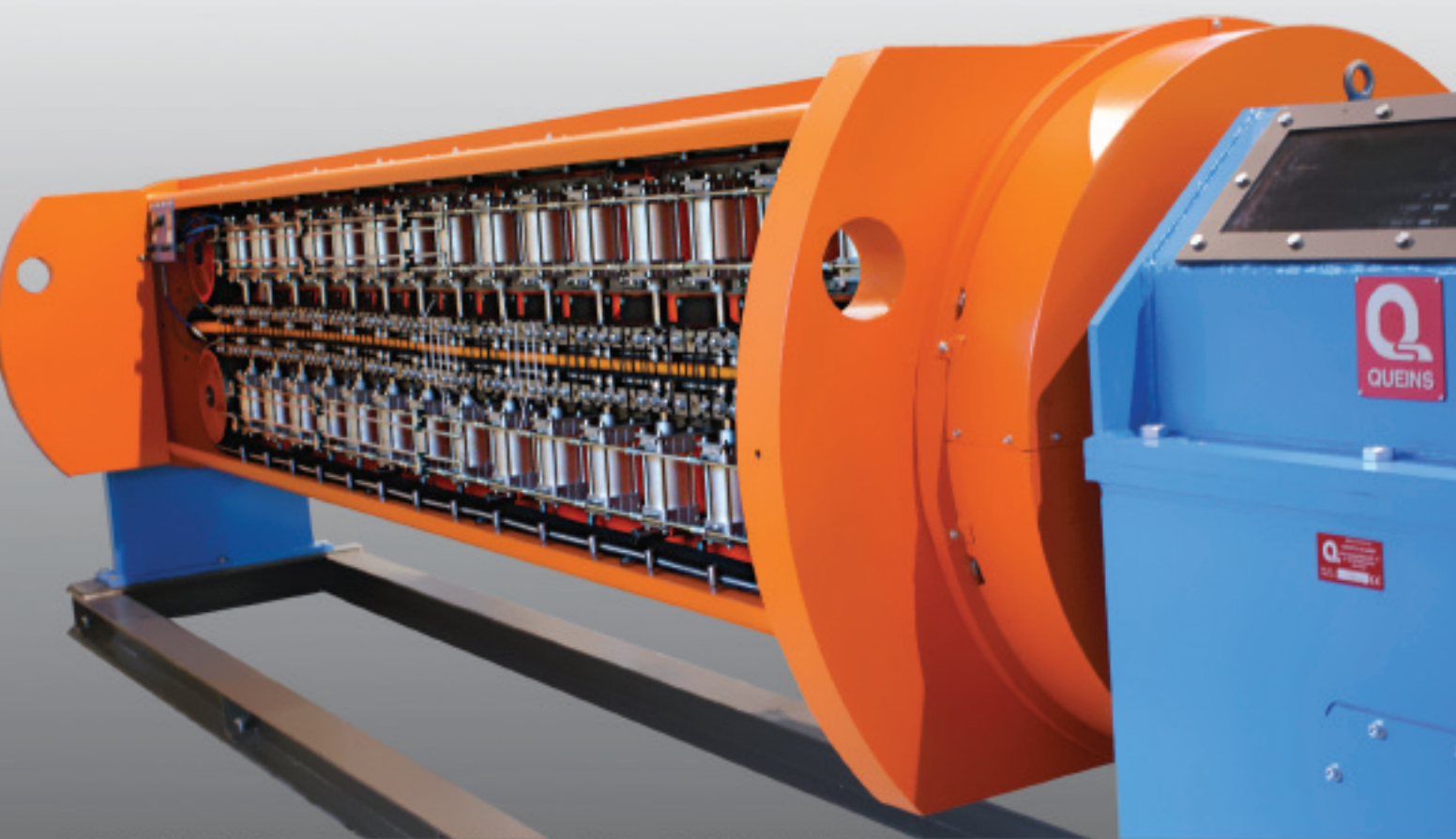


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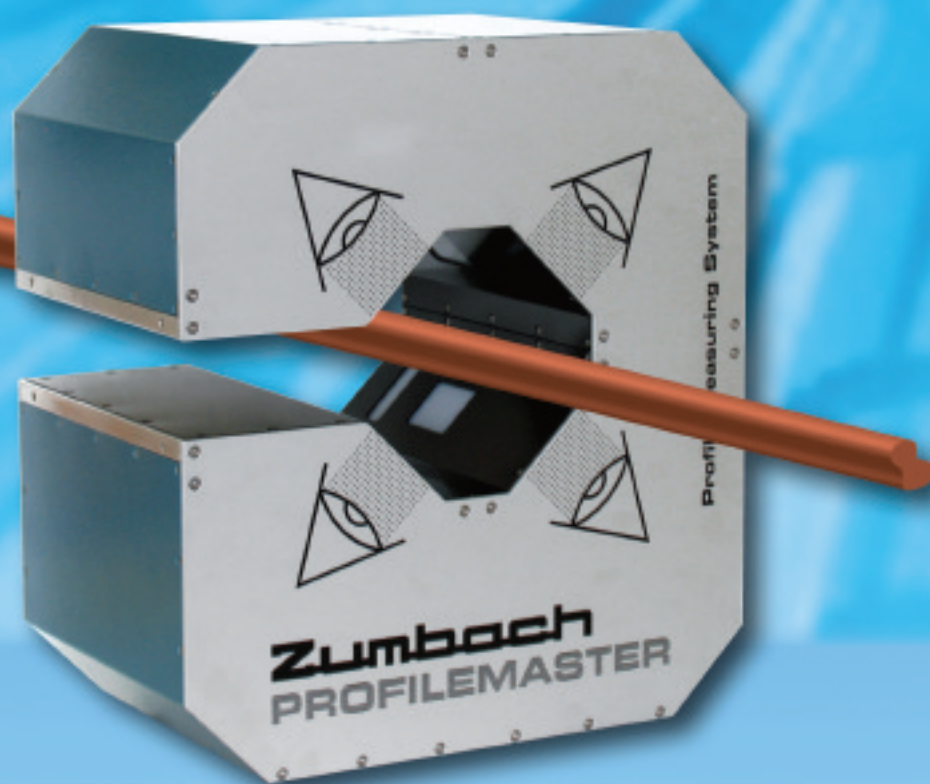
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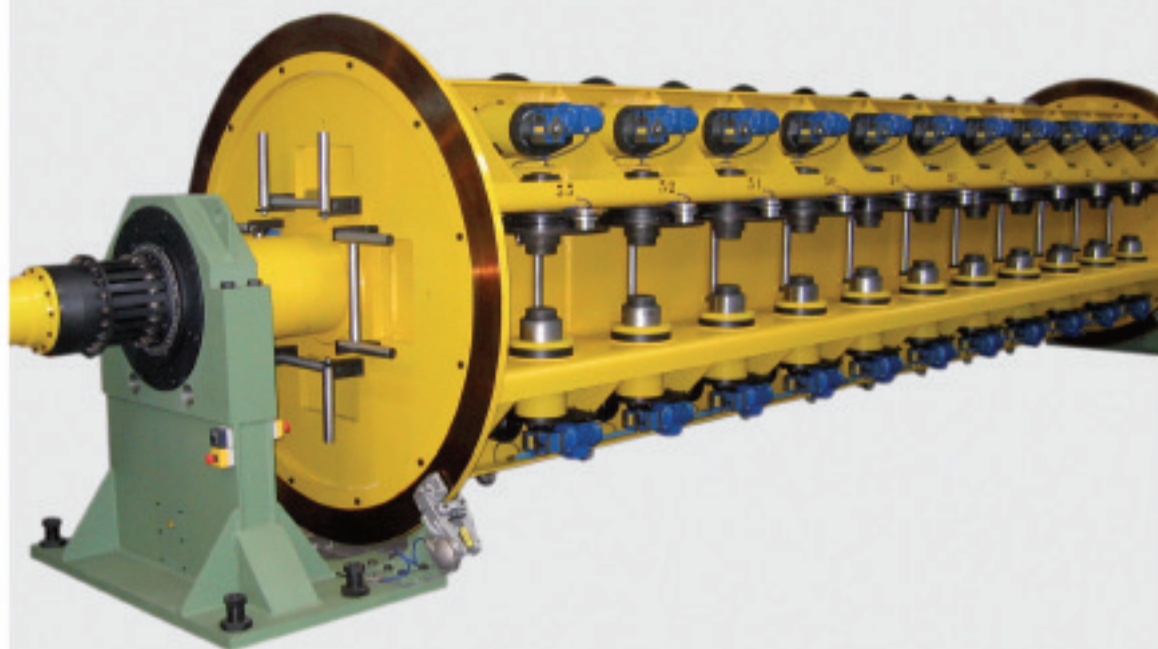
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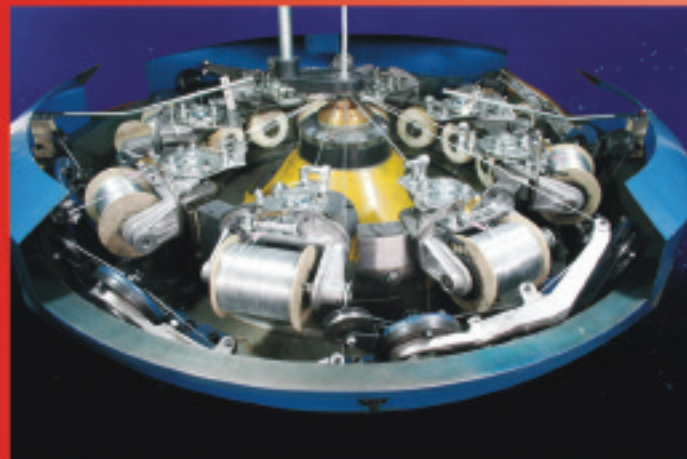
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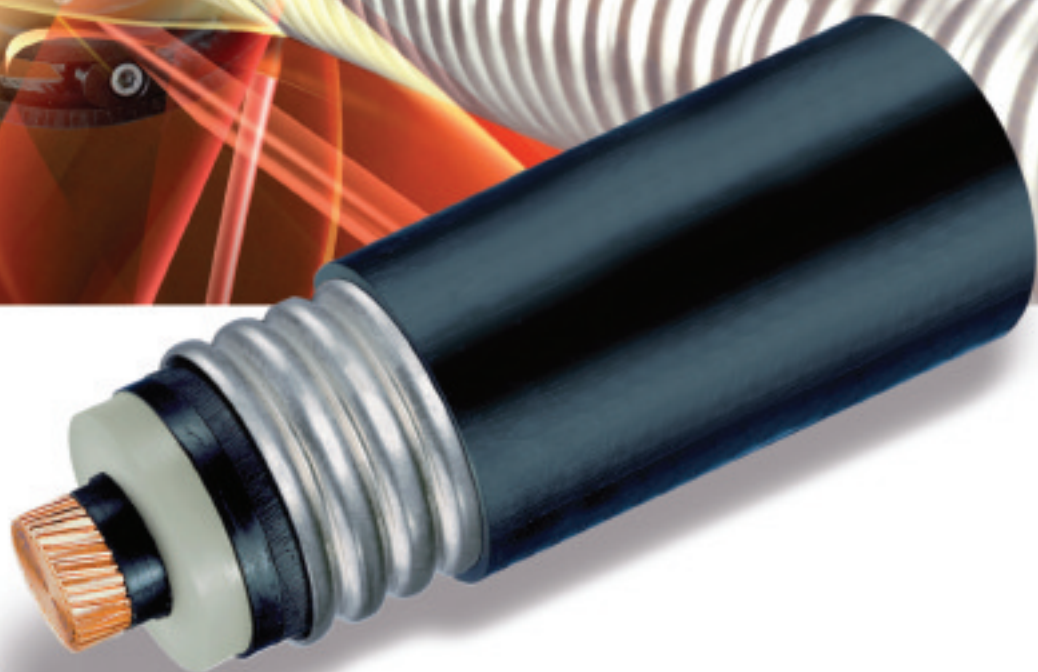
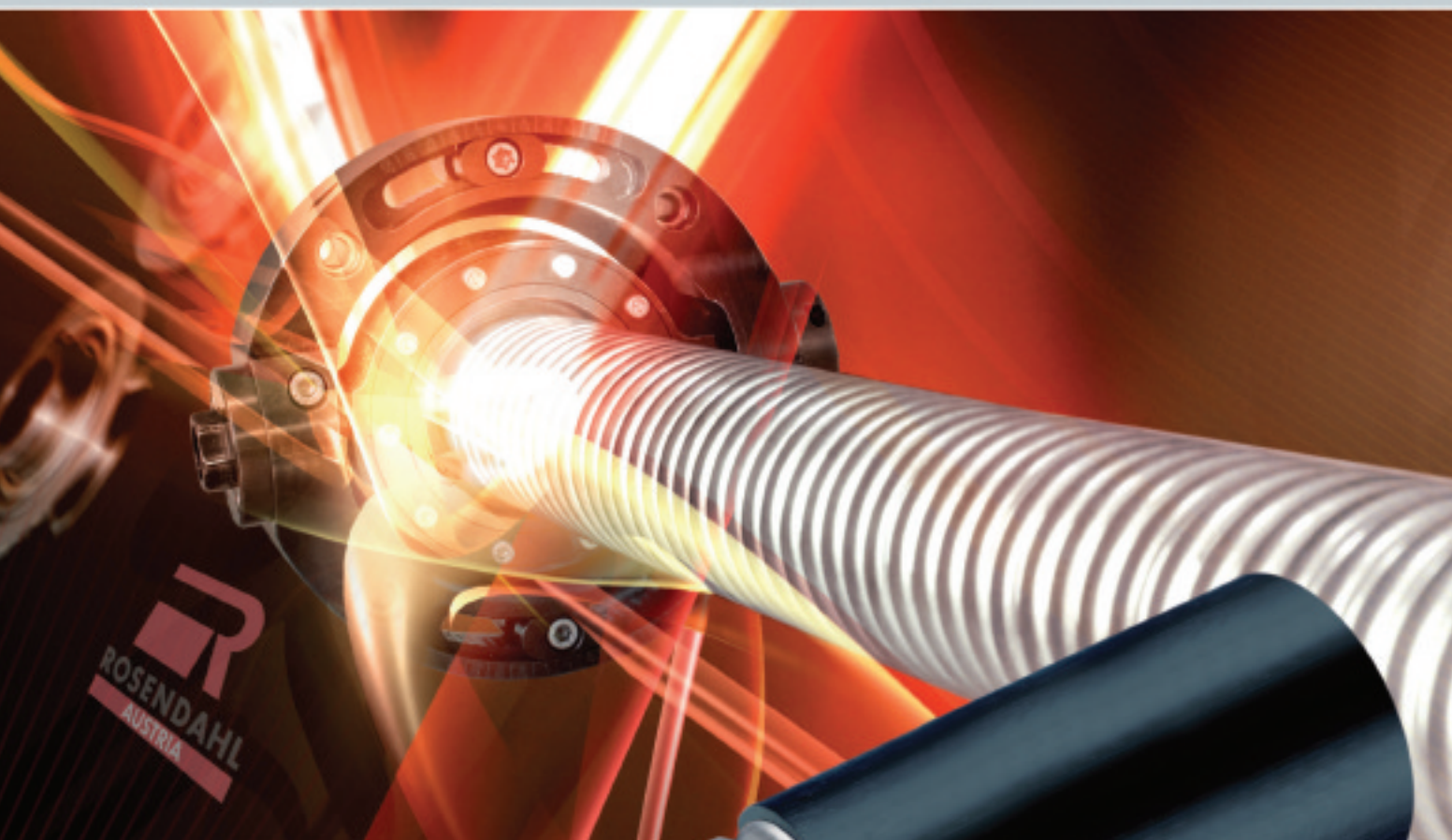
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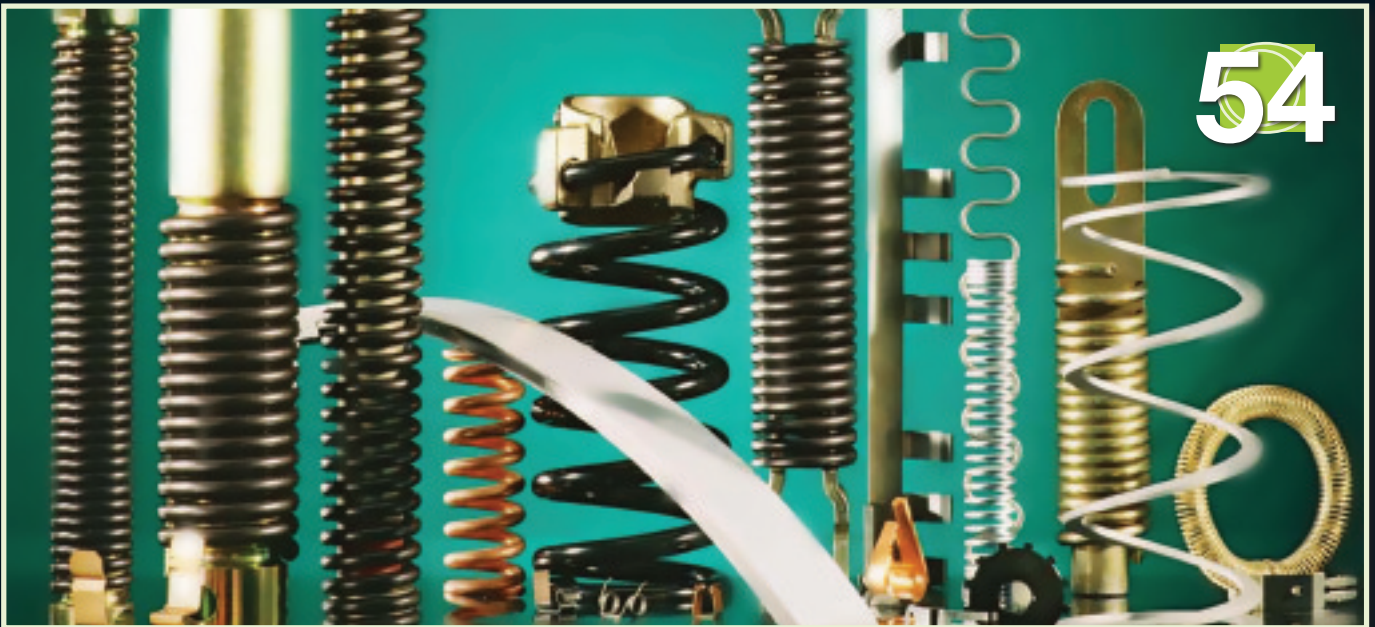
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Wire & Cable ASIA is published six times a year. It is circulated throughout North and South-east Asia to registered readers in wire, cable and wire component producer and consumer industries. An annual subscription is available from Intras Ltd at Euros 140, £95, US\$195 or Rupees 7,880.

《亚洲线缆》一年出版六期，面向整个北亚、东南亚地区的电线、电缆和线材制品的生产商和用户发行。订阅一年：欧元140；英镑95；美元195；卢比7,880。



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 'Blue Mosque domes at sunset, Istanbul, Turkey'
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2–3: Istanbul Cable & Wire '09
 – technical conference,
 Istanbul, Turkey
Organisers: IWMA, WAI, ACIMAF
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Email: info@iwma.org
Website: www.iwma.org



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 'Downtown Charlotte, NC'
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November 2009

9–11: 58th IWCS – technical
 conference – Charlotte, NC, USA
Organisers: IWCS Inc
Fax: +1 732 389 0991
Email: admin@iwcs.org
Website: www.iwcs.org

April 2010

12–16: wire/Tube Düsseldorf –
 trade exhibition – Düsseldorf,
 Germany
Organisers: Messe Düsseldorf
Fax: +49 211 45 6087 7793
Email:
 wire@messe-duesseldorf.de
Website: www.wire.de

May 2010

12–13: Wire Expo –
 technical conference and
 trade exhibition – Milwaukee,
 Wisconsin, USA
Organisers: Wire Association
 International (WAI)
Fax: +1 203 453 8384
Website: www.wirenet.org

September 2010

21–24: wire China 2010 –
 trade exhibition –
 Shanghai, China
Organisers:
 Messe Düsseldorf China
Fax: +86 21 5027 8138
Email: wire@mdc.com.cn
Website: www.wirechina.net

November 2010

TBC: 59th IWCS –
 technical conference –
 Providence, RI, USA
Organisers: IWCS Inc
Fax: +1 732 389 0991
Email: admin@iwcs.org
Website: www.iwcs.org

18–20: Wire & Cable India –
 trade exhibition – Mumbai, India
Organisers: CII
Fax: +91 22 2493 9463
Email: info@ciionline.org
Website: http://cii.in

April 2011

2–5: Interwire – trade exhibition
 – Atlanta, Georgia, USA
Organisers: Wire Association
 International (WAI)
Fax: +1 203 453 8384
Email: info@wirenet.org
Website: www.wirenet.org

May 2011

TBC: wire Russia 2011 –
 trade exhibition –
 Moscow, Russia
Organisers:
 Messe Düsseldorf GmbH
Fax: +49 211 4560 7740
Email: info@wire-russia.com
Website: www.wire-russia.com

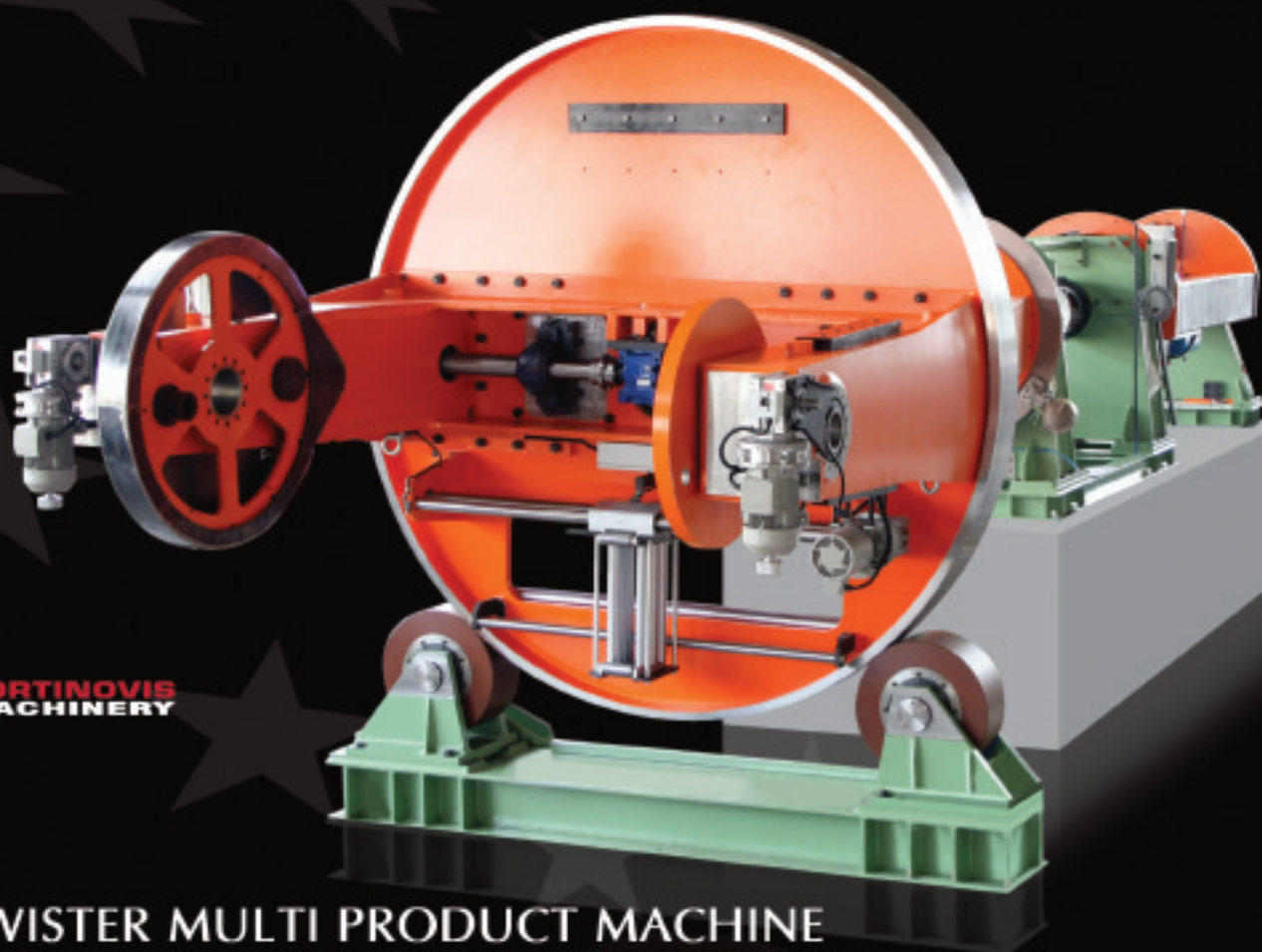
June 2011

19–23: JICABLE – technical
 conference and trade exhibition
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○ Frequency controlled HV AC resonant test system, being demonstrated by general manager Dr Bernd Kübler at the inauguration ceremony

Cable testing workshop

Highvolt Prüftechnik Dresden GmbH manufactures high-voltage and high-current test systems for the cable industry, providing test systems for development, type and routine testing in the factory up to the point of on-site testing after the laying and assembly of the power cables.

