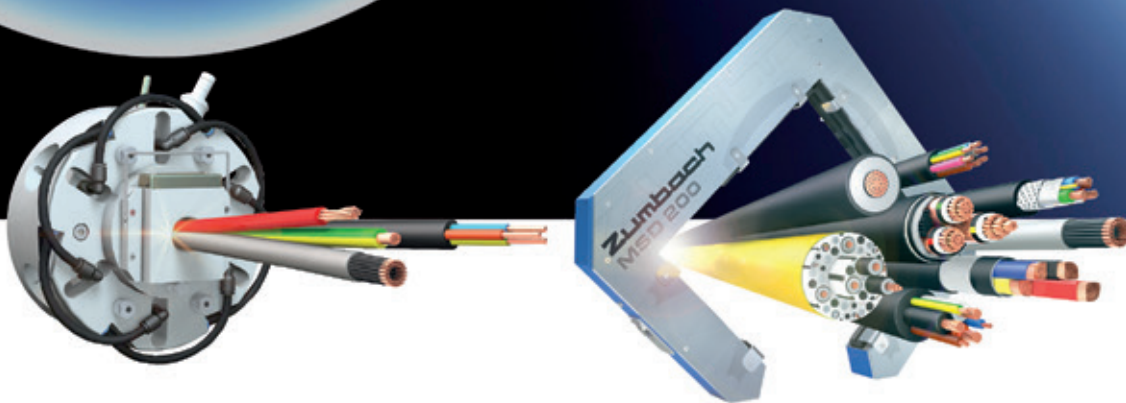
Aksh has been instrumental in contributing towards faster development of the states it partners, with its e-governance arm 1 Stop Aksh.

In its endeavours to help communities and making government initiatives accessible to the public, 1 Stop Aksh has become a major local service provider (LSP) in Rajasthan and delivers over 250 government-to-citizen (G2C) and business-to-citizen (B2C) services through its kiosks spread across the state.

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Launchpad for new lubricants

ZELLER+Gmelin, an industrial lubricants manufacturer, used wire 2016 in Düsseldorf, Germany, as the launchpad for its latest products for copper and stainless steel wire drawing.

“Among the 300 visitors at the booth, many had travelled from abroad, mainly from Europe and Asia, and a high number of prospective customers from Iran, who engaged in many technical discussions with the lubrication experts,” said Wolfgang Kienle, product manager.

The easing of economic sanctions against Iran had a direct influence on trade fair contacts. The number of visitors in total increased by almost 30 per cent compared to 2014.

Zeller+Gmelin offers both individual and holistic solutions from a single source, ranging from research and development to production.

At the centre of the new products were the innovative Multidraw drawing agents for the copper wire drawing sector: Multidraw CU CAS, a new synthetic product for continuous annealing, Multidraw CU MF C for medium and fine wire drawing and the Multidraw CU UNI S universal drawing agent for rod breakdown and medium wire drawing up to 0.1mm.

Zeller+Gmelin – Germany
Website: www.zeller-gmelin.de

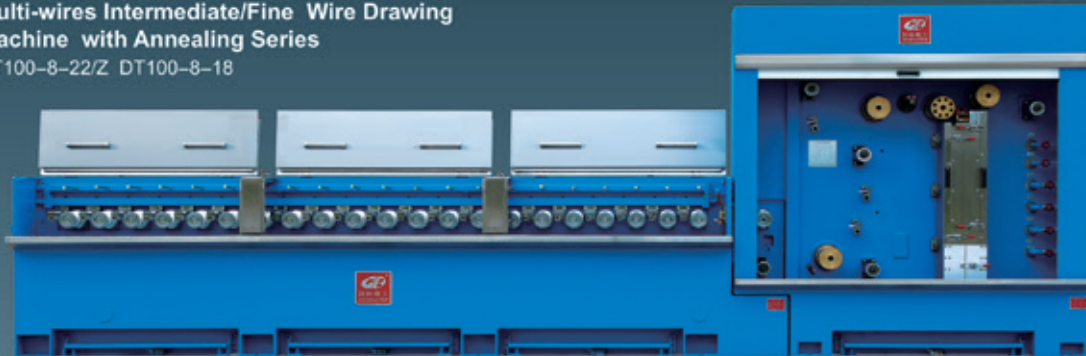


- *Multidraw CU UNI S is a water-soluble, semi-synthetic coolant for the drawing of copper wire from rod breakdown to the final wire dimensions*



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Double celebration for Niehoff

THERE were two reasons to celebrate for Niehoff as the company looked back on wire 2016 and an in-house exhibition immediately after the show in Düsseldorf, Germany.

At Düsseldorf itself, a large team of employees from the head office, subsidiaries and representative companies welcomed numerous visitors to the stand – one of the largest at this year's exhibition.

On display was the new rod breakdown machine type MSM 86, offering customers benefits like improved wire quality and higher energy efficiency, and – most importantly – notable cost savings. To achieve even more savings with Niehoff systems, the company's portfolio includes wear and spare parts with the "Niehoff Original+" label, also presented at wire.

Central topics of discussion at the stand were energy and materials efficiency, as well as how to reduce manufacturing costs. The company could prove that its innovative and custom-made solutions are the answer to these requirements.

Delegates from Niehoff subsidiaries and the representative and partner companies met with staff at the headquarters at the agents meeting, held before the trade fair to update all representatives comprehensively regarding the company's



○ The Niehoff stand at wire 2016

technology, latest developments and worldwide market trends.

The second event was the company's in-house exhibition at the headquarters in Schwabach, Germany, with more than 150 visitors from Europe, India, China and the Middle East.

Maschinenfabrik Niehoff GmbH & Co KG – Germany
Website: www.niehoff.de

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Nipple for plastic coating of wire 挤出內模
Compacting or bunching dies 拉線壓扁模
Others 其他異形鑽石模

Hexagon 六角形

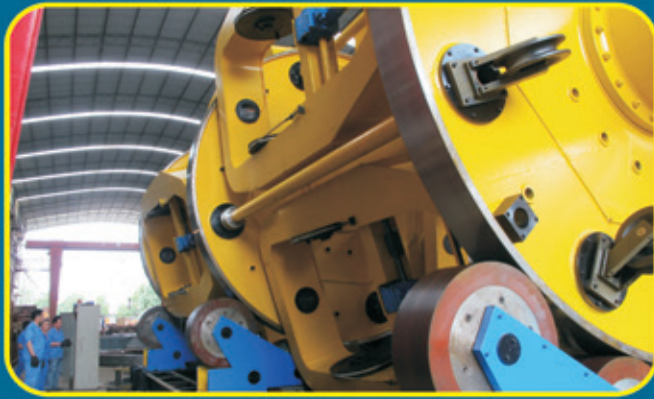
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F29

New corporate campus in Italy

TENOVA is moving its main headquarters to Castellanza, Varese, Italy, to a new and modern corporate campus.

The campus extends over a surface of approximately 100,000m² and will host over 400 employees.



○ The new headquarters in Castellanza, Varese, Italy

It was designed and developed in accordance with principles of functionality and environmental sustainability, characterised by the integration of new buildings with the Tenova Pomini offices and production site. The company has invested a total of approximately €15m in the project.

In this new location, Tenova's industrial vocation will be fully expressed: the company's various business units, functional staff and the existing Pomini factory shall all come together in a single site, creating a work environment congenial to the interaction and exchange of best practices between engineers, office staff, and specialised and professional

workers, with positive effects on the efficiency of the company's processes.

Collaboration, sharing and integration will be developed alongside another of the company's values, transparency, which will also be palpable in the campus's architecture. All of Tenova's offices are characterised by floor-to-ceiling windows and walls, for bright interiors overlooking outdoor green areas, which guarantees internal visibility, for a continuous environment where staff can work together.

Tenova will also focus on young people, and is set to bolster exchanges with

universities, schools and technical institutes. On-site areas have been specifically created for this purpose: for example, there are training rooms and a 150-seat auditorium.

The campus also features numerous meeting rooms and break areas, as well as a canteen. In order to guarantee staff wellness, services available to employees include a new sports and fitness area, a well-equipped gym and a football, beach volley and basketball court.

Tenova SpA – Italy
Website: www.tenova.com

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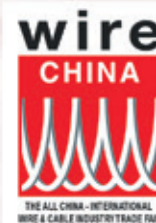
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Prysmian helps link Sicily and Calabria

PRYSMIAN Group has handed the extra high voltage power cable link between Sicily and Calabria, Italy, across the Messina Straits over to its customer Terna SpA Rete Elettrica Nazionale.

“We are proud to provide the best technology and know-how owned by our group, worldwide leader in this sector, for such a strategic link,” said Valerio Battista, Prysmian chief executive officer.

“The cable link handed over to Terna was engineered and produced in the plant located in Arco Felice, near Naples.”

Prysmian developed and produced a double-circuit 380kV HVAC (high voltage alternate current) land and submarine cable system installed along a total route of approximately 44km – of which 38km runs under water – between the power stations of



○ The cable being laid across the Messina straits

Villafranca Tirrena in Sicily and Scilla in Calabria.

The project includes the installation of the first permanent monitoring system, an exclusive of Prysmian, carried out by way of 18 Pry-Cam Grids devices installed along the entire land route section.

Prysmian installed the submarine cable with its own cables ship, *Giulio Verne*. The land cables installation proved to be among the most technically complex ever, with operations carried out in a vertical shaft of 300m and a 12 per cent sloped and 2.8km-long tunnel.

Prysmian was awarded the €300m contract in December 2009. The order book of Prysmian in the power transmission business amounts to €3.2bn.

With the goal of further strengthening its worldwide leadership in the industry, the group is currently involved in important investment programmes both in terms of technology innovation and of project execution, with the launch of a new cable laying barge.

Prysmian Group – Italy
Website: www.prysmian.com



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Cables to meet stringent solar requirements

RENEWABLE energy is booming. Not only single households, but more and more companies are also changing their power supply sources. Solar energy is one of the sources that is transmitted through solar cables, and these have special properties to fulfil environmental requirements: they need to be UV resistant, weather resistant and mechanically resistant, as well as offering electrical properties with an ideal lifetime of more than 25 years.

RosendahlNextrom delivers extrusion technology for the production of single- and multi-core solar cables. The process covers insulation and jacketing in one production step on two extruders of a similar size. An optional stripe extruder can be included in the extruder group.

The latest standard, TÜV2Pfg-1169/08.07, also allows the process to run co-extrusion (dual-layer extrusion with one crosshead).



○ Solar cable co-extrusion from RosendahlNextrom

Some advantages with Rosendahl co-extrusion are:

- Thinner walls on solar cables
- Higher production speeds
- Easy operation, as it is only one extruder group
- Lower investment costs
- Shorter line length

The extrusion process calls for intense product know-how. The material is typically a polyolefin copolymer which

is then crosslinked using either an electron beam or the Sioplas method to achieve the desired product quality. These two methods help the material attain a rigid molecular structure for chemical resistance and mechanical flexibility. The material characteristics can be tailored to suit custom needs.

RosendahlNextrom GmbH – Austria
Website: www.rosendahlnextrom.com

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Tratos joins elite club



○ *The Tratos factory at Knowsley, Merseyside, UK*

TRATOS has become the newest member to sign the Europacable Industry Charter, joining an elite group of European and worldwide cable manufacturers that have pledged to uphold ethical, sustainable and high quality cable development and manufacturing.

Europacable represents wire and cable manufacturers in Europe. Members include the world's largest producers as well as highly specialised small and medium-sized businesses from across Europe.

Ennuì Bragagni Capaccini, vice president of Tratos Group, said after signing the charter: "We are proud to add our name to the Industry Charter. Its principles mirror our own and we are fully committed to delivering continuous improvement in our business where we can."

Launched in November 2015, the charter sets out shared industry principles and objectives. It aims for signatories to play a proactive role in monitoring and evaluating emerging issues and finding innovative solutions that produce cables that exceed minimum requirements.

Founded in 1991, the association's energy and communication cable manufacturer members employ around 70,000 people globally, with more than 50 per cent based in Europe. Last year group members generated a turnover of more than €20bn.

As members of Europacable, Tratos, manufacturing in Italy and the UK and with bases worldwide, will receive information about relevant EU policy developments; representation at EU level; and engagement in policy processes.

The Europacable Charter acknowledges the need to meet the demands of business stakeholders, while at the same time supporting the interests of employees, customers, the wider community and the environment.

Charter signatories are committed to continuous achievement in product compliance and innovation, business ethics and social responsibility, health and safety, and environment and climate change.

Tratos Group – Italy
Website: www.tratos.eu

Europacable – Belgium
Website: www.europacable.com

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Greener casting from Upcast



○ *The OF-Cu rod process from Upcast*

UTILISING recycled copper in the process of casting OF-Cu rod is the target for many manufacturers. The reason is simple and obvious: cost efficiency.

Upcast already has a solution in meeting the requirements for using 100 per cent recycled material – or scrap, as many operators call it – in the OF-Cu rod process, all based on the original Upcast continuous casting technology and machinery.

Using recycled material in the Cu rod casting process has been very challenging with regard to both 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 need for workforce.

With consistent development work and understanding the importance for the customers, Upcast was able to change the situation. The first OF-Cu rod continuous casting line utilising 100 per cent recycled material from the other internal processes was successfully delivered some years ago.

the 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. When using scrap from other processes of the same manufacturer the customer can be certain that the material is exactly the kind needed for the casting process.

The material feeding and melting process of recycled material also for smaller pieces is well taken care of by pre-handling of the material and assured by a hydraulic press forcing all the pieces into the melt.

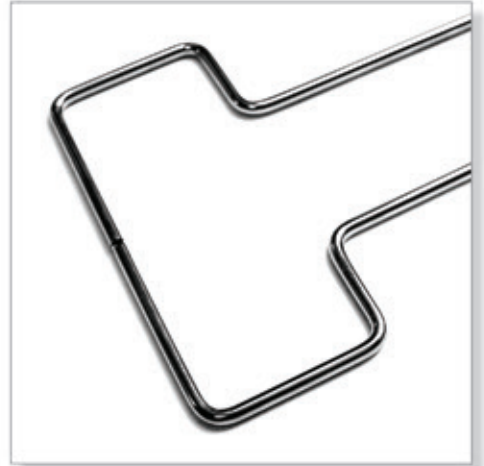
The automated processes together with the advanced control system have added to the production efficiency remarkably. For example, the automatic transfer of the melt results in less manual work, and this way the probability of human error is minimised.

The remote access system allows for a very quick fault detection followed by fast repair actions. This is extremely important in order to avoid any longer disturbances or breaks in the process. Furthermore, the system allows the customers to have all the possible process data, enabling them to make adjustments in order to improve the efficiency.

Upcast OY – Finland
Website: www.upcast.com

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An essential choice



○ The range of dies on offer from Kay Pee Dies

THE selection of proper dies and lubricants are two of the most important and essential requirements for wire drawing applications.

This not only affects the quality, but also helps in reducing the cost of drawing by increasing die life and reducing lubricant consumption.

Kay Pee Dies, established in 1968, produces tungsten carbide dies for wire, bar, tube drawing, cold heading, extrusion and special applications. The company serves customers from India, Southeast Asia, Nepal, the Middle East and Africa.

Since 2008 it has worked as an exclusive distributor for Pan Chemicals SpA, Italy, for distribution and sale of its wire drawing lubricants.

Kay Pee Dies – India
Website: www.kaypeedies.com

Awards time for Repsol

During the main conference of the European Plastics Converters (EuPC) annual meeting in Lyon, France, Repsol was bestowed the HDPE Best Polymer Producers Award for Europe 2016 and the overarching award on innovation covering all polymer types.

The awards are the result of an online customer survey launched by the Polymers for Europe Alliance. The survey received ratings from polymer users all over Europe, rating their suppliers' performance on quality, regulatory compliance, delivery performance, communication and innovation.

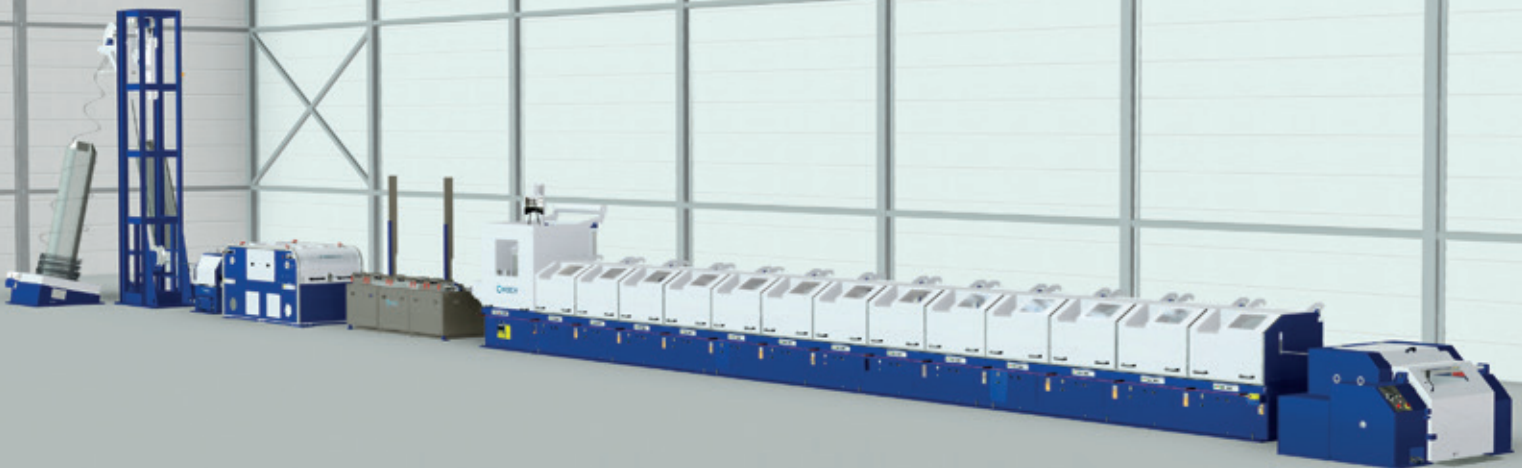
Repsol is honoured to have received this award and wishes to thank all the companies that participated in the voting. This award is not only the result of the good work of the entire team involved, comprising different businesses and areas of the company, but will also become an additional driver to further increase Repsol's commitment to its clients.

Repsol – Spain
Website: www.repsol.com

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Jochen Koch, Managing Director



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Gotex deal wrapped up



○ Staff at Gotex headquarters near Barcelona, Spain

COATS, an industrial thread manufacturer, has acquired Gotex, a Spain-based manufacturer of high performance fibres, yarns and tapes used in industries such as telecommunications, oil and gas and power transmissions.

Gotex's fibreglass coating technology and products will complement Coats' existing coated aramid product range. There is much synergy between the product offerings and together the companies will be able to provide an enhanced range of products to the fibre optics cable industry. The acquisition reinforces Coats' strategy of expanding into value added engineered yarns.

Gotex, headquartered near Barcelona, Spain, has three main categories of products:

- Technical yarns – yarns transformed via unique and proprietary coating technologies, used in the cable industry to reinforce, insulate and protect optical fibres
- Technical woven tapes – woven high technical fibres, such as fibreglass, aramid or carbon, used to protect cables from impacts, rodents, etc, and in composites
- Product trading – buying and selling additional products that cannot be manufactured in-house, like mica tapes, FRP rods and plastic films

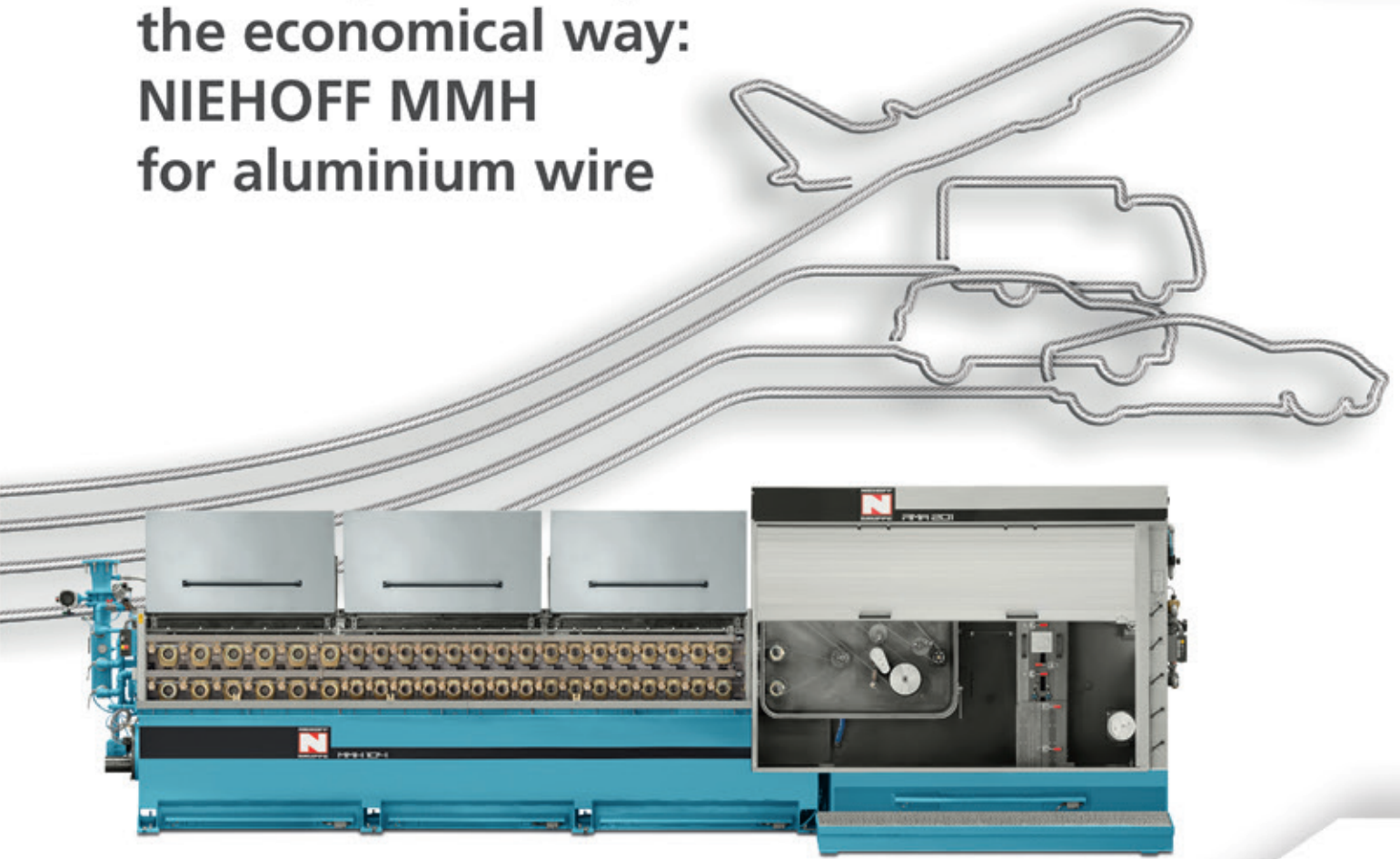
Its core customer base is fibre optic cable manufacturers, although oil and gas flexible pipe producers and high tech sports equipment manufacturers are also growing areas.

David Ferré, Gotex chief executive officer, said: "This offers great opportunity both for Gotex and our customers. It provides a way to accelerate our business growth and further develop our brand through significantly enhanced market strength and opportunity, as well as prospects for product collaboration with a global market leader."

Paul Forman, group chief executive, Coats, said: "Gotex is an exciting first acquisition for our speciality business that is fully aligned with our growth strategy; a global market leader in developing and producing innovative, high performance materials that complement our existing product portfolio. It is an ideal fit with our speciality business."

Gotex SA – Spain
Website: www.gotexweb.com

Boosting efficiency the economical way: NIEHOFF MMH for aluminium wire



Today modern, economical manufacturing techniques are vital, and never more so than in the automobile and aviation industries. As a market leader in the field of multi-wire drawing of aluminium wire for automotive wire, for many years NIEHOFF has proven that aluminium wire can be produced efficiently, economically and with outstanding quality.

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Visit our website to find out more about NIEHOFF aluminium multi-wire drawing with MMH lines.

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Expansion boost at UK-based lubricants firm

DUE to an upsurge in product demand, lubricants manufacturer Metalube has taken possession of the industrial unit located adjacent to its current site. This increases the space available to the company by more than 70 per cent.

The company now occupies a one-hectare site, which includes a 2,500m² covered factory, warehousing and office space alongside a brand new laboratory. It has also purchased four new Jungheinrich forklift trucks to service the new and improved site. Two new blending tanks have also been purchased, to enhance manufacturing capability and enable the company to keep up with demand.

Commenting on the new site, commercial director Douglas Hunt said: "We were exceptionally fortunate that the site next door became available as we were fast outgrowing our existing facility.

"The combined sites have blended



○ Metalube's new premises

together perfectly, giving us a truly outstanding operations."

Metalube manufactures a range of non-ferrous drawing oils and maintenance lubricants as well as a

variety of corrosion protection and forming oils. The exporter has offices in China, India, Brazil and UAE.

Metalube Ltd – UK
Website: www.metalube.co.uk



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Davis-Standard extruders hit the mark again

LONG-TIME Davis-Standard customer Maxi-Blast Inc installed six Davis-Standard Thematic® extruders at its new 40,000ft² facility in St Petersburg, Florida, USA.

This is the latest extruder addition for Maxi-Blast, whose chairman and CEO Robert Donaldson has been purchasing Davis-Standard extruders since founding the company in 1981. Maxi-Blast supplies both cleaning/deflashing equipment and blasting media to support customers in the construction, electrical, rubber and automotive industries.

The Davis-Standard extruders process nylon and polycarbonate pellets used in the company's proprietary line of cabinets for cleaning screws and moulds and deflashing parts.

Davis-Standard's extruder and feedscrew technology has been instrumental in Maxi-Blast's quest to make the perfect pellet for their process. Pellets are manufactured in a variety of sizes, shapes, colours and formulations depending on application.

Pellet geometry is especially important when the material is used as blasting medium so it doesn't damage the part. Maxi-Blast technology is not only used to clean screws and moulds, but is capable of deflashing rubber, phenolic and die-cast metal parts.



○ Robert Donaldson with a Thematic extruder

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



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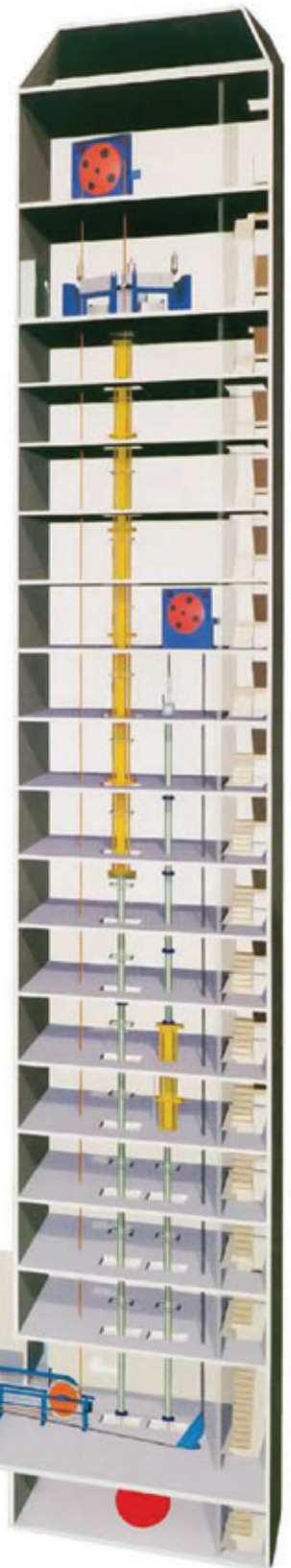
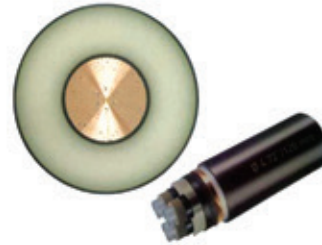




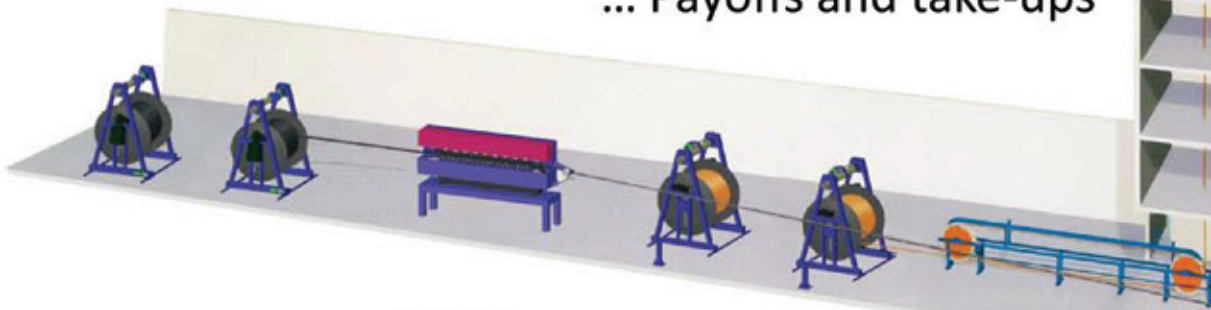
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New centre of excellence gets the NDC touch

NDC Technologies recently delivered the latest Beta LaserMike measurement technology to the new Prysmian Group manufacturing academy in Mudanya, Turkey, for the precision measurement of high-performance energy cables. This new centre of excellence will use the technology to strengthen the manufacturing skills of its employees and to build a strong manufacturing community.

“Cable manufacturers today face a number of production challenges involving quality and cost reduction, such as reducing downtime by increasing plant and personnel efficiencies, minimising material usage, and increasing process capabilities and production throughput,” said Stefano Cicetti, EMEA sales director for NDC’s line of Beta LaserMike products.

“The Beta LaserMike products we provided for the new manufacturing academy allow Prysmian personnel to train on the industry’s latest precision measurement technology. We will also share our knowledge and applications expertise to reinforce best technical practices. These manufacturing skills will enable Prysmian to develop higher quality products faster and deliver more value to customers and the industry.”

The Beta LaserMike measurement technology at the new Prysmian Manufacturing Academy includes:

- AccuScan 6000 Series – the industry’s only four-axis scanning diameter and ovality gauge, providing the highest accuracy to ensure cable products meet the tightest design and quality specifications
- LN3000 Series – three-axis lump and neckdown gauge that quickly and reliably detects and locates product flaws before they become costly production problems, for maximum quality control

- LaserSpeed® – non-contact gauge that measures the length and speed of moving products with laser precision for significant quality, productivity and manufacturing savings

Prysmian is proud of its new manufacturing academy in Mudanya. It is one of the industry’s most progressive manufacturing training centres, alongside one of Prysmian’s largest and most efficient global production facilities.

“As Prysmian, we are aware about the importance of the relationship between supplier and end user,” said Mr Halil Kongur, factory director and chairman for Turk Prysmian Kablo ve Sistemleri AS, Turkey.

“In our cable business, the tight contact is a must to achieve the best result in quality, efficiency and satisfaction of customers. We work very closely with NDC’s Beta LaserMike products management and feel very familiar in each opportunity.

“We are sure that we are using the latest technology in measuring equipment and staying up to date on any improvements. The Beta LaserMike products team supports our manufacturing academy with several measurement technologies, showing a conformity of our enforced relation.”

Mr Cicetti added: “Our partner in Turkey, D Temsilcilik, was instrumental in forming this relationship with Prysmian. We’re honoured to be part of Prysmian’s new and progressive manufacturing centre of excellence.”

NDC Technologies – USA

Website: www.ndctechnologies.com

Project praise from Miltec for honour students

Miltec UV’s partnership with the University of Maryland for the QUEST Capstone Consulting Project is now complete.

The honour students were tasked with developing a strategy to help Miltec UV choose a method of commercialisation for their ceramic coating technology, a technique that is less expensive, safer and more effective than the current process used to manufacture lithium ion batteries.

The team chosen to provide Miltec UV with a real-time innovative solution, to maximise profit with minimal risk, consisted of electrical engineer Katelyn Walter, mechanical engineer Austin Kendall, accounting and finance honour student Jessica Lewis, and finance honour student Tim Odukale.

The diverse knowledge, skills and perspectives of these students allowed them to evaluate the financial implications and risks associated with multiple commercialisation options. The recommendation was a dual-sided approach that allows Miltec to maximise profits while providing the flexibility to customise the strategy based on the customer’s needs.

The strategies were to partner with a coater who would coat the separator while Miltec UV maintains the customer



○ Pictured are, from left, Austin Kendall, Jessica Lewis, Katelyn Walter and Tim Odukale

relationship, or licensing the coating technology to the customer, and providing the equipment to coat the separators.

Miltec UV executives are extremely impressed by the financial and risk modules presented by the team.

Miltec UV – USA

Website: www.miltec.com

COMPETENCE AND INNOVATION

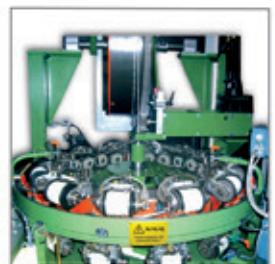
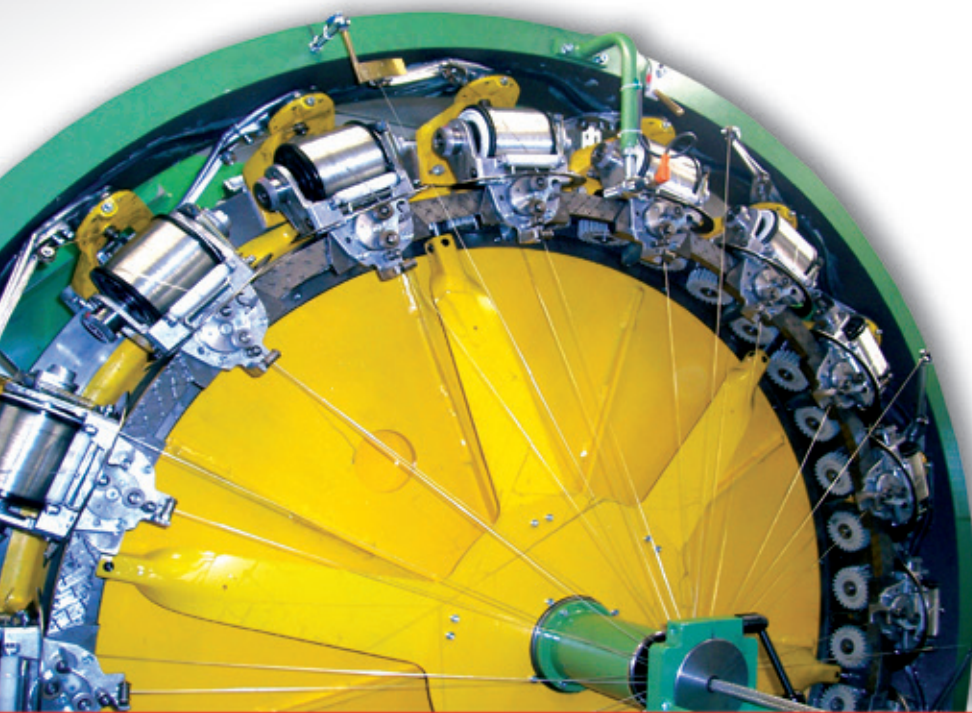
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New development centre for Melos

Over the past ten years, the turnover of Melos GmbH has almost tripled and the number of employees has doubled to more than 200. The company ended the 2015 business year with a turnover of €80.5m.

