The international magazine for the tube & pipe industries

TUBE & PIPE Technology

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MARCH 2013

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Pipe Finishing

Editorial Index

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Contents

Vol 26 No 2
March / April 2013

over 25 years

Features this issue:

The March Issue

Welcome to the latest issue of Tube & Pipe Technology magazine. This issue we have features on stainless steel production, furnaces and heat treatment. Our featured show is Made in Steel 2013, which looks like it will again surpass its record for exhibitors this year from companies in the iron and steel industries. Such great attendance is a fantastic achievement and something that shows the traditionally powerful, respected and proud steel industry in Italy refused to be dented. We should all be happy to hear that.

The show is based in the historical industry powerhouse of Milan in Northern Italy. One can hardly think of a more appropriate city or region in Europe for such an exhibition of engineering excellence. It is also a great and stylish international city with fantastic air and rail links that make it a perfect destination for a trade show of this type.

One thing I particularly admire about the philosophy of the show is the strong emphasis on forums and panel discussions and the exchange of ideas, expertise and contacts. While it is great to exhibit machinery and products it is also invaluable if you can come away with a pearl of wisdom from one of the leading experts in the world or make contact with someone who can solve a problem that was hampering you. So I would urge everyone who attends to throw themselves into the show with enthusiasm and I am sure you will be more than rewarded for this.

Rory McBride – Editor

Front Cover Story: Sinico

Italy-based Sinico specialises in the design and manufacture of automatic rotary transfer cut-off and end-finishing machines suitable for producing medium/large series of metal parts (steel, stainless steel, copper, brass, aluminium, titanium, Inconel, etc) from tubes, bars, coils, forgings and blanks.

Its machines carry out operations commonly performed with chip-removing machine tools such as cutting, facing, chamfering, boring, centring, turning, drilling, threading, tapping, milling, grooving, splining and so on and shaping operations such as flaring, tapering, rolling, pressing, marking and knurling.

Sinico has racked up over 1,500 orders delivered to companies working in a whole range of different sectors: automotive industry, bicycles, motorbikes, electrical motors, household appliances, power transmissions, hydraulics, pneumatics, pipe fittings, earth moving machinery, chains, tools, nuts and bolts, bearings, doors and windows.

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Tailor-made induction heating technology for Ovako

SMS ELOTHERM, Germany, has been awarded two orders for induction heating equipment by Ovako Tube and Ring AB in Hofors, Sweden. EloBar™ and EloTube™ machines by SMS Elotherm combine high energy efficiency with a comparatively small space requirement.

EloBar™ will be used at Ovako's forging operations to heat steel bars at a production rate of up to 8,000kg per hour. With an installed electrical power of 4,000kW, bars of up to 130mm diameter can be heated up to 1,220°C.

SMS Elotherm supplies the bar handling system, the induction heater with a hot shear and an industrial robot for the transfer between hot shear and press.

"EloBar™ belongs to our ForgeLine™ series which can be designed in a very flexible way," said Torsten Schäfer, sales representative at SMS Elotherm. "We have configured this energy-efficient system for Ovako precisely to the customer's needs."

The EloTube™ is part of a modernisation programme of Ovako. It will be placed in front of an existing Assel mill in a seamless tube plant. Hollow blooms coming directly from a rolling mill upstream will be reheated and equalised before entering the Assel mill.

Dr Guido Opezzo, sales representative at SMS Elotherm, said: "The temperature of the shell is increased to 1,100°C and the better temperature homogeneity leads to enhanced product quality in the Assel mill operation. Also, the sizing forces can be reduced and the lifetime of the sizing rollers is extended due to less wear and tear."

Induction heater order for SMS Elotherm

The induction system consists of six coils powered by state-of-the-art converters with transistor technology (IGBT), totaling a rated power of 6,400kW. The demand for floor space of this reheating unit is less than 7m in length and 2.5m in width.

The process control is realised by a combination of a tube speed measurement system based on laser doppler technology and a bicolour pyrometer for temperature measurement. "The induced power is determined by the speed and the incoming temperature of the shell. Overheating of the material is prevented and the optimum temperature level for the following sizing mill operation is achieved," says Dr Opezzo.

The EloBar™ and EloTube™ facilities will be commissioned in mid-2013.

SMS Elotherm GmbH – Germany
Website: www.sms-elotherm.de

First major project begins for joint venture

SHORTLY after the signing of the contracts for a joint venture between the Graebener Group and Tangshan Kaiyuan Autowelding Systems, the first major project with a duration of six months is being tackled together with the Chinese partner.