In the early 1990s Highvolt began to develop the WRV system of frequency controlled HV AC resonant test systems, particularly suitable for on-site testing of long XLPE-insulated HV and EHV cables, and in 1996, the first WRV system was delivered to the Siemens cable factory in Berlin.

On the occasion of the 100th delivered test system, Highvolt invited customers to a workshop to exchange experiences of on-site cable testing in the field. Between 24th and 25th September 2009, 40 participants from twelve countries on five

continents visited the Highvolt factory in Dresden, taking the opportunity to discuss trends and innovations.

Highvolt has experienced increased demand for test systems for the cable industry, and has recently extended its engineering and manufacturing capacities. In May 2009, the Prime Minister of Saxony, Mr Stanislaw Tillich, officially inaugurated the new 3,800m² manufacturing facility and a three-story office building.

For the future, a growing importance will be attached to the WRV system for on-site testing of longer cables in one sequence, often used as backbones of a power supply.

Highvolt Prüftechnik Dresden GmbH – Germany
Fax: +49 351 8425 679
Email: sales@highvolt.de
Website: www.highvolt.de

Mixed fortunes show in figures

The global economic crisis exerted an adverse effect on Leoni in the 2nd quarter of 2009, yet the company made substantial progress compared with the first quarter. Although the Q2/2009 consolidated sales were, at €530.3 million, 35.3% below the previous year's like-for-like figure €820.0 million, they were around 8% above the 1st quarter's figure.

As part of a capacity adjustment and to reduce costs, the company shed a significant number of jobs.

On 30th June 2009, Leoni employed 45,522 people group-wide, which was 7,762 fewer than on the same date in 2008. Of this total, there were 41,555 employees outside Germany, compared with 49,100 in 2008 and 3,967 in Germany, compared with 4,184 at the same date last year.

Staff are currently working short-time at nearly all facilities in Germany.

Leoni AG – Germany
Fax: +49 911 2023 231
Email: info@leoni.com
Website: www.leoni.com

Intercable 2009

The 37th Intercable Symposium took place from June 22nd to 25th in Villach, Austria, where presentations about the current situation and the forecast for the world cable industry were held.

At the general meeting the elections of the new IA Intercable management took place. Professor Peshkov was confirmed in his position as the president of the association, while Mr Rockenhaeuser of Germany's Niehoff Maschinenfabrik was elected as vice-president.

The elected board now consists of Mr Anvar Bulkhin from Samara Cable Company, Mr Dmitry Iorgachev from Odeskabel, Mr Gennadij Makarov from Sevkael Holding, Mr Anti Rissanen from Maillefer SA, Mr Rene Stoeckl from Rosendahl Maschinen GmbH and Mr Evgenij Vasiliev from Trade House VNIKP.

The event programme included a visit to the Rosendahl facility to join the company's 50th anniversary celebrations. During the visit, participants took the opportunity to see Rosendahl production and administration at first-hand.

Guided tours through the factory included the presentation of new Rosendahl technologies, such as the newly developed crosshead series RX and a high-speed running line for the production of fibre optic cable. A running line for metal tape forming and welding, used for RF cables and for shielding MV and HV cables, was also on show.

The combination of presentations and the opportunity to socialise made the 37th Intercable Symposium a successful networking event.

Maschinen Rosendahl GmbH – Austria

Fax: +43 3113 5100 59

Email: office@rosendahl-austria.com

Website: www.rosendahl-austria.com

Strong bookings for Düsseldorf

Messe Düsseldorf is reporting that, with eight months still to go before the start of the wire Düsseldorf exhibition, international exhibitors already occupy more net exhibition space than was the case during the same period two years ago. Total booked space (at the end of August 2009) is already 50,000 square metres.

As a result, exhibition Halls 9 to 12 and 15 to 17 are quite full, but individual stands are still available.

Traditionally the wire, cable and fibre optic machinery sectors, wire and cable production and the trade are presented in Halls 9 to 12, 17 and parts of Hall 16. Spring making is also located in Hall 16, while the fastener technology section (wire) is located adjacent to this in Hall 15.

Messe Düsseldorf – Germany

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Adbic and Midal in joint plant project

Abu Dhabi Basic Industries Corporation (Adbic), and Bahrain's Midal Cables Limited have agreed to a joint project to establish a \$100 million plant to produce aluminium products, including aluminium rods and aluminium electrical overhead conductors.

Capacity at the plant will be 150,000 tons per year, with some of the output serving as feedstock for Abu Dhabi's downstream industries.

Construction is scheduled to begin in early 2010 at the Khalifa Port and Industrial Zone in Taweelah, Abu Dhabi. "The establishment of the aluminium plant is the first step towards the development of Adbic's upcoming metals cluster, which will play a fundamental role in expanding Abu Dhabi's downstream manufacturing capacity in the metals sector," an Adbic statement said.

Strategically located between Abu Dhabi and Dubai, the cluster will focus on base metals such as aluminium, steel and copper. The joint venture agreement was signed by Jamal Al Dhaheri, senior vice president for metals at Adbic, and Hamid Al Zayani, managing director of Midal Cables. "This partnership brings together the technical expertise of one of the world's largest manufacturers of aluminium rods and conductors with the experience of one of the leading industrial investment and development companies in the region," commented Al Dhaheri. Al Zayani remarked: "This joint venture is strategically important for Midal Cables. The rapid industrial growth in the UAE and GCC region requires world-class expertise in the field of aluminium production. Working with a leading investment and industrial development company like Adbic further drives the growth of this key sector."

Adbic and Midal Cables also signed a MoU with Emirates Aluminium Company Limited (Emal) for the supply of molten aluminium.

Abu Dhabi Basic Industries Corporation – UAE

Email: info@adbic.com
Website: www.adbic.com

Midal Cables Ltd – Bahrain

Email: midalcbl@midalcable.com
Website: www.midalcable.com

Israel/Ireland broadband partnership

Radwin has signed an agreement with Irish Wireless of Ireland. Irish Wireless will distribute Radwin's wireless broadband systems in Ireland and provide customer support.

Gurmukh Neote, CEO of Irish Wireless, commented: "Our joint partnership combines Radwin's best-in-class solutions with Irish Wireless' expertise in distributing wireless equipment. By joining forces we can provide customers with high performance wireless links delivering native TDM and Ethernet (up to 16 E1s) with up to 100Mbps capacity for distances of up to 120km."

Yaron Ziv, Radwin's Europe sales director, stated: "Our point-to-point radios...are the ideal solution for cellular operators, wireless ISPs, private networks and CCTV networks. Ireland is a market where the demand for wireless broadband and the need to reach out to rural areas is rapidly growing, and with our solutions in place operators can expand their networks quickly."

Radwin – Israel

Website: www.radwin.com

Irish Wireless – Ireland

Website: www.irishwireless.eu

Underground cables for Mumbai

Three circuits of 220kV XLPE (cross-linked polyethylene insulation) underground cables will provide an extra power transmission capacity across Mumbai.

Tata Power Company Ltd, India's largest private sector power utility, has awarded Nexans a contract worth €15 million for a project to design, manufacture and supply high voltage underground cables to reinforce the power infrastructure in Mumbai.

In a two-year 'total supply and service' contract for Tata Power, starting in 2009, Nexans will deliver five complete circuits of 220kV cable and associated accessories to provide an extra 300MVA of power carrying capacity for the underground network, linking extra high voltage substations across Mumbai.

"Nexans has a long-standing relationship with Tata Power going back over 20 years to when we first supplied Mumbai with EHV cables," said Nicholas Ballas, Nexans' executive vice president for the Asia-Pacific area. "The technology has changed, so that we are now supplying new generation high voltage, environmentally-friendly XLPE cable."

Nexans will supply the cables during 2009 and 2010 to meet Tata Power's project implementation phases, which will continue until 2011. The XLPE cable will be manufactured in Nexans plant located in Hannover, Germany while the accessories will be supplied by the Nexans plant of Cossonay in Switzerland.

Nexans – France

Email: nexans.web@nexans.com

Fax: +33 15669 8484

Website: www.nexans.com

Partnership to provide ad-funded content

Warid (Pvt) group in Pakistan is partnering with UK based mobile media company 3rd Space to provide advertising supported mobile content for its 18 million subscribers. Warid Pakistan subscribers will be given access to free content such as Bollywood cinema, songs and music videos in exchange for watching an advert embedded within the video.

"Our partnership with Warid is vital to providing value added services to people who want it. Pakistan's focus is to engage with international companies and use partnerships like ours as a springboard for international business while supporting local communities," said Martyn Lock, director of sales and marketing.

"We are delighted to be providing mobile TV services for one of the most forward-thinking mobile operators in Pakistan. Warid Group subscribers in Ivory Coast, Bangladesh, Congo and Uganda have an appetite for mobile TV and we look forward launching advertising supported content like the Africa Nations Cup Football in the near future."

3rd Space Services – UK

Website: www.3rdspace.com

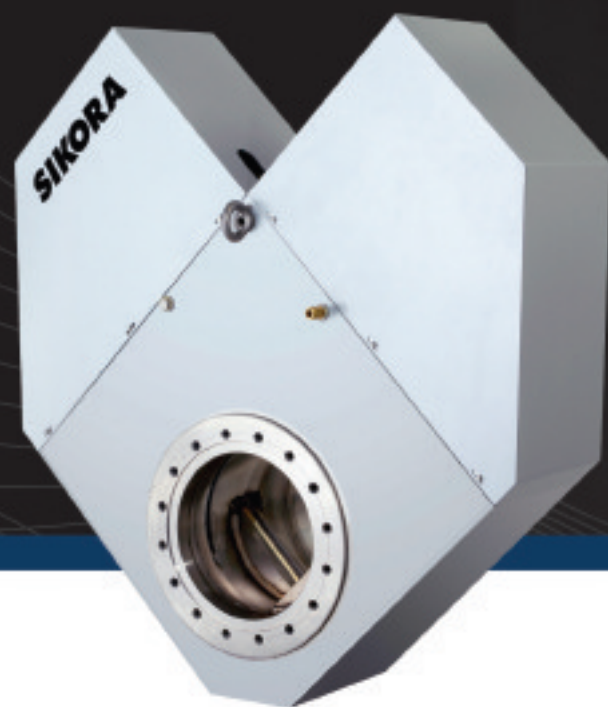
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Sikora in India...and beyond

India has shown a remarkable economic upswing in recent years, being the target of much investment from abroad and experiencing a fast development of production and infrastructure. However, India still has a backlog demand for electrical power supply all over the nation. In particular, many rural households are not connected to the main supply. Therefore, the Indian government is increasing investments in power generation, which includes the modernisation and expansion of the power network.

The resulting demand for cables has prompted local as well as large companies from abroad to invest in wire and cable production lines in India. In particular, there is a significant growth potential for building wires as well as medium and high voltage power cables.

The production of these cables demands reliable measuring and control equipment.

Sikora has specialised in measuring and control devices for medium voltage, high voltage and extra high voltage cables since the early 1990s, when the company presented its first X-ray measuring device, the X-Ray 8000.

As a result of the increasing demand for cables in the Indian market, Sikora opened up a subsidiary in India in 2004. Sikora India is situated in New Delhi, managed by Mr Prem Saggi. He and his team support Indian customers with technology and on-site service.

Sikora is familiar with the economic potential of the far eastern markets and has also set up offices in China and Korea. There will soon be an additional office in Japan. The offices work in conjunction with local representatives in Indonesia, Malaysia, Philippines, Singapore, Taiwan, Thailand and Vietnam. "South-east Asia is a market that will further emerge. It is pushed by the dominating



○ Mr Prem Saggi, manager of Sikora India

markets (of) India, China and Korea. Also, Thailand and Vietnam have big market potential and will have a decisive impact on the south-east Asian region," explained Harry Prunk, CEO of Sikora AG.

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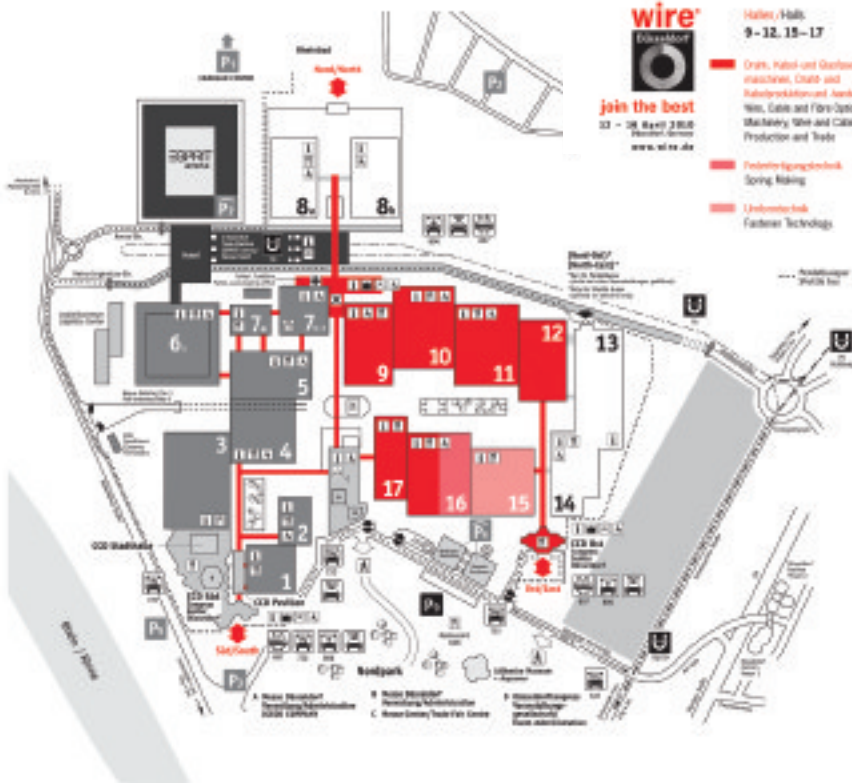


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CABMACH

CABLE AND ROPE EQUIPMENT



杜塞道夫线缆展订单如潮

据杜塞道夫消息报道，虽然距离杜塞道夫线缆展还有八个月之久的时间，国际参展商订下的展位面积已经超过两年前的上一届。总共定下的展位面积（到2009年8月底）已经达到5万平方米。

9号到12号展厅以及15号到17号展厅已经告罄，不过单独的展位还有供应。在过去，线缆和光纤机械部分，线缆生产

部分以及贸易部分在9到12号、17号以及16号展厅的一部中展出。弹簧生产的展览位于16号展厅，紧固件技术（线缆）则与15号展厅为邻。

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 网址: www.wire.de

2009年国际线缆学术研讨会

第37届国际线缆学术研讨会将于6月22日到6月25日在奥地利的Villach举办。研讨会上将讨论目前的状况，并对国际线缆行业进行预测。

在这次大会上，选举了新的IA Intercable管理层。Peshkov主席就任协会主席，而来自Niehoff Maschinenfabrik的Rockenhaeuser就任副主席。选举产生的董事会包括来自Samara Cable Company的Anvar Bulkhin、来自Odeskabel的Dmitry Iorgachev、来自Sevkabel Holding的Gennadij Makarov、来自Maillefer SA的Anti Rissanen、来自Rosendahl Maschinen GmbH的Rene Stoeckl以及来自Trade House VNIKP的Evgenij Vasiliev。

这次活动包括参观Rosendahl的设施，参加该公司的50周年庆祝。在此期间，参观者将有机会首先参观Rosendahl的生产和管理，比如新开发的RX系列十字头以及生产光缆的高速生产线。用于生产用于射频线缆和中压及高压线缆屏蔽的金属缠带成型和焊接生产线也在展览中。

产品展示与社交活动相结合，使第37届国际线缆学术研讨会成为一次成功的网络盛会。

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Sikora在印度

印度近年来经济发展非常迅速，成为许多来自海外的投资者的目标，生产和基础设施的发展都非常迅速。不过，印度总体而言在满足电力需求方面仍然落在后面，特别是许多农村家庭还没有得到电力供应。因此，印度政府正在加大对发电行业的投资，包括电网的现代化和扩建。其导致的对线缆的需求推动了本地和来自海外的大型公司投资于印度的线缆生产线。特别是在建筑线缆和中高压电力线缆方面，有着巨大的增长潜力。这些线缆的生产需要可靠的测量和控制设备。

从上个世纪90年代初推出首款X射线测量设备X-Ray 8000以来，Sikora就专业生产中压、高压和超高压线缆的测量和控制设备。

为应对印度市场日益增长的对线缆的需求，Sikora于2004年在印度开设了一个

子公司。Sikora印度设在新德里，总经理为Prem Saggi。他和他的团队为印度客户提供技术和现场服务支持。

Sikora了解远东市场的经济潜力，并在中国和韩国设立了办事处。日本的办事处也将很快设立。该办事处将与印尼、马来、菲律宾、新加坡、台湾、泰国和越南的本地代表处合作。Sikora AG的首席执行官Harry Prunk表示：“东南亚是值得进一步开拓的市场，它受到印度、中国和韩国的大市场的推动。另外，泰国和越南也有大量市场潜力，对东南亚市场有着决定性的影响。我们发现印度市场的状况与中国10年前的状况类似。在中国，在经济开始上行的时候，电力供应有所滞后，这与目前印度的情况类似。今天我们在中国市场上已经有200台X-Ray 8000测量设备在线缆生产线上投入使用。这对印度市场将来的发展是有重大启迪意义的。”



○ Prem Saggi 成为Sikora印度经理

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Adbic和Midal进行联合工厂项目

Abu Dhabi Basic Industries Corporation (Adbic)和巴林Midal Cables Limited 约定修建一个联合项目，投资1亿美元兴建一家铝厂，生产的产品包括铝杆和铝电气架空导线。该厂的产能为每年15万吨，其中部分产量将用于阿布扎比的下行业。建设于2010年初将在Khalifa港和阿布扎比的Taweelah工业区启动。Adbic在声明中表示：“该铝厂的建设是建设Adbic未来的冶金工业区的第一步，将在该冶金工业区下游产能的扩建中发挥关键性作用。”

该工业区在战略上安排在阿布扎比和迪拜之间，主要生产基础金属，例如铝、钢铁和铜。合资企业协议由Adbic金属事业部的高级副总裁Jamal Al Dhaheri和Midal Cables的执行董事Hamid Al Zayani共同签署。Al Dhaheri表示：“该合作伙伴可将世界上最大的铝杆和铝导线生产厂家的专业技能与该地区主流的工业投资和开发公司的经验合二为一。Al Zayani表示：“该合资企业对Midal Cables具有战略意义。阿联酋和海湾合作委员会地区的高速工业发展要求世界级的铝生产专业能力。与像Adbic这样的领先投资和工业开发公司合作，可以进一步推动这个关键性领域的增长。”

Adbic和Midal Cables还与Emirates Aluminium Company Limited (Emal) 签署了谅解备忘录，供应熔融铝给新的熔炉。熔融铝是该厂的主要进料。到2011年二季度，Adbic的工厂将接受第一批熔融铝。Al Dhaheri表示：“Emal在支持Adbic的冶金地区的发展中发挥着基础性的作用。这种合作伙伴关系不仅帮助推动Adbic为阿布扎比的工业多元化做贡献，还利用了Emal规划的铝业上游产能。预计到2010年1季度，该产能将达到每年70万吨。”

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 电子邮件: info@adbic.com 网址: www.adbic.com

Midal Cables Ltd – 巴林
 电子邮件: midalcb1@midalcable.com 网址: www.midalcable.com

为孟买提供的地下线缆

三条220kV XLPE(交联聚乙烯绝缘)地下线缆绝缘线路将为印度最大的城市提供额外的电力传输能力。印度最大的私有部门电力机构Tata Power Company Ltd与Nexans签署了价值1,500万欧元的协议，以进行高压地下线缆的设计、生产和供应，强化孟买的电力基础设施。

根据与Tata Power签订的为期两年的“总体供货和服务”合同，从2009年开始，Nexans将交付五套完整的220kV线缆线路及其相关配件，为地下网络提供300MVA的额外电力，将跨越孟买的高压变电站连为一体。Nexans亚太地区高级执行副总裁Nicholas Ballas表示：“Nexans与Tata Power建有长期合作关系，时间可追溯到20年以前首次向孟买供应超高压线缆的时候。由于技术已经发生了变化，我们现在在供应新一代高压环保型XLPE线缆。”

Nexans将在2009年到2010年间提供这些线缆产品，满足Tata Power各期项目实施的需要。项目实施将到2011年完成。XLPE线缆将在Nexans设在德国汉诺威的工厂生产，同时配件将由Nexans设在瑞士Cossonay的工厂提供。

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Shanghai Shenchen Wire & Cable Equipment Co., Ltd. is a specialized manufacturer of cold welding machines and moulds with strong R&D, production and marketing capacities. We are committed to supplying customers with good products at low cost but better service. Moving forward constantly and progressively, we have been bridging the industrial gaps in China that has shaped us into the leading supplier of the industry.

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上个世纪90年代初, Highvolt开始开发WRV频率控制高压交流谐振测试系统, 特别适用于在现场对大长度XLPE绝缘高压和超高压线缆进行测试。1996年, 第一套WRV系统交付给了柏林的西门子线缆工厂。

在交付第100套测试系统的时候, Highvolt邀请客户到车间交流现场线缆测试的经验。2009年9月24日到25日, 来自五大洲12个国家的40名客户参观了Highvolt设在德累斯顿的工厂, 并讨论了行业发展趋势和创新。

Highvolt从线缆行业得到的订单与日俱增, 并且在近期扩大了其工程和生产能力。2009年5月, 萨克森州的州长Stanislaw Tillich为占地面积3,800平方米的生产设施和高三层的办公建筑正式举行了揭幕仪式。

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Now a global service provider via SEACOM, Tata Communications offers end-to-end solutions for Europe, Asia, Africa and India

Having launched its SEACOM system, on 23rd July, the Indian giant Tata Communications Ltd believes it has in place the first undersea submarine cable system to connect Europe, Asia, Africa and India. SEACOM, which augments the Tata Communications SAT3/SAFE cable system, also provides fully redundant service by supplying access via multiple routes to anywhere in the world. Europe may now be reached by any one of the separate routes SAT3, SEACOM and SAFE SEA-ME-WE3/4.

Writing on 27th August in *MIS Asia*, the information technology management magazine for CIO's and senior IT executives across the Asia-Pacific region, Jack Loo noted that the African countries Mozambique, Tanzania, Kenya and South Africa can hook onto Tata Communications network services and thence to European, Asian and Indian networks. Tata Communications is itself operating the landing point in its headquarters city of Mumbai. Neotel, the Tata subsidiary in South Africa, will manage the landing point there.

"Meanwhile," Mr Loo reported, "Tata Communications is touting SEACOM to enhance connectivity for businesses based out of Europe, Asia and India with cable and capacity options into South Africa. The subsidiary Tata Communications Transformation Services will manage network administration, operations and maintenance of the 10,560-mile cable system supporting 1.28 terabits per second of capacity."

Byron Clatterbuck, who is senior vice president, global transmission services, at Tata Communications, told *MIS Asia* that his company is also able to provide onward connectivity to major business destinations in the United States.

Deutsche Telekom and France Télécom plan to merge their cellular units in Britain into the country's largest mobile operator

The largest and third-largest European telecommunications companies, Deutsche Telekom and France Télécom, said 8th September that they plan to merge their British mobile operations and thus become the leading provider of such services nationwide. The 50-50 joint venture between the companies, the number 3 and number 4 operators in Britain, would combine Deutsche Telekom's T-Mobile UK with France Telecom's Orange UK.

According to the information technology research firm Gartner, the proposed 50-50 joint venture, which needs approval from each company's supervisory board and from British and European regulators, would have 28.4 million subscribers and a 37% market share. Their pooled strength would push the partners well ahead of current market leader O2 – which commands 27% of the market –

and Vodafone, with 25%. Deutsche Telekom and France Télécom said they expected to sign an agreement by the end of October.