The company also started the new business year strongly with a 14.2 per cent increase in turnover, compared to the first five months of the previous year, and is preparing itself for the future by building a state-of-the-art development centre with a total investment of €3m.

Markets and customer needs have changed greatly over the last few years, and Melos's standard B2B business has become increasingly demanding. Today, the company offers a wide range of solutions rather than just being a supplier of components.

Aside from the strategic orientation, the company's infrastructure is being improved. Melos GmbH focuses 100

per cent on the production site at Melle, Germany, and will be investing extensively in expanding its development, production and logistics in the coming years.

The building of a competence centre for research and development – with advanced analysis and experimentation systems, new laboratory buildings and associated offices – represents the next step for the company. As one of the main drivers of positive development at Melos GmbH the industrial compounding product sector, in particular, will benefit heavily from these investments.

A further construction project is the 'Melos Village' open-air showroom. Here, Melos's sport and leisure products can be experienced and enjoyed in an entertaining atmosphere across an area of around 1,800m².

Melos GmbH – Germany
Website: www.melos-gmbh.com

Cleaning and degreasing wire the Plasmaid way

SURFACE cleaning and degreasing is an important part of the wire production process. Traditionally this involves mechanical or wet, chemical processes that are potentially harmful to the operator and the environment. One way to turn production chemical-free is to use plasma surface cleaning, which is a dry surface treatment.

PlasmaCleaner is a plasma surface treatment machine designed for surface cleaning, degreasing or oxide removal on ferrous and non-ferrous wire. Plasma treatment is a dry process that requires no rinsing or drying. Plasma treated surface can be used for removal of wet lubricant or fine oxide layer removal.

Whilst the material is kept in an inert atmosphere, the material surface is cleaned and activated, allowing for effective surface coating (good coat adhesion) or strong intermetallic layer creation between the material and surface coating.

PlasmaCleaner can be used in conjunction with polymer coating/extrusion (PTFE, FEP, PFA, ETFE or Teflon), cladding, spray coating, taping, enamelling or magnet wire, or for production of power and signalling conductors for various cables (solid, rectangular, braided or bunched). PlasmaCleaner can also be used as an efficient and accurate preheater.

removal of large quantities of soaps and scale, where conventional cleaning processes such as ultrasonic cleaning can be used as pre-cleaning in combination with fine, dry plasma treatment.

After cooling in an inert atmosphere the material can also be led to ambient air where a fine oxide layer is formed on the processed material surface. This results in a high degree of surface passivation, which will protect the surface by slowing down subsequent surface corrosion.

Plasmaid GmbH – Austria
Website: www.plasmaid.com



○ Plasma treated copper wire

New president at the helm

Magnetic Analysis Corp (MAC) recently promoted Dudley M Boden to president and chief executive officer.

Having spent 15 years as MAC's vice president – sales & marketing, Mr Boden brings an in-depth understanding of the company's test systems and customer inspection needs. He is now focused on broadening the firm's product offering in order to take advantage of new opportunities that have arisen.

"Boden's work in expanding overseas operations and strengthening the sales force and office procedures is providing a firm basis for future successful initiatives under his leadership," said MAC's chairman, William S Gould 3rd.

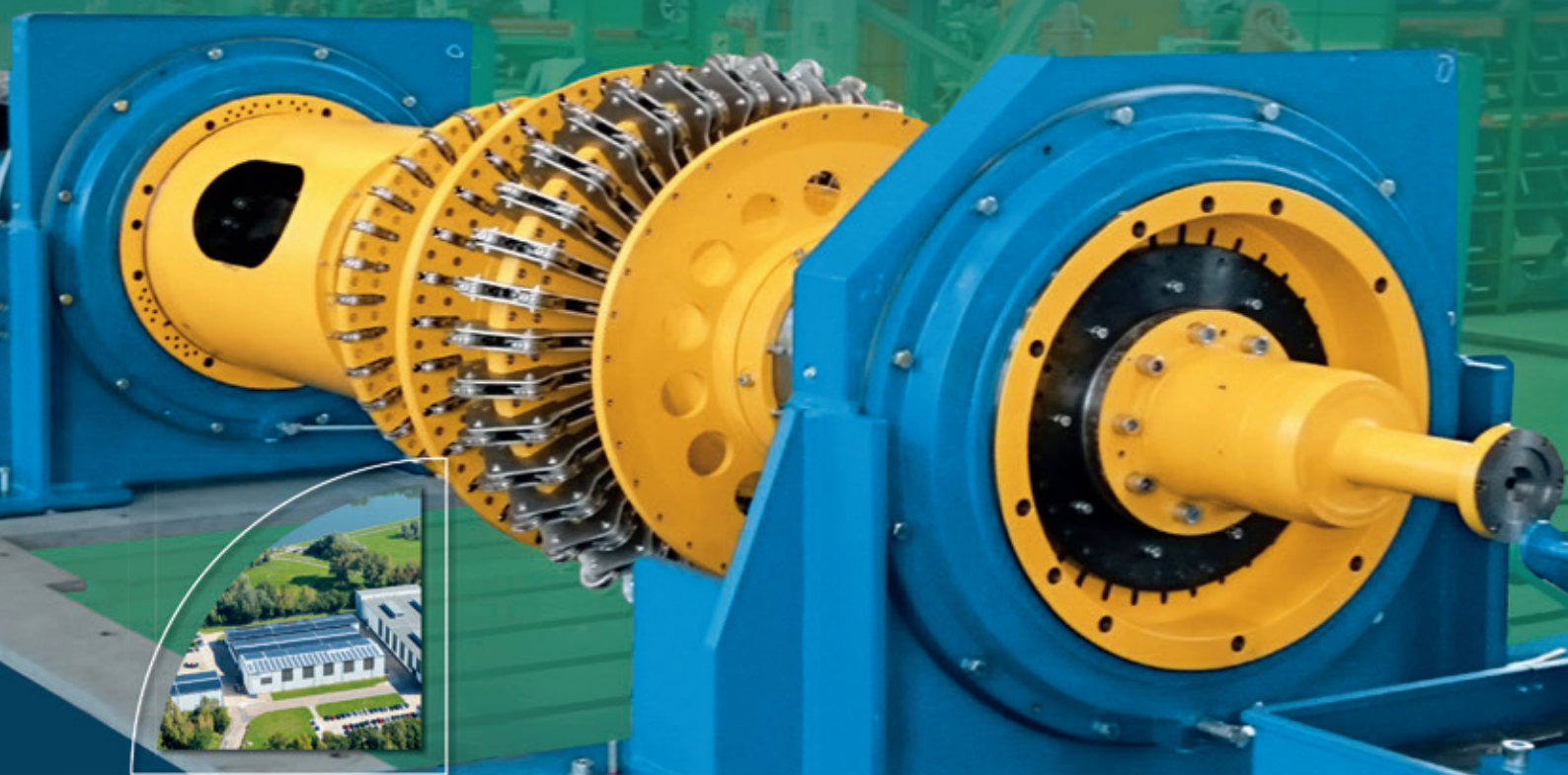
Prior to joining MAC, Mr Boden was a director and general manager of Minolta Corporation's Instrument Systems Division. While there, he was responsible for production and sales of quality control equipment. He holds a degree in Photographic Science and Instrumentation from the Rochester Institute of Technology.

Magnetic Analysis Corporation – USA **Website:** www.mac-ndt.com



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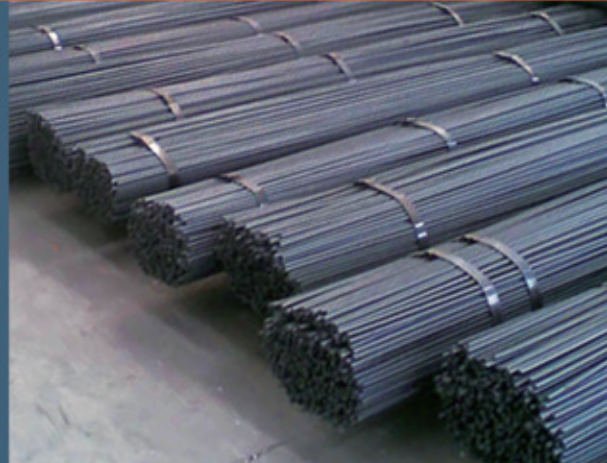
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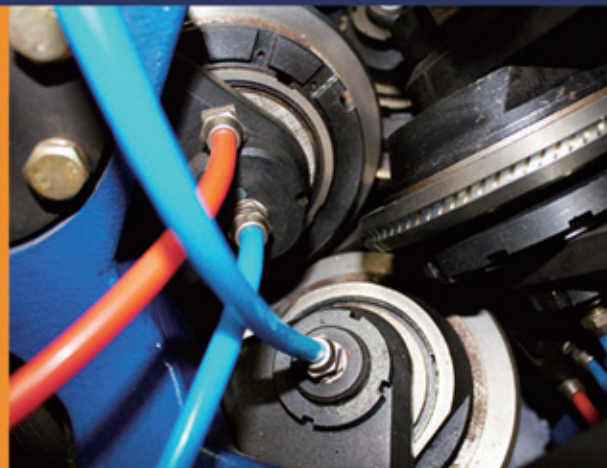


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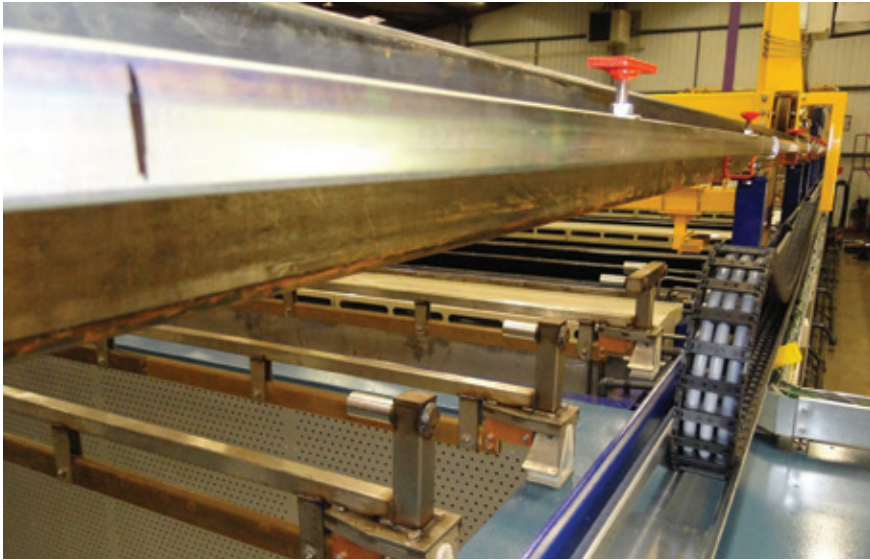
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Website: www.tjkmachinery.com

E-mail: tjk@tjkmachinery.com



○ Jacquet Weston Engineering used igus's E2/000 e-chain® system

igus support for improvements

MANUFACTURING and processing machinery that handle large, long items frequently use overhead gantries to transfer the material to, through and from the processing line. Often these gantries have to travel significant distances, whilst requiring electrical cabling to power their motors and sensors.

The conventional cable management method is to have the cables mounted above the line using festoons supported by steel rails. As the gantry traverses down the line, it pulls the cables along with it on multiple trolley mechanisms.

Jacquet Weston Engineering (JWE), a Berkshire, UK-based manufacturer of surface finishing equipment, looked to igus® for support with its continuous improvement programme. JWE has been manufacturing metal finishing process plants for over 40 years, supplying all sectors of the industry from the traditional subcontract market of acid and alkali zinc to the specialist aluminium treatment and aerospace industries with sulphuric, tartaric, chromic, boric and hard anodising processes.

igus recommended its E2/000 e-chain® system, used by a large number of manufacturers worldwide, to address cable management on all of JWE's lines utilising transporters to dip metal jigged components into the process solutions. This removed the need for the overhead cable loops and trolleys,

offering increased efficiency and reliability to the processing line, whilst the absence of cable loops also satisfied customer requirements for health and safety. The overall height of the equipment was reduced, allowing greater flexibility for machine placement within a facility.

The 1500 series e-chain can be used for guided travels of up to 75m. It can be opened from either side for cable insertion, and is suitable for both vertical and horizontal installations.

The e-chain is placed into horizontally mounted 2m-long guidefast guide troughs, the segments being connected together with clips that ensure good alignment. This e-chain product is used extensively in industry for replacing festoons as it can be easily installed to the side of an I-beam or bulkhead rather than mounting on top like a traditional e-chain trough, thus saving on installation height.

The E2/000 e-chain is a fourth generation product for igus, utilising years of accumulated experience. It offers quick installation, mechanical stability, low audible noise operation, minimal maintenance and a long service life for cables. JWE opted to use a fully harnessed readychain® system, complete with chainflex® cables.

igus – UK
Website: www.igus.co.uk

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○ 参观者在为期三天的展会活动现场

广州国际线缆展览广受好评

2016广州国际电线电缆展览会已成功举行，受到了参展商和参观者的一致好评。展会在中国进出口商品交易会展馆隆重举行。展会由南网传媒、广州博优会展服务有限公司和广州光亚法兰克福展览有限公司联合举办。三天的展会活动吸引了350家参展商以及来自25个国家和地区的18,869名观众参观采购。

2016广州国际线缆展，展会覆盖两个展馆，共22000平方米，立足华南，面向国际，向客户全面展示华南地区最新的线缆产品和创新技术、制造机械和相关材料及配件。参展的领先品牌包括：江苏通光、广东华达、京缆电缆、山东太平洋光纤光缆、深圳奔达康、深圳深缆、云南正晓、东莞赞扬、广州电缆厂和广州鸿辉等。

京缆电缆有限公司专业为电源和控制应用生产电力电气电缆，希望借助参展平台开拓华南以至海外市场。公司代表孙先生说：“莅临广州线缆展的观众反应热烈。我们在展会首日已遇到不少具潜力的客户，国内的包括广州和贵阳的电力企业，海外的则有沙特阿拉伯的工程户和尼日利亚的商会等，多家采购商向我们询价以及下订单，成绩令人鼓舞。”

同样于今年参展的广州鸿辉电工机械有限公司亦赞扬展会组织到位、安排细致，对参展效果感到非常满意。公司代表方知（音）先生说道：“多国客户在展会首日已前来跟我们接洽，包括印度、伊朗、日本及美国，日本的客户更已经订下数台机器，成效斐然。”

为方便观众有效进行采购，展会划分成两大展区，分别为线缆设备区和线缆产品及材料区。重点展示了华南线缆业的创新及成果，满足各地买家不同的采购需求。多家企业及协会组织买家团莅临采购，部分出席的团体包括：广东省电力工程企业协会、安徽省电力工程协会、中国线缆技术信息联盟、贵州电网、河南电力工程建设企业协会、辽宁省电力工程协会、正威科技（深圳）有限公司和珠海电力行业协会。

来自沙特阿拉伯Al-Musbah Trading Group 集团代表 Ali Al-Sakkaf 先生前来为公司商场和酒店建设项目寻找合适的线缆产品。他也非常感叹，展会效果立竿见影。Ali Al-Sakkaf 先生表示：“在短短几分钟内，我便遇到了不少工业及建筑用的电线电缆供应商。我们会继续与这些供应商保持紧密联系，希望今后能达成业务合作。”

广东南能汇智节能科技有限公司区域经理金鑫（音）先生来到展会的目的是为其综合能源管理服务寻找电线原始设备制造商。他表示：“这是一个很好的平台，我们能够更好地了解现今华南以至全国线缆业走势，也接触了很多优秀的线缆制造企业和线缆供应商。明年我还会再来。”

来自印度Jaggery Wire & Cables PVT Ltd 的首席执行董事 Bhavesh Modi 先生赞扬参展商素质及展品的全面性。他说：“我在此寻找供我们电线及铜线工厂使用的电线设备及材料供应商。经过几次会面后，我们计划向其中一家企业采购机械设备。”

首届亚洲线缆高峰论坛也与展会同期举行，迎来了700多位行业专家。会议及研讨会总场次为19场，并获得超过1200多名行业专家出席，题目覆盖政府政策解读、超高压电缆制造、电网项目以及电动汽车用电线电缆标准等。2017年广州国际电线电缆及附件展览会将于6月9日至11日再次在中国广州中国进出口商品交易会展馆举行。

Wire & Cable Guangzhou – 中国
网址: www.wire-cable-china.com



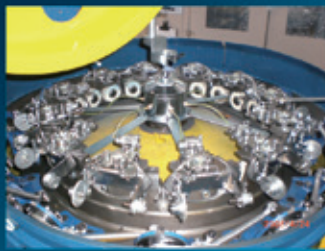
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Contact person : Stephen Chen

Tenova 迁址卡特斯拉扎企业园

Tenova 正将其总部迁至新型现代化企业园，该园区位于意大利瓦雷泽卡特斯拉扎。

园区占地面积约10万平方米，可容纳400多名员工，Tenova Pomini 根据功能性和环境可持续性的原则开发而成，办公地点和生产基地完全一体化。项目投资总额达1500欧元。

“园区彰显了 Tenova 的工作方式，即植根于分享、协作和公司不同功能的整合，”首席执行官 Andrea Lovato 表示。

“选择搬迁也表明了 Tenova 长期的战略远见，专注于不断创新，吸收、培养和开发人才与技术，保证公司健康持续发展。”

新的工作地点，Tenova 的工业使命得到了充分体现：公司各个业务部门、职



○ 位于意大利瓦雷泽卡特斯拉扎的新总部

能人员和现有的 Pomini 工厂将集聚在一起办公，为工程师、办公室人员、专门和专业的工作人员创造一个融洽互动的工作环境，以提高公司的流程效率。

公司价值观协作、分享、整合和透明度将被显著镌刻在园区建筑上，继续秉承和发扬。所有的 Tenova 办公室都带有落地窗，明亮的室内设计，可以俯瞰户外绿地，保证室内的能见度，这样一个连续性的环境，员工可以在一起工作。

另外，Tenova 将重用年轻人，加强与大学、学校和技术学院的交流。为此，公司专门设定场所：例如，会议中心有容纳150人的培训室。园内还设有多个会议室和休闲区域以及倡导欢宴分享午餐的食堂。为了保证员工身体健康，专门设有运动和健身场所，例如，设备齐全的健身房、足球、沙滩排球和篮球场。

Tenova SpA – 意大利
网址: www.tenova.com

Repsol 获颁2016最佳制造商奖

欧洲塑料加工协会 (EuPC) 年度会议在法国里昂举行，在年会的主要会议上，Repsol 被授予2016 HDPE 最佳聚合物制造商奖，该奖项围绕“创新”精神，涵盖了所有类型的聚合物。奖项由欧洲聚合物制造商联盟发起，是在

线客户调查的评选结果。调查收到了整个欧洲聚合物制造商的评定意见，他们对供应商具体情况做出了详细评价：质量、合规性、交付执行情况、沟通和创新。Repsol 很荣幸获此殊荣，感谢所有参与投票的公司。这一奖项不仅是对

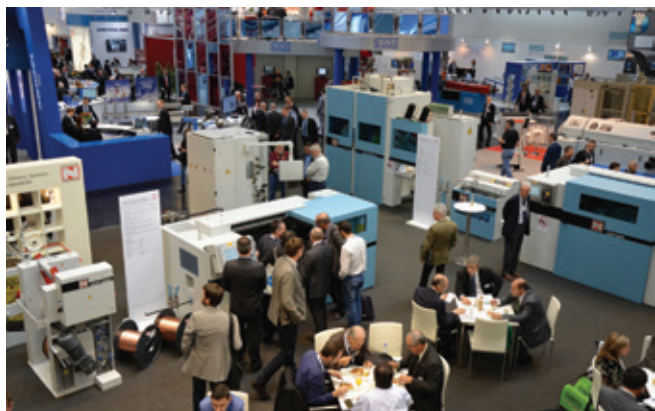
公司所有部门和区域团队共同努力的认可，还将继续推动 Repsol 为客户提供更加优质的服务，取得更大的成功。

Repsol – 西班牙
网址: www.repsol.com

Niehoff 双喜临门

Niehoff 参展2016德国杜塞尔多夫国际线缆及线材展后，又参加了一次内部展览。参展收获颇丰，Niehoff 至少有两个理由来为之庆贺。

在杜塞尔多夫展览上，来自总部、子公司和代表处员工组成的庞大参展队伍齐聚展台，接待来访的参观者 - 这是今年最大规模的行业展览。



○ 2016德国杜塞尔多夫国际线缆及线材展 Niehoff 展台

展品包括新型 MSM 86 大拉机，该机为客户带来了福音，能够帮助客户改善线材质量、更高的节能效率，重要的是，能显著降低成本。为了使客户利益最大化，Niehoff 产品组合涵盖 Niehoff Original+ 品牌磨损部件与零件，展会上也向来宾做了展示。

展台上讨论的中心议题是能源与材料效率，以及如何降低生产成本。公司表明，创新与定制解决方案是应对此类需求的理想对策。

主席兼首席执行官 Arnd Kulaczewski 表示：“我们参加杜塞尔多夫展览，确信2016国际线缆及线材展又将取得巨大成功 - 事实上，我们所有的努力都得到了回报。”

展会开始前，Niehoff 子公司和合作伙伴公司的代表们连同总部员工一起参加了代理商会议，旨在让所有与会代表了解公司的技术、最新开发成果和全球市场发展趋势。

第二项成功是公司在总部德国施瓦巴赫举行的内部展览，吸引了来自印度、中国和中东的150多位参观者。本次展会的亮点是其 MMH 112 型多线拉丝机。机器代表了 Niehoff 新一代多线拉丝机的最新开发成果，目前正在做大量的现场测试。

Maschinenfabrik Niehoff GmbH & Co KG – 德国
网址: www.niehoff.de

100%再生铜绿色铸造工艺

在OF铜杆铸造工艺中使用再生铜是众多制造商的目标。原因很简单：成本效益。

为了实现这一目标，Upcast 研发了相应的解决方案，即在OF铜杆工艺中，使用100%再生材料 - 许多运营商称之为废料。所有这些都基于 Upcast 原有的连铸技术与机械。

由于材料质量控制和机械加工，铜杆铸造工艺中使用再生材料非常具有挑战性。铸造工艺本身不需要去除原材料可能含有的冶金杂质。因此，有人建议在少量的再生材料中加入纯电解铜。这就需要运营商增加额外的手动工作，同时劳动力成本也提高了。

随着工作不断进展，客户的重要意识也逐渐增强，Upcast 因此能够改变这种状况。几年前，第一条从其它内部工艺使用100%再生材料的OF铜杆连铸生产线成功交付。

生产线的自动装载技术为再生材料特别设计。最终产品决定了原材料的标准和限制值。

因此，再生材料的纯度是该工艺的关键。如果使用相同制造商其它加工过程的废料，客户可以确定，这就是铸造工艺所需的材料。小碎片再生材料的馈送



Upcast提供 OF 铜杆铸造工艺

和熔化过程通过材料预处理和液压机迫使所有碎片进入熔体确保万无一失。自动化流程配以先进的控制系统，使得生产效率显著提升。

例如，自动转移熔体减少了手动工作，这样人为错误的可能性降至最低。远程访问系统允许快速进行故障检测再进行

修复操作。这是非常关键的，避免了加工过程中任何较长时间的干扰或中断。此外，系统允许客户拥有所有可能的加工数据，借此，客户可进行调整以提高效率。

Upcast OY - 芬兰
网址: www.upcast.com

新中心采用最新测量技术

NDC Technologies 最近为 Prysmian Group 位于土耳其穆达尼亚的电缆厂提供最新 Beta LaserMike 测量技术，用于精密测量高性能能源电缆。

卓越的新中心将采用最新技术，提升员工的生产技能，从而打造一个强大的制造业中心。

“今天的电缆制造商面临一系列涉及质量和降低成本的诸多挑战，例如通过提高设备和人员效率来减少停机时间、减少材料使用、提高加工能力和生产总量，” NDC 公司 Beta LaserMike 系列产品 EMEA 销售总监 Stefano Cicetti 表示。

“我们为新电缆厂提供Beta LaserMike 产品，Prysmian 工作人员经过培训能够拥有行业内最新的精密测量技术。我们还将分享相关知识和应用经验来强化最佳技术实践。这些制造技能使得Prysmian 能够更快地开发产品，为客户和行业创造更多价值。”

Prysmian 电缆制造厂采用的 Beta LaserMike 测量技术包括：

- AccuScan 6000 系列 - 行业内唯一的四轴扫描直径和椭圆度测量仪，精度最高，确保电缆产品满足严格的设计和和质量标准。
- LN3000 系列 - 三轴绝缘厚薄探测器能够在造成生产故障前快速、可靠地检测和定位产品的缺陷，最大化控制产品质量。
- LaserSpeed® - 非接触型测量仪利用激光精度测量移动产品的长度和速度，从而显著提高质量、生产率和降低制造成本。

穆达尼亚电缆厂是 Prysmian 的骄傲，堪称业界最先进的制造业培训中心之一，同时，也是Prysmian最大和最高效的全球生产基地之一。

“在 Prysmian，我们深刻理解供应商

和终端用户之间关系的重要性，”土耳其 Turk Prysmian Kablo ve Sistemleri AS 厂长兼董事长 Halil Kongur 先生表示。

“在电缆行业，与客户保持紧密联系是取得质量、效率和客户满意度的必要条件。我们与NDC公司的Beta LaserMike 产品管理团队密切合作，双方配合默契。相信我们的测量设备使用的是当今最先进的技术。

“Beta LaserMike 产品团队利用多种测量技术来支持穆达尼亚电缆厂，这表明我们具有一致的目标和执行力。”

Cicetti先生补充说：“我们的合作伙伴在土耳其‘D Temsilcilik’，与Prysmian 形成这种关系是非常积极有效的。我们很荣幸成为 Prysmian卓越的新制造中心。”

NDC Technologies - 美国
网址: www.ndctechnologies.com

Davis-Standard 挤出机值得信赖

Davis-Standard老客户Maxi-Blast Inc 在其美国佛罗里达州圣彼得堡，占地面积4万平方英尺的新工厂，安装了六台 Davis-Standard Thematic® 挤出机。Maxi-Blast这次购买的是最新型挤出机，公司董事长兼首席执行官Robert Donaldson自公司1981年成立以来就一直使用Davis-Standard挤出机。Maxi-Blast供应清洁/去毛刺设备和喷砂介质，为建筑、电气、橡胶和汽车行业内的客户提供支持。Davis-Standard挤出机加工尼龙和聚碳酸酯颗粒，这些颗粒用于公司专用线柜清洗螺丝、模具和去毛刺部件。

“从我创建公司伊始，我就觉得Davis-Standard制造的是最好的挤出机，”Donaldson先生说。“他们制造很多内部组件，服务优良，是一个运行良好的机构。我始终致力于提升技术水平，保持与时俱进，因此，每15年就更换 Davis-Standard 挤出机。新机器为我带来了丰厚的生产成果，老机器我还可以在二手市场出售。精心打造的Davis-Standard 机器，即便是二手机也很受欢迎。”

Davis-Standard挤出机和进给螺杆技术为 Maxi-Blast 制造完美的加工颗粒发挥了积极的作用。生产的颗粒根据应用需求，具有各种尺寸、形状、颜色和配方。Donaldson先生解释说，当材料用作喷砂介质，颗粒几何形状就显得特别重要，因为不能损坏部件。Maxi-Blast技术不仅用于清洁螺丝和模具，而且能够给橡胶、酚醛和压铸金属部件去毛刺。公司战略规划清晰，近期进行了工厂扩建，新工厂比原来的老工厂面积要大25000平方英尺。

Donaldson先生对Davis-Standard公司制造的Thematic挤出机赞赏有加，因为这些机器能够满足最严苛的加工要求。由于其耐用性、维护频率低、运行安静以及能够满足多种加工和应用要求，客户经常将这款机器描述成“行业的主力军”。除此之外，Thematic机器的优点还包括适用于广泛系列的进给螺丝和控制系统。尺寸范围从1到10英尺(40 - 250毫米)，L/D's 从12:1到40:1。

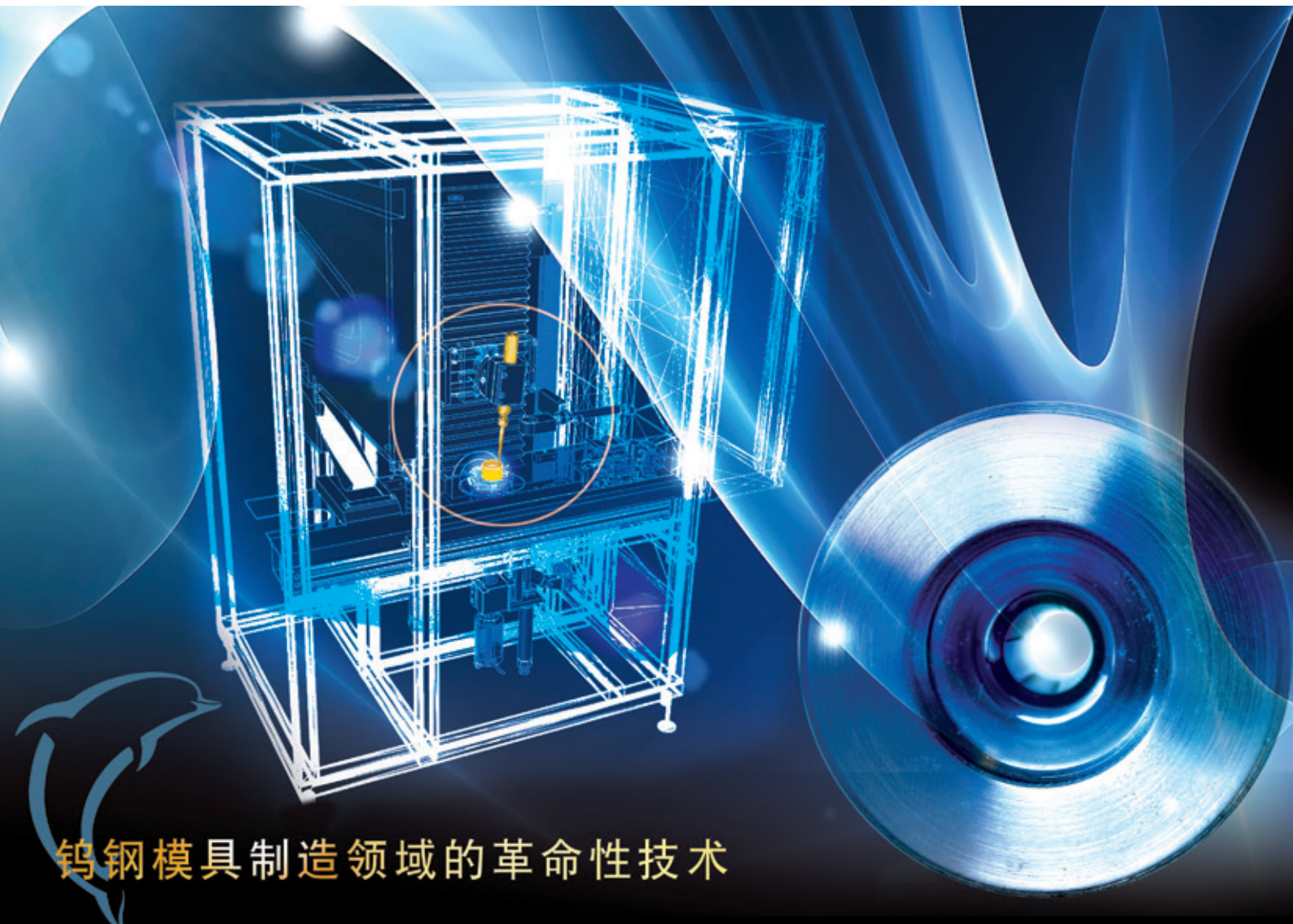
“Maxi-Blast以质量为中心。工厂扩建、更新挤出机和其它设备都是目前投资战略的组成部分，通过制造最佳品质



○ Robert Donaldson 和 Thematic 挤出机

的产品为客户提供支持，”Donaldson先生补充说。“新的Thematic挤出机生产效率提高了20%，为我们达到生产目标发挥了关键作用。我们告诉客户，Davis-Standard 技术产品是值得信赖的，新的挤出机将助力我们一如既往为客户提供优质产品。”

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



钨钢模具制造领域的革命性技术

Aksh 刷新历史

Aksh Optifibre Limited 公司专业制造光纤、光缆和FRP 棒，是印度拉贾斯坦邦规模最大的电子政务（e-Mitra）服务供应商，日前在新德里公布了其第四季度和 2015-16 财年业绩。

- 季度营收13亿卢比，同比增长19%
- 年度收入46.2亿卢比，同比增长23%
- 季度息税折旧摊销前利润2.1亿卢比，同比增长32%
- 年度息税折旧摊销前利润7.4亿卢比，同比增长34%

今年全球光纤需求量达3.92亿光纤千米，去年为3.34亿光纤千米。截至2015年12月31日，与去年同期相比增长了17%，从目前的估值70亿美元来看，光缆市场到2020年可望达到120亿美元。

通信需求日新月异，现已更新至4G/LTE和5G，随之而来，就是高速宽带连接的需求也会上涨，在印度，不仅地铁，连农村边远地区的光缆需求都在上升。印度仅去年一年，光缆消耗就超过1600万光纤千米。

目前印度政府的愿景是把印度推向高科技数据化的平台。所有的国家大型连接计划，诸如Bharat Net 和 Network for Spectrum (NFS) 这两个项目已经进入最后调试，终端接入阶段光纤的连接一般在地平线以上。

由于政府目的是要提供良好透明的管理，因此，电子政务在通过数字平台提高其服务覆盖面和为公民提供有效管理的过程中发挥了重要作用。

随着现有业务状况的改善，经营风险也随之降低，确保可持续性增长，董事会已同意斥资8.5亿卢比用于扩大产品范畴，资金来源通过阶段性债务和内部应计筹集，用于生产20万对验眼透镜。公司已启动了股东对公司章程条款修改的批准。