For Reika, and supported by Reika engineers, Kaiyuan is building a large finishing line for one of the world's leading manufacturers of heat exchanger tubes. A precision roll straightening machine is integrated into the line so as not to damage the long tubes with a wall thickness of only a few millimetres. This straightening machine, however, is manufactured in Germany.

"We have combined two of our core competences in this line," explained Andreas Zimball, sales manager at Reika. "The extremely sensitive handling of tubes with extreme dimensions and the high precision straightening." After having supplied a finishing line to another manufacturer of heat exchanger tubes last year, Reika now can claim to be a key supplier on the international market for complete handling systems in the area of delicate tubes.

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New director at EFD

EFD Induction, manufacturer of induction-based industrial heating solutions, has appointed Terje Moldestad as group sales and marketing director. Mr Moldestad takes over from Truls Larsen, who is moving into the company's business development department.

"I'm of course delighted to be joining the EFD Induction team," said Mr Moldestad, who is a graduate of BI Norwegian Business School, and an executive with 15 years' experience at General Electric. "EFD Induction is an impressive company, one that in a relatively short period of time has established an enviable customer base and a global presence. I look forward to contributing to the company's further growth."

"Terje has a long track record in international sales and marketing," commented CEO Bjørn Eldar Petersen. "Such international experience is crucial for a company such as EFD Induction, which operates around the world in a large number of industries. I would also like to thank Truls for his hard work over the years. This company wouldn't be what it is today without his drive and vision."

Mr Moldestad began his new role in January, and is based at EFD Induction's corporate headquarters in Skien, Norway.

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Website: www.efd-induction.com

Terje Moldestad

Diary of Tube Events 2013

28-30 March
Boru 2013 *(Turkey)*
International Exhibition
www.borufuari.com

3-5 April
Made in Steel *(Italy)*
International Exhibition
www.madeinsteel.it

25-28 June
Tube Russia
International Exhibition
www.metallurgy-tube-russia.com

16-21 September
EMO Hannover *(Germany)*
International Exhibition
www.emo-hannover.de

17-19 September
Tube SE Asia *(Thailand)*
International Exhibition
www.tube-southeastasia.com

1-3 October
TuboTech *(Brazil)*
International Exhibition
www.tubotech.online.com

12-14 November
Stainless Steel World Expo *(Netherlands)*
International Exhibition
www.stainless-steel-world.net

18-21 November
Fabtech *(Chicago, USA)*
International Exhibition
www.fabtechexpo.com

19-22 November
TOLexpo *(France)*
International Exhibition
www.tolexpo.com

Discover the Italian market with Made in Steel

MADE in Steel is a conference and exhibition for the steel industry, to be held in Milan, Italy, 3-5 April 2013. This will be the fifth time the event has been staged.

The event, which is supported by Centro Inox, aims at distinguishing itself from traditional fairs thanks to its formula hinged on two elements: "conference and exhibition". In addition to the business opportunities offered by the presence of top level Italian and international exhibitors and visitors, a full agenda of conferences, debates, workshops and panel discussions makes Made in Steel an ideal place to exchange knowledge and information.

This is accompanied by a constant and on-going commitment towards the internationalisation of the event, also underlined by the partnerships signed with the Italian Chambers of Commerce in the United Arab Emirates, Brazil, India, Turkey, Sweden and Germany, and by those being finalised with Saudi Arabia, Russia, Poland and Switzerland. These agreements will give participants the opportunity to hold important B2B meetings, useful to get closely in contact with the represented countries, paving the way to valuable business opportunities.

Made in Steel addresses the whole steel industry, and involves the main industries of users, including building, transportation and power and utilities, stimulating their requests and drawing from them to innovate and receive valuable contributions. This 'bottom up' approach, which follows the natural movement of information from the 'bottom' to the 'top', represents an innovative idea in the world of exhibitions.

These features, together with collaboration with Centro Inox, turn Made in Steel into an event not to be missed to get directly in contact with the world that lives 'from' and 'for' steel, in Italy, and further afield.

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Centro Inox – Italy
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Email: info@centroinox.it
Website: www.centroinox.it

New VP of OEM Sales at Inductoheat

INDUCTOHEAT Inc, Michigan, USA, has appointed John B Maher as the vice-president of OEM sales. Mr Maher has worked in industrial sales and management for more than 23 years, most recently as marketing manager for Marposs Corporation and president of Artis Systems Inc. He has a BBA from Western Michigan University specialising in industrial marketing and manufacturing technology.

As the VP of OEM sales, Mr Maher is responsible for successfully managing major OEM accounts primarily in automotive, aerospace and heavy equipment industries. He will identify customer needs; provide strategic leadership regarding Inductoheat's business strategies; and spearhead sales efforts for the North American Market. This position reports directly to the president.