Writing from Berlin in the *New York Times*, Kevin J O'Brien reported that the prospective partners foresee an outlay of \$984 million to \$1.3 billion through 2014 to eliminate redundant mobile base stations, close retail stores, and streamline administrative operations. They said they intend to maintain their current brands in Britain for 18 months before making a final, mutually agreeable choice. This could be the French brand, Orange; the German, T-Mobile; or something else entirely. ("Merger Would Create Mobile Giant in Britain," 9th September)

The operators predicted that the venture would eventually generate savings of \$5.7 billion. Gervais Pellissier, the France Télécom chief financial officer, said, "We needed the scale to run a very efficient business."

Timotheus Höttges, the Deutsche Telekom chief financial officer, told Mr O'Brien, "We evaluated all options over the last months and came to the

conclusion that [a merger] would have the most value for our shareholders. This will give us a stronger foothold in the UK market than we had before."

Tom Alexander, chief executive of Orange in Britain, will serve as chief executive of the new venture. Richard Moat, T-Mobile's chief executive in Britain, will become chief operating officer. The board of directors will have two members each from Deutsche Telekom and France Télécom.

Traditional telecom equipment vendors may look to 'the hollow operator' to brighten up their balance sheets

A report published 19th August by *Light Reading Insider* introduced a term that seems likely to enter the vocabulary of the telecommunications industry. "Telecom Managed Services: the Rise of the Hollow Operator" defines such an operator as a telecom carrier that – while continuing to own all or most of its infrastructure assets – seeks out third-party partnerships to offload more and more operational functions. The hollow operator, according to analyst Simon Sherrington, who wrote the report, "has an eye toward cutting operational expenditure [opex] costs and freeing up internal resources for more intense business development activities."

The telecom managed services sector is seen as attracting huge interest from established IT giants that see this area as a natural extension of their core businesses; and from telecom equipment manufacturers that see telecom-focused managed services as their only significant growth path over the next decade. Mr Sherrington wrote, "We began charting this inevitable clash in 2004. The intensity level has picked up dramatically over the past 18 months and will continue to grow into the next decade."

Phil Harvey, Editor-in-Chief of *Light Reading Insider* noted "a bunch of reasons" why operators would want to hollow out and trust the running of some of their networks to companies that have traditionally been telecom equipment suppliers. He wrote, "In developed countries, cost-cutting is the main driver, especially as it relates to legacy networks."

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In emerging markets, carriers want to turn over their network operations so they can focus on growth” – branding, marketing, and services.

Elsewhere in telecom . . .

① A proposal being considered by the Indian government calls for the establishment of the Telecom Testing and Security Certification Center, with functions similar to those exercised by the China Information Technology Certification Center. According to the website of the *South China Morning Post*, SCMP.com (2nd September), the new agency, under the jurisdiction of India’s Department of Telecom (DoT), would require all foreign equipment suppliers to register with the DoT, agree to be monitored by security agencies, and obtain clearance from the Home Affairs ministry.

The DoT solution is an apparent compromise intended to satisfy two sets of concerns. Indian security agencies want foreign suppliers banned from providing gear for networks in all but eight Indian states, but an initial demand that domestic telecoms supply and maintain their networks on their own was dropped when operators raised objections.

As reported in the *Economic Times* (Mumbai) on 29th August, “The government’s move to tightly regulate overseas suppliers of telecom gear, especially the Chinese, due to security concerns has met with stiff opposition from Indian mobile phone firms, which fear such stringent measures will add substantially to their costs.”

② If its \$2.9 billion bid for Brazilian telecom operator GVT is successful, the French telecommunications group Vivendi will become a direct rival of Telefónica of Spain in Latin America’s biggest market. Vivendi’s overture, on 10th September, was seen as consistent with the acknowledged interest of the company’s chief executive, Jean-Bernard Lévy, in emerging markets. Vivendi said GVT’s controlling shareholders had agreed to sell it at least 20% of outstanding shares, but that its offer would go forward only if it obtained at least 51% of GVT’s capital.

GVT has a 4% share of the Brazilian market, with 2.3 million customers and revenue of \$800 million in 2008. In offering a 15.8% premium over GVT’s share price Vivendi clearly signalled it is in earnest, but some analysts did not rule out a counterbid, noting that Telefónica might be interested in expanding its 31% market share in Brazil. Telefónica shares control of Vivo, Brazil’s number 1 wireless carrier, with Portugal Telecom.

The Spanish company also owns Telesp, Brazil’s number 2 fixed-line ‘phone company, which operates in São Paulo state.

③ In other news of Telefónica, the former Spanish ‘phone monopoly and China Unicom said 6th September in Beijing that they would each buy \$1 billion worth of stock in the other to deepen a strategic alliance. Telefónica’s stake in China Unicom will increase to 8% from 5.4%, making the Spanish operator the largest single investor in one of the largest Chinese mobile operators. China Unicom will acquire a 0.88% stake in Telefónica.

Together, the two companies have about 550 million customers. They said they will jointly buy infrastructure and equipment and develop wireless service platforms and services for multinational companies. The agreement would also extend to network roaming and the sharing of technical research. Telefónica has invested in the Chinese telecommunications market since 2005, when it bought a 2.99% stake – later raised to 5.4% – in China Netcom, an operator that was merged into China Unicom in 2008.

④ Alcatel-Lucent announced on 3rd September that it has strengthened its working relationship with Telecomunicações de Moçambique, the state-owned telecommunications company, with the signing of a \$30 million contract to deploy the third phase of the Mozambican national transmission network. The French-American telecom recently finished the two first phases, laying 1,845 miles of optical fibre across Mozambique. The third stage will give the country a fibre optic interface with landlocked neighbours.

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As reported by MyBroadband, the contract calls for Alcatel-Lucent to lay an additional 1,606 miles of fibre and deploy its optical transmission solutions to connect any remaining geographic areas.

Scheduled for completion in 2011, the Mozambican national fibre optic backbone will connect individuals and companies in Mozambique to the global submarine network and bring high-speed connectivity to provincial capitals countrywide.

© In other news of Alcatel-Lucent, the Paris-based company has signed with JV Asia TransGas LLC, an Uzbek oil and gas pipeline operator, to provide a communications network for the 310-mile Uzbekistan-China gas pipeline. The vendor said that it would install a turnkey integrated communications solution, including radio and optical transmission, satellite-based TV system and telephone devices, voice switching systems, and local area networks. The contract, announced 19th August, was signed through Alcatel-Lucent's Chinese flagship company, Alcatel-Lucent Shanghai Bell.

© AT&T (Dallas, Texas) said on 9th September that by the end of 2009 it will have begun a project to double the speed of its network in six American cities: Charlotte, Chicago, Dallas, Houston, Los Angeles and Miami. The new, speedier network standard HSPA 7.2 is also scheduled to be in 25 of the top 30 US markets by the end of 2010, the company said. That would, according to AT&T, reach about 90% of its existing 3G network.

The peak speed of the current network is 3.6 Mbps. As noted by Roy Furchgott of the blog Gadgetwise (9th September), while the HSPA 7.2 network can reach peak speeds of 7.2 megabits per second (Mbps), "real-world speed will be affected by where you are, which phone you own, and the amount of traffic on the network."

Two cities conspicuously absent from the list for conversion are San Francisco and New York, where a high concentration of iPhone users has taxed AT&T service and provoked complaints.

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Tata启用SEACOM实现全球业务提供能力, 能为欧洲、亚洲、非洲和印度提供端到端解决方案

印度电信巨头Tata Communications Ltd 7月23日启用了名为“SEACOM”的系统, 声称拥有了首套把欧洲、亚洲、非洲和印度连为一体的海底电缆系统。该系统是对Tata现有的SAT3/SAFE电缆系统的补充和强化, 通过提供到世界各地的多路由访问能力, 实现了充分的冗余业务能力。欧洲现在可以通过以下任一条路由到达: SAT3、SEACOM和SAFE SEA-ME-WE3/4。

MIS Asia, 亚太地区专门面向首席信息官和高级IT职员的信息技术管理杂志的记者Jack Loo在8月27日报道称, 非洲国家莫桑比克、坦桑尼亚、肯尼亚和南非可以连接到Tata的网络业务上, 然后接入欧洲、亚洲和印度的网络。Tata自己在其设在孟买的总部经营其接陆点。Tata设在南非的子公司Neotel将负责南非一侧的接陆点。

Loo还报道说: “同时, Tata还大张旗鼓地向欧洲、亚洲和印度的企业宣传SEACOM可以为它们提供到南非的线缆和容量, 增强连接能力。子公司Tata Communications Transformation Services将负责网络管理、运作和长达10,560英里、具有每秒1.28太比特通信能力的线缆系统的维护。” Tata全球传输业务高级副总裁Byron Clatterbuck在接受MIS Asia采访时表示, Tata还可以提供到美国主要业务地点的连接能力。

德国电信和法国电信准备合并英国的移动业务, 组建英国最大的移动营运商

欧洲排名第一和排名第三的电信公司——德国电信和法国电信9月8日宣布计划合并它们在英国的移动业务, 组建英国最大的移动营运商。该合资公司两公司分别占股50%, 由英国排名第三的德国电信子公司T-Mobile UK和法国电信子公司Orange UK合并而成。

根据信息技术公司Gartner提供的消息, 这个两公司各占50%股份的合资公司还需要各自监事会的批准以及英国和欧盟监管机构批准。如能成立, 该公司的用户数将达2,840万人, 市场份额37%。新公司将大大超越目前市场的领导者O2和目前排名第二的Vodafone, 各占27%和25%的市场份额。德国电信和法国电信表示预计到10月底签订协议。

《纽约时报》记者Kevin J O'Brien从柏林报道说, 两公司准备从现在到2014年底开支9.84亿美元到13亿美元, 拆除多余的移动基站、关闭零售店铺、理顺管理业务。两公司还表示在双方达成最终双方都可以接受的选择之前, 将继续在英国使用各自的品牌18个月。最终的品牌可能是法电的“Orange”品牌, 也可能是德国电信的“T-Mobile”品牌, 也可能是全新的品牌。(9月9日《合并创建英国移动巨头》)

两公司预计通过组建合资公司, 可以节省57亿美元的成本。法国电信首席财务官Gervais Pellissier表示: “我们需要这样的规模来高效率地经营业务。”

德国电信首席财务官Timotheus Höttges在接受O'Brien采访时表示: “我们在过

去数月中评估过所有选择, 结论是‘合并’能给我们的股东带来最大的利益。这可以让我们在英国市场上比以往地位更加牢靠。”

英国Orange的首席执行官Tom Alexander将出任新合资公司的首席执行官。T-Mobile在英国的首席执行官Richard Moat将出任首席营运官。董事会将由德国电信和法国电信分别派遣两位成员。

其它电信新闻...

① 印度政府正在考虑成立电信测试和安全认证中心的提议, 该中心的功能将类似于中国信息技术认证中心。根据《南华早报》网站SCMP.com(9月2日)提供的消息, 该新机构将接受印度电信部(DoT)的管理, 并要求所有的外国设备供应商在DoT登记, 接受安全机构监督, 并在内政部获得许可。DoT成立该机构的目的明显是为了满足印度安全部门要求在除八个印度邦之外的其他邦排除外国供应商提供的网络设备而做出的妥协措施。在营运商提出反对意见后, 起初要求国内电信公司自行为自己的网络供应设备并承担维护工作的要求被否决了。根据《经济时报》(孟买)8月29日报道: “政府出于安全原因想要严格管理外国供应商提供的电信设备, 特别是中国的电信设备的举措遭到了印度移动通信公司的激烈反对。印度的电信公司担心如此严格的措施会大大增加它们的成本。”

② 如果其出资29亿美元购并巴西电信公司GVT的计划成功, 法电集团下属的Vivendi将成为拉美最大市场上西班牙Telefónica最大竞争对手。Vivendi

9月10日的这项举措被视为体现了公司首席执行官Jean-Bernard Lévy聚焦新兴市场的战略。Vivendi表示GVT的控股股东已经愿意出售至少20%的已发行股份, 不过Vivendi只会在能够获得51%的GVT股份的情况下继续推进购并工作。GVT目前在巴西市场上的份额为4%, 用户数230万人, 2008年收入8亿美元。Vivendi的出价是Vivendi股份溢价15.8%, 这充分显示了Vivendi的诚意, 不过部分分析人士并不排除会有更高报价, 因为Telefónica可能会考虑把巴西的市场份额扩大到31%。Telefónica和葡萄牙电信控股了巴西排名第一的无线营运商Vivo。Telefónica还拥有巴西排名第二的固话公司Telesp。该公司在São Paulo州营运。

③ Telefónica和中国联通9月6日在北京宣布将互相交叉购买价值10亿美元的股份, 以加深战略合作关系。Telefónica在中国联通中的股份比例将从5.4%上升到8%, 使其成为在大型中国移动营运商中最大的单一投资者。中国联通则将购买Telefónica 0.88%的股份。两家公司加在一起的用户数量大约有5,500万。两家公司表示将联合购买基础设施和设备, 并开发面向跨国公司的无线业务平台和业务。该协议还将覆盖网络漫游和技术研究共享。Telefónica自2005年以来就在投资中国电信市场, 当时它购买了中国网通2.99%的股份, 后来增加到5.4%。中国网通后来在2008年并入了中国联通。

④ 阿尔卡特——朗讯9月3日宣布将与莫桑比克国有电信公司莫桑比克电信签订3亿美元的莫桑比克全国传输网三期建设合同, 并称合同的签订将强化阿朗与莫桑比克电信的合作关系。阿朗最近完成了两期的建设, 总共在莫桑比克境内敷设了1,845英里的光纤。第三期工程将让该国的光纤网络与内陆国家接口。据MyBroadband的报道, 该合同要求阿朗额外建设1,606英里的光纤, 并部署光纤传输解决方案以连接任何空白地区。该项目预计到2011年完工, 届时该莫桑比克国家光纤骨干网将把莫桑比克的个人和公司连接到全球海底电缆网络上, 使每个省会城市都用上高速连接。

⑤ 在其它的阿朗新闻中, 这家位于巴黎的公司与乌兹别克油气管道营运商JV Asia TransGas LLC签署协议, 为310英里长的乌兹别克到中国的天然气管道提供通信网络。阿朗表示将提供交钥匙一体化通信解决方案, 包括无线和光纤传输、基于卫星的电视系统和电话设备、语音交换系统以及局域网。该合同的签署于8月19日宣布, 由阿朗在中国最大的公司上海阿朗贝尔签署。

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6

The US economy

In a sphere in which a little bravura goes a long way, the confidence of the American consumer is seeping back

One of the more accurate criteria of the economic health of a nation is consumer sentiment. Perceptions of their financial situation influence whether people buy a house or a car now, or wait until things look a little brighter; and the decisions of millions of individuals ripple through the wider economy, to stimulating or dampening effect. September brought the good news that Americans are feeling a little better about the future.

The Reuters/University of Michigan preliminary index of consumer sentiment increased to 70.2 from 65.7 in August. More encouraging still, these results exceeded the expectations of economists in a Bloomberg News survey, who had forecast a rise to only 67.5. And the index of consumer expectations for the six months through March 2010, which more closely projects the direction of consumer spending, increased to 69.2 from 65 in August.

Inventories at US wholesalers have fallen as higher sales help distributors reduce excess supply. The pace of job losses has slowed, at least a little. These are signs that the country is pulling out of recession and Americans, taking heart, are returning to market for big-ticket items.

"They are starting to grow more upbeat after suffering the biggest destruction of wealth on record from a slump in stocks and home prices," wrote Bloomberg's Courtney Schlisserman. "And companies are ramping up production to replenish stockpiles." ("Consumer Sentiment Increases More Than Forecast," 11th September)

To be sure, she noted, consumers may still be wary of upping the spending that makes up 70% of the economy as they focus on building savings and paying down debt.

And Bloomberg respondent Jonathan Basile, an economist with Credit Suisse Holdings USA Inc, in New York, also had reservations. After declaring "Good news continues to come through, bad news continues to diminish," he qualified his enthusiasm: "It's better," he said. "But it's not good yet."

❖ But the improved mood has some firm support. On 11th September, President Barack Obama's chief economist took note of a pick-up in investment in new equipment and in orders for long-lasting items, with its potential for helping boost US gross domestic product.

"I'm very encouraged by what we're seeing in those advanced durable goods orders," Christina Romer, chairman of the White House's Council of Economic Advisers, said in a TV interview. "Eventually, firms are going to say we need workers to produce these things."

While unemployment in that week was at a 26-year high of 9.7%, there was some joy even there. The Labor Department reported that the number of Americans filing first-time claims for jobless benefits had dropped in the previous week to the lowest level since July. And the

Commerce Department reported that wholesale inventories have had the longest series of declines since record-keeping began in 1987. Depletion of inventories is a reliable sign of economic revival.

For another bellwether, on 9th September the Federal Reserve said that 11 of its 12 regional banks reported signs of a stable or improving economy in July and August. Five districts, including San Francisco, home to the biggest regional economy, "mentioned signs of improvement," the Fed said in its Beige Book business survey. (This report, published eight times a year, aims to give a broad overview of the economy as construed from banking data from all regions, bringing many variables and indicators into the mix.)

❖ To return to the Reuters/University of Michigan survey of consumer sentiment, it found that, although nearly three in four respondents thought the economy was still in recession, more than four in ten expected the economy to improve in the year ahead. While this is the highest proportion in five years, there is still pessimism about. Writing on forbes.com (11th September), Reuters correspondent Tessa Moran summarised: "It seems that, while consumers are seeing light at the end of the tunnel, they are expecting the same sluggish economic recovery that economists and leaders in Washington have projected."

Energy

For its huge solar energy project in the Mongolian Desert, China chooses a builder from the American Southwest

Chinese government officials on 8th September signed a memorandum of understanding with First Solar Inc, a solar developer based in Tempe, Arizona, for a 2,000-megawatt photovoltaic power plant to be built in Inner Mongolia. The project, which is part of an 11,950mW renewable-energy park planned for Ordos City, is the biggest such undertaking to be announced to date. On completion, in 2019, the field of black panels will cover 25 square miles.

Reporter Ryan Randazzo of the Arizona Republic did not conceal his pride in the selection of a local manufacturer for the prestigious commission. He wrote, "The plan represents not only a milestone for alternative energy but also a validation of the company's efficiency and low production costs. First Solar faces at least five major solar-panel manufacturing competitors in China." ("First Solar Signs Deal to Build Plant In China," 9th September)

Major solar-power plants using black panels such as First Solar's may be found in Spain, Portugal and Germany, and range in capacity from 40mW to 60mW in direct sunlight. The Republic supplied some details of the plant to be built in Mongolia. It will have a higher capacity to generate electricity than any single nuclear reactor or coal-burning power unit; although, unlike those plants, it will not operate around the clock. Solar panels cannot make electricity after dark. In direct sunlight, in Arizona, the plant would be able to power 500,000 homes at once.



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According to First Solar, the plant would cost \$6 billion if built in the United States but could be less expensive to build in China. Reckoning First Solar's return on the project is difficult, as US companies engaged in the new technology of solar power are heavily dependent on subsidies. Mr Randazzo noted that China is expected to enact a "feed-in tariff" that guarantees an above-market rate for power from the plant. First Solar's profit will depend on how high that tariff is set.

Automotive

US cash-for-clunkers promotes lower fuel consumption, enables Asian auto makers to shine

"This is a win for the economy, a win for the environment, and a win for American consumers," said Ray LaHood, the US transportation secretary, in reference to the month-long cash-for-clunkers programme that ended in late August.

But the real winners were the country's Asian auto makers, led by Toyota which accounted for 19% of sales under the programme. The most popular vehicles were small cars built by Asian companies and Ford Motor, the only American auto maker to avoid bankruptcy. The three largest Japanese producers – Toyota, Honda, Nissan – sold 41% of the vehicles, as compared with their 34% combined market share through July of the year.

The Toyota Corolla was the top seller, followed by the Honda Civic, Toyota Camry, Ford Focus, and the Elantra, from South Korea's Hyundai. Not one model from GM or Chrysler made the Top Ten, although GM came in second in overall sales.

The Transportation Department said that participants in the clunkers programme bought 690,000 new vehicles. About \$2.9 billion of the programme's \$3 billion was distributed in the form of government vouchers worth \$3,500 to \$4,500 toward new-car purchases.

From Detroit, Bill Vlasic of the International Herald Tribune noted how well the ideal of getting gas-guzzlers off the road was served by the Asian auto makers, whose success was driven by the type of cars in their showrooms. He wrote, "Participants in the clunkers program clearly were interested in downsizing to smaller, more fuel-efficient vehicles. Toyota and Honda have been the longtime leaders in sales of small and midsize cars in the United States. So it was hardly surprising that Corollas and Civics flew off dealer lots during the program." ("Toyota Tops List of Cash-for-Clunkers Winners," 27th August)

That other ideal of the programme – to give even a small boost to the national economy – was also realised, according to a preliminary analysis. The Obama administration said that third-quarter economic growth was 0.4% higher because of auto sales in July and August.

In addition, GM, Ford and Honda all announced that they would increase production at some US plants because of the increased demand generated by cash-for-clunkers.

By September, some analysts were saying that showroom traffic was already starting to fall in the wake of the clunkers programme – but that the stimulus could have a lingering impact in the ensuing months. On 1st September, Mr Vlasic observed that the increase in demand from the programme had prompted several auto makers, including GM and Ford, to increase vehicle production to replenish inventories, adding to the momentum that appears to be building in the broader manufacturing sector. He wrote, "Hourly workers are being called back at a handful of plants, and some factories are running on overtime."

Elsewhere in automotive . . .

❖ General Motors has formed a 50-50 joint venture with First Automobile Works Group (FAW), of Changchun, to make light trucks in China. The Detroit auto maker said on 30th August that it would make a total investment in FAW-GM Light Duty Commercial Vehicle Co of \$293 million. The deal that had been negotiated over several years calls for the trucks to be sold in China initially, with export opportunities to be explored later on.

The joint venture with FAW, which envisions output of 200,000 units in 2010, is GM's third with a Chinese vehicle maker but the first to involve trucks. The company's other Chinese partnerships produce passenger cars and mini commercial vehicles, and China has been good for GM in a time of weak sales in the home market. Sales of GM passenger cars in China rose 52% year-on-year in July, according to the California-based car consultancy JD Power and Associates.

In 2009, China overtook the US to become the world's largest vehicle market.

❖ The Chinese car company BYD has said that it will offer its e6 all-electric sedans in the US in 2010, a year ahead of schedule. BYD announced 31st August in Hong Kong that it had nearly doubled first-half net profits from a year earlier; and Wang Chuanfu, the company's chairman, said he was considering selling more shares to US investment guru Warren Buffett, whose MidAmerican Energy Holdings bought a 10% stake in BYD in September 2008.

Financial Times Shanghai correspondent Patti Waldmeir noted that BYD, although a global leader in rechargeable battery technology, is only a recent entrant to the Chinese car industry. She wrote, "Mr Wang, an engineer-turned-entrepreneur, plans to combine batteries with cars to spearhead a green revolution in electric vehicles, with the help of Chinese government subsidies."

❖ BYD can expect competition from Honda Motor, which plans to introduce electric vehicles in the US in the first half of the new decade, joining a growing number of auto makers vying for the lead in clean technology development.

Japan's second-biggest car maker, which had focused on gas-electric hybrids, built an all-electric prototype for display at the Tokyo Motor Show in October.