Aksh 一直积极推动改变生活方式，并利用电子政务1 Stop Aksh 助力各邦快速发展。公司努力实现社区生活智能化，让政府举措契合公众需求，1 Stop Aksh 已成为拉贾斯坦邦重要的地区服

务供应商（LSP），通过分布在该邦的各种信息服务亭提供超过 250 种政府与公众（G2C）、企业与公众（B2C）的电子政务服务。

目前，拉贾斯坦邦拥有8600（2015年是3800）个信息服务亭，到2016年末，Aksh开放数量预计达到1万。主要服务项目包括微型自动取款机、Aadhar（身份信息）注册和政府账单支付，服务目前仍然是最创收的领域。

在拉贾斯坦邦，Aksh 向来是普及数据知识和促进就业技能发展的重要合作伙伴，公司参与的项目包括 IT Gyan Kendras（ITGK）、National Digital Literacy Mission (NDLM) 和 Telecom Sector Skill Council (TSSC)。1 Stop Aksh 也与拉贾斯坦邦政府合作，在地区总部层面，通过光纤网络，连接所有的政府办公室，这也是 Bharat Net 的主要工作。

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

钨钢模具及设备世界领导厂商

Agir Technologies 将发布TCLD-CDCA，全球首台设备可以做到

- 数控管理并可操作20个不同步骤
- 无需拆卸钨钢模具即可研磨锥体和直径，自动检测所有直径
- 确保最高精准度和最佳几何形状
- 实现高能生产，产品范围齐全包括各种小批量直径

Agir Technologies, 世界领先的钨钢模具加工自动设备和内侧研磨设备生产商，TCLD-CDCA进一步充实了其产品线。

Agir Technologies也是金属成形钨钢模具领域的先锋及领导厂商。

更多信息，请点击 www.agir-technologies.com 或来电咨询: +33 3 80 51 81 31



自1870年，我们的专业技术是您高效的保证

新总裁掌舵MAC

Magnetic Analysis Corp (MAC) 最近晋升 Dudley M Boden 为总裁兼首席执行官。Boden先生担任 MAC 销售及市场推广副总裁15年，深刻了解公司的测试系统和客户检测需求。目前，他致力于扩大公司的产品供应范畴，以期获得新的商机。

“Boden负责拓展海外业务、加强销售团队和优化办公程序，相信在他的领导下，将为我们未来的成功奠定坚实的基础”，MAC 主席William S Gould 3rd先生说道。

“作为一家公司，MAC的理念是我们不仅仅是一家设备制造商”，Boden先生说。“进行无损检测，你需要设备和人员，把这两者结合起来是我们的优势。我们与客户合作，了解他们的真正需求和应用中的合适设备。然后，我们再与客户一起配置测试系统，使其在某种程度上达到最佳效果。”

在加入 MAC 之前，Boden 先生是 Minolta Corporation 公司仪器系统事业部的董事兼总经理，负责生产与销售质量控制设备。他拥有罗切斯特理工学院感光科学与仪表专业的学位。

Magnetic Analysis Corporation – 美国
网址: www.mac-ndt.com

太阳能电缆挤出技术

可再生能源正在蓬勃发展。不仅单个家庭，而且越来越多的公司也在改变他们的电力来源。太阳能是通过太阳能电缆传输的来源之一。这类电缆具有满足环境需求的特质：抗紫外线、耐气候性、抗机械性，并提供超过25年理想寿命的电气性能。

RosendahlNextrom 为单芯、多芯太阳能电缆提供挤压技术。生产工艺涵盖在两个类似尺寸的挤压机上、一个生产步骤中进行绝缘和护套。条纹挤出机可选择安装在挤出机组中。

新标准 TÜV2Pfg1169/08.07 也适用于共同挤压工艺（利用一个十字头进行双层挤压）。

Rosendahl 共挤工艺优点如下：

- 太阳能电缆的壁薄
- 生产速度较高
- 易于操作，因为仅在一个挤出机群内
- 投资成本较低
- 线路长度较短

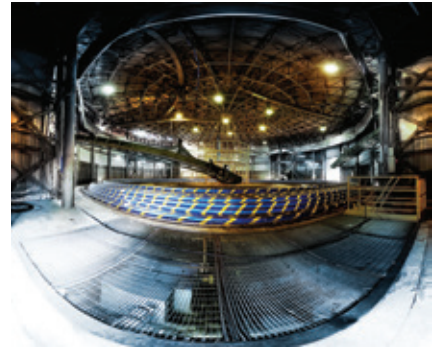
挤出工艺要求广泛的产品专业知识。材料通常是聚烯烃共聚物，再使用电子束或 sioplas 法进行交联，以取得理想的产品质量。这两种方法帮助材料实现刚性分子结构，从而达到耐化学性和机械弹性。材料特性根据具体要求可定制。

RosendahlNextrom GmbH – 奥地利
网址: www.rosendahlnextrom.com



○ RosendahlNextrom 公司推出的太阳能电缆共挤工艺

Prysmian 成功交付电缆互连



○ 跨墨西拿海峡电缆互连由意大利那不勒斯附近的 Arco Felice 工厂设计制造

Prysmian Group 宣布，位于西西里岛和卡拉布利亚间的跨墨西拿海峡的超高压电缆互连已经成功交付给其客户 Terna SpA Rete Elettrica Nazionale。

“我们很荣幸为这一战略互连提供最佳的技术和专业知识，我们是业界的领导者，拥有广泛的经验”，Prysmian 首席执行官 Valerio Battista 表示。

“交付 Terna 的电缆互连是在意大利那不勒斯附近的 Arco Felice 工厂制造的”。

Prysmian 开发并生产了双回路 380kV HVAC（高压交流）陆地及海底电缆系统，铺设路径位于西西里岛 Villafranca Tirrena 电站和卡拉布利亚 Scilla 电站之间，总长 44 千米 - 其中38千米位于水下。

该项目还包括安装首个 Prysmian 专利永久性监测系统，将经由18个Pry-Cam 电网设备实施。

Prysmian 利用 Giulio Verne 电缆船敷设海底电缆。

陆地电缆敷设被证明是迄今最具技术复杂性的，需要在一个300米深的立井，以及一条12%倾斜和2.8千米长的隧道中实施。

Prysmian于2009年12月获得这份价值3亿欧元的电缆互连合同。

Prysmian在电力传输领域的订单总额达到32亿欧元。

集团力争进一步强化其世界领导地位，目前正大力投资技术创新和项目执行，启动了新的电缆敷设船。

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

Zeller推出新型润滑剂

工业润滑剂制造商 Zeller+Gmelin 在德国杜塞尔多夫举行的2016国际线缆及线材展上向来宾展示了其最新开发成果，用于铜和不锈钢的拉丝。德国 Eislinger 公司至今已有150年的发展历史。“我们非常高兴，能有这么多参观者莅临展台”，产品经理 Wolfgang Kienle 表示。这300多位参观者大多数来自欧洲、亚洲以及伊朗，其中很大一部分是潜在客户。展台上，他们与润滑专家进行了很多技术探讨。

放松对伊朗经济制裁的政策显然对展会接触有直接影响。相较于2014年，参观者的数量增加了约30%。”展会参观者中，除了一些老客户，有一半都是潜在客户，” Kienle先生补充说。Zeller+Gmelin提供个人和整体解决方案，从单源研发到生产。许多国内外公司包括 Berkenhoff (Bedra) 都受益于其创新成果。新产品的核心是用于铜线拉伸的创新 Multidraw 系列拉丝剂：“Multidraw CU CAS”，用于连续退火新合成产品；“Multidraw CU MF C”，用于中等和细线拉伸；“Multidraw CU UNI S”通用拉丝剂，用于拉线机和中等线材拉伸，最大直径0.1毫米。客户对新的通用拉丝剂非常感兴趣。

Zeller+Gmelin – 德国
网址: www.zeller-gmelin.de



○ Multidraw CU UNI S 是一种水溶性、半合成的冷却剂，用于从开坯到终端线材的铜线拉伸

重要且必要的选择

拉丝应用中，选择合适的模具和润滑剂是两大重要和必要的要求。通过提高模具使用寿命和减少润滑剂用量，不仅提升了产品质量，还有助于降低拉丝成本。Kay Pee Dies 成立于1968年，为线材、棒材、管材拉伸和冷镦、挤压和特殊应用提供硬质合金模具。公司客户主要来自印度、东南亚、尼泊尔、中东和非洲等国家和地区。自2008年以来，公司作为意大利Pan Chemicals SpA公司的独家分销商，分销和销售拉丝润滑剂。

Kay Pee Dies – 印度
网址: www.kaypeedies.com

Melos 建设新的开发中心

在过去十年中，Melos GmbH 营业额增加了近两倍，员工人数翻了一番，目前已超过200人。截至2015年度，营业额达8005万欧元。公司开启了新的业务年，较去年前五个月营业额增长了14.2%，公司着眼于长远发展，计划投资300万欧元打造一个最先进的研发中心。市场与客户需求在过去几年里发生了深刻变化，Melos B2B业务要求越来越高。今天，公司提供的是广泛的解决方案，不再是单纯的零部件。

除了战略方向，公司基础设施也在改善。Melos GmbH 特别重视 Melle 生产基地，计划未来几年内大力投资，拓展开发、生产与物流中心。

研发能力中心 - 拥有先进的分析和实验系统，新实验楼和相关办公室 - 代表公司的下一步计划。作为 Melos GmbH 积极发展的主要驱动力之一，工业复合产品部门，将特别受益于这些投资。接下来的建设项目包括“Melos Village”露天展厅。占地面积约1800平方米，公司员工可以体验 Melos 运动休闲产品，在休闲娱乐的氛围里放松自己。

Melos GmbH – 德国 网址: www.melos-gmbh.com

保持表面清洁

表面清洁和去脂是线材生产过程中重要的组成部分。过去，一般采取机械或湿法，化学工艺对操作者和环境都有潜在的危害。将生产转变成无化学品过程的一种途径是使用等离子体清洁表面，称之为干式表面处理。

等离子体清洁器是一种等离子体表面处理机器，用于表面清洁、脱脂和去除有色金属线材表面的氧化物。

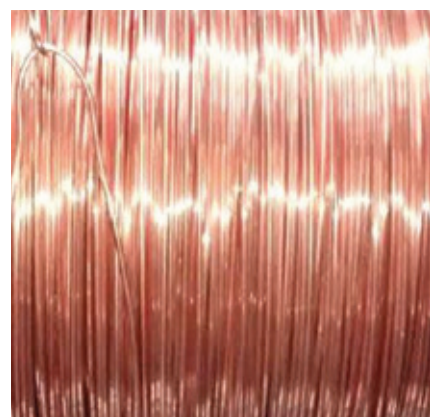
等离子体处理就是干燥的过程，不需要漂洗或烘干。等离子体处理表面可以用于去除潮湿的润滑剂或细氧化物层。

由于材料保持在惰性气体中，材料表面是清洁活化的，因此，允许有效的表面涂层（良好的涂层附着力）和在材料和

表面涂层之间创建强大的金属间化合物层。等离子体清洁器可结合使用聚合物涂层/挤出（PTFE、FEP、PFA、ETFE 和 Teflon）、包层、喷涂、缠绕、上釉和电磁线，或用于为各种电缆（立体实心、长方形、编织、成束）生产电力与信号导线。等离子体清洁器也可作为有效和精确的预热器。

等离子体如果用于去除大量的肥皂和污垢是无效的，那么我们可以利用常规的清洗工艺，如超声波清洗，再结合精细、干燥等离子体处理进行预清洗。

在惰性气体中冷却后，材料被引导至外界空气重，从而在处理的材料表面形成一种细的氧化层。这将导致表面高度



○ 等离子体处理铜线

钝化，通过减缓后续表面腐蚀来保护表面。

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



○ The Type PS 1250 DS from PS Costruzioni

New double take-up from PS Costruzioni

PS COSTRUZIONI'S automatic double take-up Type PS 1250 DS has been designed and built to work in line with extrusion lines.

The machine consists of a single frame, inside which are two take-ups and one wire guide.

A few metres before the end of reel one (the full reel) is the winding up process. The wire-guide starts moving to reel two (the empty reel).

After having reached the pre-set length, the cable is automatically cut and hooked to reel two (empty reel), and it

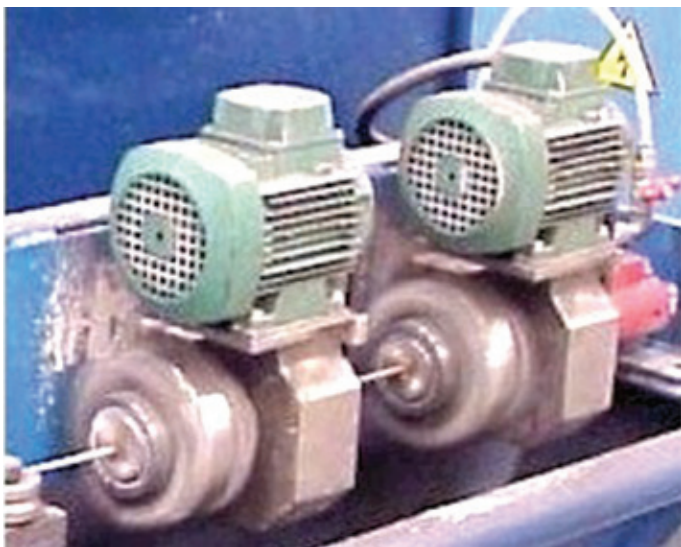
starts the winding up process of the empty reel. The cutting and hooking processes take place without slowing down the extruder speed and without any need for an accumulator.

Technical details:

- Reel flange diameter from 1,000mm to 1,250mm
- Cable diameter from 1mm to 10mm
- Max double take up speed: 1,200-1,500mt/min, according to the reel and cable diameter

PS Costruzioni Meccaniche Srl – Italy
Website: www.pscm.it

Rod rust removal by captured scale – dry, green and clean



○ Rod and wire cleaning by SB brushing system

WIRE rod rust is no longer an alarming phenomenon since the introduction of the Smooth-Brush (SB) wire rod green and dry cleaning system.

SB rod cleaning is used in the most demanding wire drawing applications, including spring wire, plating wire, galvanised wire, PC strand wire, Al clad wire, cold-heading wire, CO₂ welding wire, etc.

The SB dry cleaning system replaces the most costly operations in wire rod cleaning process (including acid and other aggressive wet chemicals), generating cost savings, environmental benefits and improvement of productivity.

Installed in-line after a simple rod reverse bending descaler, the SB system removes excess rod scale and rust, converting over 95 per cent of rod scale into useful micro-abrading medium, providing efficiency and simplicity in rod dry cleaning applications, H/C and L/C, including 0.98%C.

Continuously liberated rod scale provides in-line an extremely reactive about 5-micron size texture enabling powder lubricant to be chemically and mechanically interlocked to rod surface, forming a hard and consistent anti-wear and anti-friction conversion coating that is found to perform comparably to or better than zinc phosphate.

This achieves in-line direct drawing from mechanically descaled uncoated bare rod, at virtually zero energy consumption and zero maintenance cost, in a totally green and dry application.

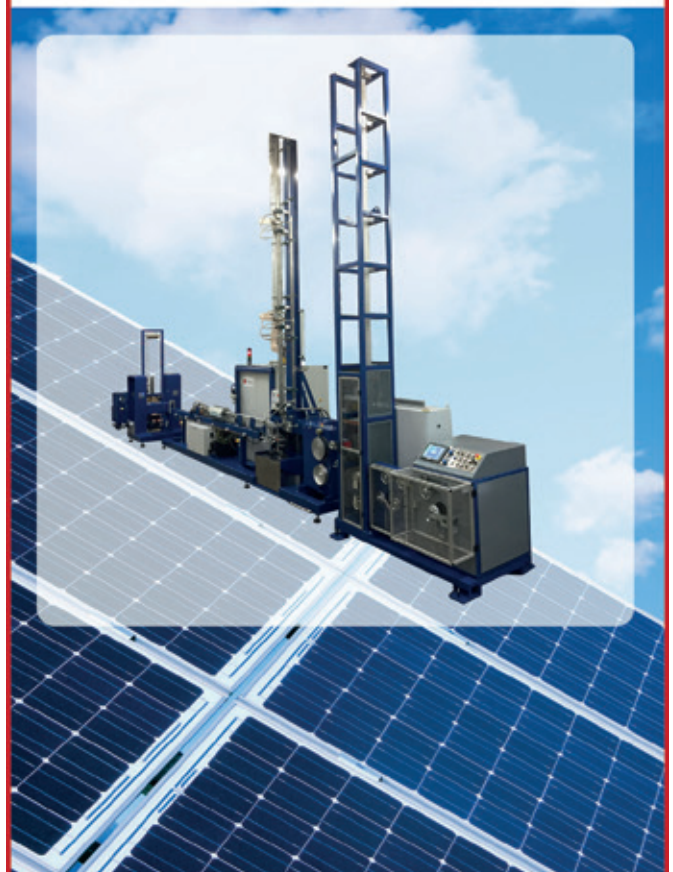
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Website: www.decalub.com



PV Ribbon Tinning Line for flat and round wire

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- High-speed annealing/tinning at max 210m/min
- Can be integrated with in-line rolling mill
- Acid-free, flux-free and automated production
- Less solder waste due to flux-free production
- Low scrap rates - 500kg continuous operation



Product quality benefits:

- Super-soft PV ribbon (Rp0.2% down to 50MPa)
- Smooth, consistent and shiny tin coat finish
- Long shelf-life of finished PV ribbon
- Good coating thickness tolerance

www.plasmait.com, info@plasmait.com

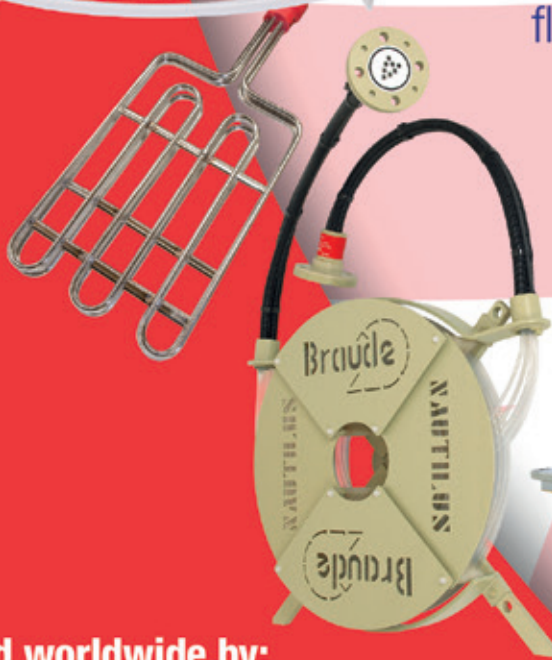
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Accuracy and reliability a feature with Odac heads

THE highest accuracy, robustness, reliability and functionality distinguish all laser measuring heads from Zumbach. Thanks to the compact design, the Odac® 14XY measuring heads can be used in virtually every manufacturing process in the wire and cable industry, the plastics and rubber industry as well as the steel and metal industry.

The technological basis considered for these measuring heads has laser diodes as light sources combined with intelligent and powerful measured-value processors which facilitate a simple and flexible integration. Long-standing experience as a pioneer of in-line measuring technology, combined with high production figures, result in a product with an excellent price-performance ratio.

Amongst the features is single scan calibration (CSS), single scan monitoring and high data rate output of up to 125 data packages per second. The measuring heads can be used with all line speeds. Vibrations during production have no noticeable influence on measurements.

This is specially suited for fine and extra fine wires, enamelled wires, cables, steel cords, fibres, medical tubing, extruded plastic or rubber products.

The Odac 14XY models are available for two measuring ranges:

- Micro version from \varnothing 0.015 to 0.3mm (0.0006 to 0.12"). Thanks to the use of a special laser, these versions can measure smallest diameters within the micrometre range
- Standard version from \varnothing 0.06 to 16mm (0.0024 to 0.64")



○ Odac 14XY measuring head with optional local display LOC 01

All the measuring heads of the Odac series have adaptive signal processing (patent DE3111356), which makes subsequent regular re-calibrations superfluous. Only in instances of component exchange or compliance to calibration regulations ISO 9000/9001 etc would re-calibration be required.

All the relevant parameters for accuracy are continuously monitored by the measuring system and automatically compensated. This is valid also for possible long-term changes of the scanner motor behaviour.

Zumbach Electronic – Switzerland
Website: www.zumbach.com





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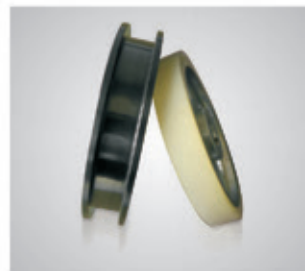
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 Combination pulley
 (size: ϕ 100- ϕ 500)



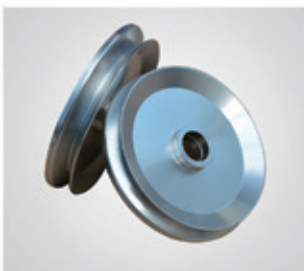
铝合金导轮
 Guide pulley
 (size: ϕ 45- ϕ 420)



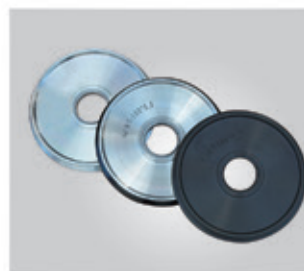
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 (size: ϕ 90- ϕ 350)



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 Fiber optic pulley
 (size: ϕ 60- ϕ 120)



漆包机轮
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Tough nylon 6/12 for automotive cable jackets

A NEW nylon 6/12 extrusion compound from Teknor Apex for automotive cable jackets provides excellent chemical resistance, withstands high service temperatures, and exhibits good dimensional stability as a result of low moisture absorption.

The chemical resistance of Chemlon® 890 HNT001 nylon 6/12 is superior to that of nylon 6 and exhibits greater stress corrosion resistance upon exposure to aggressive chemicals or mechanical stresses. The compound is heat stabilised to prevent embrittlement at high service temperatures and is lubricated to facilitate feeding into the extruder.

Chemlon 890 HNT001 compound has received General Motors and Chrysler

approvals for heat stabilised nylon 6/12. It is currently used in brake jacketing for a USA OEM, and the jacket has passed the cable supplier's heat ageing test at 135°C for 168 hours.

"Chemlon 890 HNT001 is inherently tough and easily processed," said Jeff

Schmidt, North American automotive market manager for Teknor Apex. "We can readily supply this material worldwide from our compounding facilities in the US and Singapore."

Teknor Apex Company – USA
Website: www.teknorapex.com



○ The new brake cable from Teknor Apex

**COVERAGE OF
WIRE CHINA
STARTS ON
PAGE 82**

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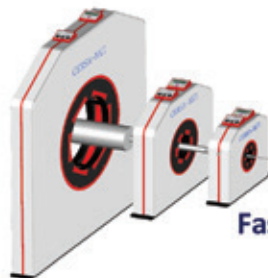
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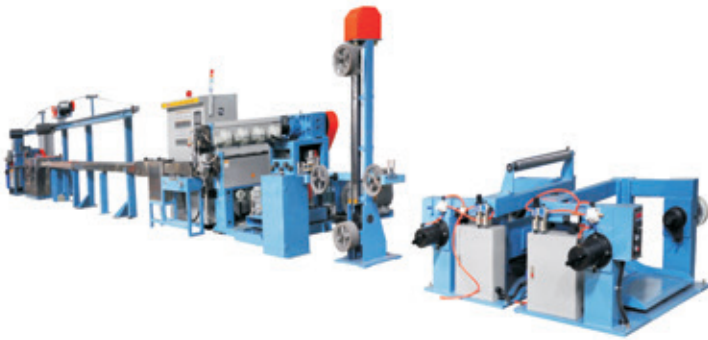
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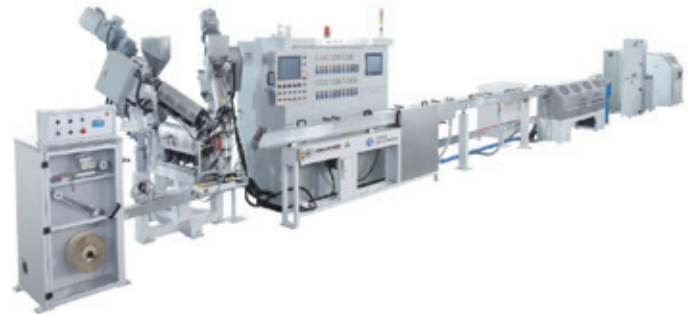
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Hot crimping resistance welding

AMADA Miyachi Europe has launched its complete hot crimping resistance welding systems, suitable for joining insulated copper wire to cable shoes or terminals.

An option for high intrinsic value products, the hot crimping systems include weld heads, transformer, power supply, and process monitor.

The systems are claimed to provide a faster and more cost effective alternative to removal of copper wire coating by lasers or mechanical means before making the electrical connection.

The company specialises in consulting with customers to correctly match hot crimping applications with the right process and equipment.

With a full line of resistance welding hot crimping technology, its solutions range from the highly delicate, fine control required to hot crimp wires as small as 40 microns (μm) to the high power and high force required for very large wires.

The systems include a high-force Miyachi Peco weld head, which mechanically holds the electrodes and feeds the electrical current to the electrodes. An integrated water-cooling system actively cools all components to prevent overheating during production.

A power supply and transformer accurately emit the programmed electrical power. All electrical parameters can be guarded and stored by the MG3 resistance welding process monitor.

With the hot crimping system, there is no metal stripping or removal, guaranteeing maximum strength.

A weld to displacement feature allows the equipment to be programmed to reach the specified compression, after which the current flow and heating is switched off.

This compensates for part-to-part variation, and lets users program a parameter that is closely related to joint quality.

Amada Miyachi Europe – Germany
Website:
www.amadamiyachieurope.com



○ Hot crimping from Amada Miyachi Europe

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COVERAGE OF WIRE
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 STARTS ON PAGE 99



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New portable cold welder

PWM, a manufacturer of cold pressure welding equipment, has launched a new portable cold welding machine for wire 0.3mm to 1.8mm (0.0118" to 0.071").

The new CP180 is a small hand-held powered cold welder housed in a handy carry pack. The compact pack contains the machine and its two-metre air supply line, the air/hydraulic power system and a supply of machine oil. The unit weighs just 16kg and can be easily moved to the work area as and when required.

The CP180 is operated by a foot pedal and is extremely simple to use. It enables even an untrained operator to produce strong, high-quality welds on non-ferrous wire, strip and profile up to 1.8mm (0.071") quickly and without effort.



○ The new CP180 portable cold welding machine from PWM

PWM Ltd – UK
Website: www.pwmltd.co.uk

New design features speeds up to 1,000RPM

Guill Tool has launched a new design for its high-production rotary models, both in-line and crosshead style.

A doubling of the speed, with models running to 1,000 RPM depending on the application, are now available in the Guill line of patented rotating tip and die designs.

By rotating the tooling in relation to the material flow, a rotary head increases the wall strength of an extrusion, thereby allowing a thinner wall with less material and the corresponding cost savings for the user.

Typical applications for rotary heads include medical and multi-lumen tubing plus various high-end extrusions with interlocking layers or multiple striping requirements.

Guill Tool & Engineering – USA
Website: www.guill.com

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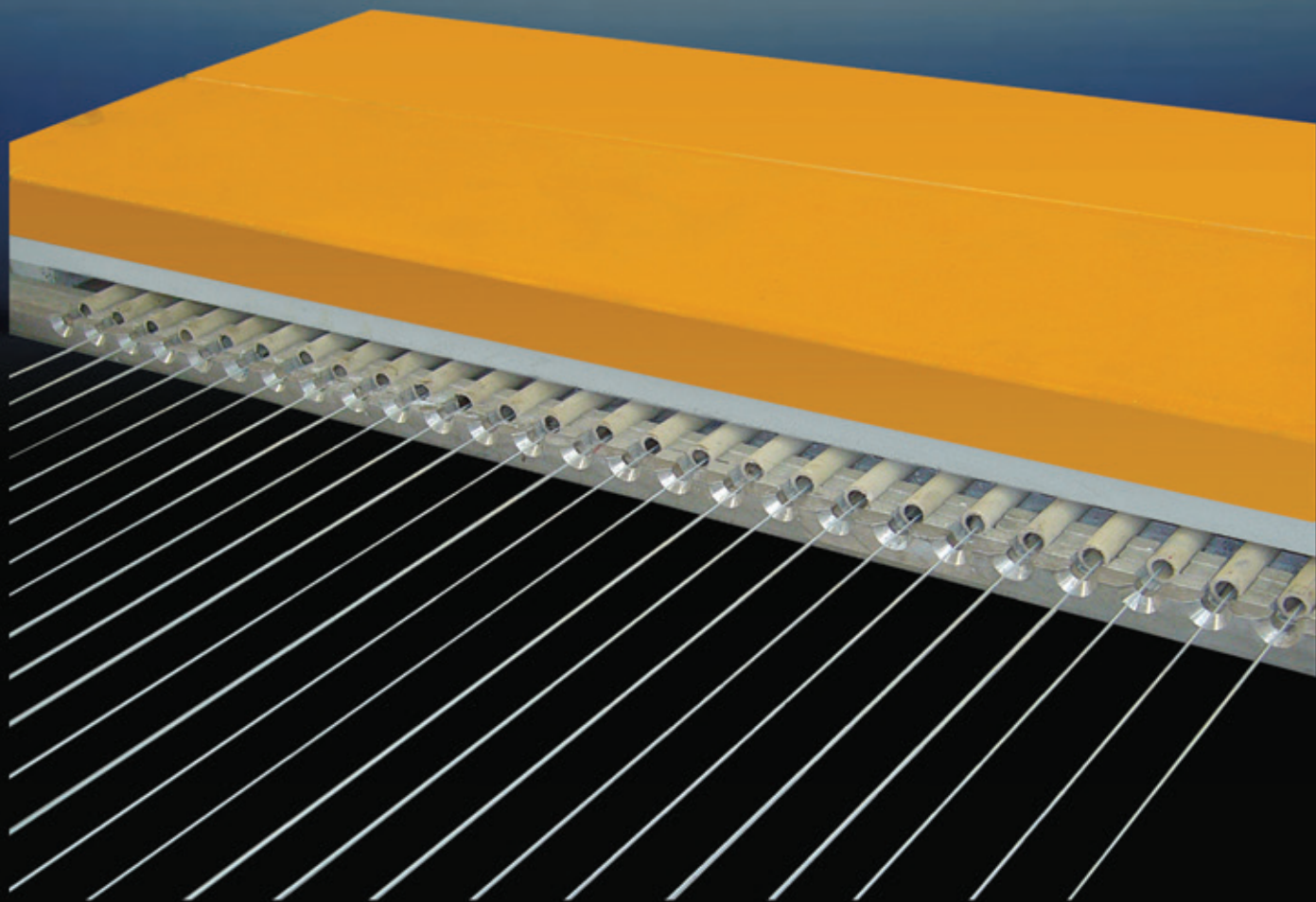
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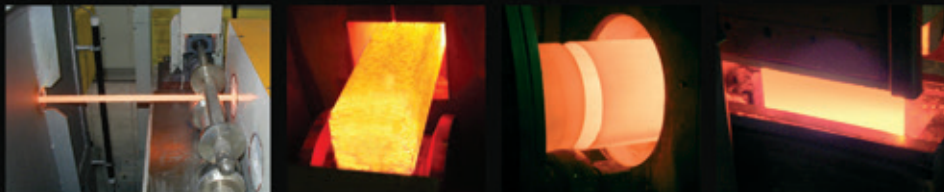


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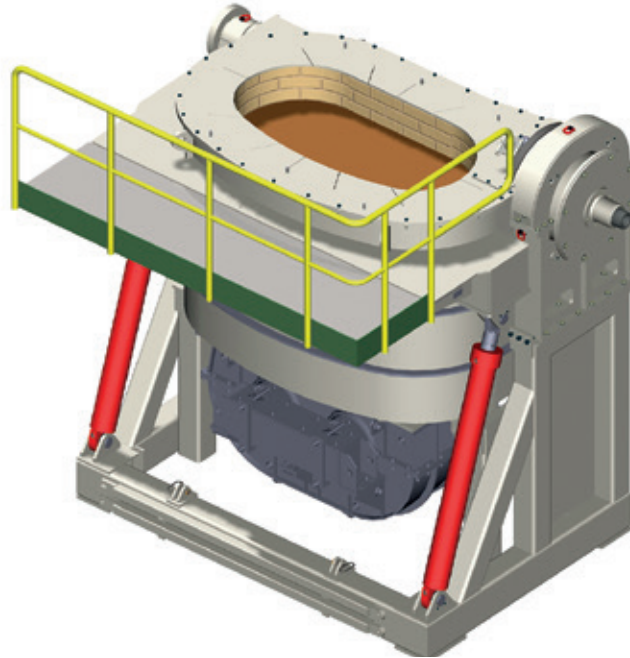


Savings and quality from 15-ton melting furnace

UPCAST'S latest development for line hardware is a new, bigger, one-inductor 15-ton teapot-type melting furnace. This replaces the previous two-inductor 12-ton cylinder-type furnace for the capacity range of 15,000-20,000 TPA.

"When the furnace is equipped with only one inductor, even though it is bigger than before, the purchase price will be less," said sales manager Tuomas Rajaviita.

The new furnace also means new opportunities both for traditional casting lines and for lines utilising recycled copper. "In certain applications using recycled material, we have always offered a three-furnace system, but now with the larger melting furnace for specific cases a two-furnace alternative is available," added Mr Rajaviita.



○ The new furnace from Upcast

Upcast OY – Finland
Website: www.upcast.com

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New PV ribbon and tinning line

THE photovoltaic industry has been going through a rapid change over the last decade. In addition to growth, the industry has continued to witness relentless price pressures along the PV value chain. The same is the case in the PV ribbon industry. Only PV ribbon producers that kept consistent product quality whilst maintaining low cost base and efficient production process have remained competitive.

Plasma-based annealing and tinning process represents an efficient PV ribbon production solution that will ensure consistent, top quality finished products at low cost.

Plasmait from Austria has introduced a new PV ribbon annealing and tinning line designed for high output production. The new line features a maximum production speed of 210m/min. This allows the line to produce up to 250 tonnes of PV ribbon per annum in a typical production split between interconnect and bus bar ribbons.

PV ribbon lines can produce a wide range of interconnect ribbons and bus bars in a typical size range of 0.8 to 8mm wide and 0.1 to 0.5mm thick. The ribbons are usually coated with 20 micron thick layer of solder with a coating thickness tolerance of ± 3 microns. The new line can produce ribbons of various yield strength, typically with Rp0,2% between 50MPa and 90MPa.