"We are pleased to welcome John to our company. He brings a wealth of experience and a proven track record that will benefit our clients," said Douglas Brown president/COO of Inductoheat Inc.

Gary Doyon, president/CEO of the Inductotherm Group added: "Inductoheat needs to continue getting closer to understanding the OEM drivetrain and transmission engineering/programs efforts, as well as demonstrating to them new technologies that we have developed that are all part of the goal of making quality, fuel efficient, and competitive products. Along with his commercial responsibilities, John is perfectly suited to handle that responsibility for our company."

Inductoheat Inc, which is a leading player in induction heating technologies, is one of forty companies making up the Inductotherm Group. As a multi-technology, global organisation, Inductotherm Group serves the thermal processing industry by manufacturing and marketing a diverse range of products and services, some of which include Inductotherm induction melting systems, Inductoheat and Radyne induction heating equipment, Thermatool pipe and tube welding equipment, and Consarc vacuum melting and refining systems. Inductoheat can solve the most challenging heat treating problems with its wide range of induction heating equipment and services.

John B Maher

Inductoheat – USA
Website: www.inductoheat.com

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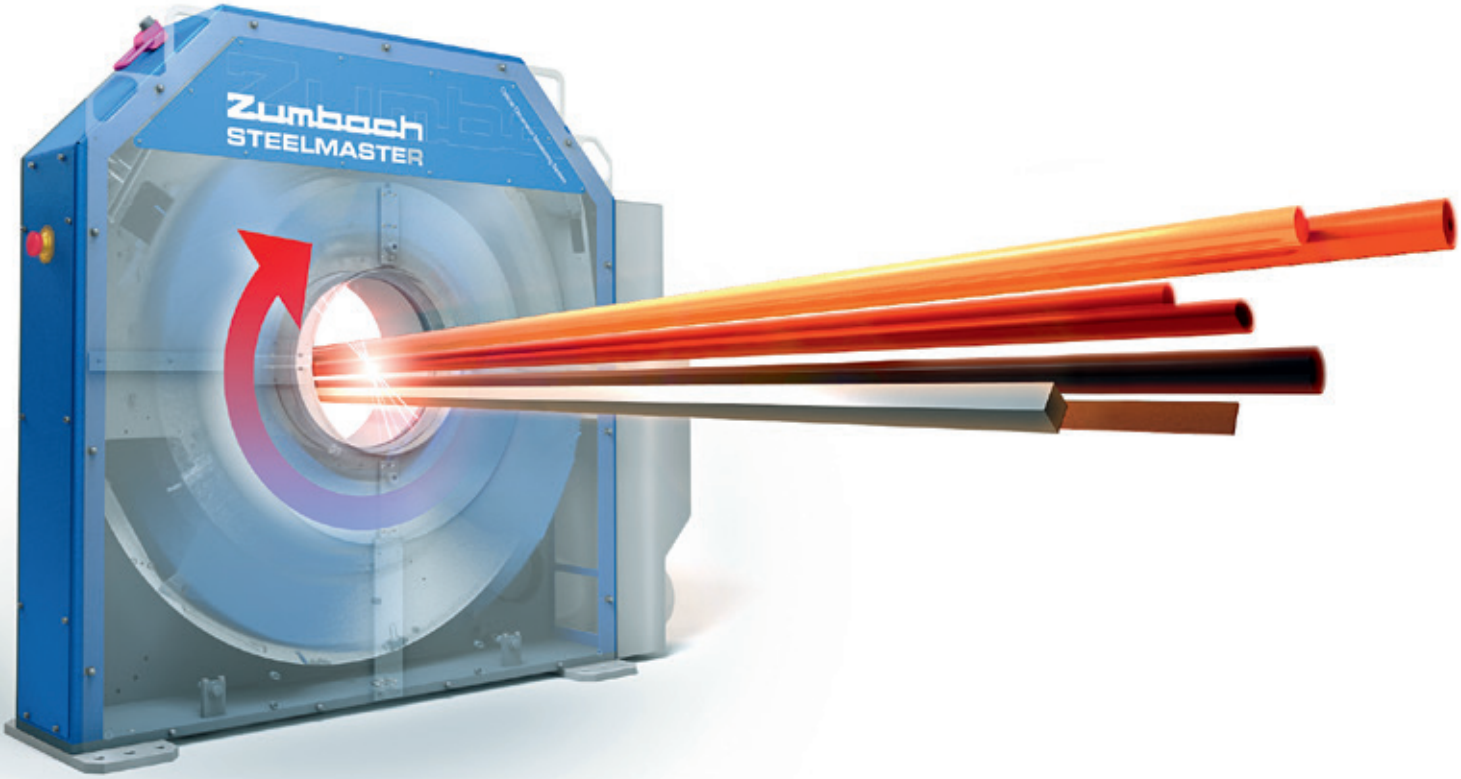

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Celebrating 10 years in business

OVER 200 people gathered at the St Regis Hotel on Al Saadiyat Island in the United Arab Emirates to join the celebration of Borouge's decade of achievements. Senior management from the Abu Dhabi National Oil Company (ADNOC), Borealis and Borouge, key industry figures, as well as the staff and customers of Borouge attended the celebration.