Dorothy Fabian
Features Editor

Cables 2010

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美国经济

美国消费者信心有所恢复

衡量一个国家的经济健康状况更准确的标准之一，是消费者心态。他们对他们的财务状况的看法影响到人们现在是购买房屋还是购买轿车，或者还是等到情况变得好些了再说。成百上千万个人的决定聚成的涟漪，会对宏观经济起到推动或者迟滞的作用。9月份带来的好消息是美国人对未来的预期有所改善。路透社/密歇根大学消费者心态初级指数从8月份的65.7增长到70.2。更鼓舞人心的是，该数据超越了彭博新闻的调研中经济学家的预期。这些经济学家预期将增长到67.5。另外，到2010年3月份的六个月来的消费者预期指数从8月份的65增长到69.2。该指数能够更加准确地预测消费者的消费趋势。

随着销售额的上升消化了分销商的多余库存，美国批发商的存货有所下降。失业率上升速度有所下降，虽然不多。这些迹象表明美国正在摆脱衰退，同时美国人从心理上来说，愿意返回到市场中去买大件商品。彭博新闻记者Courtney Schlisserman报道称：“在蒙受了股市和房价暴跌双重打击带来的有史以来最大幅度的财富缩水后，美国人的心态开始转好。企业正在开足马力生产，以补充存货。”（见9月11日《消费者心态指数超预期增长》）

Courtney Schlisserman还提到，消费者的的确对提升消费持谨慎态度，虽然美国经济的70%靠消费支撑，因为他们还把重点放在加大储蓄和归还债务。彭博新闻受访者，供职于纽约的苏黎世信贷银行美国控股公司的经济学家Jonathan Basile，也持有保留看法。在发表了“好消息接踵而来，坏消息日渐稀少”的套话后，他为他的乐观情绪套上了笼头。他说：“情况有所转好，但好得还不够。”

❖ 不过这种乐观情况确实起到了实实在在的支持作用。9月11日，总统奥巴马的首席经济学家谈及在新设备及耐用商品的开支上的投资有所上升，这有助于帮助提升美国的国内生产总值。

白宫经济咨询委员会主席Christina Romer在一次电视采访中表示：“这些先进的耐用商品订单的情况让我们欢欣鼓舞。最终企业会表示，我们需要工人来生产这些产品。”

虽然本周的失业率达到了26年的最高点——9.7%，不过仍然有好消息传来。据劳工部报告，首次申请失业救济的美国人数量上周有所下降，达到了7月份以来的最低水平。另据商务部报告，批发存货出现了1987年以来最长时间的连续下降。存货的清空是经济复苏的可靠信号。

另一个信号是美联储给出的。9月9日美联储称在12家区域性联储银行中，有11家报告经济在7月和8月出现稳定或者增长迹象。美联储在其褐皮书商业调研中表示，包括覆盖世界上最大的区域性经济的旧金山山区在内的五个区域均“提及经济改善迹象”。（美联储每年出版八次褐皮书，目的是根据来自各个区域的银行数据对经济进行总体研判，并在其中分析多个变量和指标。）

❖ 回到路透社/密歇根大学消费者心态调研。根据该调研，虽然大约有四分之三受访者仍然认为经济处于衰退中，但是受访者中有4成以上预计经济将在明年转好。虽然这是五年来最高的比例，不过悲观情况仍然是显而易见的。

路透社记者Tessa Moran 9月11日在福布斯网站上小结道：“看起来虽然消费者正在看到隧道终端的亮光，他们仍然预计经济复苏会像经济学家和美国政府官员说的那么艰难。”

汽车新闻

美国旧车换现金机会降低燃油消耗，让亚洲厂家再展头角

美国交通部长Ray LaHood在为期一月的旧车换现金计划在8月底结束后，表示：“这是经济的胜利、环境的胜利、美国消费者的胜利。”

不过真正的赢家是美国境内的亚洲汽车生产厂家，其中以丰田为首。丰田的销售占该计划总销售额的19%。最受欢迎的车辆是亚洲厂家和唯一避开破产的美国汽车厂家——福特生产的小型轿车。日本厂家前三强——丰田、本田和尼桑占销售总额的41%，相比之下它们今年到7月份的合并市场份额为34%。

丰田花冠是销售最好的车型，其次是本田思域、丰田佳美、福特Focus以及韩国现代的Elantra。没有一款来自通用或者克莱斯勒的车型打入前10强，虽然通用在总销售额中排名第二。

交通部表示，旧车换现金计划的参与者总共购买了69万辆新址。在总共30亿美元的计划总额中，大约有29亿美元是通过政府购物券的形式发放的。每张购物券价值3,500美元到4,000美元，可以用于购买新车。

《国际先驱论坛报》(International Herald Tribune)记者Bill Vlasic从底特律报道了亚洲车商如何让“油老虎”车辆离开道路的，而且它们的成功还受到展厅内的车型的推动。在报道中，他指出：“参加旧车换现金的人很明显看上了尺寸更小、更加省油的车型。丰田和本田长期以来一直是美国中小型轿车市场的领头羊。所以毫不奇怪花冠和思域在计划期间销售量夺冠。”（8月27日《丰田摘取旧车换现金计划销售量冠军》）

根据一项初步的分析，这就是计划的另一个目的——推动国民经济的复苏，哪怕是轻微的——也已经得到实现。奥巴马政府表示，由于7月份和8月份汽车销售，第三季度的经济增长速度得到了0.4%的提升。此外，由于旧车换先进计划带来的新需求，通用、福特和本田都宣布它们将增加部分美国工厂的生产。

❖ 到9月份，一些分析人士表示随着旧车换现金计划的结束，汽车展厅中的人流开始日渐稀少，不过刺激计划带来的效果还将继续影响未来的数月。9月1日，Vlasic表示计划带来的需求增长已经促使多家汽车厂家，包括通用和福特，增加汽车的产量，以补充存货。这为更大范围内的制造业的复苏添了一把柴。他表示：“在一些工厂，小时工重返工作岗位，部分工厂开始加班。”

其它汽车新闻...

❖ 通用与第一汽车集团按50%-50%的股份在长春成立了合资企业，在中国生产轻型卡车。通用8月30日表示将在一汽通用轻型商用车公司中总投资2.93亿美元。这项投资活动的谈判已历经数年。生产的卡车将首先在中国境内销售，然后销往境外。预计到2010年，通用一汽可生产20万辆轻卡，是通用在中国投资的第三家卡车生产厂家，不过是第一家涉及卡车的厂家。该公司的其他中国合资企业主要生产客车和小型商用车。在通用的国内市场一片低迷的时候，中国市场一枝独秀。据加州汽车行业咨询公司JD Power and Associates 统计，7月份，通用在中国的客车销售量比一年前上升了52%。2009年，中国超过美国成为世界上最大的汽车市场。

❖ 中国轿车生产厂家比亚迪表示将在2010年在美国推出e6型全电轿车，这比计划提前一年。比亚迪8月31日在香港表示，公司的净利润比一年前翻了一番。公司董事长王传福表示将考虑向美国投资大鳄巴菲特出售更多股份。巴菲特的MidAmerican Energy Holdings在2008年9月购买了比亚迪10%的股份。《金融时报》上海站记者Patti Waldmeir表示比亚迪虽然是全球可充电电池技术的领导者，不过在中国轿车市场上却是后来者。她报道称：“由工程师转变而来的企业家王传福先生计划把电池技术与轿车相结合，在中国政府提供的补贴的资助下，在电动汽车领域掀起绿色革命。”

❖ 比亚迪预计竞争会来自本田。本田计划在2015年以前在美国市场推出电动汽车，从而跻身引导清洁能源发展的汽车生产厂家的行列。作为日本第二大汽车生产厂家，本田一直致力于燃油——电力混合轿车。本田已经为10月份的东京汽车展建造了全电动汽车模型。

专栏编辑: Dorothy Fabian



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Reels for power cables

In recent years, A Appiani srl has increased its capacity for the production of drums and reels for cables, rope and strands.

In particular, the company has focused its investments on the development of reels for power cables, and new solutions for the manufacturing and shipping of large reels.

The design of new reel types and the evaluation of the best solutions to meet customers' requirements have

been supported by the implementation of 3D software and FEA simulations. Those tools are also suitable to evaluate reel capacity, and prevent possible ruptures in the event of heavy-duty applications.

The Appiani range of products includes structural reel type BCS and corrugated BFA type or fin flanged reels. The BFA reel is also offered with a smooth internal flange and drum surface that is suitable for medium and high voltage cable.

Special surface treatments are available, such as hot-galvanizing according to UNI EN ISO 1461, to suit power cable applications in tropical and humid high temperature environments.

Reels are also available in inox for umbilical and oil/marine applications.

A Appiani srl – Italy

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Email: info@appiani.reels.it

Website: www.appiani.reels.it

New crosshead design

The extrusion head is central to the function of the extrusion line, with the quality of extruded material directly related to the proper functioning and design of the extrusion head. The size of the axial and distribution channels is important to ensure regularity of the flow, avoiding high kinetic differences in the material and localised overheating of the material and to maintain pressures to avoid the degradation or thermo-stress of the material, ensuring the right conditions for mixing and melting.

Eurotek has developed an extrusion head that is said to allow balancing of the piezo-kinetic effect for sensitive materials such as HFFR and LSOH.

The head has a pressure and temperature transducer to detect the condition of the processed material and so avoid overpressure or heat strokes in the case of halogen-free materials. The system can be optimised by the use of a series of specially designed semi-compression tools.

During production it is possible to adjust the axial position of the tip or die, and to vary the pressure and temperature of the molten material. As a result, the adhesion of the polymer to the cable is improved. This in turn avoids defects such as surface vibration, micro-crack, localised overheating and sharkskin effects.

Eurotek srl – Italy

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Email: info@eurotek-italy.com

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Charter Wire adopts new annealing technology

In 2008, when Charter Wire, a division of Charter Manufacturing company, decided to move its manufacturing facility to a new location, the company called on Rad-Con Inc to replace a batch annealing capacity with 100% hydrogen annealing, the latest technology available.

Full production was scheduled for August 2009, and the new furnace system was the first production unit operating in the new facility, allowing Charter to quickly take advantage of the higher quality hydrogen annealing process.

During the commissioning of the equipment Charter's project manager, Greg Volovsek, commented, "Rad-Con's portion of the project has gone very well."

Charter, a supplier of shaped steel bar and wire products, will utilise the Rad-Con annealing system primarily for re-crystallize annealing of low-carbon drawn wire. The new system also gives Charter the capability to anneal alloy steels for many specific applications.

The bell-type furnace has Rad-Con's FlexLoad™ plenum to allow a variety of coil packages to be loaded. The system includes rapid hydrogen cooling



○ Charter Wire will utilise RAD-CON's latest annealing technology at its new plant

spray-water for product brightness, and Rad-Con's patented AC/APEX™ atmosphere control system for the regulation of heating rates and atmosphere flows according to specific wire quality requirements. The new Rad-Con system also includes the company's super high convection

(H2SHC™) technology for atmosphere circulation, resulting in uniform finished material properties.

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Reels and spools

Changzhou Changhua Photoelectricity Plastic Co Ltd has specialised in the design, production and distribution of plastic reels and spools since 2002 and is now among the largest manufacturers of plastic reels in China.

The company has a 6,000m² workshop with more than twenty automatic injection machines from 80g up to 16,000g, producing almost ten million pieces of plastic reel a year. It also has a complete and comprehensive physical performance testing and control laboratory.



A range of reels and spools from Changzhou Changhua Photoelectricity

Quality inspection begins at the booking-in of raw materials. Fully automatic production machines, testing equipment and the use of accurate moulds avoid product quality fluctuations. After assembly, dynamic and static balance testing are carried out.

Changhua plastic reels and spools are widely used in the optical fibre, electrical cable, and wire industries. According to national standard GB4004.1-83, JB/T76001-2008, German standard DIN 46395, DIN 46391, DIN 46399, Japanese and local standards, Changhua products can be classified in five series with 14 sub-types: PN processing reels, PC copper wire reels, PL cable packing/delivery spools, PT magnet wire spools, and pulleys.

Changzhou Changhua Photoelectricity Plastic Co Ltd – China

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Cable contract for new Mumbai Metro trains

Nexans has been awarded a contract by Nanjing SR Puzhen Rail Transport (NPRT) of China as the exclusive supplier of all the onboard power, control and data cables for a fleet of 16 trains currently under construction for Phase 1 of the new Metro system in Mumbai, India.

Over a 12-month contract, Nexans is supplying NPRT with a total of 932 kilometres of specialised rail cables for installation on 16 4-car Mumbai Metro trains. The cables, which belong to the Flamex® range for the rolling stock industry, will be manufactured to the international NFF standard, and will be used to distribute power throughout the new trains. They will also provide control and data communication services for a variety of high-tech ancillary systems such as signalling and passenger information.

Nexans has worked closely with NPRT to develop the ideal cable solution for each application. This collaboration has resulted in an important advance in cable technology for Nexans as it will be the first time it has supplied twisted power cables for a rail customer. The twisted design has been specified for the power connection between the converters and traction motors to eliminate harmonics, this improves the stability of the traction system as well as meeting EMC requirements.

The Mumbai Metro train power cables will be manufactured by Nexans (China) Wires & Cables Co Ltd, while the control and data cables will be produced by Nexans Communications (Shanghai) Cables Co Ltd.

Nexans – France

Email: nexans.web@nexans.com

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Website: www.nexans.com

Conductor preheater

Sikora has developed a conductor preheater, Preheater 6000, for cable extrusion lines. In the manufacture of data cables reliable conductor preheating is required to ensure optimum adhesion of the insulation on the wire. Preheater 6000 is positioned before the extruder and preheats the wire to between 100°C and 190°C, using inductive heating.

Sikora offers the device with the Ecocontrol 600 processor system directly integrated into the preheater housing. The Ecocontrol 600 displays the product and production parameters both numerically and graphically on a clear 8.4" TFT

monitor, including a trend display of the relevant data such as temperature and line speed.

An integrated product library stores product recipes to be easily recalled. The power required to ensure stable temperature and optimum adhesion is calculated by the preheater to suit the line speed and product diameter.

Preheater 6000 can be retrofitted into existing lines.

Sikora AG – Germany
Fax: +49 421 48900 90
Email: sales@sikora.net
Website: www.sikora.net

Reinforced fluoropolymer compounds

Colorant Chromatics produces a full range of high quality colour concentrates, compounds, pigment dispersions and inks for processors of fluoropolymers and high performance plastics.

Colorant Chromatics' extensive melt-processable product line includes colour concentrates and compounds for polymers including FEP, ETFE, PFA, PVdF, ECTFE, MFA, THV, PEEK and PES. Colour concentrates are offered in various pigment strengths and resin viscosities to assure optimal performance in the end use manufacturing process.

In addition to the Colorant Chromatics standard line of colours and compounds, the company offers special services including colour matching, pre-colouring, and custom compounding. The company also supplies a full range of pigment dispersions for PTFE extrusion, as well as printing and striping inks for FEP, ETFE, PFA, PVdF, PTFE, PEEK and polyimide.

Colorant Chromatics AG – Switzerland
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Email: international@colorantchromatics.com
Website: www.colorantchromatics.com

Cable manufacturer

Weiyang Technology Co Ltd of Taiwan is accredited with ISO 9001:2000 and a UL-certified cable manufacturer.

Established in 1987, Weiyang focuses on the design and manufacture of various telecommunication cable, RF coaxial cable and cable assemblies, and specialises in PU and PVC cable. In 2005 the company installed RF Teflon wire equipment.

Weiyang Technology's mini-coaxial low-loss cable achieves high performance. The attenuation of 1.13 low-loss-cable is under 4.2dB/M, 1.37 low-loss-cable is 3.7dB/M (frequency of 6,000MHz).



○ Micro Teflon and mini RF coaxial cable

The company is equipped to handle all aspects of production, from design to packaging in-house; every stage of production is carefully monitored.

Weiyang Technology Co Ltd – Taiwan
Fax: +886 222 69 3325
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Quality control in high voltage cable

Sikora's X-Ray 8000 NXT measures the wall thickness of three layers of medium, high and extra-high voltage cables directly after the extruder.

Now, Sikora presents advanced NTX windows (Non-Toxic X-ray-windows) that replace beryllium windows in the upper part of the X-Ray 8000 NXT. The windows are integrated into the X-Ray 8000 NXT in order to separate the measuring equipment from the pressurised area of the CV-line and to protect it against pressure, high

temperature and chemical by-products during the X-ray measuring process.

The new NTX-windows are high temperature resistant ensuring high mechanical strength and rigidity. They offer an excellent chemical and hydrolysis resistance and a high thermal stability.

Sikora AG – Germany
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Email: sales@sikora.net
Website: www.sikora.net

Advanced colour system

Nextrom has developed a high-speed, optical fibre colouring line to improve productivity and flexibility for manufacturers.

The development concentrated upon the design of key line components to achieve colouring speeds up to 3,000m per minute.

A robust mechanical and electrical design, combined with optimised tooling, an improved UV lamp system, UV monitoring instrumentation and increased spool sizes, provides the capability to produce longer fibre lengths with faster set-up.



○ Nextrom's OFC 52i colouring liner

The result is described as "a significant productivity improvement."

Previous developments of UV up-coating and ring marking were incorporated into the new design to provide the flexibility to manufacture a variety of products. The colouring line consists of a large capacity spool payoff, a dancer for payoff speed control and a coating station, followed by a series of high powered UV lamps below the coater.

The precision capstan is located below the UV lamps. The fibre passes through the dancer and tension balancer, which reduces loops that can cause OTDR steps, before being precisely wound onto a large capacity traversing take-up spool. Optional ring marking and a range of payoff/take-up sizes are available.

Nextrom Oy – Finland
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- ▶ Tube extrusion line 管狀押出機
- ▶ Triple layer extrusion line 三層押出機
- ▶ Single twist buncher 單絞機
- ▶ Fine wire drawing machine with annealer 極細線伸線機附燒焯裝置
- ▶ Medium wire drawing machine with annealer 中伸線機附燒焯裝置
- ▶ Rewinding machine 倒軸機
- ▶ Braiding machine (Technological cooperation : KYORITSU CO., LTD.) 編織機 (與日本共立株式會社技術合作)



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TGN-Intra Asia cable system

Tata Communications and Tyco Telecommunications have announced the installation, testing and commissioning of the TGN-Intra Asia (TGN-IA) cable system.

Arriving at the conclusion of a comprehensive test programme, which verified compliance with all transmission requirements, the companies have completed the final step in achieving regional and global connectivity in Southeast Asia for the TGN.

The fully operational 6,700km TGN-IA system links Hong Kong, Singapore, Tokyo, Vietnam and the Philippines, providing route diversity throughout the Asia-Pacific region.

"The Tata Communications team is very excited to have completed our TGN-IA cable system, with the unwavering support of Tyco Telecommunications," said Simon Cooper, vice president network strategy, architecture and optimisation, Tata Communications. "This system will meet the ongoing need for increasingly robust international connectivity, and will help to enable continued growth and development in the Asia-Pacific region."

Mr Cooper added: "Very recently almost all of the region's key cable systems experienced simultaneous cuts, severely impacting network traffic across Asia. Most were damaged somewhere between Hong Kong and Taiwan. TGN-IA was fortunately not disturbed by this, as a result of Tata Communications' specific decision to route the cable system as diversely as possible, so helping to improve regional business stability and ensuring our customers remain well served."

The system, which was strategically designed and routed to avoid earthquake and other hazardous areas in the Asia-Pacific region, has an initial design capacity of 3.8Tbps on a city centre to city centre basis. When combined with the Tata Global Network TIC and Pacific cable systems, the Intra Asia cable system will complete Tata Communications' multi-Terabit capability from India to Asia and onward to the United States, and is a strong complement to existing regional systems.

The system integrates seamlessly with the Tata Global Network and is a key piece in enabling Tata Communications' global connectivity. The TGN Intra-Asia Cable System is believed unique in offering a direct fibre path between Singapore and Tokyo, so delivering the fastest available connectivity (RTD is 63ms).

TATA Communications Ltd – India
Website: www.tatacommunications.com

Tyco Telecommunications – USA
Website: www.tycotelecom.com

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Strengthened tapes for cable

Jinggong has introduced some new products for the wire and cable industries. A series of strengthened tapes, including semi-conductive strengthened water blocking tape, non-conductive strengthened water blocking tape, and strengthened semi-conductive tape have been added to the range.

The new range, with higher swellable speed and height, higher tensile strength and lower moisture content

than standard tapes, is designed for use in power cables, communication and optical fibre cables.

Tapes are packed on winding rolls, to store greater lengths. Tapes of over 5,000m in length are available.

Shenyang Jinggong Cable Material Co Ltd – China

Fax: +86 24 8931 5999

Email: office@jinggong-tapes.com

Website: www.jinggong-tapes.com

Production equipment for wire and cable

Since its founding in 2001, Kunshan Fuchuan Machine and Electric Technology Co Ltd has been engaged in the design, manufacture and installation of electric wire and cable.

The company's main products include high speed stranders (bunching and winding machines), extruders, both medium and small wire drawing machines, annealing tin machines and ancillary equipment for electric wire and cable.



○ A wire drawing machine from Kunshan Fuchuan Machine

Kunshan Fuchuan Machine and Electric Technology has provided production equipment for many enterprises at home and abroad, including Shindin Cable Group Limited, Sumitomo Electric Interconnect Products (Suzhou) Ltd, Hewtech (Lianyun Gang) Wire Co Ltd, Zhengxiong Copper Group (Huaqiao Headquarter and Thailand Branch), and the Uzbekistan and Russian company JSC Andijancable. The company's machine manufacturing facility covers 6,000m² square metres, and has approximately 120 employees. Kunshan Fuchuan Machine and Electric Technology has been providing machines to the USA, Uzbekistan, Egypt and India since 2007.

Kunshan Fuchuan Machine and Electric Technology Co Ltd – China

Fax: +86 133 8215 7838

Email: ksfuchuan@sohu.com

Website: www.ksfcd.com.cn

Wire and rod cleaning

Caber Impianti Srl manufactures scroll, tunnel and bolting machines to clean metal wire and wire rod.

The double bolting machine is manufactured in a variety of sizes and is a washing machine made of two rotative bolters. The first bolter performs a detergent washing cycle and a rinse cycle. Once these cycles are over, the bolting machine reverses the rotation direction, unloading the components inside the second bolter where the drying is performed. Timing, bolter rotation speed, degreasing temperatures, rinsing and drying

timings are set at the operating panel. The technology is especially valuable where a high-level of cleaning is required, such as phosphate removal, or where a bright finish is needed.

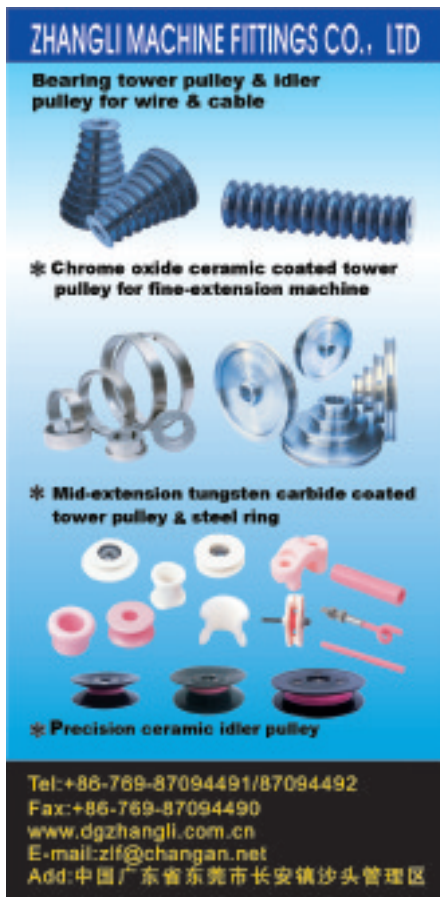
The machines are made of AISI 304. Caber Impianti also supplies all necessary accessories, such as box-lifting systems and component weighing systems.

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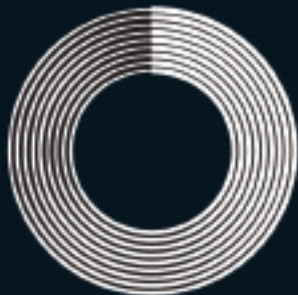
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Large-sized planetary stranders

SKET Verseilmaschinenbau GmbH offers a broad range of cage-type stranding machines for producing both cable and steel wire ropes with and without back twist.

Owing to increased demand for cage stranders for the production of submarine power cables, as well as for long and heavy steel ropes, SKET has specialised in this particular field of machinery and has supplied several large-sized stranders of this type.

At the end of 2008, the company supplied what is thought to be the world's largest cage-type stranding machine for the production of power cables. The MKVD machine is suitable for stranding cores with a 1,200mm² cross-sectional area into cables with a maximum diameter of 240mm and can be operated either with or without back twist. The full bobbins in the stranding cages weigh 20 or 50 tons, some of them having flange diameters of more than 4,000mm.

Early in 2009, SKET supplied another two planetary stranders for armouring cables with steel wire. One of these MKRD type machines with two cages can be operated in both the single (72 bobbins) and tandem (138 bobbins) mode, whereas the other consists of an 88-bobbin cage, each bobbin having a



○ The world's largest cage-type stranding machine for power cables

flange diameter of 800mm, and stranding steel wires of up to 10mm diameter. The maximum finished diameter of the cables armoured on this machine exceeds 250mm. The line, including the stranding cage and all associated assemblies delivered by SKET, has an overall length of more than 90m and weighs 250 tons.