Copper ribbons are paid off from a 500kg spool with finished tinned PV ribbon being spooled onto 4-10kg spools in a continuous production. The single-head, precision layer winding spooler includes an accumulator to ensure uninterrupted production during spool changeovers on the takeup side. Some producers choose to equip the line with an automatic spool changeover unit that can be integrated with the takeup unit. Multiple lines can therefore be operated with a single operator, which reduces labour cost.

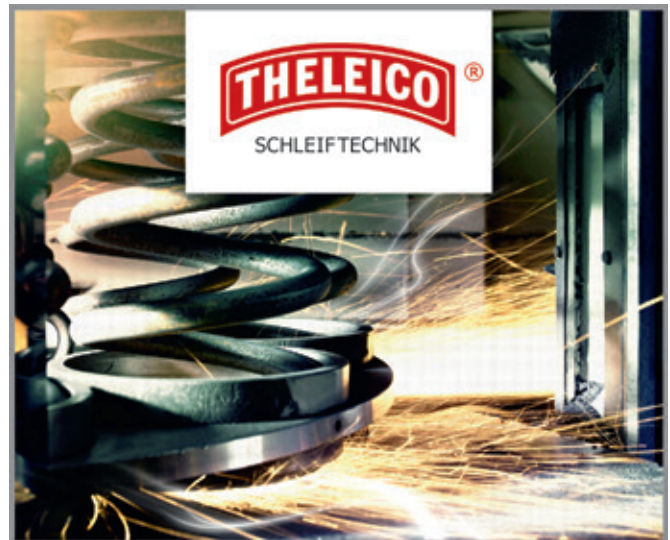
The PV ribbon line can also be integrated with an in-line rolling mill to produce interconnect ribbons directly from round copper wire. A single- or double-stand rolling mill can be used for in-line operation subject to required size and tolerance of the finished ribbon.

Unlike traditional tinning processes, plasma tinning lines operate without chemical cleaning and fluxing whilst rolling runs without cooling agents. This makes the whole production dry and environmentally friendly.

Flux-free plasma tinning process avoids contamination of tin bath with flux, which makes a big difference in the cost of tin waste. Average annual savings in terms of tin waste alone is as high as €100,000 per line when compared to the traditional flux-based tinning process. This does not take into account the savings a PV ribbon producer yields from reduced scrap rates.

The new line allows PV ribbon producers to reduce labour costs and scrap rates whilst improving production consistency and product quality. It also features low energy use and maintenance cost per kg of finished material. This combined allows the new PV ribbon line to claim the lowest cost of PV ribbon production overall, according to Plasmait.

Plasmait GmbH – Austria
Website: www.plasmait.com

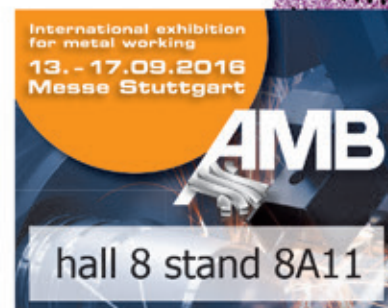


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Quality demands quality!

QUALITY demands on manufacturers and tailors of automotive and data cables as well as products for the aerospace sector are very complex. The products are used for different applications and need to withstand all kinds of strains. In order to guarantee flawless functionality and safety of the cables in all areas of application, manufacturers need to deliver their products with the highest quality.

In the production of automotive cables, the optimal wire temperature is an important criterion for an end product of the highest quality and the further processing: from wiring harnesses for ABS and airbag systems to light systems and sensors.

In order to achieve a defined adhesion of the insulation to the conductor, it is important to set the conductor temperature according to the insulating material prior to the feeding into the extruder. Only when the conductor temperature is kept constant within a small tolerance during the entire production run, can it be expected that the withdraw forces meet the specifications. Inadmissible scattering regarding the adhesion complicates the process considerably and can often lead to claims.

For devices without continuous measurement and control, the desired conductor temperature has to be measured manually and selectively with external sensors in order to set the power of such a preheating according to these measuring results. Environmental and production-related influences have an unforeseeable effect on the obtainable conductor temperature.

First of all, this includes the different temperatures of the entering copper wire (day/night/summer/winter), the changeable production speed and the gradual heating or cooling of the short circuit wheel of a preheating device. When cheaper conductor preheating devices are used, different supply voltages can also cause a change in the conductor temperature.

A constant temperature of the conductor is an important requirement for a stable foaming process.

The innovative technology of the Sikora Preheater 6000 TC bypasses those risks by measuring the



○ The Preheater 6000 TC from Sikora

temperature permanently. A camera captures the temperature of the conductor after the heating and controls the power of the preheating device automatically and continuously. The device is installed directly in front of the extruder and therefore is able to react to changing environmental conditions as well as line speeds.

The result is a stable conductor temperature independent of the material. This is especially interesting for the production of automotive cables as the conductor material is not only made of copper any more, but also of aluminium.

For a supplier it is often of utmost importance to adapt production to the market geographically. As the export of cable products would cause an enormous cost increase, many automotive cable manufacturers establish their plants close to the automobile plants.

In order to guarantee a stable quality worldwide, the same technologies, respectively the same technical equipment, should be available everywhere to specialists and operators – an automatically regulating technology at best. Industry 4.0 is the keyword in order to link production plants internationally. The Preheater devices of the series 6000 TC are, therefore, equipped with comprehensive interfaces.

Sikora AG – Germany
Website: www.sikora.net

ADWANTEK TECHNOLOGIES CO., LTD



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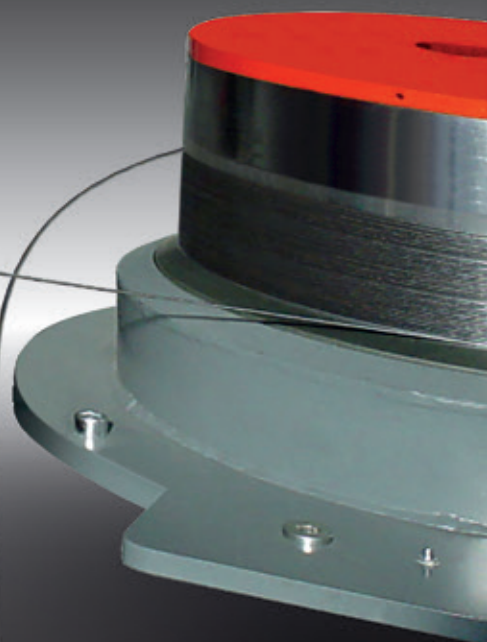
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Addition to Buttkereit's icotek range

VERSATILE hand-hydraulic punch driver tools for round, square or rectangular knock-out holes are now available in the icotek range of products from M Buttkereit Ltd.

The tools, which incorporate a hand-hydraulic punch driver, do not require any cumbersome hose connections and are capable of providing appropriate cut-outs for a wide range of cable entry system products.

The hydraulic punch drivers utilise special geometry punches which minimise both the cutting pressure and associated manual effort required for operation. The hydraulic cylinder incorporated with each punch driver can be rotated 360° on three axes, providing maximum tool versatility for operation in hard-to-reach or otherwise cramped working conditions.

The tool can be used to punch holes in stainless VA steel (up to 2mm thick), together with mild steel, aluminium or plastics up to 3mm sheet thickness. With a pilot hole of 10mm diameter, round knock-out punches are available for standard cut-outs PG16, M16, M20 and M25.



Versatile hand-hydraulic punch driver tooling now available in the icotek cable entry system product range

With an M20/20.3mm diameter pilot hole, standard cut-outs to cover M32, M40, M50 and M63 sizes can be achieved.

For square/rectangular cut-outs, a pilot hole of M25/25.5mm diameter is required, for which a standard punch tooling is available to cover two cut-out sizes of 46mm x either 46 or 112mm, together with 36mm x 65, 86 or 112mm, respectively.

Individual box sets are available incorporating appropriate punches, dies and draw studs used either with a counter nut or spacer for the optional hand-hydraulic punch driver tools.

The ease of application and operation of the hydraulic drivers is highly advantageous for multi-hole punching operations when compared to the more conventional fully manual operated wrench-style punches.

In addition, the self-centring round punches automatically split the scrap material slugs into three easily removed pieces, which is more convenient and time-saving on removal.

Where the location holes being created are for the installation of round push buttons or switches, the icotek range offers a 22.5mm punch incorporating an integrated twist notch to prevent potential rotational movement of electrical components following their consistent manual operation.

M Buttkereit Ltd – UK

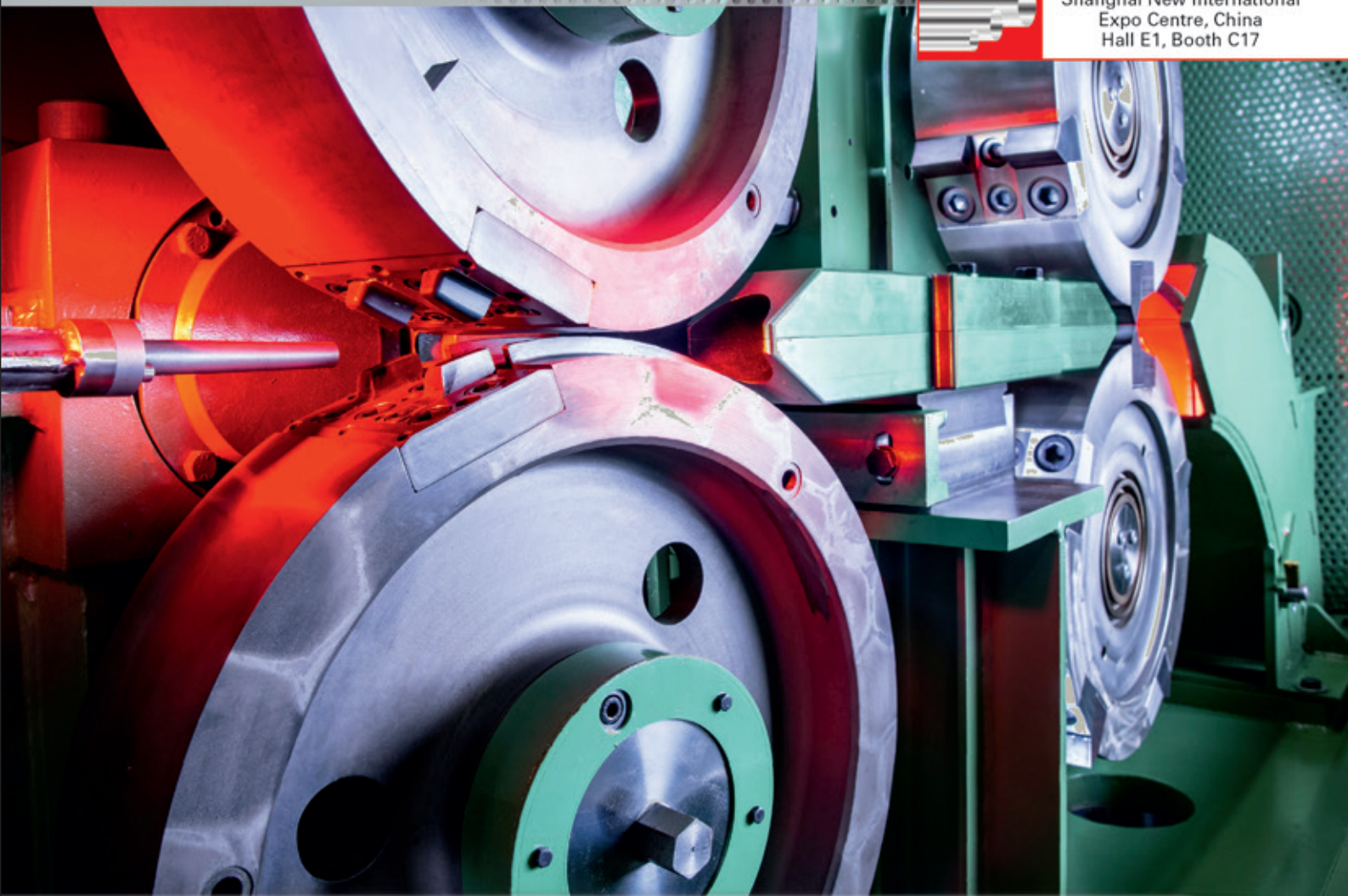
Website: www.buttkereit.co.uk

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Multiple tasking from Eurolls

THE Quick Rolling Concept has been developed by Eurolls to perform multiple tasks. Its function is to produce wire and with a sleek, compact design/dimensions allows the perfect union between different wire processing sequences.

Eurolls has supplied this QRC concept in both multiple and single in-line wire rolling configurations. In both cases, the presence of the QRC unit permits the combination of different/distinct processes but always with the same goal: improved production efficiency by having in a single line for the complete process from entry material to final product.

An example of the multiple in-line wire rolling solution was its insertion in a lattice girder manufacturing system with five individual QRC units, three for the longitudinal wires and two for the stirrups wire.

The same philosophy is present in the case of the single in-line solution that combined both a QRC unit and a straightening and cutting line to produce the finished twisted square wire in straight lengths.

In both solutions, the first section is always the QRC unit whose function is to pull the entry material from the pay-off area through both mechanical descaler and cold rolling cassettes, by means of dual V grooved pulling rings which guarantee the traction required to perform the single or double wire



○ The Quick Rolling Concept from Eurolls

draft. These drafts can be performed by using either traditional cold rolling cassettes or a combination of traditional/special cassettes in accordance with the profile required for the finished product.

In the particular case of twisted square wire production, the first cassette performs the standard rolling process to form the correct intermediate wire dimension suitable for the second draft, which uses a rotating cassette to produce the final twisted square profile.

From the QRC unit, the produced twisted square wire moves directly into

a modified Vitari NR300 straightening and cutting unit that uses two straightening roll panels, instead of the traditional rotating spinner. The final twisted square bar is then used for the production of anti-skid grating panels.

With the same simplicity and efficiency, the components can be changed in order to produce different final wire products to satisfy the different requirements of the wire sector, eg traditional reinforcement bars, electro-welded mesh panels, etc.

Eurolls – Italy
Website: www.eurolls.com

Advanced software offers greater speed and reliability

Whitelegg Machines has specialised in the manufacture of 2D wire forming machines with automatic butt welding for over 30 years.

CFMs are in use worldwide, bringing accuracy, repeatability and precision to the production of wire and strip components and sub-assemblies.

The CFM range incorporates advanced software, new bend head and intuitive operator control, and offers manufacturers even greater speed and reliability.

With the addition of a 16mm version, using the latest technologies, Whitelegg has added to the versatility of the CFM range.

Now with all servo operation and touchscreen industrial PC running the advanced 'Allform 4' software package, the

CFM is able to produce highly accurate and consistent parts with or without automatic butt welding. Wire or strip is taken from the coil, straightened and then pulled through a highly accurate feed system to the freely programmable bend head.

A huge variety of shapes are possible and, if required, the wire ends can be automatically butt welded. Thus squares, rectangles, ovals and rings can be manufactured complete, without the need for ancillary operations.

CFM machines are fitted with remote access capabilities allowing engineers on-line access to the machine so software updates, for example, can be easily and effectively introduced.

Whitelegg Machines Ltd – UK
Website: www.whitelegg.com

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○ PS Costruzioni 制造的PS 1250 DS型机

两台收线装置和一台导线装置

PS Costruzioni 公司PS 1250 DS 自动双收线机协同挤出生产线一起运作。

机器包含一个独立框架，内部有两台收线机和一台导线装置。

卷轴1(满卷轴) 末端前几米是清盘过程。

导线装置开始移向卷轴2(空卷轴)。到达预先设定的长度后，电缆被自动切断，并钩住卷轴2(空卷轴)，然后开始空卷轴的清盘过程。

挤压机无需减速，也不需要任何累集器，就可以发生切割和钩住过程。技术细节：

- 卷轴法兰直径从1,000毫米直到1,250毫米
- 电缆直径从1毫米到10毫米
- 最大双收线速度从1,200到1,500mt/min，取决于卷轴和电缆直径。

PS Costruzioni Meccaniche Srl – 意大利
网址: www.pscm.it

新的光伏焊带与镀锡生产线

光伏工业在过去的十年里发生了深刻变化。除了发展迅速之外，行业继续承受着无情的价格压力。光伏焊带行业也是如此。光伏焊带制造商只有保持稳定的产品质量，同时保持低成本和高效率的生产工艺，才能保持竞争力。基于等离子的退火镀锡工艺代表高效光伏焊带生产解决方案，确保稳定、高质成品，并且成本经济。

奥地利Plasmait推出新型光伏焊带退火镀锡线，用于高产量生产。新的生产线生产速度最高达到210米/分。生产线年产能达250吨光伏焊带，这是一个典型的生产量比例，介于互连和母线带之间。光伏焊带生产线能够生产广泛系列的互连带和母线带，典型的尺寸范围：0.8毫米-毫米宽、0.1-0.5毫米厚。焊带通常涂覆有20微米厚的一层焊料，涂覆厚度误差±3微米。新的生产线可以生产各种屈变力色带，通常Rp0,2%，在50MPa和90MPa之间。

铜焊带从500千克重的卷轴上释放，成品镀锡光伏焊带在连续生产过程中被缠绕到4-10千克重的卷轴上。单头精密层缠绕机包含有一个累集器，确保卷轴更换过程中保持不间断生产。一些制造商选择给生产线安装与收线机集成的自动线轴转换装置。一名操作员就可以运行多条生产线，从而降低了劳动力成本。

光伏焊带生产线集成直进式轧机，直接使用圆铜线就可以生产互连带。单、双机架轧机可用于直进式操作，根据成品焊带的尺寸和公差要求。不同于传统的镀锡工艺，等离子镀锡线无需化学清洗和助焊剂，同时，滚轧也无需冷却剂。因此，整个生产过程干燥环保。

无助焊剂等离子镀锡工艺避免了锡槽内助焊剂的污染，因此，显著减少了废锡，节约了成本。较之基于传统助焊剂的镀锡工艺，新的生产线，仅就减少废锡而言，每条生产线每年节约的成本高达10万欧元。这还没有考虑光伏焊带制造商废料率降低带来的成本节约。高水准的光伏焊带制造商加上平均95%的正常运行时间，可连续生产500千克。

光伏焊带制造商在降低劳动力成本和废料率的同时提高生产稳定性和产品质量。新的生产线能源使用和成本都保持最低。凭借这些优势，新的光伏焊带生产线可以说是迄今为止成本最经济的生产工艺。新生产线可配备特别设计的圆形线材抹拭系统，用于制造最近新推出的圆形光伏焊带。

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

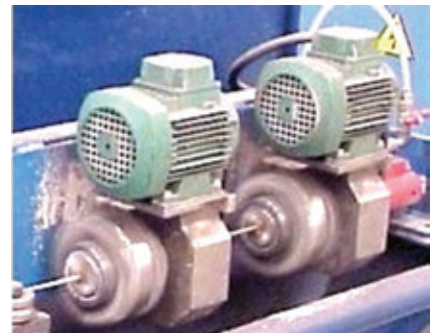
捕捉锈皮进行线材除锈-干燥、绿色和清洁

自从推出了 Smooth-Brush (SB) 线材绿色和干燥清洗系统以来，线材除锈已不再是让人惊慌的现象。SB 线材清洗系统正应用于最苛刻的拉丝，包括弹簧钢丝、镀锌钢丝、电镀丝、PC 钢绞线、铝包钢线、冷锻钢丝、CO₂ 焊丝等。

SB 干洗系统取代了最昂贵的线材清洗工艺(包括酸和其它腐蚀性湿化学品)，产生了显著的成本效益、环境效益和生产力的提高。

SB 系统安装在简单的线材反向弯曲除垢机后，去除多余的锈皮，将超过95%的线材锈皮转变成有用的微碾磨介质，为线材干洗应用、H/C和L/C，包括0.98%C，提供方便和效率。

连续释放的线材锈皮提供一系列反应强烈的5微米构造物，使得粉末润滑剂化学或机械性地与线材表面互锁，形成坚硬和一致的抗磨损和抗摩擦转化型涂层，性能



○ SB 清洁刷系统清洗棒线材

类似或优于磷酸锌，从而实现了直进式直接拉伸机械去氧化无涂层裸棒材，几乎零能耗，零维护成本，堪称完全绿色和干燥的应用。

Decalub – 法国
网址: www.decalub.com

Zumbach 测量头精确可靠

最高精度、稳定性、可靠性和功能性是 Zumbach 所有激光测量头的显著特征。由于设计紧凑，Odac® 14XY 测量头几乎可以应用于电线电缆、塑料塑胶和钢铁金属等行业的所有制造工艺。这些测量头采用最新技术制造而成，激光二极管作为光源，加上智能化强大的测量值处理器，方便与生产线灵活集成。作为在线测量技术的先驱，长期以来积累了丰富的经验，加之拥有较高的生产数据，因此，产品性价比非常高。

测量头特征包括单次扫描校准(CSS)、单次扫描检测和每秒高达125*的数据速率输出。测量头适用于所有线速度。生产过程中的振动对测量结果没有明显影响。测量头特别适合于细、超细线材、漆包线、电缆、钢帘线、光纤、医疗用管、挤出塑料或橡胶制品。

Odac 14XY 适合于两种测量：

- 微型：直径从 0.015φ-3 毫米 (0.0006φ-0.12")。由于使用了特殊激光，可以测量小至微米直径。
- 标准型：直径从 0.06φ-16 毫米 (0.0024φ-0.64")。

所有的 Odac 系列测量头都具有自适应信号处理 (专利 DE3111356)，无需后续的定期重新校准。只有更换组件或符合校准规范 ISO 9000/9001 等情况下需要重新校准。



○ Odac 14XY 测量头具有可选本地显示 LOC 01

所有关于准确性的参数通过测量系统连续监视和自动补偿。这对于扫描电机或测量电子长期的更换行为是特别有效的。

灵活的通信集成：

- 串行接口 RS-232 /-422 /-485
- 以太网 TCP/IP
- Profibus DP
- Profinet IO V2.3
- J/J-M (数字化，用于连接 Zumbach USYS 处理器)

Zumbach Electronic – 瑞士
网址: www.zumbach.com

韧尼龙6/12用于汽车 电缆护套



○ Teknor Apex 制造的新制动线缆

Teknor Apex 制造的新尼龙6/12挤出化合物将用于汽车电缆护套，新产品具有极好的耐化学性，能够承受高工作温度，并表现出良好的尺寸稳定性和低吸湿性。Chemlon® 890 HNT001 尼龙 6/12耐化学性要优于尼龙 6，暴露在侵蚀性的化学品或机械应力中，更能抗应力和耐腐蚀性。该化合物热稳定，防止在高温下脆化，并加以润滑，方便进给到挤压机中。

Chemlon 890 HNT001 化合物获得 General Motors 和 Chrysler 公司批准，用于热稳定尼龙6/12。目前，该化合物目前正被USA OEM 用于制动护套，护套通过了电缆供应商的热老化测试，在135°C温度下，持续了168个小时。“Chemlon 890 HNT001 本质就很坚韧，易于加工，” Teknor Apex 北美汽车市场经理 Jeff Schmidt 先生表示。“我们能够从美国和新加坡化工厂非常便捷地为全球客户提供这些材料。”

Teknor Apex Company – 美国
网址: www.teknorapex.com

高级软件提供 更快的速度和 可靠性

Whitelegg Machines 专业制造自动对焊2D线材成型机已有30多年历史。CFMs被全球广泛应用，能够精准、可重复和精确生产线材、带材组件和子组件。

CFM系列采用了高级软件、新的弯头和直观操作控制，为制造商提供更快的速度和可靠性。由于增加了16毫米版本，使用了最新技术，Whitelegg CFM系列机器应用范围更广。

目前，利用所有的伺服操作，触屏工业电脑安装了高级 “Allform 4” 软件包，CFM能够生产高精度和一致性的零件，带或不带自动对焊。

线材或带材取自线圈，拉直后通过高度精准的进料系统，到达可自由编程的弯头。

各种形状线材都可生产，如果需要，线材端部还可以进行自动对接焊接。因此，正方形、矩形、椭圆形和环形都可以生产，并且不需要辅助操作。

CFM机器配有远程访问功能，允许工程师在线访问机器，因此，软件升级都很简便和有效引入。

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

热卷边电阻焊

Amada Miyachi Europe 推出了完整系列热卷边电阻焊系统，非常适合于连接绝缘铜线到电缆套管或终端。

对于高内在价值产品无疑是一个很好的选择，热卷边系统包括焊头、变压器、电源和过程监控。系统在电气连接前通过激光或机械方式去除铜导线涂层，是更快、更经济的有效替代方案。



○ Amada Miyachi Europe 提供的热卷边系统

公司特地与客户协商，实现热卷边应用和合适的工艺设备的正确匹配。凭借全面的电阻焊热卷边技术，该解决方案从高度精密、细致控制热卷边线材(小至40μm)到高功率、高动力控制大型线材。

独特的系统包括一个高强力Miyachi Peco焊头，机械保持电极和馈送电流到电极上。一个集成水冷系统积极冷却所有组件，以防止生产过程中过热。电源和变压器精准发射程控电源。最终的电阻焊接过程监控器MG3负责保存所有电气参数。

利用热卷边系统，就不存在金属剥离和去除，同时还能够保证最大的强度。独特的位移焊接允许设备程序控制，从而达到指定的压缩，紧接着关闭电流和加热。此举补偿了部分到部分的变化，允许用户程序控制与连接质量密切相关的参数。

Amada Miyachi Europe – 德国
网址: www.amadamiyachieurope.com

PWM 提供新型便 携式冷焊

PWM专业制造冷压力焊接设备，最近推出了新型便携式冷焊机，适用于线材直径从0.3毫米到1.8毫米(0.0118"到0.071")。

CP180 是一款小型手持式电动冷焊机，封装在一个携带包内。紧凑的400平方厘米携带包内放置有机器及其两米长的供气管、气/液动力系统 and 机油。该装置仅重16千克，方便移动到工作区域。

CP180 通过脚踏板操作，使用非常方便。甚至连没有经过任何培训的操作人员都可以对有色金属线材、带材和型材 (最大尺寸1.8毫米)进行高效焊接，不会产生任何误差。

PWM Ltd – 英国
网址: www.pwmltd.co.uk

全新设计旋转一字型或十字头模具，转速达 1,000 RPM

Guill Tool 推出全新设计的高产旋转型模具，两种造型：一字型和十字头。Guill 新款专利旋转头和模具，速度提高了一倍，根据具体应用，转速高达1,000 RPM。根据物料流旋转模具，旋转头增加了挤出的壁强度，由此允许较少材料的薄壁，从而节约了用户成本。旋转头的典型应用包括医疗和多腔管，以及具有联锁层或多条要求各种高端挤压工艺。

新的旋转挤压模具包括反向旋转头和模具、同向旋转头和模具、具有传统头的旋转模具、具有传统模具的旋转头、十字头或一字型、多层、分条、某种成型以及最大限度减少清洗停机时间的备选快速更换滤筒。通过使用旋转模具，消除了二次处理，从而降低了挤压机成本，同时，无需焊接或分型线，加上减少或完全去除了椭圆度，使得终端产品更加美观。Guill Tool 提供新的高速旋转模具产品包，包括模具车、工具和用于安装和维护的所有配件。

Guill Tool & Engineering – 美国
网址: www.guill.com

15吨熔炼炉可节约成本和提升品质

Upcast最新开发成果，新的、大型、一电感15吨茶锅式熔炼炉，从而取代了之前的二电感12吨缸式炉，容量范围为15,000-20,000 TPA。

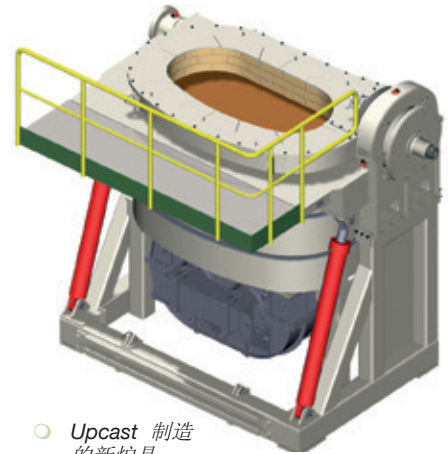
“当炉具配备了一个电感器，即使比之前更大，购买价格也会便宜些，”销售经理 Tuomas Rajaviita 说道。

无论对传统铸造生产线还是对使用再生铜的生产线来说，新炉具意味着新的机会。

“在使用再生材料的某些应用中，我们总是提供三炉系统，但是现在利用更大的熔炉，在特定情况下，二炉也可替代使用。

“因此，我们能够再生材料的有效利用提供更多机会，为客户节约成本，同时提升铸造品质，” Rajaviita 先生补充说。

Upcast OY – 芬兰 网址: www.upcast.com



Upcast 制造的新炉具

加工稳定性和重复性

汽车、数据电缆和航空航天业产品的制造商和设计师面临的质量要求是极其复杂的。这些产品应用于不同领域，需要承受各种考验。为了保证电缆在所有应用领域的完美功能和安全性，制造商需要提供最高质量的产品。

电缆生产技术、质量保证和公司灵活的定位政策是向子公司快速准确传递优化生产流程的必要条件。例如，在汽车电缆生产过程中，最佳线材温度是生产高质终端产品的重要标准，其它加工包括：从 ABS 线束和气囊系统到光系统和传感器。

许多汽车电缆制造商使用设备给导体预加热，以获得绝缘和导体之间更好的粘合性。为了达到绝缘体与导体之间的规定粘合性，在馈送到挤出机前，需要根据绝缘材料设定导体温度。在整个生产过程中，只有当导体温度在小公差范围内保持恒定，撤力可望符合规格的要求。不被允许的粘附力散射会使过程复杂化，常常导致索赔。

对于没有连续测量与控制的装置，期望导体温度只有手动测量和选择性地利用外部传感器测量，再根据测量结果设定预加热功率。环境、生产等因素对获得的导体温度有不可预见的影响。例如，进入铜丝的不同温度（白天/夜晚/夏天/冬天）、变化的生产速度以及预加热装置短路轮的

逐步加热和冷却。如果使用价格低廉的导体预加热装置，不同的电源电压也会引起导体温度的变化。

鉴于此，发泡绝缘是生产数据电缆的最佳解决方案，发泡等级很大程度上取决于预加热导体的温度。导体的恒定温度是保持发泡过程稳定的重要条件。Sikora Preheater 6000 TC 创新技术通过永久测量温度，可以规避这些风险。



Sikora 制造的 Preheater 6000 TC 设备

创新摄像头加热后捕捉导体温度，并且连续自动地控制预加热设备。该设备直接安装在挤压机前部，因此，能够对环境条件和线速度的变化做出回应。

由此可见，导体温度不再依赖材料，始终保持稳定。特别有趣的是，汽车电缆的制造，导体材料不再是铜而是铝。

对于供应商来说，根据市场调整生产显得极为重要。由于电缆产品出口将造成巨大的成本增加，因此许多汽车电缆制造商将工厂建在汽车制造厂附近。

为了保证全球质量稳定，需要为各地的专家和运营商提供相同的技术和设备 - 完全自动化的调节技术。为了将国际上的生产工厂联系起来，Industry 4.0是关键所在。Preheater 6000 TC 配备了全面的接口。

Preheater 6000 TC 可以集成到新、旧生产线。它能够连续测量导体温度，并通过创新红外线摄像机控制预加热。因此，Preheater 6000 TC 工作不受外部影响。这使得Sikora 设备成为电缆生产的重要因素之一 - 稳定的工艺可重复性成为可持续性和面向未来生产的保障。

Sikora AG – 德国
网址: www.sikora.net

India Insight

Solar power hits roof with \$625m World Bank loan

THE World Bank board has approved a \$625 million loan to support the Indian government's programme to generate electricity from widespread installation of rooftop solar photovoltaics.

The board also approved a co-financing loan of \$120 million on concessional terms and a \$5 million grant from Climate Investment Funds' (CIF) clean technology fund. The project will finance the installation of at least 400MW of grid-connected rooftop solar across India.

Despite energy shortages, and the high cost of backup supply, rooftop solar PV systems have not yet become widespread in India.

This is primarily due to the lack of adequate financing, unfamiliar technology and low consumer awareness.

Aided by government policy and declining costs, rooftop solar has the potential to transform the Indian energy sector. The overall potential demand for rooftop solar is estimated at about 124,000MW.

"India is endowed with huge solar energy potential, and the World Bank is strongly supportive of the government's plans



○ World Bank support for widespread installation of rooftop solar photovoltaics in India

to harness this potential and increase India's solar PV capacity to 100GW," said Onno Ruhl, World Bank country director in India.

"This project will support this target, by providing financing to some of the 40GW of solar PV which will be placed on rooftops."

The World Bank – USA Website: www.worldbank.org

Copper plant

Shilpi Cable Technologies is set to invest \$150 million in Abu Dhabi to establish a plant for manufacturing copper products. A company document said that the board has approved the project through a subsidiary, and that the facility will have a manufacturing capacity of 60,000 metric tonnes of copper products.

It added that it will invest \$50 million through equity and the balance of \$100 million will be through debt.

Shilpi Cable Technologies – India
Website: www.shilpicables.com

Indian power pledge

The power ministers of all Indian states, meeting in Goa, have made a resolution to focus on the hydro and wind power sectors to develop a comprehensive policy to revive stalled projects.

Union minister for power, coal and renewable energy Piyush Goyal told a press conference that to boost the hydro power sector, a committee has been established

under the chairmanship of West Bengal power minister Manish Gupta. It will submit its recommendations by 30th September 2016.

Mr Goyal confirmed that all ministers were resolved to provide constant power to all households by May 2017, and that all states, except those affected by left-wing extremism, had resolved to electrify all villages by December 2016.

Participating states resolved to install only tamper-proof, communication-enabled smart meters. The minister said that the cost of smart meters has fallen by 60 per cent as a result of central procurement, and is expected to fall further in the near future.

Hybrid project

Himachal Pradesh Power Corporation Ltd (HPPCL), a state-owned power utility company, and renewable energy company Solar Energy Corporation of India (SECI) have agreed to invest approximately \$4.6 million in the construction and development of a solar/wind hybrid power project located at Rangrik in Himachal Pradesh, India.

Himachal Pradesh Solar Power Corporation Limited – India
Website: www.hppcl.gov.in

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havet@havet-china.com
Contact Person: Vivian

Add: Fangxiang Industrial Zone, Yangzhou City, China



An independent-minded Huawei is reported to be developing its own mobile OS – also smartening up the product

Citing a report from *The Information*, Colin Gibbs of *FierceWireless* wrote that Huawei is developing its own mobile operating system (OS) as a “contingency measure” in the event its relationship with Google should deteriorate and close the Chinese smartphone vendor away from the Android platform. The Silicon Valley-based digital news site reported on 22nd June that Huawei had engaged a former Apple user interface designer to help create a new version of EMUI, an Android-based UI, for its handsets.

The Information said that Abigail Brody, the one time Apple executive brought in for the overhaul, confirmed her participation in the project. Huawei, a major player in the global smartphone market, was reported to have a team working on the new OS in Scandinavia, with ex-Nokia employees among the engineers.