In his opening speech, Abdulaziz Alhajri, CEO of Abu Dhabi Polymers Company (Borouge), recalled the company's achievements that have contributed to laying a foundation for the petrochemicals industry of the UAE, contributing to the diversification of its economy and the development of the downstream industry: "Our commitment to excellence started from day one, and in 2002, soon after our start-up, we were awarded the ISO 9001 certification. Ten years on, Borouge has set a benchmark for operational excellence in the petrochemical industry through continuously improving the management of our facilities and achieving increased levels of productivity."

Throughout the past decade, Borouge has also maintained high levels of health, safety and environment (HSE) and focused on people to ensure a sustainable growth. Its commitment also gained the company the ISO 14001 certification and ADNOC HSE Awards in operation, innovation, environment and sustainability. Borouge has also adapted the principles of responsible care and is currently pursuing RC 14001 certification.

Rashed Saud Al Shamsi, director of petrochemicals at ADNOC, and Herbert Willerth, deputy CEO of Borealis, with the honoured CEOs of Borouge since its inception in 1998

Wim Roels, CEO of Borouge's marketing and sales company, commented, "Over the years, we have developed a solid marketing and sales network across the Middle East and Asia, from Beirut to Beijing, to ensure direct interface with our customers. We have excelled in providing our customers with superior sales service and technical support to ensure that our products meet their requirements." Mr Roels also highlighted that Borouge's commitment to actively promote the responsible use of plastics that contribute positively to the progress of the society was echoed throughout its initiatives such as the "Water for the World" programme it launched with Borealis in 2007 to provide sustainable solutions that facilitate access to clean water and proper sanitation.

Borouge – United Arab Emirates
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Award for exporting expertise

SPECIALIST materials handling manufacturer Combilift has been named the Best Overall Exporter to Germany in the Irish Exporter to Germany Awards, organised by Enterprise Ireland and the German-Irish Chamber of Industry and Commerce. Combilift MD Martin McVicar accepted the trophy from Minister for Education and Skills Ruairi Quinn TD in a ceremony held in Dublin.

The awards marked 50 years of Irish export success to Germany and the 50th anniversary of the opening of Ireland's first trade office in Frankfurt in 1962. The one-off award presented to Combilift follows the company's success at the FLTA awards for its RT and CB forklift models.

Combilift entered the German market in 1999, just a year after the company was established, and since then its range of four-way handling solutions has achieved sales in excess of €100mn to German companies, with a growth rate of 22 per cent being recorded in 2012. Combilift states that its success in this market against large mainstream concerns such as Linde and Jungheinrich, as well as a German four-way forklift manufacturer, is a major achievement.

The company believes that its strong foothold in this competitive arena, where emphasis on excellently engineered and solution-based products is of uppermost importance, is chiefly due to its ethos of innovation. Combilift has a policy of taking customer feedback on board to develop handling solutions according to specific requirements, and repeat orders from 'blue chip' customers underline the suitability of the Combilift range for their operations.

"Success in Germany – a market which sets the highest possible standards for suppliers – is hard won and requires a truly high-quality offering," said Ruairi Quinn TD.

Combilift is one of the largest employers in the Monaghan area, and many of the new employment opportunities that have been created at its headquarters and manufacturing facility in the last two years can be attributed to the strength of sales in Germany.

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A new player in the US OCTG market

TURKISH steel pipe manufacturer Borusan Mannesmann will invest US$150mn in the United States to establish a steel pipe manufacturing plant to cater to the energy sector. After supplying the US market with pipes used in the energy sector for several years, Borusan Mannesmann now aims to become a local manufacturer in order to be closer to the market and its customer base. A pipe manufacturing plant with an annual production capacity of 300,000 tons will be established, focusing its output on OCTG and ERW line pipes. The target revenue for the US-based company is estimated at US$500mn.

Scheduled to start production by mid-2014, the plant is designed to produce the thick-walled and high-strength pipes suitable for state-of-the-art, advanced OCTG technology used in shale gas production. The decision on the location of the investment is not yet finalised, but Texas and Oklahoma are the leading states to attract the investment through their incentive programmes.The facility will be built on nearly 125 acres of land and will provide 350 people with employment when it becomes operational.