SKET Verseilmaschinenbau GmbH – Germany
Fax: +49 391 40558 37
Email: info@sketvmb.de
Website: www.sketvmb.de

Dosing units and mixing stations

An increasing number of cable producers are using Plasticolor volumetric mixing stations. These units work independently from the speed of the extrusion line, almost eliminating entirely the commonly experienced colour variations that occur when ramping the extruder up or down.

A mixing station is always preparing identical and homogeneous mixtures of materials and thus the amount of scrap production is drastically minimised.

Calculations by cable manufacturers suggest that a return on investment may be possible in less than two years.

An additional advantage is the reduced consumption of masterbatch. Simple controls make it easy for operators to reduce the amount of colourant used, which reduces material costs. The design of Plasticolor equipment offers easy cleaning of the auger feeders, volumetric and gravimetric mixing stations.

The modular principle of the Plasticolor system allows the user to start with the basic single dosing auger feeder and to upgrade it to a mixing station at a later date. The basic components of the dosing system are utilised in the upgrade sequence.

Woywod Kunststoffmaschinen GmbH & Co Vertriebs-KG offers a range of single dosing units, volumetric and gravimetric mixing stations, as well as gravimetric throughput measurement systems, hopper loaders and dryers.

Woywod Kunststoffmaschinen GmbH & Co Vertriebs-KG – Germany
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A Appiani srl是一个获得ISO 9001:2000认证的全球范围的制造商和供应商，生产高质量、具有价格竞争力的钢制线盘，用于电缆和线材工业。公司在过去几年增加了电缆和绳索线盘的生产能力，尤其致力于投资开发电力电缆线盘、新的制造和装运大型线盘解决方案。

为了满足客户要求，3D软件和FEA模拟的运用大大支持了新型线盘的设计和最好解决方案的评价。这些工具还适合于线盘产能评价，防止在重负荷应用中可能发生的爆裂。

Appiani的产品范围包括BCS结构型线盘和BFA波纹型线盘或翅片法兰型线盘。BFA线盘还有一个平滑的内法兰和卷筒表面，适合于中、高电压电缆。

还拥有特殊表面处理，例如符合UNI EN ISO 1461的热镀锌，使电力电缆适用于热带区域和湿热环境。线盘还可用Inox钢制成，适用于脐带式和石油/海上应用。

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新型十字头设计

挤出头是挤出设备功能和潜力的关键，挤出头的功能和设计直接关系到挤出材料的质量。

而且，轴向尺寸和分布通道尺寸对保证流动规整性至关重要，避免材料出现高动力偏差和局部过热，而且保持压力，避免材料发生降解或热应力，保证正确的混合熔融。

Eurotek开发出一种挤出头，能保证诸如HFFR和LSOH之类的敏感材料的压电动力效应平衡。它还有一个检测加工材料状态的的压力和温度传感器，避免对无卤素材料产生过压或热

冲击。系统还经过了特殊设计的半压缩工具的优化。在生产期间，调节挤出头或模具轴向位置是可能的，还可调节熔融材料压力和温度，从而改进了聚合物对电缆的粘着力，这反过来又避免了诸如表面振动、微裂纹、局部过热和鲨鱼皮效应之类的缺陷。

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线缆生产设备

Kunshan Fuchuan Machine and Electric Technology Co Ltd成立于2001年,专业从事电气线缆设备的设计、制造、安装和调试。公司的主要产品包括高速绞缆机(聚束/卷绕设备)、挤出机、中小型线材拉伸设备、退火锡焊机和各种电气线缆设备辅助件。

Kunshan Fuchuan Machine and Electric Technology为国内外许多企业提供生产设备,包括Shindin Cable Group Limited、Sumitomo Electric Interconnect Products (Suzhou) Ltd、Hewtech (Lianyun Gang) Wire Co Ltd、Zhengxiong Copper Group (Huaqiao Headquarter and Thailand Branch)以及乌兹别克斯坦和俄罗斯公司JSC Andijancable。

公司约有120名员工,设备制造设施面积达6000平方米。自2007年起,Kunshan Fuchuan Machine and Electric Technology一直为美国、乌兹别克斯坦、埃及和印度提供设备。

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孟买地铁电缆合同

Nexans从中国Nanjing SR Puzhen Rail Transport (NPRT)获得一份合同,成为印度孟买新地铁系统第一阶段工程中的16列地铁列车所有机载电力、控制和数据电缆的唯一供应商。合同履行时间为12个多月,Nexans将向NPRT供应共计932公里铁路专用电缆,用于16列4节车厢编组的孟买地铁列车。电缆属于车辆运输工业的Flamex®系列,这些电缆为新型列车分配电力,还为诸如信号和乘客信息之类的各种高技术辅助系统提供控制和数据通讯服务。

Nexans与NPRT密切合作,为每项应用开发理想的电缆解决方案。这种合作使Nexans的电缆技术取得了一项重要的进步,因为这是第一次为铁路客户提供双绞合动力电缆。绞合设计已被确定用于变频器和牵引电动机之间的电力连接,以消除谐波。这改进了牵引系统的稳定性,并满足EMC要求。孟买地铁列车动力电缆将由Nexans (China) Wires & Cables Co Ltd生产,而控制和数据电缆则由Nexans Communications (Shanghai) Cables Co Ltd生产。

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 网址: www.nexans.com

Charter采用新型退火技术

2008年,当Charter Manufacturing公司的Charter Wire分公司决定将生产设施迁移到一个新地点时,公司要求RAD-CON Inc用最新的技术-100%氢退火来更换一个间歇式退火装置。计划在2009年开始全面生产,新的退火炉系统是新设施中第一个操作的生产单元,可以使Charter拥有更高质量的氢退火工艺优势。在设备试车期间,Charter项目经理Greg Volovsek评论道:“项目的RAD-CON部分表现得非常好。”

Charter是成型钢棒和钢丝产品供应商,RAD-CON退火系统主要用于低碳拉伸钢丝的再结晶退火。钟罩型退火炉拥有RAD-CON的FlexLoad™正压通风系统,可以处理各种线圈包。系统包括用于产品光洁度的快速氢冷却喷淋水、以及根据线材质量要求来控制加热速率和常压流量的RAD-CON专利的AC/APEX™常压控制系统。



Charter Wire的新工厂将采用RAD-CON最新的退火技术

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高电压电缆质量控制

Sikora X-Ray 8000 NXT测量直接从挤出机出来的中、高和超高电压电缆壁厚。现在,Sikora推出先进的NTX-窗口(无毒X-射线-窗口),它将替换在X-Ray 8000 NXT上部的铍窗口。这些窗口与X-Ray 8000 NXT构成一体,以便将测量设备与连续硫化设备受压区分开,使其在X-射线测量期间不受压力、高温和化学副产品的影 响。与铍相反,新的NTX-窗口包括一个无毒材料,避免了腐蚀,延长了使用寿命。过去,Sikora已用陶瓷窗口更换了扫描箱下部的铍窗口。实施现在的更换之后,Sikora将提供的X-Ray 8000 NXT窗口经过无毒和技术改进,是独一无二的。新型NTX-窗口抗高温,能保证高机械强度和钢性,它们具有优秀的抗化学性和抗水解性以及高热稳定性。

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先进的着色系统OFC 52i

Nextrom开发出一种光学纤维高速着色设备,能改进制造商的生产力和灵活性。开发着力于关键设备元件的设计,以达到3000米/秒着色速度。稳健的机械和电气设计、优化的工具、改进的紫外灯系统、紫外线检测仪器以及增强的线轴尺寸,使得设备能以更快的速度生产更长的纤维。设计综合了以往的紫外涂层和环形标记开发成果,为制造各种产品提供了灵活性。

着色设备包括一个大容量放线盘、一个放轴速度控制缓冲系统和一个涂层系统,在涂层下方还有一系列高能紫外灯,紫外灯下有精密绞盘。纤维通过浮动轮系统和张力调节装置,以减少造成OTDR的回路,然后精确地缠绕在大容量排线收线盘上。

公司还提供可选项:环标记和全尺寸放线/收线装置。

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Nextrom的OFC 52i着色设备

大型行星式绞缆机

SKET Verseilmaschinenbau GmbH提供范围广泛的笼式绞合设备，在使用或不使用退扭时都可以生产电缆和钢丝绳。

为了生产海底电缆以及更长和更重的钢索，对笼式绞缆机的需求不断增加，SKET专业从事于这个特殊领域，并提供这种类型的若干种大型绞缆机。

在2008年末，公司供应了世界上最大的生产电力电缆的笼式绞缆设备。MKVD设备适合于将一个横截面积为1200mm²的缆芯卷入最大直径为240mm的电缆，操作可以在有或没有退扭的情况下进行。卷笼内线轴全重达20或50吨，有些卷笼还有大于4000mm的法兰。



○ 世界上最大的电力电缆笼式绞缆机

早在2009年，SKET供应了另外两种用于钢丝铠装电缆的行星式绞缆机。在这些含有两个笼的MKRD型设备中，一个能以单（72个线盘）模式或串联（138个线盘）模式操作，而另一个包括一个有88个线盘的绞笼，每个线盘有一个直径为800mm的法兰，绞合钢丝直径可达10mm。铠装后电缆最大、最终直径超过250mm。SKET提供包括卷台鼠笼和所有相关组件在内的设备，设备总长超过90m，重量250吨。

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线盘和线轴

Changzhou Changhua Photoelectricity Plastic Co Ltd自2002年起专业从事设计、生产和销售塑料线盘和线轴，是中国目前最大的塑料卷轴制造商之一。公司的车间达6000平方米，拥有20多台80克到16000克的自动注塑机，年产量将近1千万件。公司还拥有全面的物理性能测试实验室。质量检验从原材料订购就开始了。采用全自动生产设备、测试设备和精确模具来避免产品质量波动。在组装后，对产品进行动态和静态平衡测试。

Changhua塑料线盘和线轴广泛用于光学纤维、电气电缆和线材工业。根据国家标准GB4004.1-83.JB/T76001-2008、德国标准DIN 46395、DIN 46391、DIN 46399、日本和当地标准，Changhua产品可分为5大系列、14种类型：PN加工线盘、PC铜线线盘、PL电缆包装/发运线盘、PT磁力线盘和滚轴。



○ Changzhou Changhua Photoelectricity的各种线盘和线轴

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线材和棒材清洗

Caber Impianti Srl制造清洗金属线材和线棒的涡卷、隧道和筛选设备。双筛选设备有很多种规格，它是一种清洗设备，含有两个旋转筛选器。第一个筛选器执行清洗程序 - 采用洗涤剂和水 - 反冲洗过程。这些程序结束后，筛选设备将反转，卸掉执行干燥功能的第二筛选器内组件。定时、筛选转速、脱脂温度、反冲洗和干燥定时都在操作面板中设定。这项技术对高清洁度应用特别有价值，例如除磷或需要抛光的应用。设备材质采用AISI 304。Caber Impianti还供应所有必要的辅助件，例如提箱系统和组成称重系统。

Caber Impianti Srl - 意大利
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两种最新的成型机

RG Attachments Ltd (Tape Formers)开发出两种新型带成型机，并将它们纳入其标准带成型机系列，将最大带成型宽度从210mm提升到了480mm。新的H型和I型设备为了满足客户的需求而开发，RG Attachments Ltd很高兴提供这些新的能力。

电缆制造商用RG带成型机来纵向合拢电缆芯周围的绝缘材料，然后再将电缆送入最后的护套工序。RG带成型机使用许多种绝缘带，包括聚酯薄膜、纸张、金属复合膜，还能绝缘各种电缆，包括LAN、电力、电话、通讯、同轴和车用电缆。带成型机的位置就在挤出机头前，据称这是为了保证精密合拢。

RG Attachments Ltd - 英国
传真: +44 116 261 2403
电子邮件: info@tapeformers.com
网址: www.tapeformers.com

电缆制造商

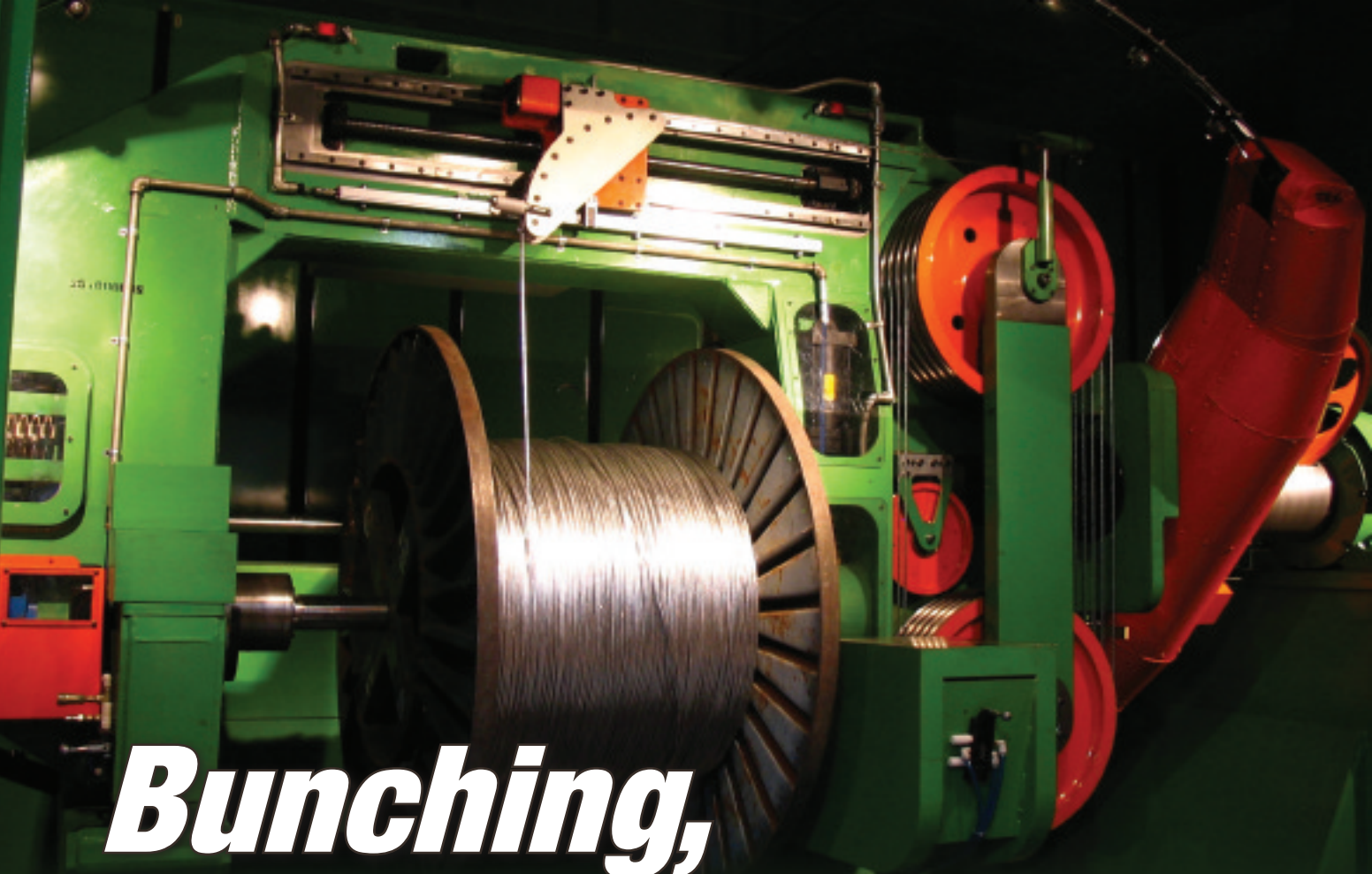
Weiyang Technology Co Ltd是一个获得ISO 9001:2000和UL-认证的制造商。公司成立于1987年。Weiyang致力于设计和制造通讯电缆、RF同轴电缆和电缆组件，专业从事PU和PVC电缆。公司在2005年安装了RF Teflon 线材设备。Weiyang Technology小型同轴低损耗电缆达到高性能。1.13低损耗电缆衰减低于4.2dB/M，1.37低损耗电缆衰减是3.7dB/M(频率为6000MHz)。公司的装备能处理从设计到厂内包装的生产各个方面，每个生产阶段都得到仔细监控。

Weiyang Technology Co Ltd - 台湾
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○ 微型Telton电缆和小型同轴电缆



Bunching, twisting, stranding and cabling machinery

Taken as a group, these specialities may stir a faint recollection of the caution on the package inserts of an earlier time: “Do Not Fold, Mutilate, or Spindle.” A production run of wire – thin, attenuated, frangible – would seem to call for protection from bunching and twisting, stranding and cabling, all at apparent cross-purposes to the careful handling due the output of a modern wire mill.

The makers of the equipment under review here are able to neutralise the effects of these rugged processes in only one way: by ensuring that their value-adding units are of the same precision-engineered excellence as the wire drawing machinery itself.

Conductors. Circuit boards. Wire-wound resistors. Wire harnesses. Connectors for moving machine parts. Mining cables. Welding electrodes. An exhaustive list of applications for wire that has been bunched, twisted, stranded and cabled would keep a researcher occupied for some time. The companies represented in this section of Wire & Cable ASIA are keenly aware of their responsibility for the controlled toughening that imparts the enhanced qualities of those products.

Tubular strander

Deyang Bochuang Electrotechnical Equipment's tubular strander is used to strand copper wire, aluminium wire, small size ACSR and strands. The machine has a small radial run-out, double bearings front and back, with smooth running, low noise and long service life. The base is made of cast iron, easily installed and gives very little vibration. It uses external threading, and has pneumatic brakes. The pay-off tension control uses mechanical friction or electromagnetic control and is equipped with automatic brake and emergency stop devices.



○ Tubular strander from Deyang Bochuang Electrotechnical Equipment The electrical system adopts PLC control, touch screen operation, centralised control of various operating parameters and fault diagnosis. This machine is composed of a payoff stand, headstock, tube components, bobbin holder, under-roller, brake, transmission box, die holder, haul-off capstans, take-up and traversing stand, safety hood and electrical system.

Deyang Bochuang Electrotechnical Equipment Co Ltd specialises in the research, development, manufacture, sale and service of copper, aluminium and aluminium alloy rod continuous casting and rolling equipment; rod drawing equipment; frame, tubular and cage stranders; and continuous lead sheathing extruding equipment.

Deyang Bochuang Electrotechnical Equipment Co Ltd – China

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Email: dybochuang@tom.com **Website:** www.dybochuang.com

Back twist in strands and wires

The back twist in strands and wires, often considered a technological sophistication, has revealed an essential point for the building of strands and wires in copper alloy or cadmium, and in building composite strands where the final product is an assembly of many strands, such as in aluminium copper clad nickel plated.

For these applications Macchine Speciali has developed several lines with back twist payoffs with bobbins from 250mm diameter up to 1,000mm diameter. These lines offer the same dimensions for unwinding, making it possible to obtain production at triple speed.

Macchine Speciali Srl – Italy

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Rotation machinery

With over 60 years of experience in the design and manufacture of rotating machinery for the production of steel ropes and power and telecommunication cables, the Spanish company CM Caballé offers a range of bunchers, stranders and cabling machines. During recent years the company has focused on upgrading and developing more efficient rotating machines for the power cable industry.

1 Conductor manufacturing (stranding)

- Rigid stranders: for round, sector, Milliken, underground or aerial conductors of any size
- Double twist stranders: up to 400mm² in unilay constructions of copper and aluminium
- Bow skip and tubular stranders: up to 19 wires of copper, aluminium, AAAC and ACSR

2 Laying-up of insulated conductors (cabling)

- Drum twisters: the rotating take-up (up to 4,000mm and 30 tons) can incorporate many different options for round, sector, Milliken and many different applications
- Single and double-twist stranders: for reels up to 2,200mm. A faster alternative to drum twisters
- Bow skip stranders: very high-speed machine to cable insulated conductors up to 240mm²
- SZ stranders: very efficient strander for small size conductors



○ Drum twister for Milliken conductors up to 3,000mm².

3 Screening

Some cables have to be screened with copper wires or armoured with steel wires before the final sheathing:

- Rigid stranders: for screening medium and high voltage power cables
- Drum twisters and single twist stranders: suitable for screening and armouring
- SZ screening: efficient solution for small wires
- Planetary stranders: the highest quality strander for high tensile strength wires

CM Caballé sa – Spain **Fax:** +34 93 399 0008 **Email:** caballe@cmcaballe.es

Website: www.cmcaballe.es

Manufacturing high-strength steel wire rope

Two model SRW 1+9x630 high-speed tubular stranders from SKET Verseilmaschinenbau will be delivered to a steel wire rope manufacturer in Tianjin within the next two months. The machines have been designed to make high-strength elevator ropes (with a maximum finished diameter of 13mm) by stranding 1+6, 1+8 or 1+9 steel wire strand constructions. This type of elevator rope meets the high demands of the end-users such as Otis and Schindler.

The machines are equipped with the following special features:

- Bobbin brake system to maintain strand tension from the full to the empty bobbin
- Strand tension-measuring device for each strand, with all strand tension values indicated on the operator panel
- Rope stretching device applied after stranding, with the stretching force adjusted and displayed at the operator panel
- Additional rope calibrating device after stretching
- Facility to record strand tension and stretching force to prove the actual value used during operation



SKET Verseilmaschinenbau GmbH – Germany Fax: +49 391 4055815 Email: info@sketvmb.de Website: www.sketvmb.de



Windak's Breakthrough Coiling Solution

Windak's NEW FC5 automatic flex coiler is the first of its new generation of Affordable Automation Packaging Solutions. Windak understands that the market today demands cost effective solutions that have a short payback time with maximum flexibility and output.

The FC-5 Flex Coiler features:

- Normally very short payback time
- Maximum line speeds up to 450 mpm
- Compact Design, minimizes floor space requirements
- Fully Automatic coiling machine: No strapper, Strapper or Binder
- Quick and easy change over between coil sizes, I.D., O.D., and Height
- 3-Coilers in one: Cables O.D.: 2,5mm-25mm
Coils O.D.: 220mm-480mm, H: 30-300mm

www.windak.se

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Tel: +46 (8) 580 38930
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Australia / Asia Pacific
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Fax: +61 2 8208 9971
Email: staffan.edstrom@windakusa.com



This range of Coil Sizes on one machine



Length measuring for stranded products

Sikora is offering a newly developed length measuring system, Length 6000, for non-contact online measurement of produced lengths of stranded products. For this method, the product profile and its movement are defined and thus the speed and the produced length calculated.

The technology of the Length 6000 is based on an optical measuring principle. In combination with two laser diodes, two image sensors are positioned next to each other. The product passes the first image sensor, which defines the shadow of the product shape. The exposure of the second image sensor occurs when the product shape, which has been recorded by the first image sensor, passes the second sensor. Hence, the characteristics of the shapes of both sensors are identical. The delay time for the exposure of the second image sensor is calculated and controlled adequately by the result of the correlation of both characteristics of the contours. Thus, Length 6000 exactly determines the produced length of the cable. Conventional length measuring devices using the principle of frequency shift, the Doppler-effect, are suitable for the measurement of flat materials such as paper, steel sheet or textile. However, this technology bears difficulties for length measurement of profiles with round or blank surfaces.

The technology of the Length 6000 is also reliable for round products and for products with blank surfaces. The system calculates the length independent from whether the product is going forward or backward. Moreover, the measurements start at zero line speed. The use of a length measuring device in cable production lines can contribute to production cost savings.

Sikora AG – Germany Fax: +49 421 48900 90 Email: sales@sikora.net Website: www.sikora.net

Cable production equipment

Shanghai Kingstone Cable & Equipment (SKS) is a manufacturer of cable machinery for the production of LAN cable, broadband coaxial cable, RF cable, broadband telecommunication cable, automotive wire and control cable.

The company supplies a variety of insulating, tandem and sheathing lines, single- and multi-wire drawing machines with a continuous annealer, several double- and single-twist stranding machines, cabling machines and auxiliary equipment such as caterpillar unit, belt capstan, payoff and take-up units. SKS is equipped with high pressure physical foaming and hi-precision chemical foaming production lines.