“There’s virtually no evidence of consumer demand for a third mobile OS, of course,” observed Mr Gibbs, noting that even deep-pocketed companies like Microsoft have failed to shake the dominance of Google’s Android and Apple’s iOS. And, while carriers claim they would welcome more competition, they have not aggressively marketed any alternative platform in years. (“Report: Huawei Developing Its Own Mobile OS,” 23rd June). Still, he said, Huawei’s move makes sense on a few levels. Google has increasingly asserted control over its own platform in response to a growing number of handset vendors – particularly in China – that have essentially co-opted the platform. And Huawei, the world’s third-largest smartphone vendor behind Samsung and Apple, may have a big enough global footprint for a new OS.

Mr Gibbs also pointed out that margins are slimming in the hardware business as growth slows in the smartphone market, and nearly every major mobile hardware company is increasingly focusing on software and services. He wrote: “Developing its own mobile platform is a relatively small gamble that may eventually pay big dividends for Huawei.”

➤ Another reader of *The Information* (which covers in depth just two tech-orientated stories a day and charges \$399 a year to read them) is James Vincent of *The Verge*. Mr Vincent took note (23rd June) of the acknowledgment by Huawei’s new hire Ms Brody that the company’s lacklustre product line holds little appeal for Western customers. The designer, according to *The Information*, said she wants to overcome the company’s “pain points” and “glaring cosmetic issues.” She was also quoted by the publication as saying that one day Huawei could become “the world’s Number One, the most advanced and favourite ‘lifestyle-centric’ ecosystem, and without having to copy Apple at all, ever!”

China claims a first: an in-space refuelling system for orbital communications satellites

China’s National University of Defense Technology announced on 30th June that it had successfully refuelled its orbiting satellite Tianyuan-1, which was rocket-launched into space on 7th March from Wenchang in Hainan Province. As noted by Jon Fingas of *Engadget* (2nd July), the “very rare feat” will keep China’s satellites alive a while longer, perhaps permitting adjustments that would otherwise be

impractical. According to Mr Fingas, keeping a satellite in orbit for even a year or two longer could mean savings of “massive amounts of money,” and an effort like China’s represents an important first step for the technology. It could also advance the fight against space junk by slowing the proliferation of dead or useless satellites.

Some Western satellite developers are believed to be working on the refuelling of communications satellites in orbit. And Chris Forrester wrote on *Advanced-television.com* (4th July) that a few satellite operators

– including Intelsat and SES, both Luxembourg-based – have expressed strong interest in the technology.

A tale of two surveys on 5G: telecoms want it, and so do other companies – even if they are not altogether clear what it is

Two recent surveys, both focused on fifth generation mobile networks, were conducted among two different populations. One set of responses was collected by Sweden’s Ericsson from telecom executives; the other, by China’s Huawei in partnership with the USA business magazine *Forbes*, from executives of other businesses around the world. As reported by Guy Daniels, the editorial director of *Telecom TV* (London), there was “a huge disparity” between the two sets of results. (“Company Executives Have No Idea About 5G; Tell That to the Telcos,” 15th June)

Ericsson commissioned a detailed survey of 100 technology leaders at telecom operators in North America, Europe, Asia Pacific, and Central and Latin America, asking about their plans for 5G adoption. Some 87 per cent agreed with the statement “5G will be a real game-changer for us.” In addition, 92 per cent of these respondents expressed a belief that 5G paves the way for the emergence of new technologies; 86 per cent, that 5G enables a wider range of services than any network has yet offered; and 86 per cent, that 5G augurs new business models and technology.

The Ericsson survey disclosed a distinct regional split on expectations for 5G adoption. Some 66 per cent of European and North American operators believe 5G will be more consumer-driven, while 61 per cent of Asia Pacific and Central and Latin America operators expect it to be more business-driven. Unfortunately, the reasons for this division are unclear, wrote Mr Daniels, who suggested that it would be a useful exercise to dig deeper into it.

As to what businesses think, the Huawei/*Forbes* survey at the end of last year enquired into the requirements of over 1,100 executives in various fields. Over one-third of the respondents said that their current systems cannot support the

evolving needs of their business and that they have outgrown their mobile networks. Some 67 per cent said they need mobile networks that provide ultra-high throughput; 64 per cent need massive numbers of connections; and 59 per cent need ultra-low latency capabilities.

➤ “All looking good for 5G,” wrote Mr Daniels – except for “one small problem.” Of the executives polled, 36 per cent said they know “very little” or “nothing” about the technologies and issues around 5G wireless. The 27 per cent who expressed themselves “very familiar” with 5G include executives in the ICT (information and communications technology) sector, who are much better informed than their counterparts in other lines of business.

Taking note of this “incredible lack of awareness,” Mr Daniels surmised that, in a canvass specifically of CEOs in non-ICT companies, “the percentage who know next to nothing about 5G would be nearer a half than a third.”

Elsewhere in telecom . . .

➤ Ericsson has announced the launch of its 5G Plug-Ins, described as software-driven innovations that bring essential 5G technology concepts to today’s cellular networks. In a 16th June press release the Swedish ICT provider asserted that 5G Plug-Ins are focused on capabilities that operators can leverage within current networks, enabling them to “evolve to 5G at their own pace.” Ericsson said that its new offering would enable mobile operators to begin to try out 5G technology as early as this year. Monica Allevon of *FierceWireless* reported that the technology was featured in a demo that USA wireless network operator Sprint staged on 11th June in Philadelphia during the Copa América Centenario soccer tournament.

➤ *Reuters* reported on 4th July that Deutsche Telekom was preparing to sell its mobile towers in an auction that could raise up to \$5.5 billion for further network investments. With the sale of its domestic towers business

the German operator would be following Spain’s Telefónica and Telecom Italia in a trend that has seen the transfer of thousands of masts from European operators to independent tower companies.

Telefónica has already created a separate tower unit called Telxius. The Spanish operator said around 15,000 towers in Spain and other countries, and its 19,263-mile submarine cable, would initially be brought into the unit. In April, Telefónica Deutschland said it planned to sell almost all of its mobile towers to Telxius, receiving \$654 million for 2,350 towers. Cited by Anne Morris on *FierceWireless* Europe (4th July), a recent report by TowerXchange, which specialises in research into the telecom tower industry, predicted that independent tower companies would own 48 per cent of European mobile towers by 2020.

➤ According to *Strategy Analytics* (Newton, Massachusetts), the emergence of 5G mobile networks will not render fixed broadband services obsolete in the USA. With their provision of higher speeds and multi-play bundles, cable operators are seen as driving continued growth in fixed broadband, which contrary to expectation is not being superseded by mobile broadband. In its latest report (1st June), *Strategy Analytics* said that multiple-system operators (MSOs) added 3.3 million new broadband subscribers in the USA from April 2015 to March 2016, helping drive fixed broadband penetration nationwide to 80 per cent. Company research shows cable now controlling 62 per cent of broadband subscriptions, with fibre holding flat at 23 per cent and digital subscriber line (DSL) falling to 15 per cent.

➤ The results of a USA study reported 27th May by the National Institutes of Health has revived the discussion of whether cell phone and smartphone use can be hazardous to health. According to the NIH, the study, conducted by researchers in its National Toxicology Program (NTP), found “low incidences” of cancers in the brains and hearts of male lab rats that were exposed to typical amounts of cell phone radiation

for nine hours daily from birth until turning two years of age.

Todd R Weiss of *eWeek* pointed out that these early findings – the latest contribution to a body of research that has considered a wide range of theories over the last few years – are far from conclusive. The NTP said it is continuing the cell phone studies, with mice, and expects to present final results for peer review and public comment by the end of 2017.

In the meantime, Mr Weiss wrote on *eweek.com* (31st May), users interested in minimising their exposure to radiofrequency energy (RF) from cell phones might wish to consult the website of the US Food and Drug Administration (www.fda.gov). Suggestions from the FDA include using speaker mode or a headset to widen the distance between the device and the user’s head.

➤ New analysis from the research and advisory firm Gartner suggests that global smartphone sales will continue to slow. Sales of smartphones are expected to grow about seven per cent in 2016 to reach around 1.5 billion units. Projecting forward to 2020, Gartner believes smartphone sales worldwide are on pace to total 1.9 billion units. (“Smartphone Growth Continues to Slow as Maturity Approaches,” 7th June)

➤ “It’s all a far cry from those halcyon days of 2010 when annual sales growth was a stratospheric 72 per cent,” noted Guy Daniels on *telecomtv.com*. Even so, he wrote, if the heady days of explosive sales are over the market is still growing. Realisation of Gartner’s expectations through the turn of the next decade would represent steady, if unspectacular, continuous growth.

In the near term, premium phone users in mature markets are extending life cycles to around two-and-a-half years, which Gartner sees as unlikely to change drastically over the next five years. In emerging markets, the average lifetime of premium phones is between 2.2 and 2.5 years, while basic phones have an average lifetime of three years or more.

独创的华为据称正开发其自有移动操作系统——使其产品更加智能化

FierceWireless的Colin Gibbs引用The Information的报道这样写道：华为正在开发其自有移动操作系统（OS）以作“不时之需”，以备其与Google关系恶化导致华为不能使用其安卓平台。这家位于硅谷的数字新闻网站在6月22日报道称华为已经聘用前Apple用户界面设计者开发基于安卓UI的新版EMUI用于华为品牌手机。The Information称Abigail Brody，这位前Apple管理人员确认参与了该项目。作为全球智能手机市场重量级企业，据报道华为已经组织有前诺基亚员工参与一个小组在斯堪的纳维亚研制新的操作系统（OS）。

“现在当然基本还没有对第三移动操作系统的需求”，Gibbs先生说，即使是资金充裕的企业如微软公司都未能成功撼动Google的安卓系统及苹果的iOS系统主导地位。虽然很多移动运营商都宣称他们欢迎更多竞争，但多年来他们并未着力推销任何新的平台。（“报道：华为正开发其自有移动操作系统，”6月23日）然而，华为的做法在几个层面都很有意义。Google对其平台正加强控制，特别是针对中国不断增长的手机生产商采用该系统的需求。而仅次于三星和苹果的世界第三大智能机生产商华为，可能有足够能量开发新系统。Gibbs先生也指出在硬件领域，由于智能手机市场增速放缓，利润越来越低，与此同时，几乎所有移动硬件生产商都开始注意软件和服务。他这样写道“开发新系统，对华为来说是一个小赌博，但在未来可能成为华为最大增长点。”

① The Information 的另一读者（每天两篇技术相关报道，一年\$399美元订阅费）The Verge 的James Vincent， Vincent先生注意到虽然华为聘请了Brody小姐，但华为貌不惊人的产品对欧洲消费者来说依然缺乏吸引力。据The Information报道，该设计师想要克服华为的“痛点”及“明显外观问题”。据称她曾说过在未来某一天，华为可能成为“世界第一，拥有最先进且最受欢迎以生活方式为中心的生态系统，且一点无需模仿Apple！”

中国率先主张：轨道通信卫星太空燃料重新加注系统

中国国防大学6月30日宣布成功为轨道卫星天源1号重新加注燃料，该卫星与3月7日于海南省文昌通过火箭发送升空。如Engadget 的Jon Fingas与7月2日报道，这种“少见壮举”将可使中国卫星使用寿命更长，可能会使得未重新加注燃料前不现实的调整都变得可能。

据Fingas先生说，是在轨卫星延长一到两年可以节约“大量资金”，而中国这种方法使得使用该项技术迈出坚实的第一步。甚至可以减少现在越来越严重的由于废旧卫星造成的日益增多的太空垃圾。一些西方卫星开发商也一直致力于为在轨通信卫星重新加注燃料。Chris Forrester于7月4日在Advanced-television.com中这样写道：一些卫星运营商包括Intelsat及SES（总部都在卢森堡）都对该技术表达了强烈兴趣。

5G两项调查：电信需要，其他公司也需要——即使他们并不清楚5G到底是什么

最近两项有关第五代移动网络的调查在两群人中开展。一部分由瑞典Ericsson收集来自电信管理人员的反馈；另一部分由中国华为与美国商业杂志福布斯合

作开展，收集来自世界各地其他行业管理人员的反馈。据伦敦Telecom TV总编辑Guy Daniels报道，两项调查差异巨大。（“企业管理人员对5G一无所知，通知电信公司吧”6月15日）

Ericsson针对100家位于北美、欧洲、亚太、中美及拉美的电信科技领军企业开展一项针对5G接受度问题的详细调查。约87%受访者同意“5G将真正改变我们的游戏规则”。

同时，92%受访者相信5G将为新技术产生创造条件；86%相信5G会提供前所未有的服务；86%相信5G意味着全新商业模式和技术。

Ericsson调查显示对采用5G有明显地域差异。约66%欧洲及北美运营商相信5G将由消费者驱动，而61%的亚太、中美及拉美运营商相信是企业驱动的。造成这种地域差异的原因尚不明朗，Daniels先生说，可能可以更深入去研究这个问题。

至于企业方面的看法，华为/福布斯去年年底的调查采访了超过1,100位不同领域的管理人员。超过三分之一的受访者称他们的现有系统无法满足商业不断变化的需求而他们已经比现有移动网络更为超前。约67%受访者表示他们需要移动网络提供超高流量；64%需要大量连接；59%需要超短等待时间。

② “一切看起来都很美好”除了“一个小问题”，Daniels先生说。在所有接受采访的管理人员中，36%受访者表示他们对5G无线网络技术“知之甚少”或“一无所知”。27%受访者表示对5G“非常熟悉”的包括信息通信技术领域的管理人员（他们比其他领域管理人员对5G技术了解深入很多）注意到“难以置信的缺乏意识”Daniels先生推测对非信息通信技术领域管理人员而言“对5G一无所知人员比例接近一半而不是三分之一。”

其他地方的电信

① Ericsson宣称推出5G插件，一直被任务是软件驱动的革新且该革新为今日蜂窝网络带来全新5G技术概念。在6月16日新闻发布会上，这家瑞典信息通信技术商声称5G插件主要集中于现行运营商可以在现行网络中进行利用、调整，使得他们“按自己的节奏进入5G”Ericsson称这些新的解决方案可以使移动运营商最早可于今年开始尝试5G技术。FierceWireless的Monica Alleen报道称该技术于6月11日在费城一家美国无线网络运营商Sprint在Copa America Centenario足球锦标赛期间的一项展示中作为主推产品推出。

② 路透社于7月4日报道称德国电信准备将其移动信号塔台拍卖以筹集55亿美元资金用于网络投资。随着将其国内信号塔销售出去，该德国运营商将步西班牙Telefonica及意大利电信后尘将信号塔卖给独立塔台运营公司。Telefonica成立一家独立塔台实体称Telxius。该西班牙运营商称西班牙境内及其他国家的约15,000座塔台及19,263英里海底光缆将剥离到Telxius公司中。在四月，Telefonica Deutschland称其计划将其几乎所有塔台，2,350座（价值65400万美元）出售给Telxius。由Anne Morris引用发表于FierceWireless欧洲（7月4日）显示最近由TowerXchange（研究电信塔台行业的专业机构）发起的一项报道预测至2020年独立塔台公司将拥有欧洲移动塔台的48%。

③ 据Strategy Analytics（马萨诸塞州牛顿）称5G移动网络的出现不会致使美国固定宽带服务的淘汰。可能与一般认为移动网络将取代固定网络相反，有线网络运营商凭借其提供的高速多元束将会为固定宽带业务注入源源不断的活力。在Strategy Analytics最新报道（6月1日）中，在2015年4月至2016年3月间，美国多系统运营商为美国增加330万新的宽带用户，使得全国固定宽带渗透率达到80%。企业研究表明有线网络占有62%的宽带用户，其中光纤用户持平占23%，而数字用户线路降到15%。

Automotive

The first fatal crash in the USA of an autonomous car heightens concerns about the Tesla S and other “self-driving” vehicles

Early accounts of a fatal highway crash involving a 2015 Tesla Model S centred on the colourful figure of owner/driver Joshua Brown – former US Navy SEAL, knowledgeable “techie”, strongly enthusiastic Tesla fan – who died at the scene. Mr Brown had enjoyed cruising the highways with the car on Autopilot, making YouTube videos of himself driving hands-free. In the first nine months he owned it, the 40-year-old Mr Brown, of Canton, Ohio, put more than 45,000 miles on the all-electric car he nicknamed Tessy.

If anyone might be expected to operate a Model S safely, it was he. But in the collision on 7th May in Williston, Florida, which claimed Mr Brown’s life the car was operating in Autopilot mode. His is believed to be the first death in the USA in the crash of a vehicle with its semi-autonomous driving feature engaged.

(Note: Strictly speaking, the Model S is not a self-driving car. It has self-driving features – autonomous elements meant to assist rather than replace the driver.)

According to the National Highway Traffic Safety Administration (NHTSA), it received notification from Tesla Motors (Palo Alto, California) of the fatal accident. The safety regulator is now investigating about 25,000 Tesla cars and will “examine the design and performance of any automated driving systems in use at the time of the crash.”

While NHTSA said it will be gathering more data about the Florida accident, from preliminary reports the sequence of events is clear enough. According to the *Detroit News*, NHTSA said a semi-trailer rig turned left in front of the Tesla at a highway intersection. The police said the roof of the car struck the underside of the trailer and the car passed beneath. The car went off the road, striking two wire fences and a power pole before coming to a rest about 100 feet away. (“NHTSA Probes Tesla Self-Driving Cars After Fatal Crash,” 30th June)

Tesla wrote in a 30th June blog post that, because neither Autopilot nor the driver perceived the white side of the tractor-trailer against a bright sky, the brake was not applied.

‘The system didn’t know what it couldn’t see’

It is perhaps worth quoting more fully from Tesla: “The high ride height of the trailer combined with its positioning across the road and the extremely rare circumstances of the impact caused the Model S to pass under the trailer, with the bottom of the trailer impacting the windshield of the Model S. Had the Model S impacted the front or rear of the trailer, even at high speed, its advanced crash safety system would likely have prevented serious injury as it has in numerous other similar incidents.”

Tesla also asserted that Autopilot is disabled by default and requires, before the system can be enabled, the operator’s explicit acknowledgment that this is new technology and still in a public beta [a testing phase open to any user, who is known as a beta tester]. When the driver activates Autopilot, the acknowledgment box explains that Autopilot “is an assist feature that requires you to keep your hands on the steering wheel . . . prepared to take over at any time.”

What do the experts say?

🌐 To Missy Cummings, director of Duke University’s Humans and Autonomy Lab, the Tesla crash shows the limitations of quasi-automated cars. As she told the *Detroit News*: “This is one of those situations where the system didn’t know what it couldn’t see and neither did the human.” Ms Cummings, who testified before Congress in March that boosters of the self-driving technology are exaggerating its readiness for widespread expansion, said research shows “humans simply do not pay attention when they think the system is good enough.”

🌐 John Simpson, the privacy project director of California-based *Consumer Watchdog*, a non-profit education and advocacy organisation, was rather more judgmental. “The fatal crash of a Tesla while on so-called Autopilot should serve as a wake-up call for all who are rushing to deploy autonomous vehicles,” he said.

Detroit excels in the influential JD Power Initial Quality Study – but Kia of South Korea is the star

The results of the JD Power Initial Quality Study of 2016 model vehicles show that all three Detroit automakers improved their scores – to the point, in fact, of collectively outperforming import brands for only the second time in 30 years. But, for an even more impressive showing in the closely watched study, South Korea’s Kia Motors earned the top score among the 33 brands evaluated.

JD Power and Associates (Costa Mesa, California), which conducts multiple annual surveys of the automotive industry, determines initial quality from the number of problems experienced by new car buyers in the early days of ownership. This year’s data, derived from more than 80,000 completed surveys, revealed that the Detroit Three – General Motors, Ford and Fiat Chrysler Automobiles (FCA) – achieved a combined average score of 103 problems per 100 vehicles over the first 90 days of new vehicle ownership. That represents a 10 per cent improvement from 2015 and twice the improvement rate of the import brands that scored a collective 106 problems per 100.

As noted by automotive reporter Brent Snavelly of the *Detroit Free Press*, the collective score for the Detroit Three is good news for the USA automotive industry, whose vehicles suffer from an impression that their quality lags that of Asian and German products. It is, Mr Snavelly wrote, especially good news for FCA, “which typically finishes last in quality and reliability studies from third-party organisations like JD Power.”

But even as the Detroit Three collectively showed improvement, Kia commanded the spotlight with its first-place finish among all brands. With an overall score of 83, Kia finished ahead of Porsche, Hyundai, Toyota and BMW, which rounded out the top five in that order.

This was the first time in 27 years that a mainstream automotive brand achieved the highest score in the rankings; and the second consecutive year that Kia, which ranked second in 2015, led all non-premium brands in initial quality. (“Kia Ranks First, Detroit Three Rise in JD Power Study,” 22nd June)

- 🔍 The study also found that all automakers are making better cars. This year, the initial quality of new vehicles improved six per cent, double the three per cent rate of improvement in 2015 and the largest increase since 2009.
- 🔍 The week in which Power published its results was good for Ford on another count. On 19th June, the brand-new Ford GT sports car took first, second and fourth place in its class in the 24 Hours of Le Mans endurance race in France. The No 2 spot was claimed by a Ferrari, recalling – a half-century on – the high point in Ford history when its GT40 racers topped Ferrari’s entries to score the top three finishing spots in the 1966 event.

Buying a new car would compel the typical American household to live beyond its means

According to the vehicle valuation firm Kelley Blue Book, the average price of a new car or light truck in the USA in 2016 is about \$34,000. A new analysis from the personal finance site *bankrate.com*, published 1st July, found that a median-income USA household couldn’t afford a new car in any of the 50 largest cities in the country. To calculate an affordable purchase price for major cities, *Bankrate* used median incomes from federal Census data and factored in sales taxes and insurance costs.

By these criteria, the median income of around \$84,000 in San Jose, in California’s Silicon Valley, allows for a new car purchase price of \$33,000. In Hartford, Connecticut, with a median income of about \$29,000, the affordable purchase price is about \$8,000 – not even a quarter of the sticker price of a new car.

Accordingly, many Americans are borrowing more, for longer periods, to finance the purchase of a car. Experian said that, in the first quarter of this year, the proportion of new cars bought with the help of financing rose to more than 86 per cent; and the average loan amount topped \$30,000, the highest since the credit services firm began tracking the data. The average term for a new-car loan is now about five-and-a-half years, and some loans stretch out seven years.

Again according to Experian, auto leases, which often offer lower payments than traditional car loans, are becoming more popular in the USA. Leases were reported as accounting for more than 30 per cent of new-car transactions in the first-quarter 2016.

Aluminium

While China’s steel overproduction draws all the attention, its exports of semi-finished aluminium products continue unabated

“Excess aluminium production there is damaging the prospects of aluminium producers in the rest of the world, purely because of the size of China’s massive aluminium industry.”

In the matter of aluminium, Stuart Burns of *MetalMiner* was calling attention to another Chinese industry that both produces and exports too much product. Citing recent reporting by *Reuters*, Mr Burns noted that, as with China’s exports of steel, its aluminium exports have clouded prospects for producers elsewhere, forcing closures and losses and delaying investments.

Reuters pointed out a number of similarities between the two Chinese industries. In April, the world’s largest producer in both markets accounted for 51.5 per cent of global steel output and 54.4 per cent of global primary aluminium output. In both industries, China has been exporting excess production in the form of semi-manufactured products. In 2015 its steel product exports of 112.4 million metric tons (mmt) represented around 14 per cent of the rest of the world’s output; its aluminium product exports of 4.2 mmt, around 17 per cent of the global total.

In the case of steel, though, wrote Mr Burns, the fear of jeopardising China’s application to the World Trade Organization (WTO) for market economy status “has forced a more conciliatory response by Beijing in recent discussions, and the promise of large-scale closure of older [steel] capacity in China.”

How effective this will be remains to be seen, the *MetalMiner* founder acknowledged. Even so, he said, the Chinese position on steel presents a marked contrast vis-à-vis aluminium, where Beijing seems unable or unwilling to curtail new investment. As prices on the Shanghai Futures Exchange rose this year, idled smelters have restarted and new capacity has continued to come on-stream.

By the *Reuters* reckoning, annualised run rates increased by almost 650,000 metric tons (mt) over April and May, with May’s average daily output of 86,290mt the highest since November 2015. (“Chinese Aluminium Exports Increase Even as Oversupply Remains,” 22nd June)

- 🔍 The rapid rise in China’s aluminium capacity derives largely from the new state-of-the-art low-cost smelters in the north western provinces. Employing cutting-edge, world-class technology, they are commanding good prices for their output (\$1,600/mt at midyear, up from the \$1,450-1,500/mt levels of late 2015). As a result, *Reuters* concludes, capacity is unlikely to be trimmed anytime soon – at least not by government fiat.

Mr Burns summed up: “For aluminium producers outside of China, that is not good news.”

Steel

🌐 *People's Daily*, which disseminates information on the policies and viewpoints of the Chinese government, this spring carried a small item that may merit more attention than it received.

Zhang Shengsheng, identified as the general manager of an investment company, was quoted on 17th May as saying that China plans to transfer ten million tons of steel capacity to Brazil in a move that will help, not only to cut steel overcapacity in China, but also to avoid “the anti-dumping and anti-subsidy trade investigation that has been launched by Western countries against China.”

Several large Chinese companies – including Ansteel, Masteel, Baosteel, and Wuhan Iron and Steel – were reported “to have all expressed interest” in the Brazilian initiative. For its part, Brazil was said to be looking forward to hosting the project, which would boost local employment and increase tax revenue, and to have agreed to donate almost eight square miles of land to it.

While no details were given, according to Xu Zhongbo, vice-president of the preparatory committee for the project, the transplanted Chinese output will meet Brazilian demand first, then the needs of other South American and North American customers.

🌐 Nippon Steel & Sumitomo Metal Corp (NSSMC) announced on 21st June that is planning to build a \$50 million plant in Shelbyville, Indiana, to process cold heading steel wire for the automotive industry. Japan’s largest steel producer said it has set up a subsidiary – Nippon Steel & Sumikin Cold Heading Wire Indiana Inc – to operate the facility, expected to produce 39,000 tons of steel wire per year. Commissioning is set for spring 2018. According to *Indiana Star* reporter James Briggs, the state of Indiana has offered the Japanese company \$475,000 in tax credits and \$140,000 in training grants if it follows through with hiring plans that extend to 2021.

The town of Shelbyville is considering additional incentives. NSSMC, formed by the merger of Nippon Steel and Sumitomo Metal in 2012, also operates Indiana Precision Forge in Shelbyville, Seymour Tubing Inc in Seymour, and IN/Tek and IN/Kote in New Carlisle.

🌐 In an attention-getting Industrial Internet of Things (IIoT) initiative, Japan’s JFE Steel, the fifth-largest steelmaker in the world, will standardise its core platform across all factories, using the Internet of Things (IoT) to connect factories for better management. Parent company JFE Holdings said it plans to spend \$652 million to bring IIoT to its factories by 2022. The single database is expected to shorten production times, reduce order delivery times, and detect signs of equipment failure earlier.

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info@buehler-redex.de
Bühler Redex GmbH
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David Curry reported in *ReadWrite* (13th June) that the standardisation will also enable JFE Steel factories to reinforce one another: if a mill is achieving a higher production rate or superior steel quality, its methods can be quickly instituted at the other mills. Mr Curry suggested that it will “be tough” for JFE Steel to create the single database, since its steel mills in Chiba, Kanagawa, Okayama and Hiroshima all use different operating systems. The company did not say whether it will try to bring farther-flung JFE ventures – California Steel; Fujian Sino-Japan, in China; Minas de Serra Geral, in Brazil – into the new system.

Telecom

‘Put under a microscope’ by Washington, China’s Huawei is stymied yet again in its plans to advance in the USA

Huawei Technologies, already the world’s largest telecommunications equipment manufacturer, has been making significant gains in both the smartphone and mobile infrastructure markets. With demand up in both segments, the Chinese company posted a 33 per cent increase in net profit in 2015 over the previous year, on revenues of \$60.8 billion. The information and analytics firm IHS pronounced Huawei the No 2 vendor of LTE gear worldwide in the second quarter of this year, with a 22 per cent share of the market. But Huawei’s efforts to tap the USA infrastructure market have been thwarted by national security concerns, and very few American carriers sell Huawei phones to their customers. Now, those efforts have suffered another setback.

On 3rd June, the US Commerce Department subpoenaed Huawei, requesting that it turn over “all information regarding the export or re-export of American technology to Cuba, Iran, North Korea, Sudan and Syria.” The subpoena, sent to Huawei’s headquarters in the Dallas area in Texas, is part of an investigation into whether Huawei violated American export controls. The subpoena does not signify a criminal investigation, and Huawei has not been accused of wrongdoing. The company said “it was committed to complying with laws and regulations where it operated.”

🔍 The Huawei subpoena comes on the heels of sanctions against ZTE for allegedly violating USA export controls on Iran. The Commerce Department said it had uncovered plans by ZTE to use multiple shell companies to re-export controlled items to Iran in violation of USA control laws. Like Huawei, ZTE is a China-based technology company. The US sanctions against ZTE were lifted, temporarily, in March.

🔍 The broader implications of the matter were reflected in an article in the *South China Morning Post* (“US Probe of Huawei, ZTE Casts Harsh Light on Chinese Telecoms Equipment Manufacturers,” 3rd June). After glossing the news, reporters Bien Perez and He Huifeng commented that that massive Chinese sector appears to have been “put under a microscope” by Washington. As for the Chinese company at the centre of the scrutiny, Mr Perez and Ms Huifeng wrote: “The US probe could throw a monkey wrench into the ambitious global expansion

plans of Huawei, the world’s third-largest smartphone supplier and No 1 global equipment supplier to telecoms network operators by revenue.”

Americans are generally happy with their smartphones, but one in four has complaints about battery life

In the American Customer Satisfaction Index (ACSI) for last year, Apple and Samsung were neck-and-neck at 80 per cent. This year’s results, released 1st June, show Samsung retaining its 2015 score. Apple took sole possession of the industry lead with 81 per cent of its subscribers professing contentment with its services. In the large-scale survey of 12,710 American telecom customers, chosen at random, the satisfaction benchmark (score) of Lenovo’s Motorola receded three per cent (to 77); so did HTC’s score (to 75), while LG remains at 74. Microsoft Mobile (with both Nokia- and MS-branded phones) dipped to 74, followed by the smaller manufacturers which as a group edged up three per cent to a score of 73.

As noted by Ben Lovejoy of *9to5Mac*, when it comes down to specific models Apple did not score the most satisfied customers. The survey put Apple’s iPhone 6 Plus, at 85 per cent, behind the Samsung Galaxy Note 5 at 86 per cent. All four top devices are phablets. Mr Lovejoy observed that smartphones generally score well on customer satisfaction. The main complaint centres on battery life; here, the ACSI found that satisfaction levels fall to 75 percent. Headquartered at the University of Michigan, the American Customer Satisfaction Index aggregates its collected data to produce customer satisfaction benchmarks for 43 industries and ten economic sectors which together represent a broad swathe of the USA national economy.

Energy

As awareness of the importance of energy efficiency grows, battery-based storage systems command attention

A recent survey of more than 1,200 facility and energy management executives in the USA, Germany, Brazil, China and India disclosed that interest and investment in energy efficiency are at an all-time high. The 2016 Energy Efficiency Indicator (EEI) was conducted by Johnson Controls Inc, a Wisconsin-based multinational conglomerate that produces batteries and electronics for automotive applications and HVAC equipment for buildings.

The results of the current survey were released on 23rd June at the Energy Efficiency Forum in Washington DC, co-sponsored by Johnson Controls and the United States Energy Association. Fifty per cent of the EEI respondents said their organisations are paying more attention to energy efficiency today than they did a year ago, with 72 per cent anticipating increased investments in energy efficiency and renewable energy over the next 12 months. The comparable responses for 2013 were 37 per cent and 42 per cent. Organisations are investing in energy efficiency mainly to reduce costs; but more all the time are considering security,

customer satisfaction, and greenhouse gas reduction as they plan for future demand. Compared to 41 per cent in 2013, 64 per cent of USA respondents now have an internal or publicly stated carbon reduction goal.

As the energy executives were meeting in Washington, the Electric Vehicle Symposium in Montreal was generating news very much in line with their concerns and objectives: the introduction by BMW's electric vehicle (EV) unit of an energy storage system powered by the BMW i3 vehicle battery. The system can connect with charging stations, solar panels, and new or used "second life" EV batteries. The used but still operational EV batteries present an economical alternative to more expensive new batteries for residential energy storage.

Circumventing the local power grid

As reported by April Nowicki in *Smart Grid News*, the batteries powering the BMW storage system have 22 kWh or 33 kWh capacity, enough for up to 24 hours of operation. According to 2014 data from the Energy Information Administration, USA households typically use between 15-30 kWh daily. Because the electric draw is typically lower in homes compared to automotive usage, the BMW storage system would seem a likely application for retired i3 batteries. ("BMW to Recycle i3 EV Batteries for Home Energy Storage," 23rd June)

Ms Nowicki noted that individual battery storage systems are important in the transition to a modernised electricity grid, as they enable privately generated renewable power to be tapped on-site instead of being fed into a local power grid.

Utilising real-time energy readings, the BMW system measures available energy supply and demand, making the necessary calculations to determine the optimal time to charge or discharge. It includes a voltage converter and power electronics to manage the energy flow among renewable energy sources, the house interface, and the Li-Ion high-voltage battery from the BMW i3.

Last year, BMW and Pacific Gas and Electric announced a partnership researching how vehicle to grid (V2G) technologies can benefit a modernised electricity grid with load management services.

🌐 In the same week that BMW introduced its battery-powered energy storage system in Montreal, Tesla Motors announced its bid to acquire the energy services provider SolarCity, also California-based. If successful, the EV maker would be able to offer its customers an end-to-end energy production, distribution and storage system. Tesla's Powerwall battery storage has 6.4 kWh capacity.