Agâh Uğur, Borusan Holding Group CEO, commented, "Borusan Mannesmann is among the leading players of steel pipe market in Europe. One of its top goals is to become a global player in the pipe industry. This investment is not only a way to insert Borusan Mannesmann into the US market; it is also the first step to becoming an international manufacturer."

Board chairman Semih Özmen added, "Investing in a product that requires the use of advanced technology such as OCTG pipes requires significant know-how and expertise and our new CEO, Buddy Brewer, is among the few individuals with the experience and knowledge to carry this through. Not only that, Borusan Mannesmann is among the few firms with the strength to make such an investment."

Borusan Mannesmann has realised many oil and natural gas pipeline projects in Turkey, Central Europe and North Africa. The Elba Express and Line 300 natural gas pipeline projects brought the company prestige in the US market, and over the last three years it has become one of the largest international companies that exports to the United States the pipes used in oil and natural gas exploration and extraction.

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Straight seam welding pipe

DALIAN Sage Group and Krakatau Steel Group have signed a contract for a SG/508 HF straight seam welding pipe line. The chairman and board members of Krakatau Steel Group and PT KHI Pipe Industries, chairman and vice chairman of Dalian Sage Group, and the Counselor of Foreign Affairs of the People's Republic of China Embassy in Indonesia attended the contract signing ceremony.

Krakatau Steel Group is a state-owned iron and steel enterprise in Indonesia, and has a pivotal position in the national economy. The bidding process for SG/508 welding pipe line lasted for one year, and included eight competitor firms.

Dalian Sage Group stated that the winning of the bid has particular significance, as it indicates that Sage Forming (SGF), with Chinese independent intellectual property rights and innovative forming method, has been recognised by the international market.

The SG/508 HF welding pipe line will be put into operation in August 2014, and will become the largest diameter, thickest wall, highest steel grade ERW producing line in Indonesia after completion.

Dalian Sage Group – China
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Website: www.csage.com

Technology award

CLAMPON has had the honour of using the Spotlight on New Technology logo since receiving an award last year. The company received the award for its development of the ClampOn Subsea Corrosion-Erosion Monitor (Subsea CEM), a project realised with the support of BP and Innovation Norway.

The technology used in the Subsea CEM enables operators to monitor the rate of erosion or corrosion in their pipelines. The instrument includes up to 32 ultrasonic transducers installed on the outside of a section of pipe up to two metres long. The transducers 'talk' to each other and the ultrasonic signals passing between them change as the pipe wall thickness reduces.

ClampOn states that it is presently the only manufacturer that can offer technology that can measure erosion or corrosion on the pipe itself in water depths of up to 3,000m, although it expects competing systems to enter the market at some point.

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Fax: +47 5594 8855
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Website: www.clampon.com

Doubling production capacity in Slovakia

KRAUSSMAFFEI Group commissioned the second assembly hall at its plant in Sucany, Slovakia in November, allowing production to start earlier than planned. With this step, the company is doubling the production area to around 13,000m^2 just two years after the opening of the plant in October 2010.

"Production in the second assembly hall is therefore commencing well before the originally planned starting date in the first quarter of 2013," commented Jan Siebert, chairman of the board of management. "I would like to thank all participating companies and our employees for their great commitment and dedication. Doubling of the production capacities is an important move for the KraussMaffei Group so that it can cope even better with the increasing demand for electric injection moulding machines and reaction process machinery and systems on our core markets and on growth markets such as Eastern Europe and Asia."

In future, the plant will also produce for KraussMaffei brand injection moulding machines in the EX series, linear robots, reaction process machines and systems, and component trimming machines (for example punching machines that cut gates or produce openings).

AX series machines enable precise and efficient manufacturing of widely varying mouldings

To date, KraussMaffei injection moulding machines in the AX series, as well as switching cabinets and moulds, have been manufactured in Sucany. During the extension of the plant, a large number of improvements were also made in production processes and quality management. In addition, competencies were strengthened in the areas of development and design of electric injection moulding machines. Around 200 people now work at the plant.

KraussMaffei Group's products and services cover the whole spectrum of injection and reaction moulding and extrusion technology. The group supplies its products, processes and services as standard or custom solutions.