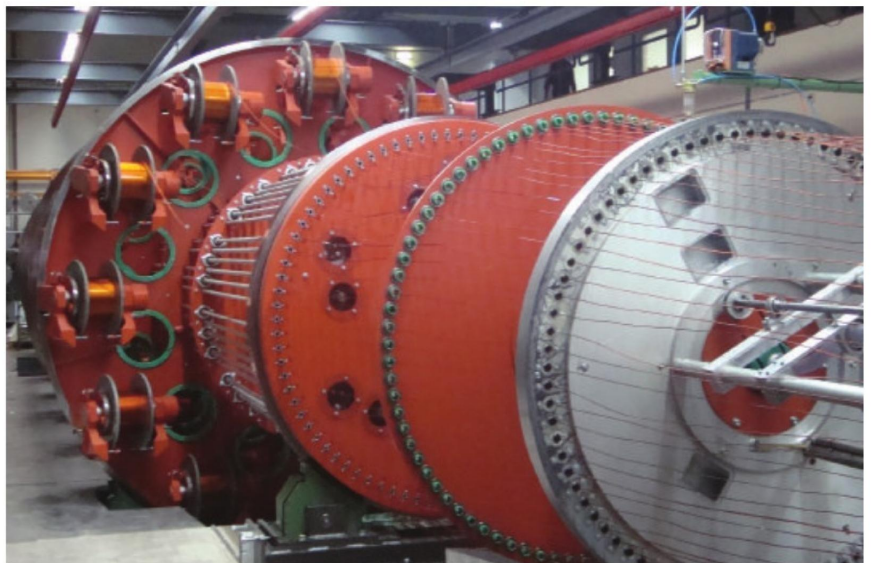
- PTB-550 high accuracy pair twisting machine with backtwist for Cat.5/6/7 LAN cable

Complete turnkey project management is available.

Shanghai Kingstone Cable & Equipment Co Ltd – China
Fax: +86 21 5814 3355
Email: sks58@sohu.com
Website: www.chinasks.com

Stranding range

Queins & Co GmbH manufactures all kind of stranding machines for electrical cables and steel wire ropes, offering performance with state-of-the-art controls and easy operation.



- Queins CTC machine

The range of machines manufactured covers:

- Tubular stranders
- Skip stranders
- Bow stranding machines
- Rigid stranders
- Planetary stranders
- Drum twisters for power cables and telephone cables
- Armouring lines

Queins & Co GmbH also manufactures CTC-machines that produce the continuously transposed conductors used in large transformers. The range accommodates up to 85 flat-enamelled copper wires, stranded in a heavy-duty planetary cage.

Queins & Co GmbH – Germany Fax: +49 2472 3014
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Roll form strander

The roll form stranding process from Ceeco Bartell combines the advantages of two highly productive processes – roll forming of shaped wire and double twist stranding of conductors. These two systems are forged to create one high-speed continuous manufacturing cell, capable of producing up to 300mm² compact conductors at speeds of over 200m/min.



○ Roll form stranding technology from Ceeco Bartell Products

Roll form stranding not only produces compact strand at high speeds, but also allows significant savings to be made throughout the stranding process, from wire drawing to the extrusion process. Roll form strander allows the use of a single input diameter wire to be used throughout the stranding process, resulting in significant process savings and advantages, including:

- Higher productivity stranding (typically 40 ton/day compact Al)
- Higher productivity wire drawing
- Less drawn wire scrap
- Lower insulating costs
- Lower capital investment
- Improved return on investment
- Quicker set-up
- Reduced work in process
- Shorter cycle times
- Smaller input wire storage area
- 75% more energy efficient than a typical rigid strander

The high performance of roll form standers with the Ceeco Bartell patented roll forming process is said to reduce costs without compromising finished conductor performance.

Ceeco Bartell Products – USA

Fax: +1 905 669 2218 **Website:** www.ceecobartell.com

Rollertwist stranding

Conductix Wampfler, of the Delachaux group, offers Rollertwist™ stranding technology, originally developed through the Godderidge company. A Rollertwist unilayer strander will strand 1, 7, 12, 19 or 37 cables or wires at the speed of a double twist but with the quality of the single twist. Tapes can be applied if required.

Applications of Rollertwist stranding include:

- Data and LAN telecommunication cables
- Control and signal cables
- Building and LV power cables
- Hybrid and composite cables

Delachaux SA – France **Fax:** +33 479 425005 **Website:** www.conductix.com



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Double twist stranding of instrumentation cables

Maschinenfabrik Niehoff has developed the DSI series of double twist stranding machines, and additional equipment which can be combined to manufacture all types of data and special cables, including LAN cables of all existing categories and even future generations.



An example application of the versatility of Niehoff's double twist stranding lines is the manufacturing of instrumentation cable for the petrochemical industry. In this case, the cable consists of two flexible conductors with polyethylene insulation, two fillers and a drain wire (ground). During the stranding process, the inner part of the cable has to be wrapped with three film layers. All elements of the cable are assembled in one process on a stranding line which is composed of three payoffs type ATP 630, three payoffs type ALB 600, a pre-twister type VVD 180, and a DSI 631 type double twist stranding machine.

The ATP 630 tangential payoffs are designed for the uncoiling of cables, insulated single conductors, pairs and quads with a maximum diameter of 4mm. Each payoff is driven by a dancer-controlled spool drive with adjustable wire tension; the maximum haul-off speed is 300m/min. In this case, the units were used to payoff the two flexible insulated wires and the ground wire.

The ALB 600 longitudinal tape payoffs with tape forming are driven by a dancer-controlled AC motor; they are designed to enable an easy and rapid film insertion and tensioning. The film tension can be adjusted separately and the forming tools for overlapping either on the right or left can be quickly exchanged. The payoffs can be operated with payoff spools or film disks and are suitable for films with a maximum width of 40mm and a maximum thickness of 65µm. The maximum haul-off speed is 300m/min.

The pre-twister VVD180 has been developed for the cost-effective production of insulated wires, pairs, quads and cable cores with 5- or 7-conductor design and three or more films applied in the S or Z twist direction by double twist stranding machines. The pre-twist devices enable the application of tapes under a reduced, controlled and constant tension. The devices can accommodate

○ ATP 630 type tangential conductor payoffs

tapes made from all kinds of films used for data and special cables. The speed can be infinitely controlled. The VVD pre-twisters are designed to handle stranded products with a maximum diameter of 10mm or 15mm.

Double twist stranding machine DSI 631 is used for a wide conductor cross-section range and a maximum strand diameter of 8mm. The lay length can be freely adjusted from 8mm to 180mm with a lay length tolerance of less than $\pm 0.5\%$ of the effective lay length. The DSI 631 and the larger version DSI1001 are designed to cable insulated conductors into pairs or quads and to strand conductor pairs into LAN cables and other special cables, with or without back twist. Depending on the respective machine version up to three films can be applied. An important feature of the DSI stranders is the single bow design that results in a significantly reduced energy consumption and noise emission. Three-phase drive technology and non-contact machine data transfer reduce maintenance to a minimum. All production parameters are set using the machine's HMI touch screen display where they are clearly visible together with service and maintenance messages.

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

Top speed stranding

The high-speed, robust SZ strander from Tensor Machinery has a series of direct driven lay plates that provide a smooth product flow, even when the strander reaches top speed. Since only the cable product, not the reels rotate in the SZ strander the line speeds are higher than in traditional stranding methods.

The Tensor strander was initially designed for fibre optic cables, but it is now being adopted by a number of cable producers for hybrid cable designs, power cables, and control cables and for any application where high speeds and reduced cable costs are required.

In most cases the SZ strander is combined with a high-speed binder that binds a yarn around the cable to hold the structure together. For some fibre optic cable designs where a binder is not desirable, Tensor also supplies a high speed, low-tension planetary stranders. Tensor can supply a complete SZ stranding line to fit most needs.

Tensor Fibre Optic Technologies Ltd – Canada
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Website: www.tensorfiber.com

Twiner/quadder model

Model TD-1930 double-twist twinner/quadder from Tulsa Power is designed for twisting or quadding wires into twisted pairs. The system is designed to operate quickly and efficiently with minimal operator attention or experience required. The system will accommodate up to 19" flange diameter in the cradle area and up to 30" flange diameter in the take-up shaft.



○ Tulsa's double-twist twinner/quadder TD-1930

Single-twist twinning, double-twist twinning and double-twist quadding with up to 2,000 twists per minute are all achievable with the TD series equipment. Individual payoff tension brakes are standard on the TD range, and fully adjustable while the unit is in operation. Each system includes a four-groove dual-wheel capstan built into the mainframe, tension controlled take-up shaft and all aspects of the drives, flyer bow and capstan are electronically integrated to one master speed control potentiometer. Each drive also includes trim potentiometers for fine tuning while the system is in operation. Available upgrades include full AC vector drive systems with encoder feedback and full colour operator touch screen interface.

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Website: www.tulsapower.com

Twisting and cabling

Flymca is a supplier of machinery and equipment for the manufacture of electrical cables, submarine, offshore and umbilical cables, and steel ropes. The company's machinery range includes:

- Rigid stranders for 630mm and 800mm DIN or American standard bobbins: carriages from 6 to 36 bobbins with fast loading systems to produce high quality compacted conductors, either by rollers or die. This machine type can also be adapted for screening purposes with multi-wire bobbins
- Tubular stranders: high speed stranding in a choice of configurations (1+6; 1+12; 1+6+12) and specials such as 1+6+(6+1) which also can produce as 1+12 in tandem operation
- Bow stranders: for aluminium or copper bare wire stranding and for steel wire ropes on PC-lines
- Bow cablers: for fast laying-up of insulated conductors
- Double-twist bunchers: for bobbin diameters of 1,000mm, 1,250mm and 1,600mm. High speed production of aluminium or copper conductors, with or without compacting (by die or rollers)
- Drum twisters: for laying-up, armouring or screening conductors. Also for cabling high and extra-high power cables such as Milliken. Machines for drums up to 4.5m and 40 tonnes have been supplied
- Planetary: for OPGW, steel wire ropes, CTC, umbilicals and offshore cable, and for armouring of multiple enamelled wires. Machinery can work with 100% backtwist or variable from 0% to 100%. Drums for diameters from 500mm (standard for CTC), from 630mm for OPGW, steel or armouring, and from 1,000mm up to 2.5m for umbilicals, offshore and submarine cables

Flymca SL – Spain
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Website: www.flymca.com

Double twist machines

The double-twist stranding machine (DTO) from Officine Meccaniche di Lesmo was among the first machines developed by the company.

The design is known for a single bow system that offers cost advantages in energy consumption and replacement parts.

The high torsion of double-twist technology can improve productivity and, if fitted with an adequate payoff system, can operate continuously for 24 hours a day.

Double-twist stranders can be used for stranding rigid copper, aluminium and aluminium alloy and for flexible copper from buncher or multiwire processes. They can also be used for laying-up of insulated cable, with or without tape, and for making sector cable of copper and aluminium.

OM Lesmo SpA – Italy

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Email: omlesmo@omlesmo.com

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Use For: Galvanized Wire Rope
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Mining Rope



Antirust Oil 防锈油
防锈油 防锈油

Type: Water-based Antirust Oil
Thin Coating Antirust Oil
Rapid Dried Antirust Oil

Use For: Hardware and Steel Wire etc.

Antirust Oil and Burnishing Oil for Welding Wire

Swelling Waterproof Ointment for Cables

Corrosion Preventive Ointment for ACSR

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这些专业领域放在一起可能会把人搞晕了，回顾前一段时间刊载系列小心：“勿折、损伤，或者心轴。”

线材生产运行—细小、脆弱、易损—好像束线、对绞、绞缆、成缆需要保护，所有这些要小心处理显然与现代线材设备的大规模产量相矛盾。

在这里介绍的设备制造商要能够消除这种严酷生产工艺的影响只有一个方法：确保他们的高附加值设备能够像拉丝机的精确生产性能一样。

导体、线路板、绕组电阻器、束线、移动设备的连接器、矿用电缆、焊条、线材的应用可以无尽的列下去，而束线、对绞、绞缆、成缆足够让一个研究者忙一段时间了。

在亚洲线缆这一部分描述的这些公司清楚地认识到，严格控制以提高这些产品的质量是他们的职责。

辊式绞缆机

采用Rollertwist辊式绞缆生产线工艺有两种高生产率工艺过程优势——型材线辊轧成形和双扭绞线导体。

这两个系统是一起创建了高速连续生产单元，可生产300平方毫米紧压导体，速度超过200米/分。

辊轧式绞线不仅可高速绞合，而且通过绞线过程，从拉线到挤出还可以节省成本。辊轧成形绞线机通过绞合过程时，可输入单一直径线，其结果是节省了工序，其优势包括：

- 绞合生产率较高（典型的是40吨/天紧压铝材）
- 线材拉丝生产率较高
- 较少拉线废料
- 较低绝缘成本
- 较低资金投入
- 投资回报有所提高
- 设置较快
- 减少了过程工作
- 较短循环时间
- 较小输入线材保存区域
- 比典型的钢架式绞线机的能效高出75%

高性能辊轧绞线机，加上 Ceeco Bartell 辊轧成形专利工艺，据说可减少成本，不会影响已完工导体的性能。

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旋转机械

具有60多年设计、制造钢索、电力电缆、电信电缆等旋转机械的经验，西班牙公司 CM Caballé 提供了一系列束线机、绞缆机和成缆机。近年来，公司集中精力更新和开发更有效的用于电力电缆行业的旋转机械。



○ 盘式成缆机，用于高达3,000平方毫米的分割导体

1 导体生产（绞线机）

- 钢架式绞缆机：用于任何尺寸的圆形、扇形、分割、地下或空中导体。
- 双扭绞线机：最高达400平方毫米，用于铜铝单层同节距绞合。
- 弓形和管式绞线机：最高达19股线的铜线、铝线、铝合金绞线和铜芯铝线

2 绝缘导体的绞合（成缆）

- 盘式成缆机：旋转收线装置有用于圆形、扇形、分割导体和许多不同应用领域的不同可选方案
- 单绞和双绞绞缆机可适用最大2,200毫米线盘。对盘式成缆机而言是更快的选择。
- 弓形绞缆机：速度很快的机器，可成缆240平方毫米的绝缘导体
- SZ绞缆机：用于小尺寸导体的很有效率的绞缆机

3 屏蔽

- 在最终护套之前，有些电缆需要铜线屏蔽或钢丝铠装
- 钢架式绞缆机：用来屏蔽中高压电力电缆
- 盘式绞合机和单扭绞缆机：适合于屏蔽和铠装
- SZ屏蔽：小线材的有效解决办法
- 行星式绞缆机：质量最高的绞缆机，用于高抗拉强度线材

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生产高强度钢丝绳

SKET Verseilmaschinenbau公司的两款SRW1+9x630高速管式捻股机将在未来两个月内送至在天津的钢丝绳制造商。机器设计成可制造高强度起重机用索(最大精加工直径13毫米)，可捻1+6, 1+8或1+9钢丝索结构。这种起重机用索符合诸如Otis and Schindler公司的终端用户的高要求。



机器配置有以下特殊特征：

- 线盘制动系统保持捻线从满至空盘的张力
- 每股都有张力测量装置，所有张力值都显示在操作面板上
- 捻股之后，应用索拉伸装置可调整张力，并显示在操作面板上
- 拉伸之后有其它绳索校准装置
- 便于运行时记录捻股拉力和张力，验证实际值

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电缆生产设备

上海金东线缆设备有限公司是一家电缆机械生产商，用于生产局域网电缆、宽带同轴电缆、RF电缆、宽带电信电缆、汽车线缆和控制电缆。



○ PTB-550高精度双捻机，带退扭 Cat. 5/6/7局域网电缆

公司提供多种绝缘、串联护套线、单线和多线拉丝机，带一个连续退火炉，几个单双捻股机，电缆机械和辅助设备，例如履带牵引单元、带式绞盘、收放线装置。SKS还配置高压物理发泡和高精度化学发泡生产线。

可提供完整的交钥匙项目管理。

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绞缆系列

Queins & Co GmbH 生产了各种捻股机用于电缆和钢丝绳，具有前沿技术的高性能的控制，操作轻松。

生产出的机器系列包括：

- 管式捻股机
- 随机跳跃式绞线机
- 弓式绞线机
- 钢架式绞线机
- 行星绞线机
- 盘式成缆机，用于电力电缆和电话电缆
- 铠装生产线



Queins CTC 机器

Queins & Co GmbH 公司还生产CTC机，生产出连续调换的导体用于大型变压器。它可容纳85扁平漆包铜线，绞合在重型行星笼中。

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绞线和成缆

Flymca是一家机械和设备供应商，用于电器电缆、海底电缆、海上和脐带电缆、钢丝绳生产。公司的机械系列包括：

- 630毫米和800毫米DIN或美国标准线盘的钢架式绞线机：绞线机架上有6-36个线盘，带快速装系统，以便通过辘子或模具生产出高质量的紧压导体。机器类型适用于屏蔽多股线盘。
- 管式绞线机：高速绞线，选择配置(1+6; 1+12; 1+6+12)和特殊结构，例如1+6+(6+1)，在串联运行时，它可生产出1+12。
- 弓式绞线机：用于绞铝或铜裸线和绞PC线上的钢丝绳。
- 弓式成缆机：快速成缆绝缘导体
- 双绞束线机：线盘直径1,000毫米、1,250毫米和1,600毫米。高速生产铝或铜导体，带或不带压模(滚轮或模具)。
- 盘式成缆机：用成缆、铠装或屏蔽导体，还用于成缆高压电力和超高电力电缆，例如分割导体。机器可使用的盘最大为4.5米，40吨。
- 行星式成缆机：用于地线复合光缆、钢丝绳、CTC、脐带和海上电缆及铠装多层漆包线。机器运转时100%退扭，或者可以在0%-100%变化。盘直径从500毫米(用于CTC标准)，630毫米用于地线复合光缆、钢材或铠装，1,000毫米到2.5米用于脐带电缆、海上和海底电缆。

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绞合线产品长度测量

Sikora提供了新开发的长度测量装置Length 6000，用于制造出的绞线产品的长度非接触在线测量。利用这个方式，明确产品轮廓及其移动，因此，可计算速度和生产出的长度。Length 6000的技术是以光学测量原则为基础。结合两个激光器二极管，两台图像传感器相互靠着。产品经过定义了产品形状阴影的第一个图像传感器。当产品形状被第一个图像传感器记录之后，进入第二个图像传感器时，第二个传感器就发生曝露。因此，两个传感器的特征是一致的。

第二个图像传感器曝露的延迟时间可根据两者的曲线特征相关结果计算和适当控制。因此，Length 6000实际决定了生产的电缆长度。以变频为原则的传统长度测量装置适合于扁平材料测量，例如纸张、钢片或纺织品。但是，该技术克服了圆形或毛坯表面的型材长度测量。Length 6000技术还依靠圆形产品和毛坯表面产品。不管产品是前进还是后退，装置都可以计算长度。但是，测量是从零线速开始。电缆生产线中使用长度测量装置，可减少生产成本。

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高速绞合

Tensor机械公司的高速稳健SZ捻股机有一系列直接驱动层板，可让产品顺利流动，甚至能让捻线机实现高速。由于是唯一的电缆产品，不是在SZ捻股机内线轴转动，生产线速度比传统的绞合方式更快。

Tensor捻股机最初是为光纤电缆设计的，如今，但是大量电缆制造商采用的是混合电缆设计、电力电缆、控制电缆，用于要求高速、电缆成本降低的领域。在大多数情况下，SZ捻线机结合高速束线机，束线机将电缆周围的丝线捆绑起来支持结构。对于一些不想用束线机的光纤电缆，Tensor还提供高速、低张力的行星捻股机。Tensor可以提供成套SZ捻股机生产线，以满足大多数需求。

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Tubular strander 管式绞线机

德阳博创电工设备有限公司的管式绞线机用于绞合铜线、铝线和小尺寸钢芯铝绞线和钢绞线。机器径向跳动小，前后有双轴承，平稳运行，噪音低，服务寿命长。基础是铸铁制成，安装简单，振动很小。使用外攻丝，气压制动。



德阳博创电工设备有限公司的管式绞线机

放线张力控制使用机械摩擦或电磁控制，配置有自动制动和应急止动装置。电力系统采用PLC控制，触摸屏操作，不同操作参数集中控制和失误诊断。

机器由放线架、主轴箱、管部件、筒管架、托轮、制动器、传动箱、冲模座、牵引绞盘、收线和排线架、安全罩和电气装置组成。

德阳博创电工设备有限公司专门研究、开发、生产和销售服务于铜、铝和铝合金杆连续铸造和轧制设备，棒材拉丝设备，框架式、管式和笼式绞线机及连续铝包挤出设备。

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双绞捻线机

Officine Meccaniche di Lesmo 公司的双绞捻线机是该公司开发的首批机器中的一种。众所周知，其简单弓形装置设计，在能耗和更换件方面具有成本优势。

高力矩双捻技术提高了生产率，如果配置有合适的放线装置，它可一天连续运行24小时。双捻机可用来从束线机或多线过程中捻刚性铜、铝、铝合金和柔软铜材。还可以成缆绝缘电缆，带或不带膜带，用于制造铜和铝的扇形电缆。

Lesmo生产的双捻机可处理450毫米-2,500毫米直径的线盘。OM Lesmo 的 eDTO-2500mm (250mm 双绞) 被认为是市场上最大的双捻机。

OM Lesmo 的双捻机技术还提供了新形高速双捻机 DTO-2500，最大线盘直径2,500毫米(100")。机器可生产圆形、高生产率、紧压铜导体(高达300平方毫米)或铝导体(高达500平方毫米)。

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Twiner/quadder (双绞/四线绞合) 型号

Tulsa Power公司的型号 TD-1930双绞盘机设计成将绞合线拧成双绞线。该系统操作快速而有效，尽量用不着操作员去关注。系统在摇架区可容纳19英寸直径线盘，在收线轴上可容纳30英寸直径线盘。



○ Tulsa的双绞/四线绞合机 TD-1930

使用TD系列装置，单绞机、双绞机和双绞四线组机器可实现每分钟2,000 绞合。在TD范围内的单个放线拉伸制动都是标准的，当装置运行时，全部可调。每个系统包括有一个建在主机里的四槽口双轮绞盘、拉伸控制收线轴和各种驱动。

飞弓和绞盘都整合在一个总速度控制的电位计中。当系统运行时，每个驱动还有精调的切边电位计。升级版的系统包括带解码器反馈的全交流导航系统和彩色用户触摸屏界面。

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仪表电缆双扭绞缆机

Maschinenfabrik Niehoff 公司已开发DSI系列双扭绞线机，其它生产各种数据和特殊电缆的设备包括现有等级和未来新生代的局域网电缆。Niehoff 的双扭绞线机多种应用中其中一个例子就是用于石化行业的仪表电缆生产。在这种情况下，电缆由两个灵活的聚乙烯绝缘导体、两种填料和一条加蔽线(接地)构成。在绞合过程中，电缆内部件由三层膜包裹。电缆的所有元件都在绞合生产线上一次性进行组装。绞合生产线是由三个型号ATP630放线装置、三个型号ALB600放线装置、一个预绞线机型号VVD 180及一个DSI631型号双绞捻线机构成。

ATP630切向放线装置设计成放送电缆、绝缘单导体、最大直径为4毫米的双股和四股。每个放线装置都由补偿轮控制线轴驱动，线张力可调。最大牵引速度是300米/分。在这种情况下，使用装置来灵活的放送两个绝缘线和接地线。

ALB 600 纵向放带装置，由补偿轮控制交流电机驱动成形。其设计使插入和拉伸膜容易、快速。可单独调整膜拉伸，可迅速更换成形工具用于左边或右边的搭接。放带装置可使用带放线轴或膜盘，适合于最大宽度40毫米、最大厚度65 μ m 的膜。最大牵引速度为300米/分。

开发出的预绞线机 VVD180，用于绝缘线、双股线、四股线和电缆芯的生产，节约成本，5-7个导体的设计，三个或更多膜应用于双绞捻线机的S或Z绞线方向。预绞线机可使带有在减径、控制、稳定张力下应用。装置可容纳数据和特殊电缆各种膜带。速度可无限控制。预绞线机 VVD的设计可处理最大直径为10或15毫米的绞线产品。

双绞盘捻线机 DSI 631用于横截面大的导体，最大绞股直径为8毫米。节距长度可在8-180毫米之间自由调节，节距长度误差为低于有效节距长度的 $\pm 0.5\%$ 。DSI 631 及其较大型号 DSI1001的设计是电缆绝缘导体捻成两股或四股，捻过的导体对进入局域网电缆和其它特殊电缆，带或不带退扭。根据各机器的不同型号，可使用三种膜带。DSI捻线机的重要特征是单一弓形设计，减少了能耗和噪音释放。三相驱动技术和非接触机器数据传输将维修将至最低。所有的生产参数在HMI触摸显示屏上进行设置，显示屏清晰可见，提供服务和维修信息。