Dorothy Fabian – Features Editor

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早先对2015年一起特斯拉S的致死高速事故的报道围绕一位丰富多彩人物Joshua Brown（前美国海军陆战队队员，技术控、特斯拉拥趸），他在车祸中当场死亡。Brown先生一直喜欢在高速公路上使用自动驾驶，这样他便可以拍摄自己解放双手驾驶的录像以上传到YouTube上去。

在他拥有特斯拉的前九个月，来自俄亥俄州坎顿40岁的Brown先生，已经将Tessy（特斯拉的昵称）行驶的超过45,000英里视频上传。

如果说还有人能够安全操作S型车的话，则非他莫属。然而在5月7日发生在佛罗里达州的威利斯顿导致Brown先生死亡的车祸中——当时该车正在自动驾驶模式中。他的死亡是美国第一例有半自动驾驶介入的车祸死亡案例。

（严格意义来讲，S型车并不是自动驾驶车型。它具有自动驾驶特征——具备某些自动元素可以帮助驾驶员而不是取代驾驶员。）据美国国家公路交通安全管理局（NHTSA）称，其收到来自特斯拉汽车（加利福尼亚州阿尔托）有关该致死车祸的通知。该安全机构正在调查约25,000辆特斯拉汽车并将“检查车祸发生当时起作用的任何自动系统的设计及运行情况”。

当NHTSA称正在收集有关该事故数据时，初步报告显示事件的后果已经非常清晰。据底特律新闻消息，NHTSA称在特斯拉车前面一辆半拖挂车在路口左转。警察称汽车车顶撞到拖挂车下部并强行滑过。然后特斯拉冲出道路，撞倒两道铁丝网及一根电线杆后在约100英尺后停下来。（“NHTSA有关特斯拉自动汽车车祸调查”，7月30日）

特斯拉在7月30日博客称，由于自动驾驶及驾驶员都未能将半拖挂车的白边与白天天空区分开，当时汽车没有刹车。

“系统并不知道它看不见的操作”

也许我们可以详细看看特斯拉的报告：“拖挂车的高度与其当时在路上的位置巧合结合，同时S型特斯拉从拖挂车下方强行滑过，加上拖挂车下部冲击S型车的挡风玻璃。即使S型车高速撞击该拖挂车前部或后部，特斯拉先进的安全系统会像很多其他情况下那样，都有很大可能会防止严重伤害的发生”

特斯拉还声称自动驾驶默认是取消的，如果启用该功能 需要操作者明确指示，该功能仍在公众测试期（向公众开发的一种测试状态，使用者通常也称测试用户）。当驾驶员启动自动驾驶时，该指示解释自动驾驶功能为“这只是一项辅助功能，在操作过程中，请务必双手把稳方向盘以随时介入。”

专家说法

① 对杜克大学人类及自动化实验室主任Missy Cummings而言，特斯拉车祸显示出准自动驾驶汽车的局限性。如她接受底特律新闻采访时称“这是那些系统看不见且人也看不见并不知如何操作的众多情形中的一种。”Cummings小姐三月份在国会做证言时称自动驾驶技术支持者夸大规模应用自动驾驶的完备性，研究显示“人们在认为系统够好之后通常会熟视无睹”

② 加州一家消费者保护组织（该组织为非盈利教育倡导组织）隐私项目主管John Simpson则更激进“这次致死事故应为那些鼓吹所谓自动驾驶者当头棒喝，遏止他们急不可耐应用汽车自动驾驶。”

底特律在深具影响力JD Power初步质量调查中脱颖而出——但韩国起亚汽车成为瞩目之星

JD Power 2016车型初期质量调查结果显示底特律三家汽车生产商都有显著进步，是的，实际上在30年中同时胜过进口品牌这才是第二次。但更引人瞩目的是韩国起亚汽车在33个参评品牌中荣登榜首。

JD Power及合作企业（加州的Costa Mesa）开展多项汽车行业年度调查，决定通过调查汽车消费者在购买后初期对汽车产生问题来决定汽车质量评价。

今年的数据（由超过80,000分调查得出）显示底特律三巨头——通用、福特及菲亚特克莱斯勒（FCA）——在用户头90天内获得每100辆汽车平均共103项问题。这意味着比2015年的数据提升了10%，同时比进口品牌提升了两倍（每100辆汽车平均106项问题）。

如《底特律自由新闻》汽车新闻记者Brent Snavely称，有关底特律三巨头的综合数据对美国汽车行业是好消息，通常美国汽车都有质量不如亚洲或德国产品的印象。这对FCA则更是好消息，因他们通常在第三方（如JD Power）开展的有关质量和可靠性调查方面总是垫底。

然而即使底特律三巨头进步明显，起亚仍然成为瞩目明星，因其荣登榜首。总得分83分，起亚超过保时捷、现代、丰田及BMW（也即前五）。这是27年来主流汽车品牌在该排名中荣登榜首，且对起亚而言，是连续第二年（2015年起亚排名第二）在所有主流品牌中初期质量领先其他品牌。

① 该调查还显示所有汽车生产商都有进步。今年，新车初期质量比2015年提升了6%，比2015年的3%提升了一倍，同时也是自2009年来最大幅度提升。

② 这周当Power发布结果时，对福特而言有另一方面的益处。6月29日，全新福特GT跑车在法国勒芒汽车耐力赛24小时耐力赛各级别中分获第一、第二及第四名（第二点由法拉利获得）。于福特而言，这是半个世纪的等待，1966年福特GT40胜过法拉利。

买新车将使普通美国家庭入不敷出

汽车评估公司Kelley Blue Book称：2016年美国新车或轻卡价格约为\$34,000。一项7月1日由一家个人金融网站bankrate.com发布一项新的分析报告显示在全美50个大城市中普通平均收入家庭买不起新车。为计算大城市人们可以买得起汽车的价格，Bankrate使用联邦统计局平均收入数据（考虑销售税及保险费用因素）。

根据这些标准，在加州圣何塞“硅谷”平均收入约为\$84,000时，可以负担新车价格为\$33,000。在康涅狄克州的哈特福特，平均收入约为\$29,000，则可负担新车价为\$8,000——不到一辆新车价格的四分之一。

据称，很多美国人都通过借更多的钱、借更长周期以支付新车。Experian称今年一季度，购买新车时使用金融手段的比例上升到86%；且平均借贷额度达\$30,000，自信用机构开始跟踪数据时创新高。平均借贷期现为五年半左右，有些甚至延长到七年。

Experian还称，汽车租赁（往往比传统汽车贷款要求支付更少）在美国越来越受欢迎。2016年第一季度中租赁汽车占有所有新车交易的30%。

铝

中国钢产量继续引人注目，其铝材半成品出口也毫不示弱

“由于中国巨大的铝材市场及铝材过度生产正使全世界铝材制造商前景暗淡。”

有关铝材，MetalMiner的Stuart Burns呼吁大家关注中国另外一个生产及出口都过度的产品。引用最近路透社报道，Burns先生说与中国钢铁出口一样，铝材出口已经使世界其他生产商前景暗淡、倒闭并延迟投资。

路透社指出中国这两个产业间有很多相似之处。4月世界最大两个产业制造商占了世界钢铁总产量的51.5%和世界初级铝产出量的54.4%，中国一直致力于大量出口半成品。2015年其钢铁产品出口总量11240万吨占世界总产量的14%；铝产品出口420万吨，占世界总量17%。Burns先生写道，虽然在钢铁方面，因害怕可能会影响到中国在WTO的市场经济地位得到承认，“中国一直在近期商谈中采取合作态度，并承诺关闭大量旧钢厂。”

这种做法有多大作用，仍待观察，MetalMiner创始人承认。即便如此，中国对钢铁的态度将会对铝材产生重要参考意义，总的来说，中国似乎不能、抑或不愿限制投资。随着上海期货市场价格上扬，那些之前闲置产能再次开动、投入生产。

路透社认为，年化运行率在四月和五月增长了约650,000公吨，自2015年11月以来5月创新高，其平均日产量达86,290公吨。

中国铝材生产快速增长，主要来源于中国西北部最新、低成本产能的投入。由于使用先进的世界级技术，其价格也越来越好（如年终价格\$1,600/公吨，而2015年下半年\$1,450-1,500/公吨）。因此路透社总结，中国政府不大可能在短期内削减铝材产量。Burns先生总结：“这对不在中国境内生产的铝材企业来说是个好消息。”

钢铁

人民日报（中国官方喉舌）今年春季发布了一则不太为人注意的消息。一家投资公司总经理张盛盛（音）称在5月17日中国计划将1000万吨钢铁产能转移到巴西。该措施主要目的为降低中国钢铁过剩产能，同时也可避免中国现在面临的西方国家反倾销、反补贴贸易调查。几家大型中国企业如鞍钢、马钢、宝钢及武钢，据报道都对巴西项目明确表达了兴趣。同时，巴西方面也对该项目表达了兴趣，因其可以促进当地就业、增加税收，巴西方面同意划拨八平方英里土地用于项目建设。据该项目筹备委员会副主任许中博（音）称，虽无细节信息透露，但该项目将首先满足巴西需求，然后南美及北美客户需求。

新日铁住金金属公司（NSSMC）6月21日宣布将在印第安纳州谢尔比维尔建设价值5000万美元项目以生产冷镀锌钢钢丝以满足汽车产业需求。日本最大钢铁公司据称已成立一家下属分支企业新日铁住金冷镀锌钢钢丝公司印第安纳公司来负责项目运营，该项目预计年产量39,000吨。委托生产将于2018年春季开始。据Indiana Star记者James Briggs报道，如该企业能在雇佣当地人时间上可以延续到2021年，印第安纳州为日本企业免税\$475,000美元及\$140,000美元培训资助。谢尔比维尔正考虑新的激励措施。新日铁住金金属公司（NSSMC）于2012年由日本钢铁与住友金属合并成立，同时在印第安纳州谢尔比维尔运营Precision Forge，西摩的Seymour Tubing及新卡莱尔的IN/Tek和IN/Kote公司。

在备受瞩目的工业物联网创新方面，日本JFE公司（世界第五大钢铁生产商）将其所有工厂核心平台使用物联网将说有工厂连接起来以提升管理效能。其母公司JFE控股称其将花费\$65200万美元在2022年前将物联网应用到其工厂中。同意数据库据称将缩短生产时间、降低订货发货时间，同时还可以更早发现设备故障。David Curry在6月13日ReadWrite的报道称，该标准化流程将可使JFE钢铁工厂共同提升：如果一家工厂提高生产率或产出质量更高，那么它的生产方法可以很快应用到其他工厂中。Curry先生称JFE钢铁应用统一数据库过程会“很困难”，因其在千叶、神奈川、冈山、广岛的工厂都使用不同操作系统。该公司并未说明会不会将更远的JFE企业如加州钢铁、中国的福建中日合资、巴西的Minas de Serra Geral纳入新系统。

电信

美国对华为调查“吹毛求疵”，华为在美拓展举步维艰

华为科技（世界第一电信设备制造商）在智能手机和移动基础设施市场发展迅速。随着在上述两个领域需求的增长，华为2015年净利润比上年同比增长33%，收益达608亿美元。IHS（一家信息分析企业）宣布华为今年第二季度已成为世界第二大LTE设备供应商，占世界市场份额的22%。然而华为在美国基础设施市场的努力一直饱受国家安全因素影响，同时很少美国运营商向其客户销售华为手机。现在华为将遭受更大困难。

6月3日，美国商务部传讯华为，要求华为提交“所有有关美国技术的出口及再出口至古巴、伊朗、朝鲜、苏丹及叙利亚的所有信息”。该传票作为美国调查华为是否违反美国出口管制调查的一部分送往华为在美总部——德克萨斯州的达拉斯。该传票并不构成刑事调查，同时华为也未被指控有错。华为宣称“一直致力于遵守当地法律及各项规定”

紧随ZTE被制裁（被控违反美国出口伊朗管制）后，华为也被传讯。商务部称其已经发现ZTE使用多个壳公司向伊朗再出口某些违反美国管制法案的管制物品。像华为一样，ZTE也是一家中国科技公司。美国针对ZTE的制裁在三月份暂时取消。

美国人对智能手机基本满意，但四分之一用户对电池寿命不满

在去年美国客户满意指数中，苹果和三星并驾齐驱，为80%。今年6月1日公布的结果显示三星保持2015年水准。苹果以81%客户满意度的微弱优势领先。在这项针对12,710位电信客户随机抽查的大规模调查中，联想摩托罗拉客户满意度微降3%（77%）；HTC也微降3%至75%，LG维持74%。微软移动（有诺基亚及MS品牌手机）下降至74%，其他小生产商作为一个整体上升三个百分点至73%。

9to5Mac的Ben Lovejoy称，如涉及苹果具体型号，苹果公司客户满意度并不是最高。该调查得出结论，苹果的iPhone 6+满意度为85%，落后于三星的Galaxy Note 5的86%。四个最满意设备都是平板手机。

Lovejoy先生注意到智能机在客户满意度方面得分较高。主要问题在于电池寿命，在此一项，ACSI发现客户满意度降低至75%。美国客户满意度指数（总部位于密歇根大学）收集数据提供客户满意度基准参数，为全美43个行业及10个经济领域提供广泛参考。

专栏编辑：Dorothy Fabian

2016 中国线材展 wire China 2016

7th All China International Wire and Cable Industry Trade Fair

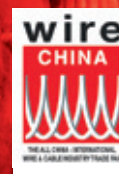
THE coming decade forecasts strong growth in regenerative industries in China, and along with Industry 4.0 this will be at the forefront of this year's wire China – being staged in Shanghai, from 26th to 29th September.

With a focus on wind power, solar power and nuclear power, demand for wind power cables, PV cables, nuclear power cables and other special cables will reach new heights.

Against the background of the growing awareness for green and energy-saving development, smart grids have become

an important area that is being closely watched in many countries. This also gives the wire and cable industries new challenges: smart energy, smart cities and the smart grid will drive and determine innovations in the field of wire and cable.

With 57,500m² of exhibition space already rented for the exhibition, 1,000 Chinese and international exhibitors will present innovations from the areas of wire production and processing machines, auxiliaries, materials, special wires and cables, and measuring and control technology.



Opening hours:

26th-28th Sept: 9.00am – 4.30pm

29th Sept: 9.00am – 4.00pm

Admission is free for business/trade visitors once registered

For enquiries: Tel: +86 216 169 8300

Fax: +86 216 169 8301

Email: wire@mds.cn

www.wirechina.net

Agir Technologies Stand WC139

Involved in the fields of tungsten carbide tools since 1870 and machinery for decades, Agir Technologies presents a broad range of skills to its customers, where it is able to provide solutions and competent advice to a wide range of requests.

The investments recently made in the company, such as a wire cutting EDM with two-wire spool of 0.03mm, a five-axis CNC machine to cut the electrodes, and new CAD/CAM software, allow the company to expand its range of high precision and quality tools.

Agir exports its tungsten carbide tools, machines and know-how on five continents and to over 60 countries.



○ The Cut 2000 X-treme from Agir

First for its own needs in tungsten carbide dies and then for its partners, the company has made a point of developing the machinery sector by creating and building a wide range of machines. From a unique shaving head to the various polishing lathes, as well as numerous grinding machines, the company is shaped to bring an answer to the most demanding requirements.

Horizontal or vertical, for large or small diameters, half or fully automatic, with a whole range of options (spindle, chuck, motorisation), substantial possibilities exist to help efficiency and manufacturing processes.

Agir Technologies – France
Website:
www.agir-technologies.com

Ajex & Turner Stand W1A70

Ajex & Turner Wire Technologies will showcase VNT dies and other products along with lubricants by Fuchs, UK, and TKT, Italy, for copper, aluminium, steel, and MIG/CO₂ wire.

The company has been an integral part of the wire and cable industry for 40 years, and this time in China is looking forward to showcasing its new developments.



○ The range of dies from Ajex & Turner

Mr Adrian Day from Fuchs Lubricant, UK, and Mr Fabio Bellina from TKT Tecno, Italy, will accompany the company at the exhibition with technical assistance for all lubricant related queries.

Being a one-stop-shop for major consumable requirements for any wire and cable manufacturing plant, visitors wanting precise quality and troubleshooting for wire drawing units will be able to benefit.

The complete product range of VNT dies, PCD dies, carbide dies for wire drawing and compacting, busbar dies, shaped dies, die polishing machines for PCD and carbide, die polishing accessories and die inspection microscopes will all be on display.

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

Besel Basim Stand W1B51

Besel Basim has been a producer and converter of flexible materials for technical applications since 1975. The company makes high quality insulating films to the



○ Besel Basim will show off its latest developments

specifications of its customers based on the materials of ALU, CU, PET, PP, PE, etc; and water blocking, semi-conductive and conductive films; and other tapes and foils for the cable industry.

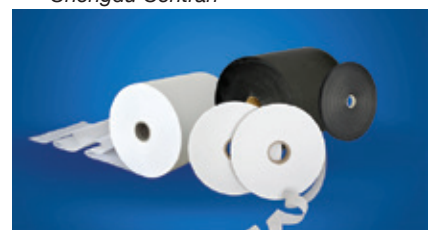
With an ISO9001 certified quality system, experienced and skilled staff and management team, the company is happy to show its latest developments and share the experience in building high quality electrical insulation and flexible film materials.

Besel Basim – Turkey
Website: www.beselfoil.com

Chengdu Centran Stand W5C01

Centran Industrial is a global supplier of raw materials for the cable and wire industry, and one of the largest manufacturers of water-blocking tape and yarn, PET yarn, marking tape, etc.

○ Some of the tapes on offer from Chengdu Centran



Blachford



experience and innovation

Blachford is technology-driven. We understand customer needs and our robust R&D team creates solutions, such as our **Low Dust Lubricants**.

Blachford is a US company supplying the global wire industry with new technology products. Our customers represent **20 countries on 5 continents**.

Blachford delivers **rock-solid reliability** and **rigorous quality control**. We help reduce variability in manufacturing processes and improve products and profitability for our customers.



Please visit Blachford
at the 2016 wire China show
Stand W1F16

Blachford – experience you can draw on.



Blachford

www.blachford.com | Illinois 815.464.2100 | Ontario 905.823.3200

<<< Total capacity is 5,000m for water-blocking tape and yarn. With strong emphasis on quality and customer satisfaction, the company is ISO 9002 certified and has become a reliable source of quality products in the international market having exported to more than 45 countries worldwide.

Chengdu Centran Industrial Co Ltd – China

Website: www.china-centran.com

Cimteq Stand W1F36

The world of cable manufacturing is a constantly evolving environment. The speed at which the systems and processes available to manufacturers are changing and developing means that in order to keep ahead of the competition companies need to be confident in their systems and be sure that the way in which they are operating is providing them with the best efficiencies, quality of product, return on investment and ultimately profitability.

The 21st Century has seen phenomenal developments in terms of software and technological advancement, therefore it is only natural that this in itself will revolutionise the manufacturing industry. The onset of what is essentially the fourth phase of an industrial revolution that began back in the 1700s has seen the manufacturing world become increasingly driven by digital systems and the ‘Internet of Things’, providing increased capabilities in terms of designing, planning, controlling and monitoring down to extremely tight parameters.

Cimteq, one of the leading software designers within the cable industry, is no stranger to this concept. Its systems fully embrace and promote the idea that through the adoption of sophisticated design and manufacturing software systems manufacturers can produce cable faster, smarter and more profitably whilst adapting quickly to changes in the manufacturing environment.

In the increasingly fast paced world there is more reliance on machines to design, produce and manage logistics, freeing up the human element of the workforce to focus on monitoring output, application of experience and teaching the machines.

Ali Shehab, chief executive of Cimteq, envisages these ‘Smart Factories’ as the future of wire and cable production and the products are geared towards this, even going so far as to contain technology that allows the users to teach the machine how to behave and to communicate with other systems and devices.

The launch of CableSuite by Cimteq and its partner, Innovites, earlier this year provides a resource to cable manufacturing companies in terms of helping them to embrace the concept of streamlining their production, designing their product more accurately and controlling the production and manufacturing process closely to reduce waste, improve efficiency and provide improvements in profitability.

CableSuite consists of two of Cimteq’s products: CableBuilder and CableMES. CableBuilder comprises a host of components including cable design, quotation, 2D and 3D drawings, PDM, manufacturing waste simulation and quality control.

CableMES is a cable-specific manufacturing execution system based on the Wonderware platform and covers warehouse management, product traceability, performance management and job management.

Cimteq Ltd – UK

Website: www.cimteq.com

Contrôle Mesure Systèmes Stand E1D20

Contrôle Mesure Systèmes has specialised for more than 25 years in non-destructive testing, and thanks to its complete NDT range of products in eddy current and ultrasonic methods, can supply

solutions for most industrial applications.

The CMS product line is designed to meet inspection, testing and quality control on both ferrous and non-ferrous products – steel, copper, alloys, carbon steel, stainless steel and aluminium.

The non-exhaustive list of applications includes:

- Tubes, bars, pipes and wires inspection
- Surface flaws detection by RotoETscan eddy current rotating head
- Internal and dimensional flaws detection by RotoUTscan ultrasonic rotating head
- Tubes inspection with product in rotation
- Full body and/or weld of welded tubes inspection
- Full body and/or ends of non-welded tubes inspection
- Defects detection on double wall tubes
- Heat treatment, hardness, coating verification and measurement
- Supra conductor wires inspection
- Multiple lines inspection
- Hot rod inspection
- Material sorting
- Exchanger tubes inspection



○ Complete titanium tubes inspection by UT and ET

All the systems (on-line and/or off-line) meet quality standards such as API, ASTM and DIN.

Through its products and its remote assistance, CMS provides quality and productivity solutions for industrial applications worldwide.

Contrôle Mesure Systèmes – France

Website: www.cmseddyscan.com

wire China 2016



Daloo Stand W1F25

Daloo is the logical extension of the Gauder Group global offer for

- A portal self-traversing take-up, mobile on floor (Daloo SY 2000-8)



cable producers looking for an alternative between new machines made in Europe (with higher cost) and second-hand machines.

Its complete stranding lines and accessories for the production of power and communication cables are designed and made in China following Gauder Group proven methods and strict quality criteria.

Daloo – China

Website:
www.daloo-machines.com

Davis-Standard Stand W1G07

Davis-Standard will feature its latest wire and cable technology. As the leading trade fair of its kind in Asia, wire China is an excellent venue for Davis-Standard to promote its new line of traversing and collapsible take-ups and pay-offs as well as capstan and extruder technology.



- Single reel pay-off and take-up from Davis-Standard

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

Machine sizes range from 1,250mm to 5,000mm (48 to 195") with the greatest concentration within the 1,800mm to 2,500mm (70 to 98") size range.





INNOVATIONS FOR THE CABLE INDUSTRY

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www.troester.de



EXCELLENCE IN EXTRUSION.





<<< For international customers, machines are equipped with a Siemens AC drive, PLC and HMI with a Mitsubishi servo drive.

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

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

The ability to address market demand in terms of performance and cost efficiency is just one aspect of Davis-Standard's advantage in wire and cable. Another is the company's experience in supplying extruders and associated wire and cable equipment for more than 70 years. Applications include aerial cable, building wire, coaxial and composite cable, video pair cable, tray cable, CATV, THHN and THWN wire, among others.

Davis-Standard LLC – USA

Website:

www.davis-standard.com

Flymca and Flyro Stand W1F48

Flymca's stand will be showing some interesting pictures regarding projects made during the last two years. For instance:

For the power cable market: new rigid strander developments

improving the features of the previous models. Either for bobbins with diameters of 630 or 800mm DIN or for both bobbins on the same machine, allowing factories to use advantages of both; automatic bobbin loading process either by side carriages at 90° or at 45°; higher rotating speeds to gain production improvements; and smooth, precise and constant wire tension control to achieve high quality conductor standards, etc.

For steel wire ropes: larger capacity of machinery for bigger ropes. Tubular and planetary closers that are able to manufacture bigger ropes in lower production time, increasing machine productivity. The use of a special new material allows the company to achieve better results and provides improvements mainly in reliability, low maintenance and longer life time expectancy.

Control and special cables made on planetary stranders using advanced solutions for smooth and fine tension values on elements, including double control systems either in the cradles and in the formation with wi-fi communications to achieve final special cable features.

For greenhouse: special customised machinery to improve the production of steel strands composed of two and three wires, reaching higher outputs.

For CTC (continuous transposed conductors): experience in this traditional market lets the company offer combined solutions to achieve high quality cables with larger production.

Sister company Flyro will provide details of its large inventory of available second-hand machinery. The company proposes used machinery mainly still installed and in working condition, but also offers services such as dismantling and refurbishing, as well as production of new electrical cabinets.

Flymca and Flyro – Spain

Websites:

www.flymca.com, www.flyro.es

Hanyu Cable Materials Co Ltd Stand W5C65

With industrial and information technology continuing to move forward, especially high-voltage cables, smart power grid and the global information network, the power cable and cable materials are required to have higher performances.

Hanyu Cable Materials makes products with binding, insulation, water-blocking, shielding, flame-retardant and buffering protection performance, and also products with combined performance. Hanyu is able to meet the needs of customers for power cables and optical cables.

The company produces:

- Binding tapes: high strength non-woven binding tape, film laminated polyester non-woven tape, polyester film tape, insulation tape
- Semi-conductive shielding tapes: semi-conductive non-woven tape, semi-conductive nylon tape, semi-conductive Tetoron tape
- Non-conductive water-blocking tapes: water blocking tape, single layer water-blocking tape, film laminated water-blocking tape
- Semi-conductive water-blocking tapes: semi-conductive water blocking tape, semi-conductive single layer water-blocking tape, semi-conductive buffer water-blocking tape
- Copper wire shielding tapes: copper wire scatter EM shielding tape, semi-conductive buffer copper wire shielding tape, semi-conductive copper wire water-blocking tape
- Halogen-free, low smoke flame retardant tapes

Hanyu Cable Materials Co Ltd – China

Website: www.cnhanyu.com

H Folke Sandelin AB Stand W1F63

H Folke Sandelin AB (HFSAB) from Motala, Sweden, will be a

wire China 2016



co-exhibitor with Niehoff Machinery Changzhou Co Ltd.

HFSAB has had a leading role worldwide in the following areas for over 50 years, supplying:

Continuous lead extrusion equipment and know-how for trouble-free lead sheathing of cables, providing a moisture barrier. Today the latest design lead extruder from HFSAB is horizontal, floor standing, easy to install and maintain, fully automatic, and reliable, with its control system enabling continuous operation for weeks with little or no variation in temperatures and wall thickness/concentricity.

The lead wall thickness can be kept to a minimum with corresponding savings in lead. A range of die blocks are available to cover an extensive diameter range of 6mm to 190mm (over lead), and a range of melting pots are available for 10, 18, 35 and 60 tonne capacities.



○ The 5960 extruder from H Folke Sandelin

Additional equipment includes the cable repair and recovery system CRRS, which has the possibility of removing individual layers, such as the outer jacket, lead sheath or triple layer XLPE insulation, without causing any damage to the subsequent layer below.

This enables the outer jacket, lead sheath or triple layer XLPE to be re-applied and the cable repaired.

Even if the cable is just going to be scrapped, the metal price differences for insulated or un-insulated cables are very large and the equipment would have a very

short pay-back period, if the metals are scrapped in their "bright" form.

HFSAB is able to provide a full and extensive after sales service, know how, fully trained and experienced technician support and spare parts.

H Folke Sandelin AB – Sweden
Website: www.hfsab.com

Lukas Anlagenbau Stand W1D54

Lukas Anlagenbau GmbH is a family-owned company, established in 1959, that produces customer-specific equipment for the wire and cable industry. The focus of its products is on complete taping lines for producing taped or wrapped conductors with tape materials like PTFE, Kapton, Mica, paper, etc.

The company also produces special cables for medical and



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<<< aircraft applications. Its taping lines can be found at many well-known suppliers worldwide. Its product range covers single components like pay-offs, capstans, caterpillars and take-ups, up to complete rewinding lines and fine wire drawing lines for non-ferrous materials.



○ The focus of Lukas Anlagenbau's products is on complete taping lines

Recent developments have been advanced by energy and size reduction – and this will be in evidence with the exhibiting taping machines for magnet wire applications, cost-optimised and easy-to-integrate taping and heating solutions. This should give incentives, especially to the Asian market.

Lukas Anlagenbau – Germany
Website:
www.lukas-anlagenbau.de

Maillefer
Stand W1F24

Maillefer has its roots in cable manufacturing. This combined with the widest application coverage and over 4,000 line deliveries has created unique competences available for customers via several new products.

At China the company will introduce many novelties which enhance the competitiveness and responsiveness of wire and cable manufacturers.

- Maillefer Factory System is a qualified concept to plan and realise a greenfield factory with the lowest possible risk and cost. The system is a way to outsource a factory project right after you have defined the end product, and is also suitable for expansion of current production facilities

- Maillefer Consultation is a new service entity that is built around the wire and cable production process. It exploits core knowledge into individual advice and process skill improvements of wire and cable manufacturers

The company is introducing a new Value Package to the Chinese market, including the new Round Value Package Premium with which production is controlled under very precise tolerances. This brand new curing concept guarantees utmost roundness in high voltage cable production. The new three-layer crosshead THX 100/180 LR redefines extrusion for big conductor sizes and EHV insulation. Optimised bi-flow distributors enable accurate wall thickness, centricity and roundness of the cable.

The application offering has grown by one to include aviation, and the company's experts are happy to explain about the new Aviation & Aerospace Wire Insulation Lines TEL 15X/Enter and TEL 25X//Extend. Material know-how is proven by demonstrations of how a rheometer for testing rubber curing parameters and the Curing Calculation Program NSS together give the best possible production run recipe.

Cable samples from the R&D Centre's Vertical Pilot Line for cables up to 750kV are available, and visitors can see how the new CRM 180 Cable Roundness Meter works. Measurement results are examined in minute detail for sudden cable geometry errors. Finding the reason for cable geometry errors in processes makes it easier to maintain quality in CV line production.

Maillefer Oy – Finland
Website: www.maillefer.net

Medek & Schörner
Stand W1C32

Medek & Schörner will be presenting the following cable marking machines in Shanghai:



○ Optical fibre colouring from Medek & Schörner

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 dust for pre-cooling of the hot wire immediately after the extruder
- Embossing metre markers/hot foil sequential metre markers for high accuracy of length measurement (power cables, telecommunication cables, optical fibre cables, etc)
- High performance ring markers for marking telephone wires, switchboard 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

Optical fibre coating systems:

- Top speed optical fibre processing systems
- Optical fibre colour coding up to 3,000m/min
- Ring marking of optical fibres at speeds up to 1,150m/min
- 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

**NDC Technologies
(Beta LaserMike)
Stand W1A47**

NDC Technologies will be demonstrating the latest Beta LaserMike system solution for in-process measurement and automated quality testing of cable.

The Beta LaserMike measurement system solution is designed to improve product quality, increase productivity, optimise process reliability, and reduce manufacturing costs.

NDC will be exhibiting its range of AccuScan diameter and ovality gauges including the economical AccuScan 4012 single-axis gauge and the AccuScan 5000 Series two-axis gauges.

The AccuScan 4012 offers manufacturers a compact, economical gauge for measuring product diameters up to 12mm with ± 0.0005 mm accuracy.

The AccuScan 4012 provides highly flexible communications with easy connection to a host PC or PLC using RS-232, DeviceNet, Profinet, Profibus, Ethernet/IP, and Ethernet TCP/IP. The AccuScan 5000 Series offers high-speed, highly reliable two-axis diameter and ovality measurements for products up to 80mm. The AccuScan 5000 Series effectively monitors cylindrical round and special-shaped products for optimum process control and immediately catches product flaws with high-speed tolerance checking.

The Beta LaserMike products team will also present its new AccuScan 6000 Series – a four-axis scanning diameter and ovality gauge that provides the highest ovality and flaw detection accuracy compared to three-axis gauges.

The latest DCM ES-2G LAN/data cable testing system enables

cable makers to test more cable faster and with higher quality results. The DCM ES-2G efficiently tests Cat 5/6/6a/7/7a/8 cables to 2.2GHz. A new innovative technology eliminates the effect of jacket removal on reflection measurements, such as input impedance and return loss. An automated four-pair switching platform enables operators to perform cable testing in less than three minutes.

Easy-to-use testing software offers complete test management and reporting capabilities.

In addition, the other latest Beta LaserMike products on display include:

- LN3015/LN3040 Series three-axis lump and neckdown detectors for the quick, reliable detection and location of product flaws before they become costly production problems to ensure maximum quality control.

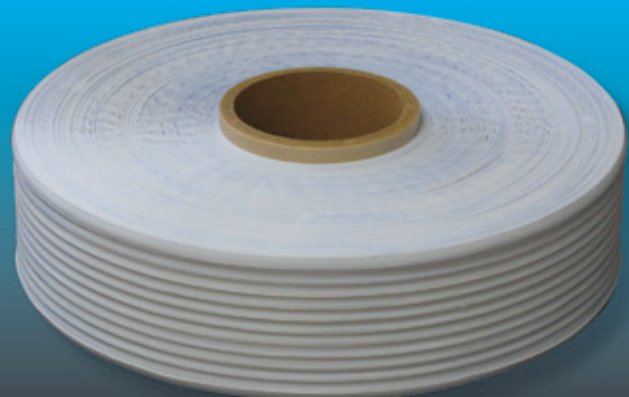


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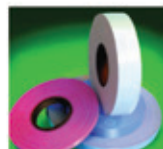
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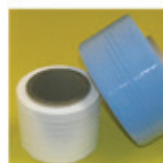
Solid Pack® is for PTFE film from 5/32" to 3/4", in 1/32" increments. DeWAL PTFE film can be as thin as 0.001".

Custom packages are manufactured at DeWAL's Narragansett, RI, facilities in widths up to 12" and diameters also up to 12". Packages can be with or without sideboards. Film lengths can be as much as 20,000 ft.

Besides new Solid Packs, DeWAL offers traditional flat pad packages in standard and custom configurations. For all your options, call DeWAL today.



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- CenterScan 2010 eccentricity measurement system for the accurate, dependable gauging of insulation diameter and conductor eccentricity of wire and cable to maximise product quality and reduce production scrap.
- LaserSpeed® non-contact laser gauge for measuring the length and speed of products with better than $\pm 0.05\%$ accuracy and $\pm 0.02\%$ repeatability, delivering significant quality, productivity and manufacturing savings.
- BenchMike, the industry's leading off-line part/sample inspection system with over 15,000 gauges installed worldwide, now with larger high-resolution display.
- DataPro process controllers that capture product and process data from Beta LaserMike gauges in real time to efficiently control processes at every step, from start-up through production to final quality checks.

NDC Technologies – USA
Website: www.ndc.com

**Maschinenfabrik Niehoff
 Niehoff Machinery
 Changzhou Co Ltd
 Stand W1F63**

Maschinenfabrik Niehoff and Niehoff Machinery Changzhou Co Ltd (NMC), its Chinese subsidiary, will display an MMH 121 + RM 201 type multi-wire drawing machine from Germany and a D 631.5 + ARP 630 type high speed double twist bunching machine made by NMC.

H Folke Sandelin AB (HFSAB), specialist in horizontal lead extrusion and cable repair and recovery systems, will also be a co-exhibitor.

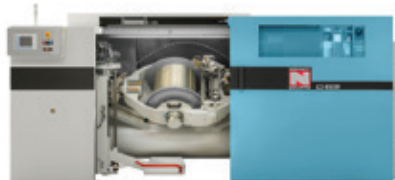
The multi-wire drawing machine MMH 121 is designed to simultaneously draw 14 wires in one level for a diameter range from 0.2mm to 1.05mm. The MMH 121 is combined with an inline annealer type RM 201 and can work with a

speed of up to 40m/s. The MMH 121 is best suited for the production of electronic wires as well as for building wires.