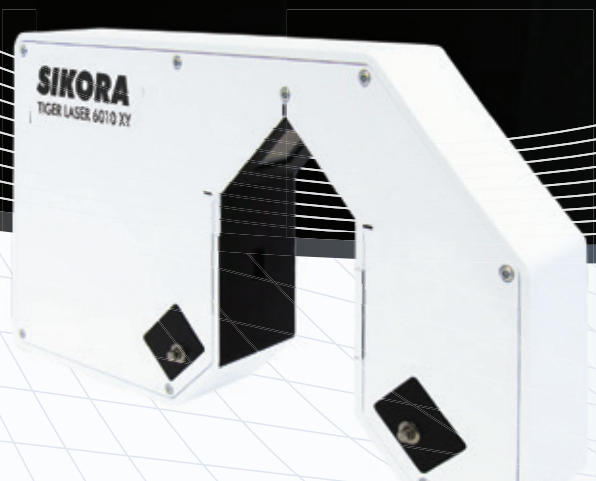
KraussMaffei Group – Germany
Website: www.kraussmaffeigroup.com

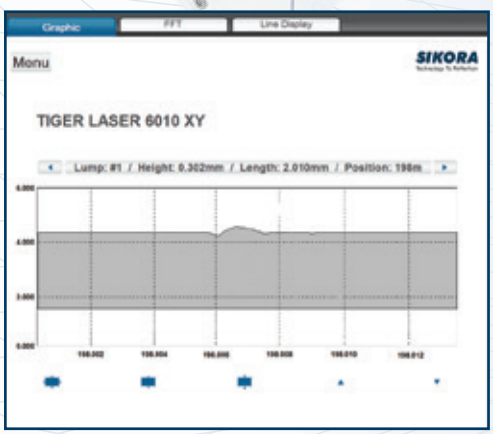
KraussMaffei's plant in Sucany, Slovakia

www.sikora.net/tiger6000

»A picture is better than a thousand words.«

Stephanie Imöhl, Head of
Procurement & Logistics at SIKORA AG





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Inductotherm Heating & Welding at Made in Steel

INDUCTOTHERM Heating & Welding Ltd, in conjunction with Thermatool Corporation – members of the Inductotherm Group of companies – is pleased to announce its participation at the forthcoming Made in Steel Conference in Milan, 3-5 April 2013.

Thermatool is a leading global manufacturer of solid state HF induction welding systems for tube and pipe production applications, and with a significant number of installations in Italy, recognises the importance of keeping its customers informed with recent advancements in HF welding systems and continued support through its global channel of customer service and spare parts facilities.

An area of particular focus on stand C49C at Made in Steel will be Thermatool's new generation of solid state HF tube and pipe welding systems, which incorporates HAZControl™ Technology – An intuitive user interface that provides precise heat input control with selectable weld power and frequency on each and every mill run. The combination of selecting and storing weld power and frequency offers tube and pipe manufacturers the flexibility to produce the best weld quality suited to virtually any material type, while significantly reducing scrap output.

A number of Thermatool product specialists will be available on stand C49C, to discuss any queries or requirements with regards to the entire range of Thermatool welding, seam annealing and cut-off systems and services.

Thermatool Corporation has its European manufacturing headquarters at Inductotherm Heating and Welding Ltd in Basingstoke, UK and you can find out more at www.inductothermhw.com

Inductotherm Heating & Welding Ltd is the European manufacturing and technical headquarters for Thermatool, Radyne, Banyard and Newelco – leaders in induction heating and welding technologies for a variety of induction heating applications.

Thermatool Corp is the leader in a development of the latest advancements in the high frequency welding of tube and pipe. The priority is to deliver pipe and tube producers with high quality HF welding and heat treating equipment, power supplies for inductively coupled plasmas and high speed cutting.

Inductotherm Heating & Welding – UK
Email: info@inductothermhw.com
Website: www.inductothermhw.com

SMS Meer supplies six high-speed machines to China

THE Chinese company Huitong Jincheng Precision Metal Manufacturing, Shanghai, has ordered six drawing machines from SMS Meer, Germany – two with integrated chamfering machines. With these machines, Huitong Jincheng aims to meet the high demand for bright steel products in China.

The six machines draw, cut and straighten the bars at a speed of 25 to 120m/min, while the integrated chamfering machines finish the ends of up to 40 bars per minute.

Deviations for free-cutting and unalloyed steel are max. 0.2mm per metre. Huitong Jincheng is thus able to meet the high demands of its customers from the electronics and automotive industry.

"With the machines from SMS Meer, we can open up new market segments," said Chih Hsiung, deputy managing director of Huitong Jincheng. "We can profit from the good reputation of our supplier in the Asian region. When we tell our customers that we produce with SMS Meer equipment, they know that they can rely on our quality."

A further advantage for Huitong Jincheng lies in the wide range of the SMS Meer products. The machines produce round, square and hexagonal profiles, with each machine being designed for a different diameter. The finished products range from 3mm to 22mm.

The machines supplied by SMS Meer are easy to operate. In addition, SMS Meer trains Huitong Jincheng's operating personnel on site – before, during and after completion of the project.

Commissioning is scheduled for the 1st quarter 2013.