○ 型号ATP630切向导体放线装置

Maschinenfabrik Niehoff GmbH & Co KG - 德国

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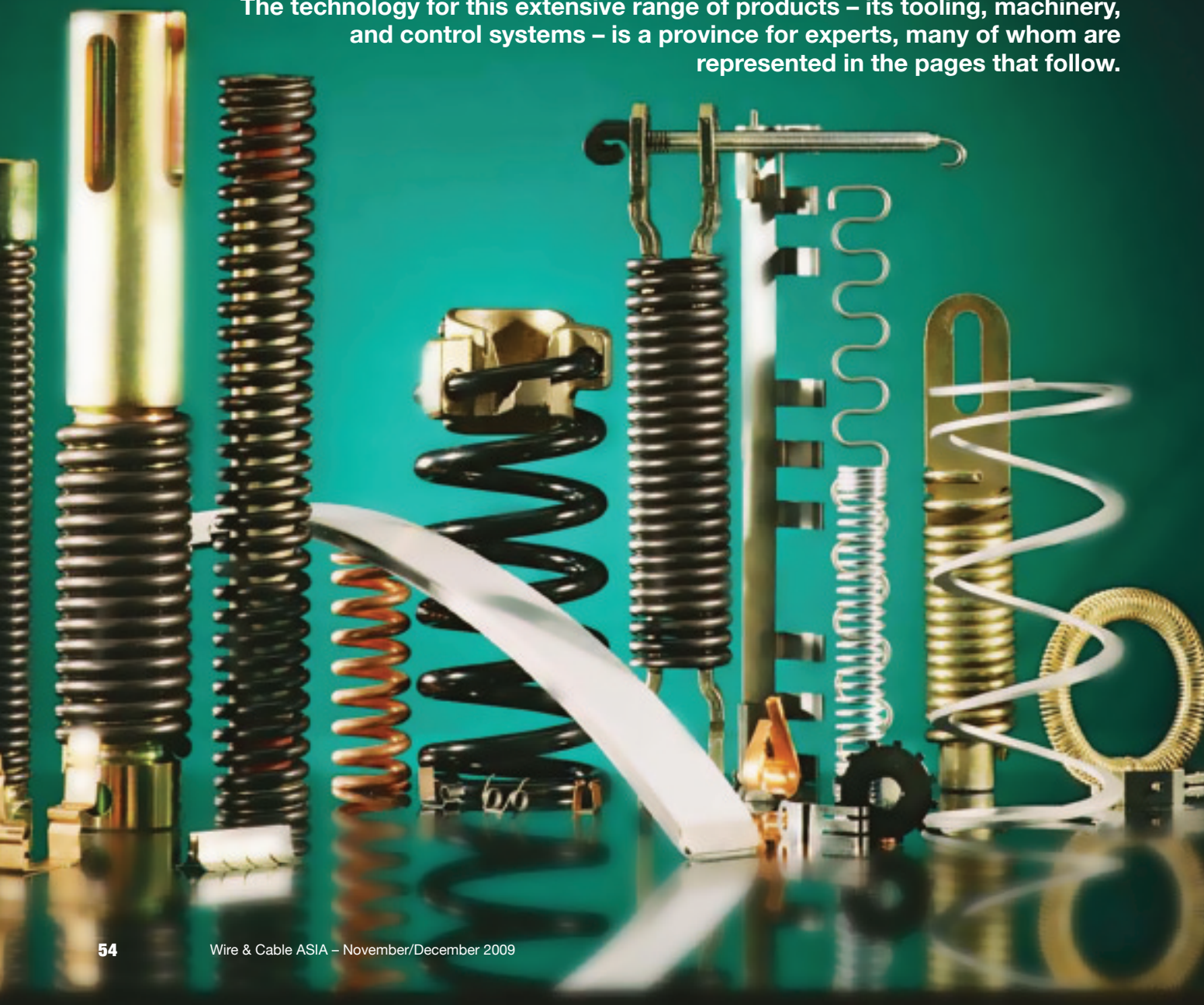
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Springs, fasteners and wire formed parts

Under their protective topcoats, the items in this category command more – and more focused – attention than many other products of our industry.

The technology for this extensive range of products – its tooling, machinery, and control systems – is a province for experts, many of whom are represented in the pages that follow.



Engineered for accuracy

Precision engineered for speed and accuracy, Pave's Zukron CNC rotational wire forming machine has been developed to produce extremely long surface length wire products, in both simple and complex three-dimensional shapes, quickly and cost effectively.

Designed and built in Pave's UK production facility, the competitively priced Zukron utilises the latest wire forming technology to deliver accurate and consistent twist- and mark-free finished form products.

The machine has a fast, versatile 360-degree continuously rotating head and incorporates Pave's 'Trueline' front-end wire stabiliser and patented straightening system.



○ Zukron CNC wire forming machine from Pave

Compact, robust and reliable, the Zukron can process short and long length wire products up to 10mm (3/8") in diameter. Like all Pave machines, set-up and changeover times are fast and the Zukron's fully automated user-friendly CNC operation ensures economical production. Pave's comprehensive range of high-performance machines includes user-friendly single- and twin-head wire forming centres for a variety of applications.

Pave Automation Ltd – UK Fax: +44 1733 563500 Email: pave@enterprise.net Website: www.pave-wire.com

Handling springs and wire formed parts

The new magnetic Transporter™-CA (cylinder actuated) from Industrial Magnetics Inc, is designed for automated transfer or manually operated material handling applications of heavy, steel parts and offers numerous options for pick-up points on odd-shaped stamped, forged and formed parts or complete part assemblies.



The magnetic Transporter-CA can be placed on robotic end-of-arm tooling, cranes, or other operator assisted lifting devices to ergonomically and magnetically lift and rotate heavy and awkward steel parts, such as springs or cylinders, from horizontal to vertical orientation or vice-versa.

The application pictured here is of a magnetic Transporter-CA designed to lift an 18lb, heavy-duty truck spring – measuring 6" in diameter and 17" long – out of its shipping container, and to rotate it by 90 degrees for placement into the assembly line.

Other applications include loading springs and formed parts onto paint lines, removing parts from storage totes or bins and placing finished parts into shipping containers.

The Magnetic Transporter-CA saves the operator from repetitive bending and lifting of heavy parts and helps prevent costly and painful injuries. The permanent magnet positively holds springs and parts, requires no electricity and uses minimal shop air to activate and deactivate the magnet. The non-marring on/off release will not damage paint/coatings on the spring.

○ Transporter-CA is used to lift a heavy-duty truck spring

Industrial Magnetics Inc – USA Fax: +1 231 582 0622 Email: imi@magnetics.com Website: www.magnetics.com

Continued development in wire forming

YHM Springtech Machinery Co (Yeou Heuy Machine Co) has been making machines for 27 years. The range includes a torsion spring former, compression spring coiler and long extension spring former, garter spring and micro spring coilers, a filament former and a bobbinless air coil former with in-line stripping, soldering, winding, bending and hot air heating.



○ YHM's WB 360 wire forming machine

YHM is currently focused on developing a wire bender for special wire forms with end processing, such as stamping, drilling, tapping, threading and chamfering.

In 2010, following collaboration with a European machinery company, YHM will announce a new, modular machine for wire and strip hybrid forming.

The hybrid forming machine can form wire and/or strip material with stamping, bending, winding, coiling, drilling, tapping, threading, chamfering and/or welding actions, combined with assembling processes and various types of feeding systems and transfer stations.

The machine can be designed with between 2- and 32-axes of servo control, according to customer requirement, with base die/tool for quick setup. This hybrid machine is suitable for fast simple production or as a mass-production machine.

YHM Springtech Machinery Co – Taiwan

Fax: +886 4 8887086

Email: yhm@wire-machine.com.tw

Website: www.wire-machine.com.tw

Springs and clips



○ Springs from Tiger Steel

Tiger Steel Co Ltd has specialised in producing suspension coil springs, sway bar, torsion bar, leaf springs and fastening clips for over 40 years.

The company is ISO/TS16949, ISO-14001, ISO-9001 and Ford Q1 certified. Products are mainly supplied to OEMs, in countries throughout the world.

Tiger Steel Co Ltd – Taiwan

Fax: +886 3 4734361 4734350

Website: www.tigersteel-tw.com

Cold and warm forming headers

Sacma's SP 660 five-die large cold former and the six-die SP 670 machines are controlled by SC-MATIC software, with all data transfer by Ethernet. Designed to be user-friendly, hydraulic clamping of the tools, wedges and transfer makes operation of such large machines straightforward for setters and operators.

The machines can also be equipped with an automatic system for setting and adjustment of the transfer finger timing cams.

The standard equipment includes two patented hydraulic service platforms that position themselves in the work area to assist in the operation of individual tool removal. A portal framed overhead crane with 3-D power movements manipulates tools and heavy weights. Alternatively, a portal-type robotised powered manipulator is available for automatic removal and fitting of complete tool holders.

An electronic joystick is supplied for ease of transfer finger setting procedures, allowing the operator to move the machine in slow motion to avoid collisions of tools. It will also avoid jogging, and safeguard the clutch/brake unit for enhanced operational life. Optional accessories and systems are offered to make these machines extremely flexible for the manufacture of complex parts, from high tensile materials.

SP660 and SP670 offer high production speed and forging power for manufacturing bolts and parts that usually require hot forging. This results in a significant saving on energy costs.

Sacma is also introducing a new range of four-die and five-die warm forming headers (WF), especially for high tensile bolts and special parts for the aerospace and automotive fields where it is necessary to use fixing elements able to sustain high temperature and high stresses.

Sacma Limbiate SpA – Italy

Fax: +39 0299 050185

Email: info@sacmalimbiate.it

Website: www.sacmalimbiate.it

Nail forming

Enkotec A/S has released a new nail machine, the MI01. Producing 1,000 round nails of 2.3mm–3.8mm diameters and 50mm–90mm lengths, the MI01 is intended for small to medium-sized capacity needs.

The MI01 is based on Enkotec's rotary forming principle, but for this model Enkotec has chosen a simple, sturdy transmission system based on belt drives, with a mechanical adjustment set-up. The tooling ring includes fewer dies, a contributing factor to the short tooling changeover times.

The MI01 nail machine is user friendly in its design, with an ergonomic working height, foot controlled wire feeding, and easy access for cleaning and service. It has an efficient active nail ejection system.



○ The MI01 nail former from Enkotec

A characteristic of all Enkotec nail machines is the low noise level resulting from the rotary head-forming principle. Moreover, the straightening unit is placed in a closed box, from which it is possible to establish a connection to exhaust ventilation.

The new MI01 has a re-designed wire payoff featuring machine-integrated controls and allowing a maximum coil weight of 2,000kg.

Enkotec managing director, Bent Just Petersen, comments: "We see our MI01 model as a very strong alternative for our customers' capacity needs, whether they produce a single nail type or several different nails. The new MI01 combined with our high-end NX series allow us to offer a complete range of nail machines, where many tooling parts are common for all machine models, thus increasing their cost effectiveness."

Enkotec A/S – Denmark
Fax: +45 8652 4199
Email: sales@enkotec.dk
Website: www.enkotec.com

Spring feeding

Skako Comessa vibratory storage feeders will keep sorting and inspection machines running with the right quantity of small products, formed parts or springs, without needing operator intervention.

There are two solutions for feeding inspection and packing machines: the silo feeder is used for very small and easily flowing bulk material such as nuts, washers and screws, while the storage feeder, FVE, is for longer, larger and interlocking products. The storage feeder is available in different sizes from 70 litres or 125kg capacity, up to 2,240 litres or 4,000kg.

To complete the feeding equipment for an inspection and packing machine line, the Skako Comessa lift and tipping system, Tilde, is available to empty all sizes of transport boxes (10 to 3.15kg per box) into the feeders.



○ Sorting and feeding small parts with Skako Comessa equipment

Skako Comessa – Germany
Email: de@skako.dk

Fax: +49 2364 1060 72
Website: www.skakocomessa.com

Springs for industry

Spring manufacturer Mevis SpA, established in 1961, produces springs for the automotive and electromechanical industries, as well as for household appliances.



○ A spring from Mevis SpA

A dedicated in-house laboratory (certified by the Italian government) carries out all the relevant tests necessary for specific parts, including fatigue tests, coating tests, welding tests, salts spray tests and metallographic analysis.

All design projects are carried out internally, in two tooling workshops, and the company also designs and produces its own machines for bending, assembly and sorting.

Mevis has been ISO 9001 approved since 1994; AVSQ94 and QS9000 certified since 1999 and ISO TS 16949 since 2000.

Mevis SpA – Italy
Email: mevis@mevis.it

Fax: +39 0424 58 1780
Website: www.mevis.com

Spring testing

Wintime Machinery Co Ltd, founded in 1992, is a spring machinery maker in China, specialised in spring manufacturing and testing machines including a spring coiler, grinder, computer controlled spring tester, railway spring and spring fatigue tester. The maximum capacity of the spring tester is 2,000kN (equal to 200 tons).

Wintime is an ISO9001 certified enterprise, a member of the China Standardization Committee of Testing Machines, as well as a cooperative unit of the Institute of Spring Technology (IST) and Moyer Manufacturing Company Inc.

The company has many patents and technical achievements, in cooperation with a university research and development centre. The Wintime railway spring testers for EN13298 are in use in the CRH (China Railway High-speed) quality inspection centre of the Ministry of Railways.

Wintime machines are widely used in the railway, machinery, electricity, defence and space industries.



○ Wintime spring tester

Wintime Machinery Co Ltd – China

Fax: +86 773 581 1057

Email: wintime6@163.com or wintime-4@163.com

Website: www.wtmmachine.com

Semi-automatic bending

Ravni Technologies manufactures the MPM20-S semi-automatic bending machine, for bends in round wire and flat wire in a diameter range from 1mm to 16mm with a radius from 1mm to 40mm.

A digitised abutment positions the wire before each bend. Up to ten angles can be programmed automatically and, as the feeding and bending operations are automatic, the operator is safely out of the area.



○ MPM20-S semi-automatic bending from Ravni

Parameters such as speed of bending, the angles of bending (up to 250 degrees) or the distances between bends (from 30mm to 4,000mm) are programmable on a touch screen.

Ravni Technologies provides service for the installation, training and set-up of its machines all over the world.

Ravni Technologies – France

Fax: +33 477 905865

Email: info@ravni.com

Website: www.ravni.com

Spring production equipment

OMD Officina Meccanica Domaso SpA, has long experience in the spring sector and its product range is constantly under development to keep pace with technology.

The OMD range includes:

- Automatic spring end grinding machines for small and medium wire diameter
- Pendulum wet grinding machines designed for hot-coiled springs
- Spring coiling machines with CNC control and coiling lathes designed for cold-coiled springs
- Multi-formers with CNC control for the production of torsion and traction springs and shaped parts

OMD can supply complete spring production lines and technical advice, particularly with regard to valve springs, friction springs, injectors and springs applied in the railway industry.

This wide production range includes a series of automatic spring end grinding machines equipped with a special cooling system, grinding wheel rotation speed change, a loading shaft handling system and a loading plate rotation control system for automatic spring loading.



○ Spring production machinery from OMD

Control and production management is via an industrial PC based on graphic interface programming.

OMD-SpA Officina Meccanica Domaso – Italy

Fax: +39 0344 96093

Email: info@o-m-d.it

Website: www.o-m-d.it

Forming machinery

New Form-Tech Enterprise Co Ltd was founded in 1990 as a specialised manufacturer of computer-controlled wire and spring forming machinery.



○ Computer-controlled forming machinery from New Form-Tech

The computer is programmable, even during the running mode, and users can easily edit a new program using MPG control and TEACH mode. Operator training is available for all equipment.

New Form-Tech Enterprise Co Ltd – Taiwan
Fax: +886 3420 1318
Email: form.tech@msa.hinet.net
Website: www.wire-forming.com.tw

Making fasteners, fast

Cold header manufacturer, Carlo Salvi SpA celebrated its 70th anniversary during 2009. In addition to the company's traditional range, a new generation of headers has been developed with electronic devices to simplify set-up for the production of fasteners such as screws and tubular rivets.

Carlo Salvi's core business is in one-die two-blow headers, with linear wire feed, a quick-change system, automatic and electronic lever adjustments and kick-out pins for high productivity.

The same technology is applied on two-die four-blow headers for complex shaped components (with very short shanks or large heads) with a dramatic reduction in costs compared to multi-station machines.

With the improvements of hydraulic die clamping, independent transfer fingers with oscillating transfer and a short part stopper the new, progressive headers have been well received.

Carlo Salvi SpA – Italy
Fax: +39 0341 682 869
Email: carlosalvi@carlosalvi.it
Website: www.carlosalvi.it

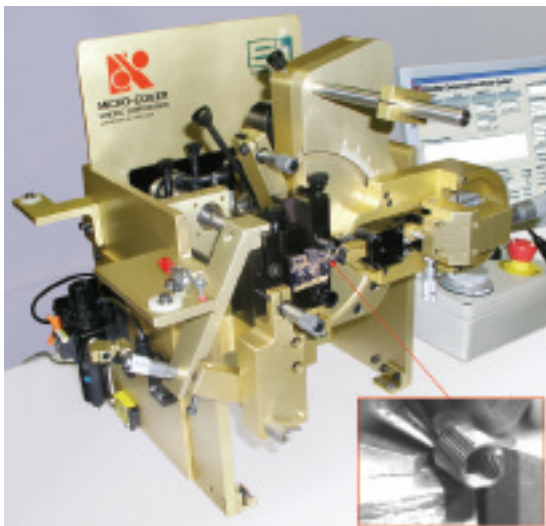


○ Cold header from Carlo Salvi of Italy

Small coils from fine wire

Kinefac's micro-coiler is used by catheter manufacturing companies to produce parts for guide wires.

Initially, the bulk of its production was for marker coils and similar small parts made from platinum tungsten wire down to 0.002" diameter, but with a demand for coil from finer wire the company developed the sub-micro feed system to produce coil from 0.025mm diameter wire down to 0.177mm. Kinefac then developed the Micro-Align tooling system, precision feed roll pressure control and micro-adjustment of the cutoff tool to enable the operator to make repeat setups in minutes rather than hours.



○ Kinefac micro-coiler

As catheter makers developed a need for flat wire coiling, Kinefac answered the requirement by developing three-point coiling tooling which enables the user to achieve precise diametrical tolerances at high speed on long coils.

To handle these very long coils a unique output trough system was developed that automatically constrains the coil during coiling and unloads it at completion. An integral part of this system is a remote cutoff, which allows the coil to stabilise after coiling and before it is cut away. In addition, to facilitate output system setup, Kinefac developed a micrometer position, angularly adjustable output trough mounting which is necessary for achieving repeatable setup of the coil output angle.

Finally, Kinefac has developed special tooling for the coiling of coated wire, which, in some cases, has enabled the user to eliminate a step in the extrusion coating process.

These capability enhancements have provided the new Mod. II Micro-Coiler user with improved market capability and more efficient production.

Sleeper Division, Kinefac Corporation – USA
Email: sales@microcoiler.com

Fax: +1 508 756 5342
Website: www.microcoiler.com

Spring range

Mollificio Lombardo SpA was founded in 1932 and today can produce traction springs, compression springs, torsion and double torsion springs, flexion, shaped and blanked. Using the most modern machinery, housed in the 18,000m² facility, any kind of elastic component can be made from wire or strip and finished with any surface treatment.

Springs are supplied to users in a variety of sectors including mechanics, electronics, textile, aeronautics, automotive and communication both at home and abroad, to all necessary international specifications.

Production at Mollificio Lombardo SpA complies with UNI EN ISO 9001:2000 standards and in May 2008 the company also achieved ISO/TS 16949:02.

Mollificio Lombardo SpA – Italy

Fax: +39 035 794163

Email: molle@molle.com

Website: www.mollificio.lombardo.molle.com



○ Typical products from Mollificio Lombardo

OEM panel-mounted spring gauge

Quickly following the release of its new Tiger spring gauge, Larson Systems has announced the introduction of the Tiger CNC, believed to be the first OEM panel-mounted spring gauge. Measuring just 3.5" x 7" x 1.4" deep and weighing a mere 0.99lb (0.45kg) the Tiger CNC mounts directly onto the control panel of a spring coiling machine. The digital gauge allows spring manufacturers to sort springs directly through the coiler's electronics – a separate computer interface is not required.

The Tiger CNC is available with two software packages, Tiger and Super Tiger, which give it comparable functionality to Larson's Lynx or Panther gauges.



○ The Tiger CNC spring gauge

Designed to be faster than previous gauges, the Tiger CNC uses standard LION protocol setups and techniques and is compatible with all LSI probes and sorters.

Larson Systems Inc – USA

Fax: +1 763 780 2182

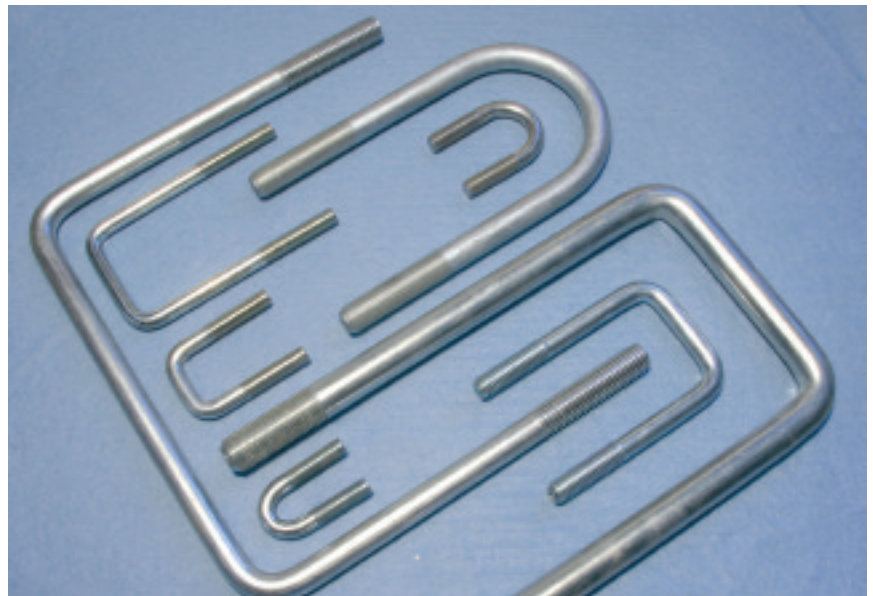
Email: info@larsonsystems.com

Website: www.larsonsystems.com

Cold formers for straight and bent parts

Videx is offering a new line of single or multiple die hand-feed cold formers. The machines are designed for the production of small and medium sized batches of long headed, shouldered or extruded parts either straight or bent.

The Videx cold formers are available with one, two or three heading stations and in tonnage ratings from 50 tons to 300 tons. A threading station is optional on all models. The feed of the parts is done either from the front (for straight parts) or from the side for bent parts that need to be collated or headed close to the bend.



○ Cold formed bent parts

The machines are designed for quick and simple changeover. The whole gripper die block lifts up pneumatically and die change can be performed outside the machine. The heading tools are reachable from the side and can be changed in a couple of minutes. The position of the blank is precise, due to the retractable positive stop, and the stroke is fully adjustable by turning a wheel at the back of the machine. When supplied as a fully automatic machine, the machine will also straighten, cut to length and optionally thread the parts and bend them.