As the MMH machines are based on a modular principle, they can be built adapted to the specific tasks of customers. The wires drawn on these machines exceed the most demanding specifications and processing requirements as far as physical properties and can be processed to multi-wire bundles with outstanding characteristics. Up to now, more than 1,500 MMH lines are in operation worldwide.

The D 631.5 single-bow double twist bunching machine and the ARP 630 pay-off are both built by NMC under Niehoff licence to match the high requirements of the Chinese market.

The machine is designed for strands with a cross section of 0.09 to 6mm² and a steplessly variable lay length of 6 to 100mm. The maximum number of twists is 6,500 twists/min while the maximum linear speed is 300m/min.



○ The D 631.5 single-bow double twist bunching machine

The machine is equipped with AC drive technology, contactless transmission of machine data within the machine, field proven energy-saving ECO-Bow and an NMI touch-screen display with colour user interface and simplified navigation structure.

Another special feature is the perfect tension control for the winding of the strand from the beginning to the end of bobbin using a load cell and dancer.

Maschinenfabrik Niehoff has been active in China since the early 1970s. Assisted by experienced Chinese engineers, Niehoff has

successfully introduced rod breakdown and multi-wire as well as super fine wire drawing technology to many wire and cable factories in China.

One of the pillars on which this success in the marketplace is built was the Niehoff Service Centre in Shanghai, founded in 1994, which became the Niehoff Shanghai Representative Office in 2000 and eventually changed to the Shanghai sales branch of Niehoff Machinery Changzhou (NMC) Co Ltd.

NMC is situated in the Wujin Economic Development Zone in Changzhou, approximately 200km west of Shanghai. It operates a factory with modern production equipment and manufactures different kinds of machines under Niehoff licence for the Chinese market.

NMC is also responsible for the complete after-sales service and the reliable and fast supply of Niehoff's Chinese customers with Niehoff Original+ parts for all Niehoff machinery.

**Maschinenfabrik Niehoff GmbH
 & Co KG – Germany**
Website: www.niehoff.de

**Pourtier
 Stand W1F25**

Pourtier has made impressive achievements in the field of submarine and umbilical cables with the supply of large armouring lines and laying-up lines, as well as its heavy-duty stranders, cablers and armouring lines for ferrous and non-ferrous cables.

Its multi-wire concentric stranding line is also widely used for low and medium power cable production.

All these machines are made in Europe with the highest standards in design and manufacturing for the production of high voltage and extra-high voltage power cable, from overhead to insulated, AC type (using high quality Milliken conductor) for land cable or DC

wire China 2016



○ A power regenerative high speed concentric strander module of four reels with three wires each (Pourtier COS 1200-4)

type (using large round compacted conductor or trapezoidal wires) for both land and submarine cable.

Pourtier – France

Website: www.pourtier-setic.com

**Queins Machines
Stolberger-KMB
Stand W1G57**

Queins Machines GmbH and Stolberger-KMB, both Germany-based companies, have been

manufacturing machinery for many years, and will be displaying a number of photographs and videos of machines already delivered to the rope and cable industry.

The main products are all types of high-speed stranding machines, machines for CTC conductors, pay-offs/take-ups, taping heads, and disc- and belt-type caterpillars/capstans.

Highlights of this year's new development was the manufacturing and installation of a large planetary strander for the

○ Just one of the machines already delivered to the industry



production of subsea cables, based on reel weights of up to 55 tons per conductor. High-energy efficiency was obtained due to the use of the latest motor and drive technology with full energy recovery.

The second-hand department offers a full choice of machines and equipment for the wire and cable industry.

Queins Machines GmbH – Germany

Website: www.queins.com

Stolberger-KMB – Germany

Website: www.stolberger.com

**RosendahlNextrom
Stand W1D43**

Rosendahl and Nextrom have been focusing on how to create even more customer value with their advanced manufacturing technology.





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A passion for service.

We are the expert for welding wire...
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<<< Industry 4.0 – “Smart Factory” – is becoming a reality and opening new doors both for suppliers and manufacturers. Predictive maintenance, backtracking of processes and online monitoring are just a few of those values and benefits. It supports optimising of the complete product life cycle.



○ VAD preform technology

Rosendahl & Nextrom have undertaken technological developments in:

- Processing high-temp materials and silicone rubbers
- Producing loose tubes with fibre overlength control at extremely high speeds
- Recycling helium during fibre draw
- VAD/OVD preform technology

RosendahlNextrom – Austria

Website:

www.rosendahlnextrom.com

Setic Stand W1F25

Setic provides high-speed double twist bunchers/stranders for the automotive industry as well as complete solutions to produce high quality LAN, special and control cables with enhanced performance (in one or two steps, according to product mix).

The company is continuously developing new lines and concepts for non-ferrous cables in order to meet customers' needs, such as tandem “mica taping/bunching”, special high speed lines for battery cable, and new high speed lines for special and instrumentation cables.

These machines are made in France and some of them are also



○ A large double twist stranding/laying-up machine (Setic TC 1250-4M)

manufactured by the Gauder Group China division for direct supply to the Asian market, with the same quality standards.

Setic – France

Website: www.pourtier-setic.com

Sikora Stand W1F62

Sikora is presenting a full programme of well proven and innovative non-contact measuring, control, inspection and sorting devices for quality assurance and cost reduction in the wire, cable, optical fibre and plastics industries.

The product range includes X-ray and laser devices for the measurement of diameter, eccentricity, ovality and wall thickness. In addition, lump detectors for the detection of non-conformities on the product

○ The X-Ray 6000 measures the diameter, wall thickness and eccentricity of cables



surface as well as devices for monitoring the cleanliness of plastic material and for temperature measurement of PE melts will be shown.

Sikora will showcase the Preheater 6000 TC, a temperature-controlled conductor preheating device that assures an optimum adhesion of the PE or other plastics on the conductor.

In this context the Wire-Temp 6000 will also be presented: a non-contact conductor temperature measurement system that is now also available for diameters up to 50mm and suitable for installation in CV lines.

With the Purity Scanner, Sikora offers a system for 100 per cent online inspection and sorting of plastic pellets that contributes to process optimisation, quality assurance and cost saving.

In addition, visitors will get to know the company's sophisticated systems for quality assurance of optical fibres in the drawing tower.

The product series is complemented by a gauge head for measuring the fibre temperature, as well as innovative equipment that gives information on the coating concentricity.

Sikora AG – Germany

Website: www.sikora.net

Spirka Schnellflechter Stand W1F57

Since 2012, Spirka Schnellflechter has offered complete reverse coiling lines with revised design and control for shielded low voltage and medium voltage cables.

The advantage of LV- or MV-cables with a waveconal shielding is their easy and safe installation.

The SSB shielding system features a high efficiency, good product quality and a long runtime as it uses drums for the copper tapes in



○ The plant from Spirka Schnellflechter the taper. The mobility of its components ensures a flexible operation within the whole surface line.

The entire plant is controlled with a central pivoting touch panel. The plant is designed for putting shield wires made of soft aluminium or copper wires on a core (cable) in a sinusoidal shape.

In order to fix them, the wires are wrapped onto the core with a copper or aluminium tape.

Main parameters: (deviation on customer's request)

- Line speed: V max = 50m/min
- Core diameter: (cable diameter) 15-70mm
- Metal shield: consists of max 120 soft copper or aluminium wires with a diameter of 0.4 to 2.5mm, depending on the material
- Fixation: Using a copper or aluminium tape with a thickness of 0.1-0.2mm and a width of 5-15mm.

In detail, the plant consists of a compensation device for adjusting the wire, reverse coiling device, central tape coiler, stabilisation crawler, electrical equipment and control.

Spirka Schnellflechter GmbH – Germany
Website:
www.spirka-schnellflechter.com

Troester Group
Stand W1F43

Troester GmbH & Co KG is 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 as well as the complete range of downstream equipment, including winders, caterpillars, capstans and accumulators.

In China Troester is represented by its subsidiary, Troester Machinery Shanghai (TMS), which is responsible for sales, after-sales service and production for

the domestic market. The company will present information and new developments in the fields of:

- CCV and VCV lines for MV, HV and EHV cables up to 1,000kV
- Rubber CV and CCV lines up to 35kV
- CV technology for production of HV cables on CCV lines
- Production equipment for submarine cables





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○ The Troester stand at a previous wire China

X-Compound, a member of the Troester Group, is specialised in complete systems for the compounding of plastics with the process steps conveying, melting, dispersing, mixing and degassing. X-Compound will present:

- Kneader technology for the continuous compounding of HFFR (LSOH), PVC and XLPE
- Semiconductive materials and EPR/EPDM

Troester Group – Germany
Website: www.troester.de

Unistrong Stand W1E07

Unistrong from Taiwan offers turnkey projects with a tunnel-type continuous automatic wire pickling processing line with 30,000 tons per month capacity. It provides wire rod pickling processing solutions to meet the demanding criteria for automation and pollution control.

The pickling line is a special design close tunnel to minimise the exhaustion of corrosive fumes and maximise isolation to the outside environment and operators, resulting in a cleaner environment and safe working conditions. Throughout the entire tunnel, the required treatment and time can be controlled either automatically or manually for each type of material grade and type using the PLC-controlled system.

The PLC system will monitor multiple cranes to transport material automatically through the necessary treatment steps through various chemical baths. For that reason, the final surface quality is

high, with less chemical and fresh water consumption.

Other benefits of the Unistrong tunnel pickling line are:

- Hazard-free working environment
- Qualified with worldwide environmental certifications
- Central and automatic control systems, automatic production
- Minimum operator errors
- Low manpower requirements
- Optimised chemical consumption
- Ability to process multiple material types simultaneously
- Various treatment programmes
- Uniform and superior surface quality
- Minimum treatment time, higher throughput rates
- Long service lifetime

Unistrong – Taiwan
Website: www.unistrong.com.tw

Wire & Plastic Machinery Corporation Stand W1G05

Wire & Plastic Machinery Corp will be exhibiting its large inventory of second-hand and reconditioned wire and cable manufacturing equipment.



○ A rebuilt 150mm (6") Davis-Standard rubber extruder

Over the past 30 years, Wire & Plastic Machinery Corp has earned a reputation for providing a wide range of high quality pre-owned and reconditioned equipment. The company has more than 30,000 machines in stock.

Wire & Plastic Machinery Corp – USA
Website: www.wireandplastic.com

Woywod Kunststoffmaschinen Stand W1G51

Woywod Kunststoffmaschinen is introducing a new four-litre weighing hopper (TRW 4L) for the processing of quantities up to approximately 80kg/h.



○ The Plasticolor TRW 4L weighing hopper with storage hopper and butterfly valve for automatic refilling

This new compact and low-cost weighing hopper is in addition to the existing weighing hoppers and “Loss-in-Weight” systems.

The unit is designed for granular, free-flowing materials, and regrinds and can be used in all areas of the plastic processing.

The newly developed weighing hopper fits perfectly in the Plasticolor modular system, like all other pieces of the equipment.

It is therefore also possible to upgrade existing equipment.

Three different versions are available:

- The new Plasticolor TRW 4L weighing hopper can also be used as assembly in Plasticolor gravimetric mixing stations and gravimetric dosing stations

- Plasticolor TRW 4L weighing hopper with inlet funnel and hopper loader for automatic refilling (without refill valve)
- Plasticolor TRW 4L weighing hopper with storage hopper and butterfly valve for automatic refilling. The storage hopper can be filled manually or by a hopper loader, or from a larger storage hopper mounted above

The operation is done by single controllers with display, touchscreen PC or via the line control by optional available interfaces (all standard bus-systems).

In summary, the advantages include:

- Independence from the bulk density
- Quick changeover at order changes
- Robust construction
- Individual layout depending on the requirements
- Exact dosing of small quantities
- Easy operation
- Quick and operator-friendly cleaning (weighing hopper can be removed without tools)

Woywod Kunststoffmaschinen GmbH & Co Vertriebs-KG – Germany
Website: www.plasticolor.de

WTM Stand W1A26

WTM Srl has been in the wire and cable industry since the end of the 1980s.

The company has gained a strong reputation for specialising in designing, developing and manufacturing high performance machines such as concentric tapping lines, spinning machines, single twisting equipment, rewinding lines and special equipment for specific applications.

Its devotion to research and design, material selection, accurate manufacturing, assembly and testing allows WTM machines to fully meet the requirements of the most demanding cable producers all over the world.

Believing in the strength of its experience in the field of this industry, and in satisfying the different and specific needs of the important cable producers in Europe, USA and Russia, WTM is approaching the Chinese market offering the sophisticated technology of its equipment for the production of every kind of cables of the highest quality, including those used for aeronautical, aerospace, IT communication and military uses.



○ Some of the new machinery on offer from WTM

The most recent results of WTM studies and research are focused on high frequency cables, required in the rapidly expanding fields of information technology and cloud technology.

The cables produced with WTM products comply with the strictest rules and performance requirements thanks to the high precision and flexibility of WTM machines.

WTM Srl – Italy
Website: www.wtmachinery.com

Yangtze Precision Machinery and Technology Stand TBC

Yangtze Precision Machinery & Technology Co Ltd is a subsidiary





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<<< of Jinggong Holding Group Co Ltd, with registered capital of 40 million yuan and total investments of 150 million yuan.

With continuous development and accumulated experience, it has emerged as a high-tech enterprise specialising in the research and development, production and marketing of wire and cable machinery in China.

Its products consist of three main series: drawing machines, stranding machines and laying up machines – with more than 40 types of product available.

The heavy-duty trolley wire drawing machine and vertical type submarine cable laying up machine fill the domestic gaps.

Located at Changjiang Jinggong Industry Park, Lu'an Economic Development Zone, its modern plant covers an area of 48,000m², facilitated with hundreds of processing machines and quality inspection equipment.



○ The company's factory at the Changjiang Jinggong Industry Park

As a member of China Electrical Equipment Industrial Association and Shanghai Wire and Cable Industry Association, it has ISO9001:2000 international quality authentication, and CE Approval for the European market.

Yangtze Precision Machinery and Technology – China
Website: www.ahcjc.com

Yangzhou Havet Machinery Stand W3F81

Yangzhou Havet Machinery Co Ltd is specialised in the manufacture of reels, spools, steel drums and bobbins for the wire and cable industry.



○ One of the reels on offer from Yangzhou Havet

Based in Yangzhou City, China, the company fabricates the reels as DIN standard or to meet customers' requirements.

Yangzhou Havet Machinery Co Ltd – China
Website: www.havet-china.com

Zumbach Electronic Stand W1E22

Zumbach will be able to give detailed information on its wide range of measuring and control solutions for process monitoring, quality control and cost-effective production.

On display will be:

Sensors

- New DC and high frequency AC spark tester generation with local BAE 2 SP control and display unit that accurately maintains test voltage under any conditions, including highest capacitive loads
- New, advanced KW Trio fault detectors with local BAE 2 KW control and display unit
- New 1, 2 and 3 axis diameter gauges for any cable and wire and any budget. Besides the complete line of Odac laser diameter gauges, new models with special beam geometry, fault detection function and high scan rate will be exhibited

- MSD gauges diameter and ovality with multi-source device technology
- The advanced Odex concentricity and diameter gauge for wire extrusion. Fully non-contact, based on magnetic and laser technology
- New ultrasonic wall thickness and eccentricity scanners of the Umac series with quick and easy adaptation to cable diameters and space-saving integration
- Profilemaster profile and shape measurement systems using light section principle and machine vision



○ The new Profilemaster PMM 10 profile measuring unit for shaped wire and similar

Data acquisition, processing and display units (processors)

- Modular high-performance USYS IPCe data acquisition, processing and display units

Complete measuring and control systems

- Dynamic Rayex D and static Rayex S series: X-ray measuring and control system for CV lines, for wall thickness (three layers), eccentricity and diameter/ovality for CV lines
- Wallmaster/Umac – Dialcal systems: Ultrasonic wall thickness and eccentricity systems for cable jackets and Dialcal option for fully automatic calibration and control

Zumbach Electronic – Switzerland
Website: www.zumbach.com



WIRE & CABLE INDIA 2016

6th International Exhibition for the Wire & Cable Industry

Hot on the heels of wire China, the wire and cable industry will turn its attention to the Indian subcontinent for Wire & Cable India, being staged from 5th to 7th October at the Bombay Exhibition Centre in Mumbai, India.

Co-located with the top events Metallurgy India/Tube India International as well as India Essen Welding & Cutting (organised as a joint event by Messe Düsseldorf India and Messe Essen GmbH), all four trade fairs present technology highlights from the metallurgy, wire and cable industries and the tube industry, as well as from the industrial areas of cutting and welding.

Organisers Messe Düsseldorf GmbH and its Indian subsidiary Messe Düsseldorf India, as well as the Confederation of Indian Industry, expect a total of 400 exhibitors from 25 countries. Many Indian and international companies have already registered for participation, and there will again be group participations from Italy, Austria, France and China.

On display at Wire & Cable India will be machines and plants for wire production and processing, forming technology, spring-making technology, cable and

stranded wire machines, tools and auxiliaries for process engineering, measuring and control technology, all types of wires, rolled wire, bare wire, bars, sheet metal as well as special wires and cables.

Support for the Indian trade fairs comes courtesy of the international associations IWCEA (International Wire and Cable Exhibitors Association), IWMA (International Wire & Machinery Association), ACIMAF (Italian Wire Machinery Manufacturers Association), WCISA (Wire and Cable Industry Suppliers Association) USA and ITA (International Tube Association).

The Indian associations SWMAI (Steel Wire Manufacturers Association of India) and AIWMA (All India Welded Mesh Manufacturers' Association) are also at hand with their country-specific insider know-how.

Dates: 5th – 7th October 2016

Website: www.wire-india.com

Location: Bombay Exhibition Centre, Mumbai, India

Organisers: Messe Düsseldorf GmbH and Messe Düsseldorf India

Exhibition times:

5th and 6th October: 10.00am to 6.00pm

7th October: 10.00am to 5.00pm

**Ajex & Turner
Stand B02**

Ajex & Turner Wire Technologies will showcase VNT dies and other products along with lubricants by Fuchs, UK, and TKT, Italy, for copper, aluminium, steel, and MIG/CO₂ wire.

The company has been an integral part of the wire and cable industry for 40 years, and this time in India is looking forward to showcasing its new developments.



○ The range of dies from Ajex & Turner

Being a one-stop-shop for major consumable requirements for any wire and cable manufacturing plant, visitors wanting precise quality and troubleshooting for wire drawing units will be able to benefit.

The complete product range of VNT dies, PCD dies, carbide dies for wire drawing and compacting, busbar dies, shaped dies, die polishing machines for PCD and carbide, die polishing accessories, and die inspection microscopes will all be on display.

Ajex & Turner – India

Website: www.ajexturner.com

**Besel Basim
Stand 1D12**

Besel Basim has been a producer and converter of flexible materials for technical applications since 1975.

The company makes high quality insulating films to the specifications of its customers based on the materials of ALU, CU, PET, PP, PE, etc; water blocking, semi-conductive and conductive films; and other tapes and foils for the cable industry.

With an ISO9001-certified quality system, experienced and skilled



○ Besel Basim will show off its latest developments

staff and management team, the company is happy to show its latest developments and share the experience in building high quality electrical insulation and flexible film materials.

Besel Basim – Turkey

Website: www.beselfoil.com

**DEM
Stand TBC**

DEM SpA manufactures machines, plants and solutions for the cold rolling of wire.

As an enterprising company with global ambitions, India is already a known market for DEM, with some advanced solutions provided to wire manufacturers.

One of the most notable plants delivered in recent years is a profile wire rolling line for the production of stainless steel triangular wire.

The line rolls spools of 2,000kg of AISI 316L wire, with a maximum inlet diameter of Ø 7.5mm.

The finished product has a constant tolerance of 0.005mm at a maximum rolling speed of 8m/sec (480m/min), with superior repeatability. The product is used in screens for oil, water and liquid filtration systems.

Beyond this specific application, the DEM line can also be set to produce different final shapes, thanks to a quick roll-changing system and operator-friendly interface. Besides profile wire rolling lines, DEM covers the full sphere of cold rolling of wire, having expertise in the design, manufacture and start up of:

- *Flat wire rolling line:* Technological plants to produce flat products, both in ferrous and non-ferrous materials. Finished material can be delivered in coils or cut-to-length bars. Typical applications are: springs, busbars, gratings and electrical connectors
- *Cold rolling lines:* All-in-one machines to decoil, straighten and roll wire rod for the production of reinforcing wire. The output of these lines can be packed in coils or in straight bars. Additional processes, such as automatic strapping, weighing and unloading, both for bars and coils, are also possible
- *Cold rolling cassettes:* Usually installed on cold rolling lines for smooth or ribbed wire production, they are interchangeable with any other cold rolling cassette available on the market. In addition, they are used for compacting of rope and strand with high carbon content, for wire rod calibration and for rough shaping of profiles
- *Micro rolling cassettes:* Technology to replace traditional dies on dry drawing machines. Their economic advantage over dies is demonstrated when running long production batches and for special applications (for instance materials like titanium and zinc)

Flux cored wire lines, payoffs, take-ups and warm rolling systems can all be discovered at the DEM stand in Mumbai.

DEM SpA – Italy

Website: www.demgroup.com

**Flymca and Flyro
Stand 01C06**

Flymca's stand will be showing some interesting pictures regarding

WIRE & CABLE INDIA

5-7 October

projects made during the last two years. For instance:

For the power cable market: new rigid strander developments improving the features of the previous models.

Either for bobbins with diameters of 630 or 800mm DIN or for both bobbins on the same machine, allowing factories to use advantages of both; automatic bobbin loading process either by side carriages at 90° or at 45°; higher rotating speeds to gain production improvements; and smooth, precise and constant wire tension control to achieve high quality conductor standards, etc.

For steel wire ropes: larger capacity of machinery for bigger ropes. Tubular and planetary closers that are able to manufacture bigger ropes in lower production time, increasing machine productivity.

The use of a special new material allows the company to achieve better results and provides improvements mainly in reliability, low maintenance and longer life time expectancy.

Control and special cables made on planetary stranders using advanced solutions for smooth and fine tension values on elements, including double control systems either in the cradles and in the formation with wi-fi communications to achieve final special cable features.

For greenhouse: special customised machinery to improve the production of steel strands composed of two and three wires, reaching higher outputs.

For CTC (continuous transposed conductors): experience in this traditional market lets the company offer combined solutions to achieve high quality cables with larger production.

Sister company Flyro will provide details of its large inventory of available second-hand machinery.

The company proposes used machinery mainly still installed and in working condition, but also offers

services such as dismantling and refurbishing, as well as production of new electrical cabinets.

Flymca and Flyro – Spain

Websites:

www.flymca.com, www.flyro.es

GMP Slovakia Stand TBC

GMP Slovakia manufactures steel reels, take-apart reels and handling equipment for the wire and cable industry. The company has its main manufacturing plant in Pribenik, Slovakia, and a second manufacturing plant in Nashik, India.

This second plant opened two years ago and is equipped to manufacture different models of reels, both for process and transport.

The DW-Double Wall model is a reel for drawing, buncher and stranding of steel, copper or aluminium wire. It is machined on the barrel and is dynamically balanced for 30m/sec and more. The structure of this reel is fully welded to make the structure resistant after frequent use, and the barrel can be reinforced.



○ One of the many reels on offer from GMP Slovakia

CD-Corrugated Drum is a reel for cable and rope process (reinforced version). It is statically or dynamically balanced and also available with reinforcements in the barrel for drum twister application.

This model of reel can be also manufactured in a light version for transport cable purposes, and can be supplied in a knock down version to reduce transport costs. The reel is supplied with tie rods and screws to be assembled by the customer. >>>

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Multi wire cleaning plant



Ultrasonic
& Electrolytic

Single wire plating plant

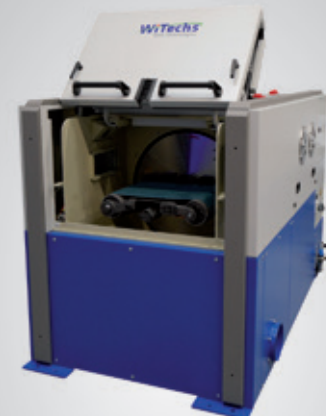


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Sanding Descaler SEZ-2-450

The more thoroughly the surface of a wire is cleaned of scale and rolling residue, the higher the drawing speed and longer the lifetime of the die. We offer processing methods for almost any type of wire.

This and other Wire Descaling Lines on:

www.witech.de

◀◀◀ The MR-Massive Reel is a strong construction reel for drawing and stranding steel wire process. The reel is machined only on the barrel, and is usually supplied with hardened changeable bushings, which can be replaced when worn out. This reel is also dynamically balanced and can be supplied with many optional extras, such as lifting hooks and reinforced barrel.

GMP Slovakia – Slovakia

Website: www.gmp-slovakia.com

**H Folke Sandelin AB
Stand TBC**

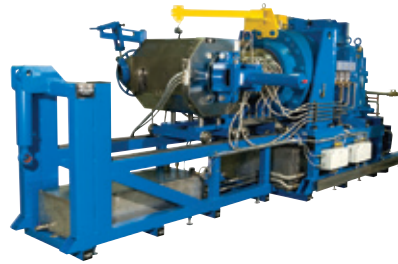
H Folke Sandelin AB (HFSAB) from Motala, Sweden, will be a co-exhibitor with Niehoff of India Pvt Ltd. HFSAB has had a leading role worldwide in the following areas for over 50 years, supplying:

Continuous lead extrusion equipment and know-how for trouble-free lead sheathing of cables, providing a moisture barrier. Today the latest design lead extruder from HFSAB is horizontal, floor standing, easy to install and maintain, fully automatic, and reliable, with its control system enabling continuous operation for weeks with little or no variation in temperatures and wall thickness/concentricity.

The lead wall thickness can be kept to a minimum with corresponding savings in lead. A range of die blocks are available to cover an extensive diameter range of 6mm to 190mm (over lead), and a range of melting pots are available for 10, 18, 35 and 60 tonne capacities.

Additional equipment includes the cable repair and recovery system CRRS, which has the possibility of removing individual layers, such as the outer jacket, lead sheath or triple layer XLPE insulation, without causing any damage to the subsequent layer below.

This enables the outer jacket, lead sheath or triple layer XLPE to be re-applied and the cable repaired. Even if the cable is just going to be scrapped, the metal price differences for insulated or



○ The 5960 extruder from H Folke Sandelin un-insulated cables are very large and the equipment would have a very short pay-back period, if the metals are scrapped in their “bright” form.

HFSAB is able to provide a full and extensive after sales service, know how, fully trained and experienced technician support and spare parts.

H Folke Sandelin AB – Sweden

Website: www.hfsab.com

**Lukas Anlagenbau
Stand TBC**

Lukas Anlagenbau GmbH is a family-owned company, established in 1959, that produces customer-specific equipment for the wire and cable industry. The focus of its products is on complete taping lines for producing taped or wrapped conductors with tape materials like PTFE, Kapton, Mica, paper, etc.



○ The focus of Lukas Anlagenbau’s products is on complete taping lines

The company also produces special cables for medical and aircraft applications. Its taping lines can be found at many well-known suppliers worldwide. Its product range covers single components like pay-offs, capstans, caterpillars and take-ups, up to complete rewinding lines and fine wire drawing lines for non-ferrous materials.

Recent developments have been advanced by energy and size

reduction – and this will be in evidence with the exhibiting taping machines for magnet wire applications, cost-optimised and easy-to-integrate taping and heating solutions. This should give incentives, especially to the Asian market.

Lukas Anlagenbau – Germany

Website:

www.lukas-anlagenbau.de

**Maillefer
Stand 1C12**

How would you define competitiveness? For Maillefer it means increasing the lifetime value of technology in different production and market circumstances. The company does this by empowering people, production and productivity – by equipping customers with the right competency.

To better answer the diverse needs of wire and cable manufacturers worldwide, the company’s portfolio is organised in three different solution levels – /Enter, //Extend and ///Explore. These solutions vary in capacity, cost, automation, flexibility, product range, space requirements and maintenance needs.

Do you need a qualified concept to realise a complete factory with the lowest risk and cost? The new Maillefer Factory System is a suitable option.

Maillefer Consultation allows you to maximise the value of technology, access the best practices and improve your process based on needs.

In India details of the new Round Value Package Premium and how it guarantees utmost roundness in high voltage cable production will be available, as will the new CRM 180 Cable Roundness Meter which enables a totally new method for reliable and error-free measurement of cable core roundness and concentricity of medium, high and extra high voltage cable cores.

Other solutions, products and services on display will include,

WIRE & CABLE INDIA

5-7 October

among others, the quick conductor splicing QCS, FO cable secondary coating line OEL 40, MV CCV line EPL 30, and HV CCV line EPL 50.

Maillefer Extrusion Oy – Finland
Website: www.maillefer.net

**Maschinenfabrik Niehoff,
Niehoff of India
Stand E02**

Maschinenfabrik Niehoff and Niehoff of India (NoI), its Indian subsidiary, will display a 16-wire multi-wire drawing line type MMH 121 + RM 201 made by NoI, and a pairing machine type DSI 631 for data cables with backtwist pay-off type ARD 630 D.

Niehoff partner companies August Strecker, Germany (wire welding machines), Zeller + Gmelin, Germany (drawing lubricants) and H Folke Sandelin AB (HFSAB), Sweden (horizontal lead extrusion and cable stripping, repair and recovery equipment) will also be in attendance at the Niehoff stand.



○ The MMH121 which will be on display in India

The multi-wire drawing machine MMH 121 built by NoI under Niehoff licence is designed to draw simultaneously 16 wires in one level for a diameter range from 0.2mm to 1.05mm.

The MMH 121 is combined with an inline annealer type RM 201 and can work at a speed up to 35m/s. The MMH 121 is best suited for the production of electronic wires as well as for building wires.

As the MMH machines are based on a modular principle, they can be built adapted to the specific tasks of customers. The wires drawn on these machines exceed the most demanding specifications and processing requirements as far as physical properties, and can be processed to multi-wire bundles with outstanding characteristics.

To date, more than 1,500 MMH lines are in operation worldwide.

The DSI 631 type double-twist stranding machine combined with an upstream backtwist pay-off type ARD 630 D has been designed for the stranding of insulated conductors into pairs and quads and the stranding of four conductor pairs into LAN cables.

The machine is able to manufacture reliably LAN cables of all categories – even of future generations – as well as pairs with tape shielding, bus cables and other telecommunications cables.

The DSI stranding machine system includes additional auxiliary equipment, so that customer-specific production lines can be created and rapidly rebuilt depending on the order situation.

Compared with other machines and process technologies, the combination possibilities of the DSI system are claimed to generate significant financial advantages for the manufacture of certain products or a certain production performance.

Maschinenfabrik Niehoff GmbH & Co KG – Germany
Niehoff of India – India
Website: www.niehoff.de

**Queins Machines
Stolberger-KMB
Stand TBA**

Queins Machines GmbH and Stolberger-KMB, both Germany-based companies, have been manufacturing machinery for many years, and will be displaying a number of photographs and videos of machines already delivered to the rope and cable industry.

The main products are all types of high-speed stranding machines, machines for CTC conductors, pay-offs/take-ups, taping heads, and disc- and belt-type caterpillars/capstans.

Highlights of this year's new development was the manufacturing and installation of a large planetary



○ Just one of the machines already delivered to the industry

strander for the production of subsea cables, based on reel weights of up to 55 tons per conductor. High-energy efficiency was obtained due to the use of the latest motor and drive technology with full energy recovery.

The second-hand department offers a full choice of machines and equipment for the wire and cable industry.

Queins Machines GmbH – Germany
Website: www.queins.com

Stolberger-KMB – Germany
Website: www.stolberger.com

SCIENCE BEHIND WIRE DRAWING AND COMPACTING
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- Carbide Split & Enamelling Dies, Sector Die
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- Extrusion Tools (PCD & Carbide) Tips & Dies
- Lubricants for Copper /Aluminium/Steel/CO2
- Microscope for Inspecting Drawing Dies
- Ultrasonic Die Cleaning System
- Spiral Brushes & Buncher Bows & Cross Head
- Die Checking Go-No-Go Pins

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Email: sales@ajexturner.com, info@ajexturner.com
Website: www.ajexturner.com

**RosendahlNextrom
Stand TBC**

Rosendahl and Nextrom are global suppliers of production technologies for cables, wires and optical fibres.

The companies will present the latest advancements and technology highlights, including state-of-the-art achievements in the production of solar cables in co-extrusion as well as tandem extrusion, automotive wires, technologies for optical fibre UV-coating, fibre proof testing and the manufacturing of fibre optic cables.



○ The solar cable co-extrusion line from RosendahlNextrom

Industry 4.0 – “Smart Factory” – is becoming a reality and opening new doors for manufacturers. Rosendahl and Nextrom take this revolution seriously and provide the technology for companies to be part of this.

RosendahlNextrom – Austria

Website:

www.rosendahlnextrom.com

**Spirka Schnellflechter
Stand TBC**

The increasing demand for cables for applications in automotive, data transfer and other industrial applications as well as the constantly growing requirements for increased transmission speeds, data security and quality parameters are also making greater and greater demands on the effectiveness and the quality of cable screening with regard to the braids and foil taping of cables.

Fault-free braids, precision in lay lengths, sensitive handling of the core material and gentle, jolt-free



○ Improvements on the optimised braiding and taping line

winding of the cables before and after the braiding process are decisive for the quality of the cables and their competitiveness. The same applies for precision taping processes below and after the braiding, whether longitudinal or concentric taping is used.

Spirka Schnellflechter offers a comprehensive product portfolio of braiding machines, dancer-controlled payoffs and take-ups, longitudinal foil taping attachments, and concentric taping as integrated or separate units for the above areas of application and requirements which are well known to cable manufacturers.

The lay lengths can be set continuously by motorised capstans. Tensions on the cable are monitored with dancer control and are reproducible; wire tensions can be set and controlled precisely.

SSB has previously presented an optimised braiding and taping line with following improvements:

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

The line was presented with options for payoff and take-up to demonstrate the flexibility of the system for different application ranges and cable specifications. It offered a wide range of applications and increased flexibility in screening processes.

The concentric horizontal taper integrated in the line featured optimised regulation for precise pre-setting of tape tensions and a harmonised brake system for fine tuning. Alternatively, the taper can be integrated as a vertical version into the braiding machine.

Spirka Schnellflechter GmbH – Germany

Website:

www.spirka-schnellflechter.com

**Wire and Plastic
Machinery Corp
Stand 1F26**

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Design Analysis of a Large Planetary Strander using CAE tools

By Giorgio Pirovano, MFL Group, and Fabiano Maggio, EnginSoft SpA

Introduction

The design of a stranding and closing planetary machine with back-twist is not a simple project, due to the “planetary” rotation of the parts: that introduces dynamic effects that are difficult to estimate; in particular if the performance is extreme due to large spool mass, load configurations and rotation speed.