SMS Meer GmbH – Germany
Fax: +49 2161 350 1862
Email: info@sms-meer.com
Website: www.sms-meer.com

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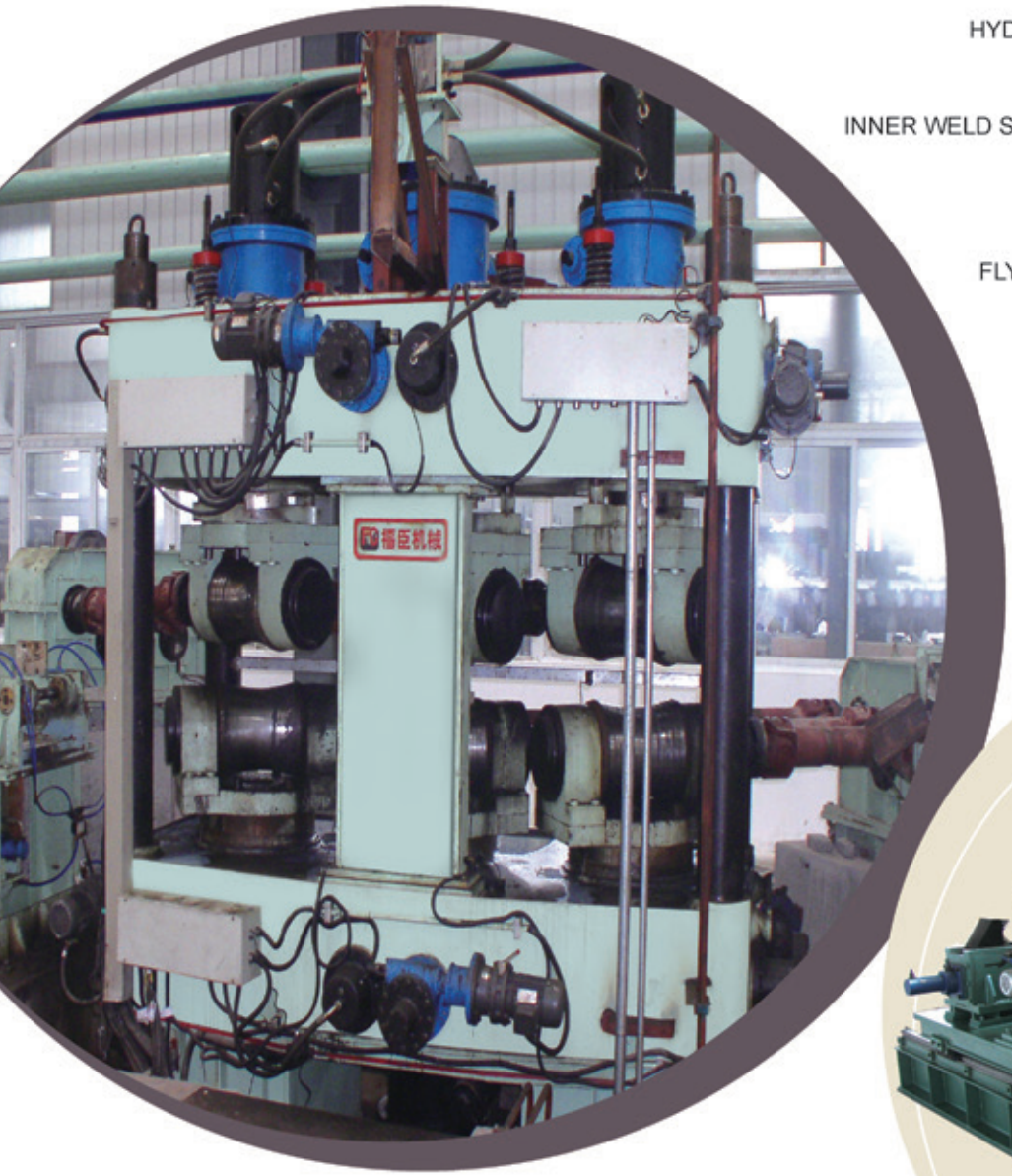