Videx – Israel

Email: videx@videx.co.il

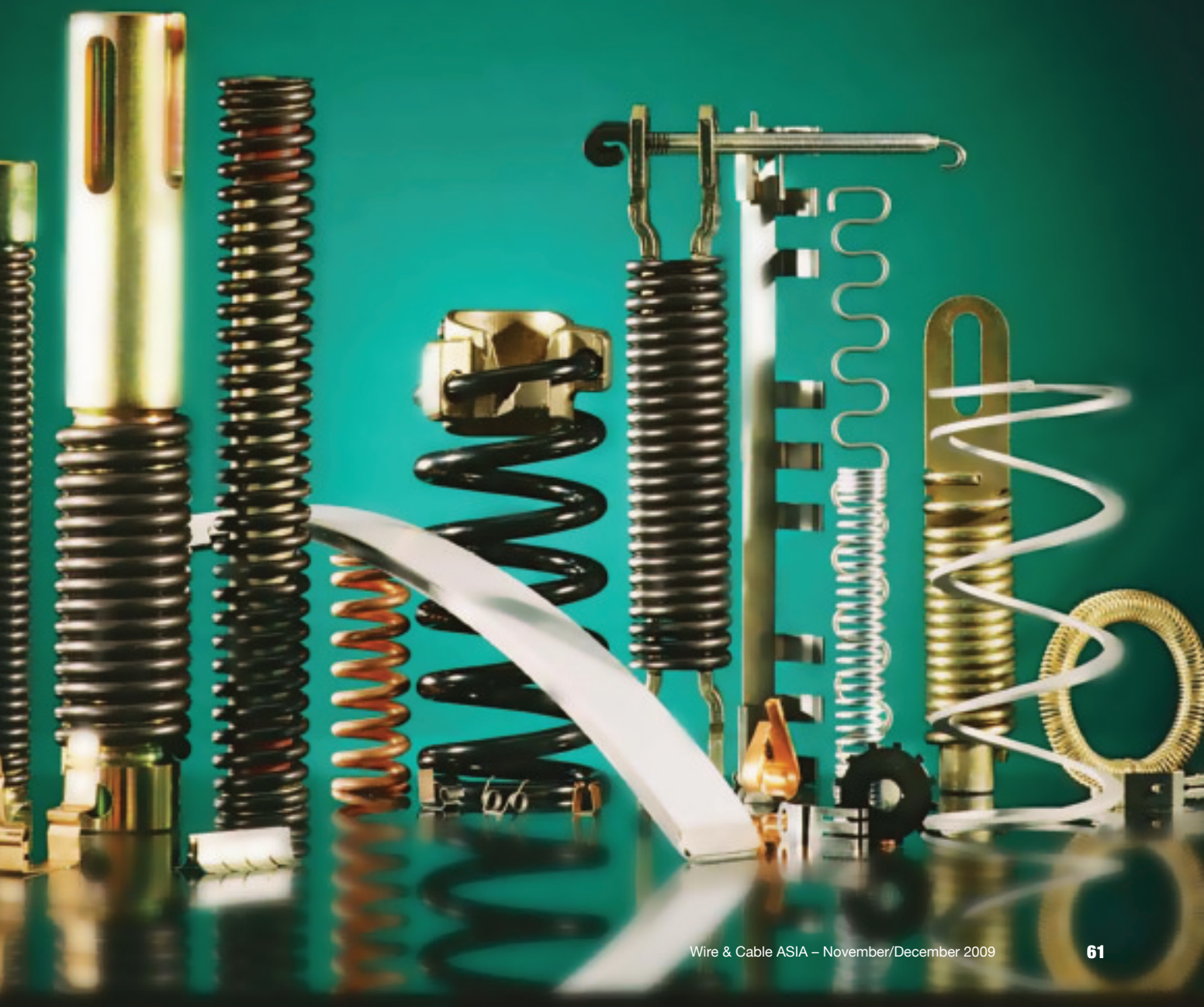
Fax: +972 3536 4802

Website: www.videx.co.il

弹簧、紧固件和 线材制品

在它们的外衣保护下，这一类的产品必须给于更多-更多的关注-比我们这个行业的其它产品都要多的关注。

这么广泛系列产品的技术 – 它的工艺装备、设备和控制系统 – 是一个专业的领域，接下来的几页介绍了很多这方面的企业。



工程精度

专注于速度和精度的精密工程Pave公司已开发出Zukron CNC旋转线成形机，以生产极长表面长度的线产品，用于简单和复杂三维型材，快速，有效节约成本。

由于Pave公司在英国生产工厂设计和制造，具有竞争力价格的Zukron利用最新线成形技术，以便发送精确、一致的无扭曲无痕成品成形产品。机器有一个快速、多样的360度连续旋转头，还有Pave公司的‘Trueline’前-末端线稳定器及专利矫直装置。



○ Pave公司的Zukron CNC线成形机

由于紧凑、机器化和可靠，Zukron可加工直径高达10毫米(3/8")长度短和长的线产品。像所有Pave公司的所有机器一样，设置和切换时间短，全自动用户CNC操作确保了经济生产。Pave公司的高性能机器包括使用方便的单头和双头线成形中心，应用范围广。

Pave Automation Ltd – 英国
电子邮件: pave@enterprise.net

传真: +44 1733 563500
网址: www.pave-wire.com

Marlin公司投资自动线成形机

巴尔的摩Marlin钢丝产品公司，是一家大型金属网篮生产商，近来进行了其投资历史上最大的一笔投资，该投资主要用于投资机器，该机器能弯曲金属的速率为500英尺/分钟，比常规的机器速度快两倍。Marlin公司总裁Drew Greenblatt说过公司应用钢线弯曲机器，例如目前才从AIM购买的这一个，主要是用来满足公司生产的网篮和线成形日益严格的标准。Greenblatt还说，精确度是必不可少的，因为网篮经常用于清洁，浸泡，清洗，杀菌，材料加工，矫正，保护，运送或储藏部件，这些部件主要应用在制药医疗到工业汽车行业并起关键性作用。“我们提供定制的不锈钢架和线成形给其工厂需要快速解决方案的顾客。该机器给这个行业提供了最精密零件。”

AIM提供给Marlin公司的这个机器能够在前三周之内生产100,000件不锈钢线成型部件。由于其速度，工厂已经下了额外的300,000件订单，要求在2周之内完成生产和发货。

机器还记录了每个件的图像。在1/200秒内，零件与初始打印图相比来确定产品质量。创建生产的每个零件的所有尺寸电子数据表。因此检查结果是实时、准确的，不是统计采样。Drew Greenblatt继续说到：“生产件批准程序是过去的事情，现在由于我们是整个运行时测量每个单件。如果零件不合格，机器会将其分离。所有好零件都是数字测量的，我们可以将这些和装箱单一起发电子邮件给客户。”

由于带Fanuc 二级机器，提高了机器的速度，二级机器可以与线弯机“握手”合作，抓取零件，因为一旦人工操作，零件就可以成形并执行复杂操作。Fanuc取走零件、车螺纹、冲压、打倒角、开槽、型锻、钻孔或一致而且快速地执行其它任务。

AIM Inc – 美国
电子邮件: info@aimmachines.com

传真: +1 630 458 0730
网址: www.aimmachines.com

弹簧和扣夹



○ Tiger Steel的弹簧

Tiger Steel有限公司专营悬挂式卷簧、活动连接杆、扭力杆、板簧和紧固夹生产，有40多年经营经验。

公司通过ISO/TS16949, ISO-14001, ISO-9001和福特 Q1认证。产品主要是OEM产品，供给全世界各地。

Tiger Steel Co Ltd – 台湾
传真: +886 3 4734361 4734350
网址: www.tigersteel-tw.com

OEM面板安装弹簧计

随着新Tiger弹簧计的推出，Larson Systems公司宣布引进Tiger CNC，认为这是第一台OEM面板安装弹定位装置。尺寸只有3.5英寸x 7英寸 x 1.4英寸深，重量只不过.99lb (0.45kg)，Tiger CNC直接安装在弹簧卷线机的控制面板上。数字测量仪表让弹簧制造商可直接通过卷线机的电子件筛选弹簧，不需要单独的计算机接口。



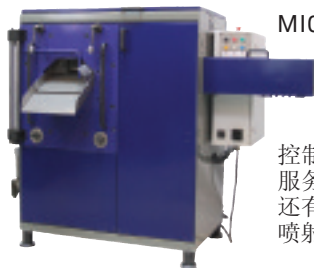
○ Tiger CNC弹簧计

Tiger CNC有两个软件包可提供，Tiger和Super Tiger，其功能与Larson公司的Lynx或 Panther仪表相似。设计得比以前的仪表更快速，Tiger CNC使用标准的LION协议设置和技术，可与LSI探头和分类机兼容。

Larson Systems Inc – 美国
传真: +1 763 780 2182
电子邮件: info@larsonsystems.com
网址: www.larsonsystems.com

钉成形

Enkotec A/S已推出了一台新的机器MI01, 生产1,000圆钉直径2.3毫米-3.8毫米, 长度50-90毫米。MI01旨在满足小尺寸到中等尺寸的生产需求。MI01是以Enkotec的旋转成形为原则, 但是该款Enkotec选择的是简单、牢固传输系统, 以皮带传动为基础, 机械调节设置。加工环包括较少的冲模, 是促进加工切换时间短的因素之一。



MI01钉机的设计方便用户使用, 具有人机工作高度, 脚踏式控制送线, 清洁和服务都很方便。它还有一个高效的钉喷射系统。

○ Enkotec公司的MI01钉成形机

所有的Enkotec钉机特征是噪音等级低, 以旋转头成型为原则。矫平单元置于封闭箱中, 因此可安置接头便于排气通风。新的MI01是重新设计的放线装置, 特点是机械综合控制, 最大线圈重量为2,000公斤。

Enkotec执行总监Bent Just Petersen评价道: “我们看到MI01型号是满足客户能力需求的很强可选方案, 不管是生产单钉类型还是几个不同钉时。新的MI01结合高端NX系列, 可提供成套钉机, 由于许多加工模具件对所有的机器型号而言都通用, 因此, 增加了成本效率。”

Enkotec A/S - 丹麦
 传真: +45 8652 4199
 电子邮件: sales@enkotec.dk
 网址: www.enkotec.com

弹簧试验

Wintime机械有限公司, 成立于1992年, 是一家在中国的弹簧机械制造商, 专营弹簧生产和试验机, 包括弹簧卷线机、磨机、计算机控制弹簧试验机、铁路弹簧和弹簧故障试验机。弹簧试验机的最大能力是2,000kN (相当于200吨)。Wintime是通过ISO9001认证的企业, 是中国试验机标准化委员会的成员, 也是弹簧技术学会和Moyer制造有限公司的合作单位。

公司与大学研发中心的合作, 取得了许多专利和技术成就。EN13298的Wintime铁路弹簧试验机用于铁道部的中国铁路高速质量检验中心。Wintime机器厂广泛用于铁路、机械、电气、国防和航天行业。

Wintime Machinery Co Ltd - 中国
 传真: +86 773 581 1057
 电子邮件: wintime6@163.com
 wintime-4@163.com
 网址: www.wtmachine.com



○ Wintime 弹簧试验机

工业用弹簧

弹簧制造商Mevis SpA成立于1961年, 生产用于汽车和电机行业的弹簧, 还用于家用电器行业。



○ Mevis SpA公司的弹簧

精致的室内实验室(意大利政府认可)内, 进行具体零件的所有相关试验, 包括疲劳试验、涂装试验、焊接试验、烟雾试验和金相分析。

所有设计项目内部执行, 在两个加工车间进行, 公司还设计和生产其自己的机器用于弯曲、组装和分拣。

自从1994年, Mevis公司就取得ISO9001认证。1999年取得AVSQ94和QS9000认证, 2000年取得ISO TS 16949认证。

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线成形持续发展

YHM Springtech机械有限公司制造机器有27年了。其范围包括力矩弹簧成型机、压缩弹簧卷线机、延伸的弹簧成型机、卡紧弹簧和微型弹簧卷线机、细丝成形机和在线脱模、钎焊、绕线、弯曲和热气加热的无筒管气体卷线成形机。

目前, YHM专注于开发线弯机, 末端加工用于特殊线成形, 例如冲压、钻孔、攻螺丝、车螺纹和打倒角。

在2010年, 随着与欧洲机械公司的合作, YHM公司将宣布推出一种新的模块化机器, 用于线材和带材的混合成形。混合成形机可成形线材和/或带材, 经过冲压、弯曲、绕线、卷线、钻孔、攻螺丝、打倒角和/或焊接, 并结合组装过程和各种不同的送料装置和传送站。

根据客户要求, 机器可设计成2和32轴伺服控制, 有基本模具用于快速设置。混合机器适合于快速冲压生产或者是作为批量生产。

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○ YHM的WB360线成形机

成形机械

New Form-Tech企业有限公司成立于1990年，是一家专门的计算机控制线和



弹簧成形机械的制造商。计算机可编程，甚至是在运行模式时。用户利用MPG控制和TEACH模式可轻松编辑新程序。所有设备都可提供操作员培训。

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弹簧送料

Skako Comessa振动式储存送料机可保持筛选和检验机运行，使小产品、成形件或弹簧的数量正确，不需作业员介入。检验和包装机送料有两个解决方案：料仓送料机用于很小、流动容易的散装材料，例如螺母、垫圈和螺丝，而储存送料机的可用不同尺寸为从70升、重125公斤到2.240升、4,000公斤。



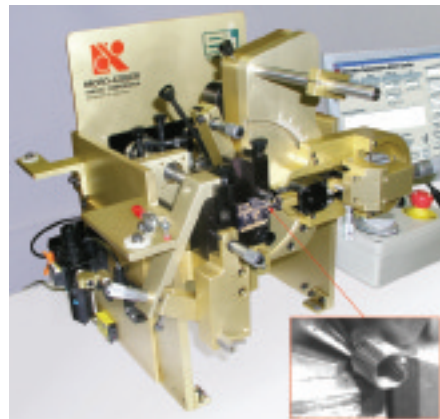
○ Skako Comessa 用于小零件的筛选和上料设备

为了完成检验和包装机线上的送料设备，Skako Comessa公司的起重倾翻装置Tilde可用于抽空运输箱(10 - 3.15公斤/箱)，进入送料机。

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精细钢丝小线圈

Kinefac公司的微型绕线机被导管制造公司用来生产尺度索零件。起初，大量生产直径低于0.002"的铂钨线制成的卷线和类似小零件，但是由于对精细钢丝卷线有需求，公司开发出亚微型进线装置，可生产0.025毫米-0.177毫米直径卷线。然后Kinefac开发了Micro-Align加工系统，精确送料辊压控制和切断工具微型调整都能使操作者在几分钟内重复设置，而不是需要好几个小时。



○ Kinefac的微型绕线机

作为导管制造商满足扁平钢丝卷线需求，Kinefac公司开发的产品正满足了这点，三点绕线加工用户可实现精密直径误差，在长线圈上高速运行。为了处理这些很长线圈，开发出独特的输出槽系统，在完成绕线和拆装时，自动限制线圈。该系统必需的部件是远程断开装置，在绕线之后，切断之前，使线圈稳定。此外，为了方便输出系统设置，Kinefac开发了能实现可重复设置线圈输出角度的微米定位、可调输出槽。最后，Kinefac公司还开发了涂层线圈特殊加工，在一些情况下，用户可以取消挤出涂装过程这一步骤。新型号II微型绕线机用户利用这些强项提高了市场能力和提供了更有效的生产。

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弹簧系列

Mollificio Lombardo SpA公司成立于1932年，如今可生产牵引缓冲弹簧、压力弹簧、力矩和双力矩弹簧，有弯曲、成形和毛坯的。使用最现代机械技术，在18,000平方米的工厂设施里，各种弹力部件可从线材或带材制作，并进行表面处理。提供给用户的弹簧用在各部门行业，包括国内外机械、电子、纺织、航天、汽车和通讯行业，满足所有必须的国际技术要求。Mollificio Lombardo SpA的生产率符合UNI EN ISO 9001:2000标准，在2008年5月，公司取得ISO/TS 16949:02认证。

○ Mollificio Lombardo 公司的代表产品



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冷、热成形锻机

Sacma公司的SP660五工件大型冷成形机和六工件SP670机器都是由SC-MATIC软件控制，所有的数据传输都通过以太网。设计成方便用户的液压夹持工具和楔形物，使得这样大型设备的安装作业员操作简单容易。机器还配置有自动系统，用于传递指针调节凸轮。标准设备包括两个专利液压服务平台，平台自身定位在工作区，辅助单个工具拆除操作。门形行车是3D电力移动操纵工具和重型机器。还有一种可选方案是门形机电力操纵器，它用于成套工具架的自动拆除和装配。

提供的电子操纵杆转移指示设置程序简单，作业员可慢速移动机器，避免工具碰撞。还要避免摇动，保证增强离合器/制动单元的操作寿命。可选附件和装置使得用于高强度材料的复合零件生产时，机器使用极其灵活。SP660和SP670生产速度快，通常需要热锻造的螺栓和零件生产的锻造功率高。这样可以极大的节约能耗成本。

Sacma还推出了新系列四模、五模热成形锻机，用于航天航空和汽车领域的高强度螺栓和特殊零件。这些领域都须使用稳固材料以承受高温和高应力。

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○ OMD公司的弹簧生产机械

弹簧生产设备

OMD Officina Meccanica Domaso SpA公司有很长的弹簧行业经验，产品范围一直与技术保持一致进行开发。

OMD的范围包括：

- 用于中小线直径的自动弹簧端磨机
- 用于热缠弹簧的摆旋湿式磨机
- 弹簧卷线机，带CNC控制和为冷缠弹簧而设计的卷线车床
- 多成形机，带CNC控制，生产力矩和牵引缓冲弹簧和成形零件

OMD可提供成套弹簧生产线和技术装置，特别是阀门弹簧、摩擦弹簧、喷射器和应用于铁路行业的弹簧。

生产范围广，包括一系列自动弹簧端磨机，配置有特殊冷却系统、磨轮旋转变速装置、装载轴处理系统和一台装载板式旋转控制系统用于自动弹簧装载。控制和管理经由工业个人计算机进行图形接口编程。

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U螺栓机械

自从1973年，Videx机器工程公司就生产U型螺栓和其它弯曲件设备，直接从卷线开始工作。两年前，Videx引进了一种新的弯曲系统，有弯曲滑模和内脱模机械装置。由于这条新生产线，VAS-DBQ系列的机器用户不再需要对每个件进行弯模：机器有漂浮弯模，它覆盖了圆底和方底U螺栓的整个范围，在几分钟内就能确定好U螺栓的新尺寸。



○ Videx机器制造的斜切U螺栓

VAS-DBQ型号配备有正脱模机，可使机器以最大速度运行并且不会有卡件的风险。VAS机器从卷材中拉线，矫直，定长切割，两端打倒角和车螺丝并弯曲成形。也可进行冷成形操作，例如顶锻和挤出，还有移走材料，例如钻孔和定点。斜切角或辊轧，车螺丝或成形轧，压花纹，卷边，开槽和弄平等其它操作可按序执行。

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网址: www.videx.co.il

半自动弯曲机

Ravni Technologies公司生产MPM20-S半自动弯机，用于弯曲直径范围为1-16毫米，半径为1-40毫米的圆钢丝和扁钢丝。

每次弯曲之前，数字桥台定位钢丝。高达10个角度可自动编程，因为进料和弯曲操作都是自动的，操作员可安全走出该区域。

参数，例如弯曲速度、弯曲角度（高达250度）或弯曲（从30- 4,000毫米）间的距离等都可可在触摸屏上编程。

Ravni Technologies公司为全世界提供安装、培训和机器设置服务。

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处理弹簧和线成形件

Industrial Magnetics有限公司的新磁性Transporter™-CA（汽缸执行机构）设计用于自动转移或手动操作材料，处理重型钢件，为不规则形状冲压件、锻造件和成形件或成套组件提供了大量选择方案。磁性Transporter™-CA置于机械化臂端工具、起重机或其它需操作员辅助的起吊装置，人机磁性起重和旋转重型笨拙钢件，例如弹簧或汽缸，从水平方向到竖直方向，反之亦然。

这里指的应用是磁性Transporter™-CA设计成可起重181磅、重型车架弹簧——测量6"直径和17"长度——从运输集装箱中取出，旋转90度并放置在组装线上。其它应用包括荷载弹簧和油漆线上的成形件，从提货袋或储存箱中取出零件，并将完工件放置于运输集装箱中。

磁性Transporter™-CA节省了操作员重复弯曲和起吊重型件的操作，预防造成经济和伤痛损害。永久磁铁可吸住弹簧和零件，无需电气，采用尽量最小的车间气源激活和不激活磁性。非配对打开/关闭释放装置不会损害弹簧上的油漆/涂层。

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网址: www.magnetics.com



○ Transporter-CA用来起吊重型车架弹簧

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Front cover courtesy of Queins & Co GmbH. Machine shown is the new rotating caterpillar capstan.
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US copies only: *Wire & Cable ASIA* (ISSN No. 0218-3277) is published bi-monthly by INTRAS Ltd and distributed in the US by DSW, 75 Aberdeen Road, Emigsville, PA 17318-0437. Periodicals postage paid at Emigsville, PA. Postmaster: send address changes to *Wire & Cable ASIA*, PO Box 437, Emigsville PA 17318-0437.



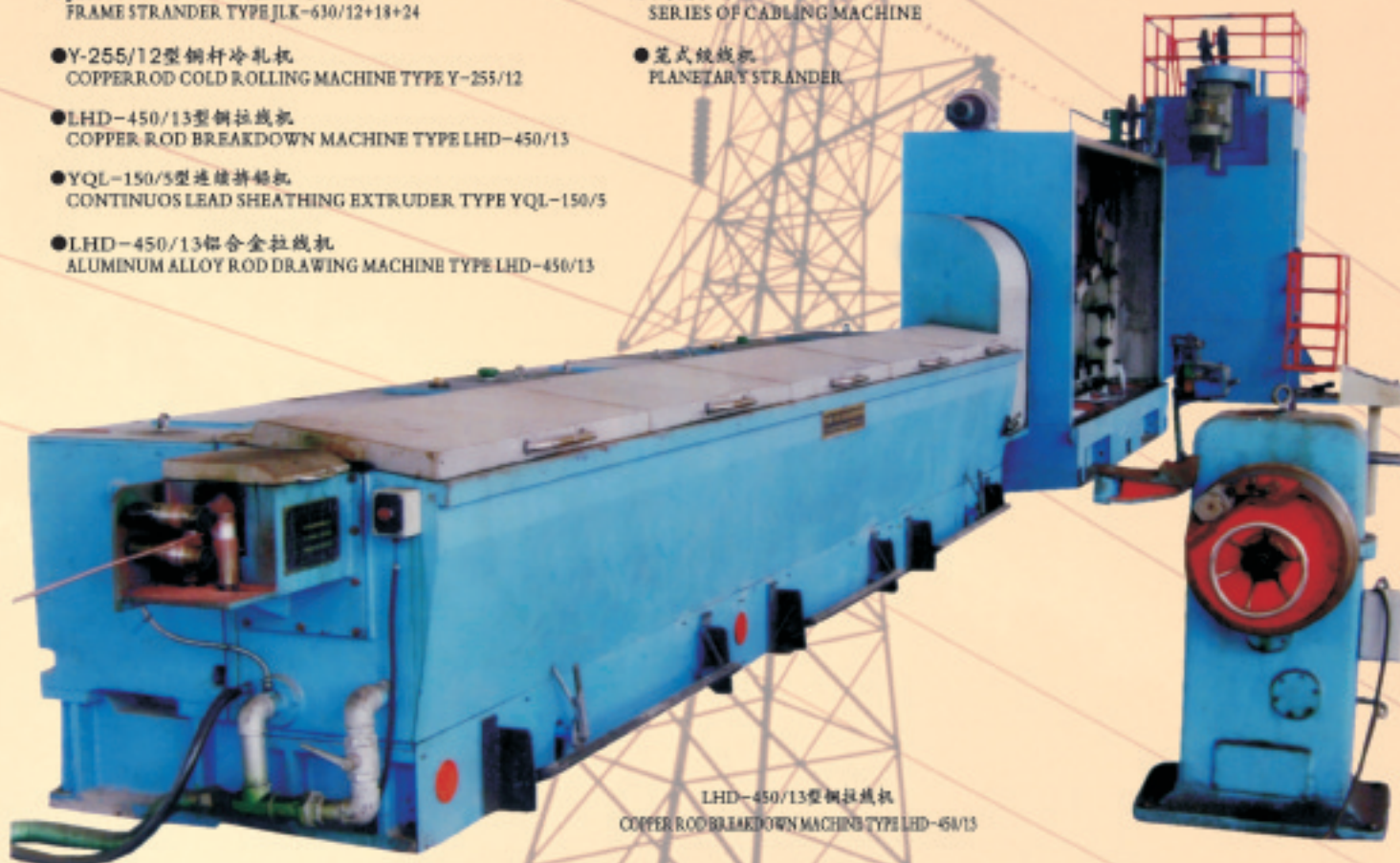
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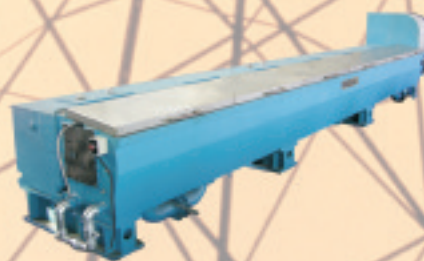
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thermoplastic elastomers
(PVC, TPV, olefin, rubber, nylon)

AlphaGary
Market Leadership in Specialty Compounds

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