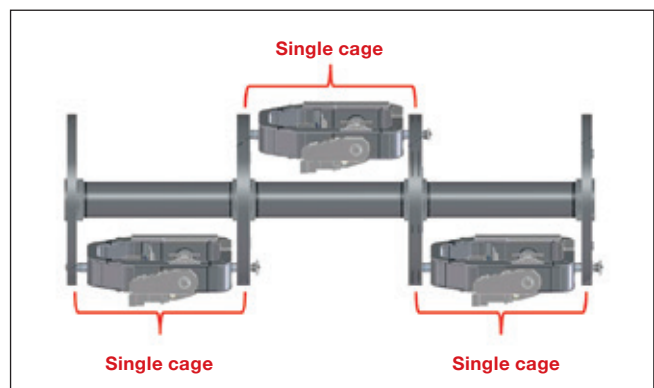
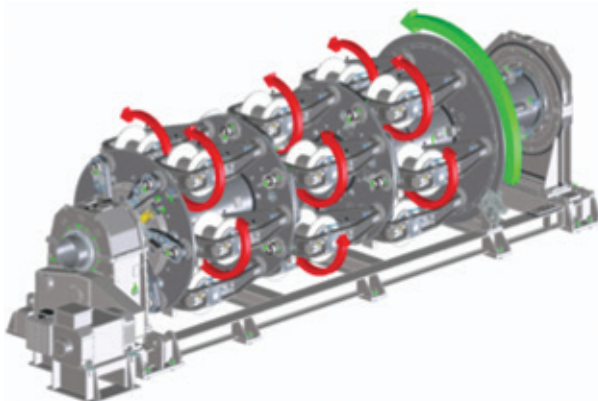
In order to avoid any possible risk and to obtain the most precise design input, MFL involves EnginSoft and its simulation capabilities as reliable partner in this project.

For this specific project, EnginSoft is in charge of carrying out the whole dynamical assessment of the planetary machine. In order to achieve reliable and precise results, it is necessary to use a powerful and versatile multi-body software: RecurDyn®. On the other hand, MFL has to complete the design of all parts in order to meet structural requirement in terms of strength and lifetime.

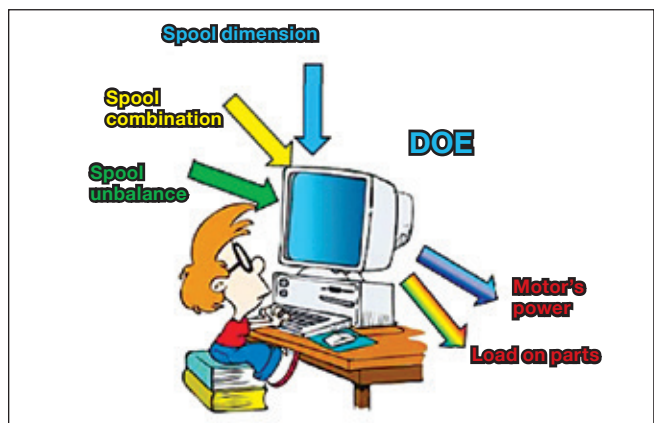
Methods and problem definition

This colossal planetary machine will be used to produce cable with different diameters and strand combinations, so that the spools loaded on the machine can be different in size and position on the main rotor. In addition, the spools are naturally unbalanced due to winding errors.

○ **Figure 1:** Rotations on a planetary stranding machine



○ **Figure 2:** Single cage of planetary machine

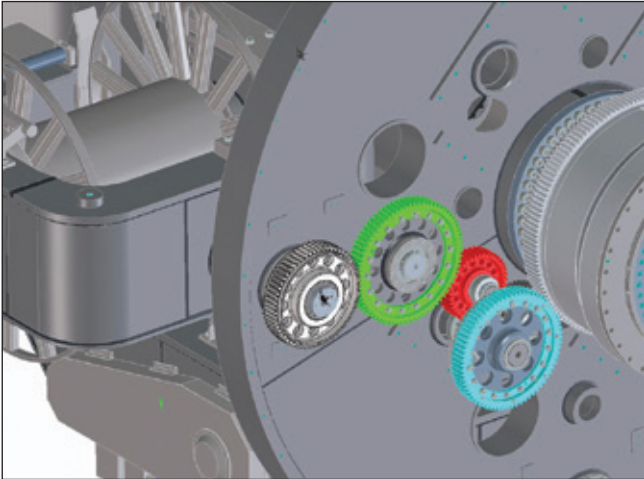


○ **Figure 3:** Method and DOE approach

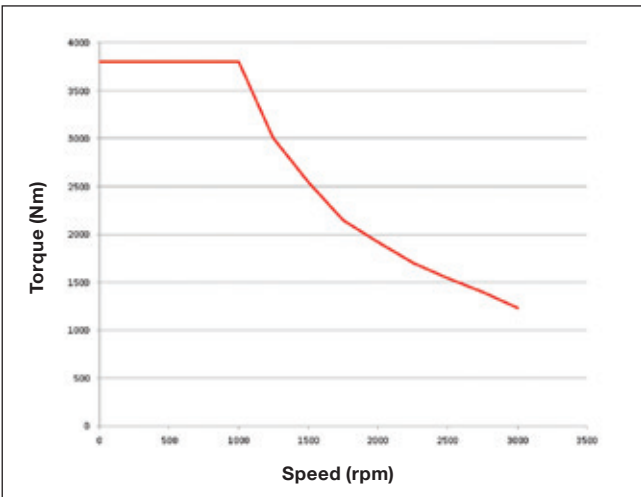
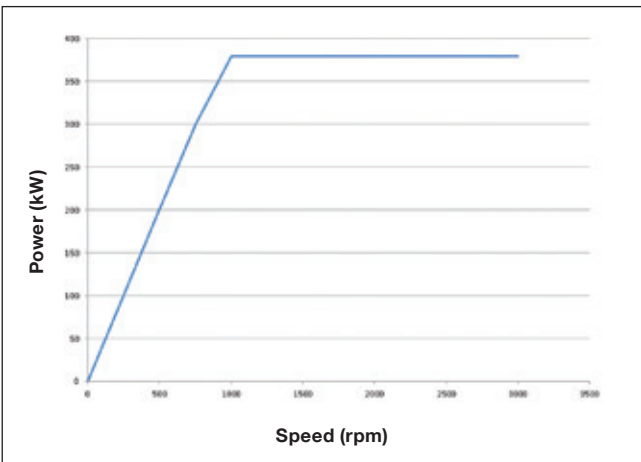
This results in various load scenarios to be analysed. The goal is the identification of the worst case in terms of power required to the motors and stress on parts. EnginSoft’s engineers are in charge of finding out such worst conditions through dynamic simulation.

The approach starts with a single cage, and an analysis defines the worst configuration. After that, together with MFL, finite load scenarios are defined.

The next step is the dynamic simulation of the different load scenarios by applying the worst cage condition previously defined. At the end it is possible to obtain the worst working condition of the whole machine.



○ **Figure 4:** Planetary back-twist



○ **Figure 5:** Induction motor power and torque curves

In other words, this activity is the scientific and precise application of the design of experiment (DOE).

Rigid body dynamics model

A rigid body dynamic analysis is performed; internal loads and motor power torques mainly depend on acceleration and inertias of moving parts, so that there is not a clear need of introducing flexibilities into the model (which would significantly increase the computational effort).

Starting from the MFL 3D CAD geometry of the machine, the dynamic model is defined in the RecurDyn® environment. The result is an accurate model with more than 100 bodies.

Most of the inertial proprieties are derived automatically from CAD, but several bodies are parametrised inside the multi-body software.

Obviously, the connection between the different bodies perfectly simulates the real kinematic link (gear, shafts, and so on) in order to obtain a model which is the closest as possible to the real machine in terms of degrees of freedom.

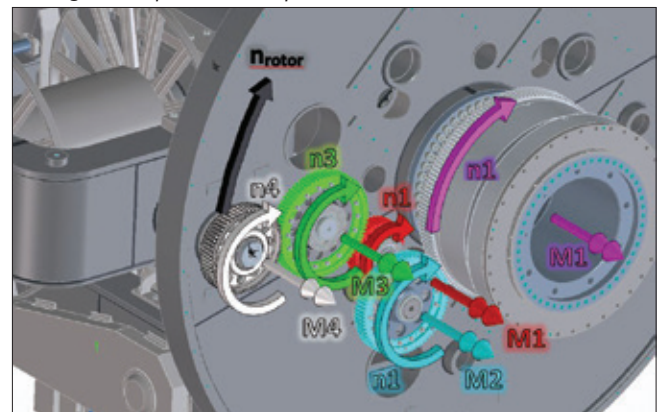
Gear elements are special features of the RecurDyn® library, designed to simulate both kinematics (transmission ratio) and dynamics (reciprocal loading) occurring at any gear couple.

Figure 4 shows the gears back-twist system. It is easy to see that the “gear feature” of RecurDyn® has been massively used due to the conformation of the transmission chain.

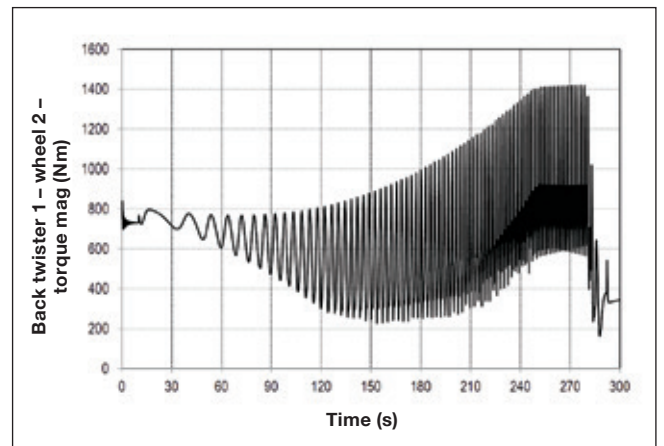
When each simulation runs, all loads are automatically combined together along the transmission chains, leading to a precise estimation of the power demand at all motor shafts.

As active parts of the machine, the electric motors, are modelled taking into account the real inertia of the rotating parts and using the real constructive curves (torque and speed) of modern induction motors.

○ **Figure 6:** Speed and torque on each back-twist shaft



○ **Figure 7:** Torque curve on a gear



Otherwise by using ideal motors (very easy and simple in RecurDyn®) there would be the risk to obtain an imprecise answer. In fact, such an approach would generate unrealistic torque peaks in the simulated signals; motors with unlimited torque simply do not exist.

Figure 5 shows an example of motor laws.

Dynamic simulation and results

A lot of dynamic simulations are run, and more than 60 cases are analysed, based on the possible different load cases preliminarily defined.

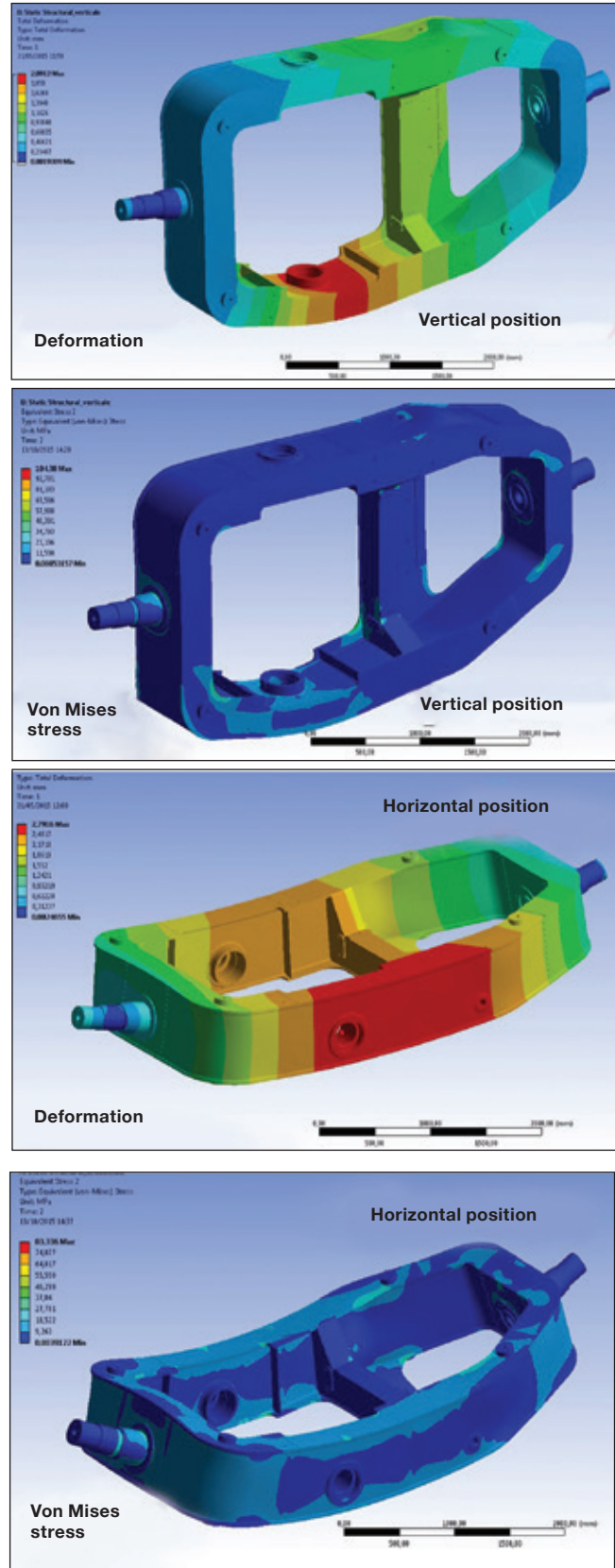
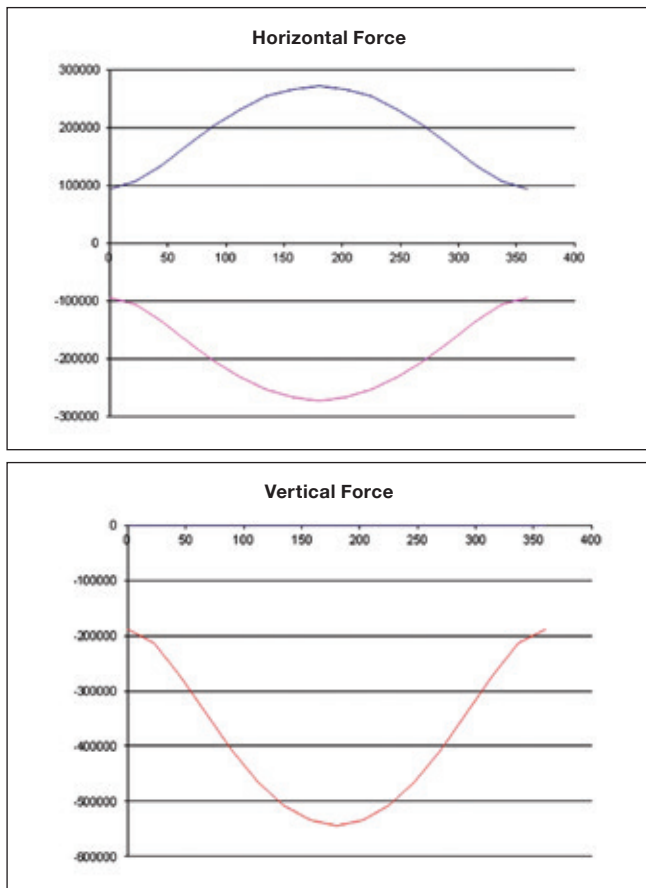
Each dynamic simulation is composed of three phases: acceleration (from zero to the maximum speed), a steady state condition at the maximum speed, and the emergency braking (deceleration from maximum speed to zero in a few seconds).

From the large volume of data collected it is possible to define all the information necessary for the design; in particular the maximum power required to the motors and the maximum torque and speed on each part.

This data is fundamental for the right choice of motors and for a good structural design of the parts (rotor, cradles, joints, and so on).

Figure 6 shows the results in terms of rotation speed and torque on each part of the transmission chain. Figure 7 shows a typical torque output on a gear. The peaks, clearly visible in the curve, are due to spools unbalance.

○ Figure 8: Load on cradles



○ Figure 9: Cradle equivalent deformation and Von Mises stress

Dynamic results as structural input

As previously explained, the results obtained from the dynamic simulation are the input of the structural simulation.

By using the CAE structural software ANSYS Workbench®, that is directly linked with RecurDyn®, MFL performs the simulation of the mechanical behaviour of the most important parts of the planetary machine.

The goal is to verify that all parts meet the strength and deformability specifications.

On a planetary machine, all parts are under fatigue (*Figure 8* shows the load on the main frame of a cradle during a rotation around its axle); so that the engineers use specific methods for the verification of welded structure under fatigue as hot spot, Radaj methods and so on.

Figure 9 shows deformation and equivalent Von Mises stress on a cradle in two positions.

Finally, a check of the eigen-frequencies of all parts of the machine was done to avoid any risk of resonance.

Conclusion

Thanks to EnginSoft's expertise in dynamic simulation it was possible to obtain an accurate simulation of a huge planetary stranding machine in a short time.

The results of these simulations support Mario Frigerio's mechanical designers for the dimensioning of the machine. On this large machine no mistake is acceptable.

Virtualisation allows saving time in the development process and is an alternative to the classical approach, in particular when historical data, from similar applications, is not available.

This collaboration between companies made it possible to optimise the design of this challenging project and preserve the high quality level and performance of Mario Frigerio's products.

This article contains references to the following products, which are trademarks or registered trademarks of their respective owners: ANSYS Workbench; RecurDyn.

Mario Frigerio SpA

Via Lombardia snc, I-23847 Molteno (LC)

Tel: +39 031 548 8100

Email: info@mariofrigerio.com

Website: www.mariofrigerio.com

EnginSoft SpA

Via della Stazione 27, Mattarello, Trento, Italy

Tel: +39 035 368 780

Email: info@enginsoft.it

Website: www.enginsoft.it

使用CAE工具设计分析大型行星式绞缆机

作者：MFL集团Giorgio Pirovano和EnginSoft SpA有限公司 Fabiano Maggio

简介

设计使用退捻方法的绞合紧密行星式机并不简单，因为全部部件的旋转会导致难以预测的动态效果；特别是在因量大、装载配置及旋转速度导致的极端情况下更是如此。为避免可能风险及获得最精确设计效果，MFL拟在此项目上与EnginSoft合作应用其可靠的模拟能力。在此项目上，EnginSoft负责执行该机械的全部动态评估。为获取可靠、准确结果，有必要使用强大、通用的多体软件：RecurDyn®另外一方面，MFL须完成所有部件的设计以符合强度及使用寿命的结构要求。

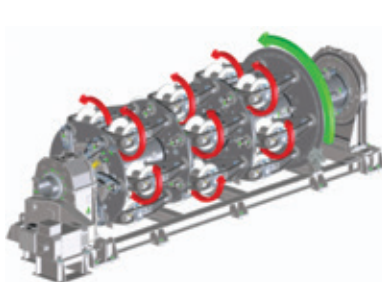


图1: 篮筐式捻股机上的旋转

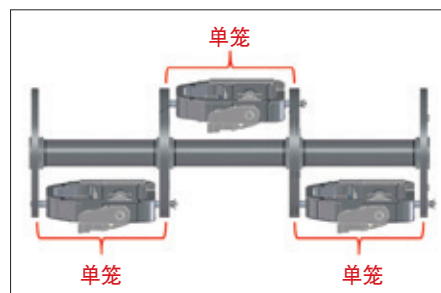


图2: 单一篮筐捻股机

方法及问题定义

该大型机器将用于生产不同直径及组合线轴，因此装在机器上的线轴须可有不同尺寸及可安装于主转子的不同位置。同时，由于缠绕问题，线轴本身就是不平衡的。这将导致可用于分析的各种不同装载情形。实验目标为找出在马达需要之马力及部件压力方面找出承受极限。

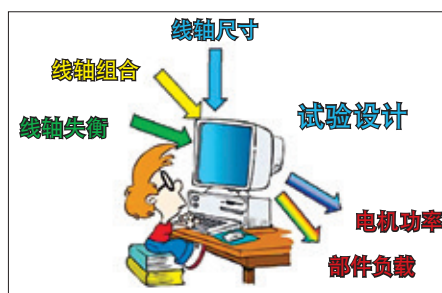


图3: 方法及试验设计方法

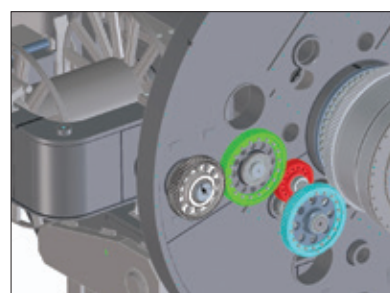


图4: 篮筐式退扭

EnginSoft的工程师们将通过动态模拟找出极端情况。该方法首先做一个极端情形配置分析。之后，与MFL一起，进行各种限量负荷分析。下一步通过之前定义的极端情况进行各种负荷情况的动态模拟。最后可以得出整个机器的极端工作情况。也即试验设计的科学、精确应用。

刚体动力模型

执行刚体动力分析；内部负荷及电机功率力矩主要依靠移动部件的加速和惯性，因此没有明确引入灵活度的需要（如引入，会极大增加计算要求）。

始于该机器的MFL 3D几何结构，该动态模型由RecurDyn®环境定义。结果为超过100个机身的精确模型。多数惯量属性由CAD自动生成，但有几个机身由该多体软件按照参数生成。

显然，不同机身之间联系关系完美模拟了真实动力联系（齿轮、轴等）以获得在自由度方面尽可能贴近真实机器的情况模拟。

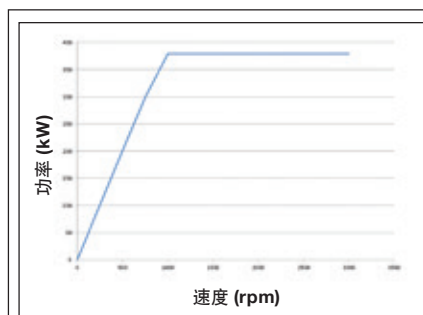


图5: 感应电机功率及力矩曲线

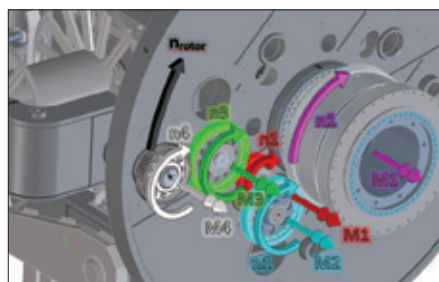
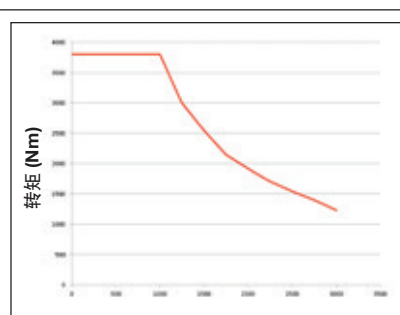


图6: 退扭轴上速度及力矩

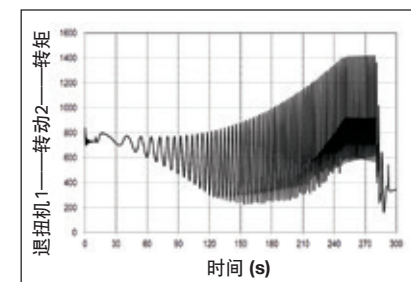
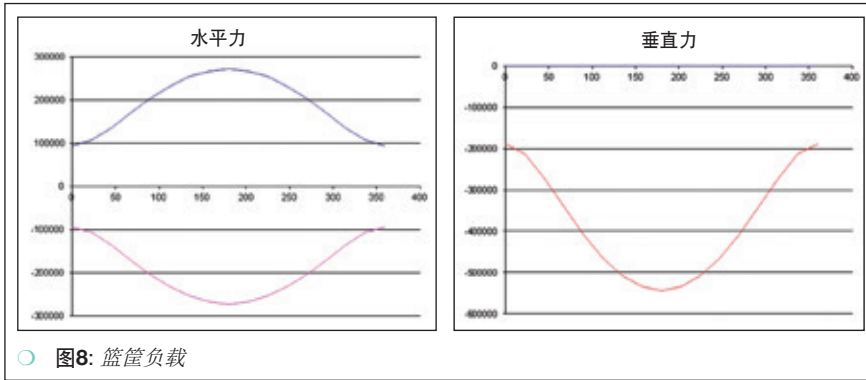


图7: 齿轮力矩曲线

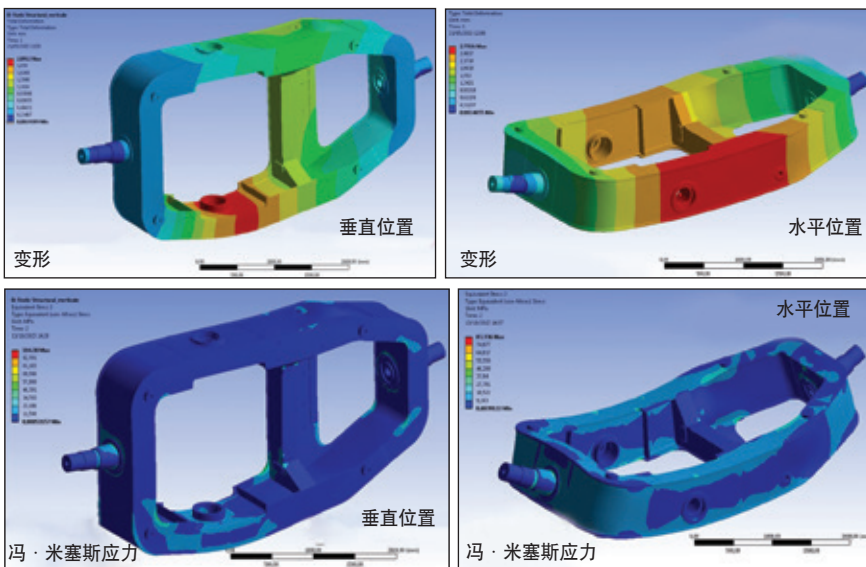


从大量收集的数据看可以定义该设计的相关所需信息；特别是电机所需最大动力及每个部件的最大力矩及速度。

这些速度对电机选择及部件的结构设计(转子、支架、接头等)非常重要。

图6显示转速及力矩在传动链各部分的结果。

图7显示在齿轮上的一个典型力矩输出。明显可见曲线最高顶点，由最大力矩是线轴失衡产生。



结构输入的动态结果

如前所述，由动态模拟所获结果为结构模拟的输入。通过使用CAE结构软件ANSYS Workbench®，(与RecurDyn®直接联系)，MFL完成了筐篮式捻股机最主要部件的机械行为模拟。

其目的为核实所有部件符合强度和变形技术参数。

在行星式绞缆机上，所有部件都须进行疲劳测试(图8显示在绕轴旋转时篮筐内主机机架的负载)；因此工程师使用具体方法测定焊接结构的疲劳点作为热点，Radaj法等。

图9显示篮筐在两种情况下不同变形及冯米塞斯应力等价。

最后检查所有部件的固有频率以避免任何共振风险。

齿轮部件是RecurDyn®的特点，以模拟在任意齿轮配比上的动力学(传输比)及力学(往复加载)。

图4展示齿轮回扭系统。可以明显看出因传动链构造原因RecurDyn®的“齿轮特点”的大量应用。

每次运行模拟，不同载荷与传动链自动组合，因此，所有电机轴所需不同动力都可以得到精确估测。

作为该机器的主动部件，电机的模型塑型考虑了现代感应电机旋转部件的真实惯性且使用了真实的构造曲线(力矩、速度)。

然而如果使用理想电机(对RecurDyn®来说很容易)，则有模拟数据不准确的风险。

实际上，这种方法会在模拟中产生不现实的最大力矩；而无限力矩的电机现实中并不存在。

图5 展示了一电机定律的案例。

动态模拟及结果

在之前定义的很多可能的不同载荷情况下我们运行了多项动态模拟，分析了超过60种情况。

每个动态模拟包含三个阶段：加速(0到最大速度)，维持最大速度及紧急停机(几秒内由最大速度降到0)。

结论

因EnginSoft在动态模拟方面的专业，我们才可以在短期内获得大型筐篮捻股机的精确模拟。模拟结果支持Mario Frigerio的机械设计标注尺寸。在这种大型机械上，不允许任何错误。硬件虚拟化可以极大缩短开发流程，同时可作为传统方法的替代选择，特别是在没有同类应用历史数据的情况下尤其适合。

企业之间合作可以将此挑战性项目进行最优化设计，同时保证Mario Frigerio产品的高品质水平及产品性能。

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Mario Frigerio SpA
Via Lombardia snc, I-23847 Molteno (LC)
电话: +39 031 548 8100
电子邮件: info@mariofrigerio.com
网址: www.mariofrigerio.com

EnginSoft SpA
Via della Stazione 27, Mattarello, Trento, Italy
电话: +39 035 368 780
电子邮件: info@enginsoft.it
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46 Holly Walk • Leamington Spa • Warwickshire CV32 4HY • UK

Tel: +44 1926 334137 • Fax: +44 1926 314755 • Email: wca@intras.co.uk • Website: www.read-wca.com

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Copper/Aluminum Rod Breakdown Machine LHD-450

Application: the breakdown machine is used to draw copper wire or aluminum alloy wire. It consists of a host drawing machine, pay-off stand, continuous annealer, accumulator, dual-spooler take-up unit or downcoiler.



Continuous Lead Extruder YQL-150

This series of lead extruder is used to continuously coat lead layer for marine cable or rubber cable.



Copper Rod Continuous Casting and Rolling Line/Aluminum Rod Continuous Casting and Rolling Line

Copper CCR line is used to produce copper rod in 8mm diameter from copper scraps or cathodes. Users can choose different furnace systems according to different feedstock and output capacity.

Aluminum CCR line is used to produce aluminum or aluminum alloy rod in 9.5mm diameter from aluminum ingot. Users can choose magnetic stirrer, induction heater, filter or quenching section if it is used to produce aluminum alloy rod.

Major Product Lines: Copper rod continuous casting and rolling line
 Aluminium (aluminium alloy) rod continuous casting and rolling line
 Drawing machine for copper, aluminium, aluminium alloy wire
 Stranding machine
 Non-slip aluminium/aluminium alloy rod breakdown machine

DEYANG



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Aluminium Alloy Rod Continuous Casting and Rolling Line Production Process



Non-slip Aluminium/Aluminium Alloy Rod Breakdown Machine Model LFD450

1. Application and Features:
 This unit is equipped with continuous casting and rolling mill to continuously coil Al or Al alloy rod in diameter 9.5 or 12 mm.
 After Al rod or Al alloy rod is hot-rolled from CCR line, this unit can finish traversing in different pitches, continuous coiling and pneumatic bundling up to it. This unit is of full mechanical and electrical integration, featured with high efficiency and conforms to relative wire and cable standard.

2. Composition:
 Rod cooling device----Shears----Route dividing device----Drive unit for waste rod----Dual-spooler coiler----Air system----Electrical transmission and control device

3. Main Technical Data:
 1. Coiling size: External diameter: 1520 mm; Internal diameter: 780mm
 Diameter of Al rod: 9.5/12 mm;
 Diameter of Al alloy rod: 9.5 mm
 Coiling speed: 4-7.2 m/sec. for \varnothing 9.5mm Al rod;
 2.55-4.55 m/sec. for \varnothing 12mm
 Traverse pitch: 5-20mm (stepless and adjustable)
 Bundled weight: Max. 2200Kg

Dual-spooler Coiler Type SGS800/1600



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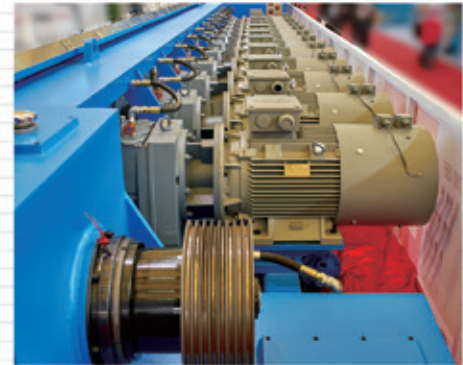
26-29.09.2016

Booth No:

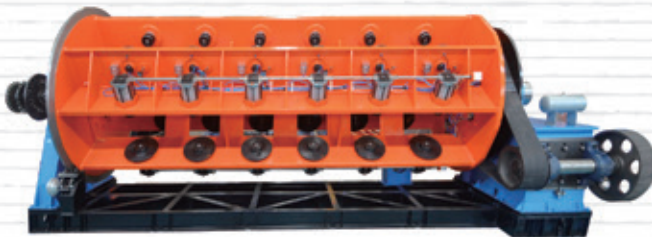
W2D23



Rigid Frame Stranding Machine — By Reducer



Aluminum Alloy/ Copper Rod Breakdown Machine- Separate Motor



Rigid Frame Stranding Machine — By Belt



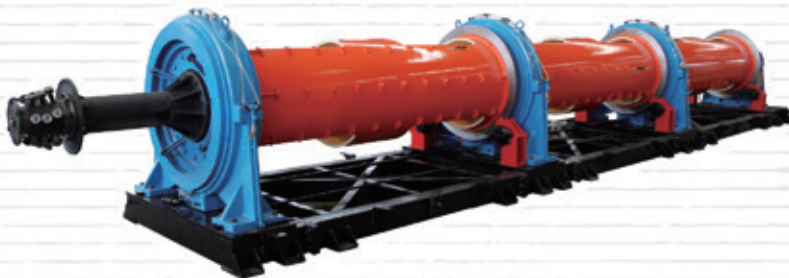
Aluminum Alloy/ Copper Rod Breakdown Machine (one head-two heads)



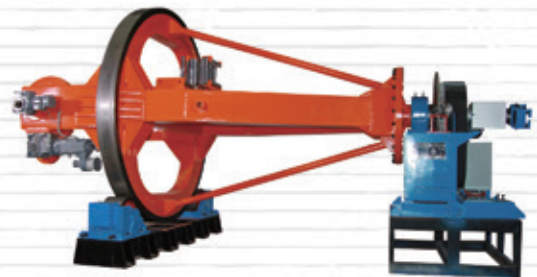
Bow Type Laying-up Machine



Copper Rod Breakdown Machine with Continuous Annealer



Tubular Strander



Drum Twister

Service Tel: 4000000505 Tel: +86-21-58588333 Fax: +86-21-58587306 E-mail: info@hosnglobe.com
Add: Suite 909C, Building 1, Jidiangang, Zhangjiang High-Tech Park No 3000, Longdong Ave, Shanghai, P.R.China