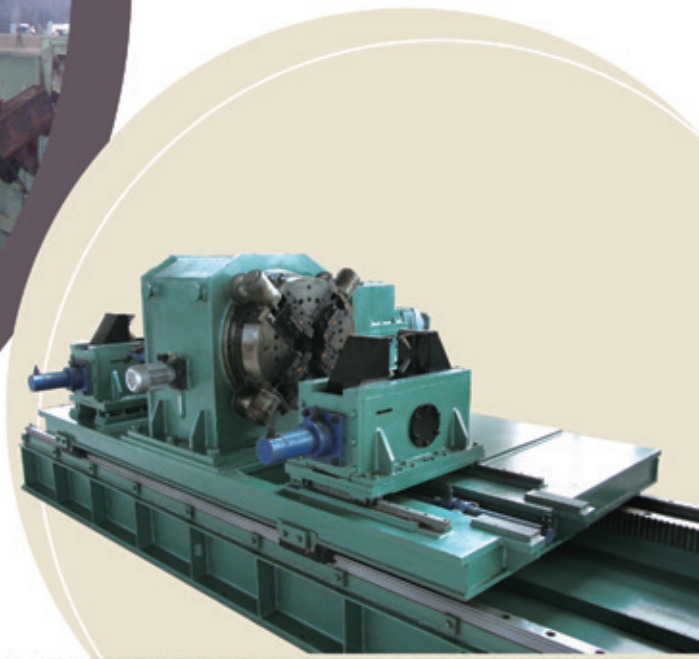

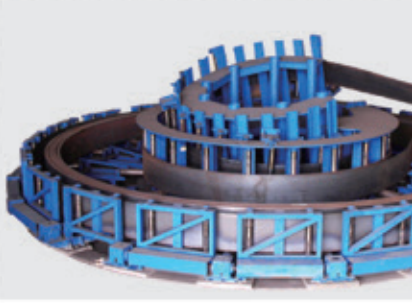

FORTUNE

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HTTP : //www.tjfuchen.com E-mail : tjfc@eyou.com

SMS Meer revamps USA steel mill

NUCOR-YAMATO Steel Company in Blytheville, Arkansas, USA, has placed an order with SMS Meer, Germany, for the modernisation and upgrade of its NYS No1 steel rolling mill. SMS Meer supplies the rolling mill equipment which will enable the rolling of wider sheet piling products.

The package of SMS Meer includes charging and discharging machines for the reheating furnace, modern primary descaling equipment, a new BD 1 (Break Down) stand and three new CCS® (Compact Cartridge Stand) finishing stands.

The core of the project is a new three-stand finishing mill which replaces the existing universal finishing stand. In addition to the replaced stand, two more stands will be installed in order to provide the required passes for rolling of wide sheet piles. All new finishing stands employ the CCS® design with hydraulic screw-down, adjustment under load and quick program change in only 20 minutes.

The finishing mill can be operated in two different ways: either in two-high mode for rolling of structural shapes or in a universal edger for finish-rolling of beams. The new stands of the CCS® type enable the wide sheet pile production and contribute to increase the productivity and quality of beam production.

The existing BD 1 stand will be replaced by a new one with an increased screw-down range for large slabs as well as a higher screw-down speed and accuracy. New features such as breakaway cylinders for overload protection and rolling force measurement as well as high-strength locks provide advanced functionality and reliability compared to the existing stand.

Nucor-Yamato Steel, a joint venture between Nucor Corporation and Yamato Kogyo, operates two mills in Blytheville for medium and heavy sections. The steel mill No 1 was originally installed in 1987. The installation of the new equipment is expected to be completed in early 2014.

SMS Meer GmbH – Germany
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Email: info@sms-meer.com
Website: www.sms-meer.com

TATA Steel UK orders two new cranes

TATA Steel at Brierley Hill in the West Midlands, UK, has ordered two SMARTON® cranes for coil lifting from Scotland–based Konecranes UK Industrial Crane Division. The contract, worth just under £1m, is for the supply of two 32 ton SMTD cranes operating on a 31.8m span and fitted with SMT double girder trolleys with a lift height of 9.5m.

The SMT stands for SMT SMARTON®, which has an intelligent, yet easy-to-use Human Interface to Machine (HIM) system keeping the user continuously up to date on not only the weight of the load but also its position relative to the available workspace. In addition, the crane monitors its own condition and recommends when and what kind of inspection or preventive maintenance should be performed. This way, the customer can better plan and minimise maintenance shutdowns, thereby maximising uptime and saving costs. Both cranes will also have Konecranes TRUCONNECT Remote Monitoring and Reporting service where the cranes' performance is being continuously monitored remotely and should anything arise then a Konecranes engineer will automatically be despatched to site, without any request or call from the client.

The cranes for TATA Steel will also have Konecranes DynAHoist and DynAC closed loop inverter variable speed control systems, Remox (HIM) and radio control with a spare transmitter.

Konecranes UK
Fax: +44 1355 263654
Website: www.konecranes-uk.com

Alliance for Working Together announce recent achievements

THE Alliance for Working Together Foundation (AWT), a group that Roll-Kraft is heavily involved in sponsoring, was formed by local business executives to promote careers in manufacturing and focus on developing programmes to encourage students. Roll-Kraft has announced the programme's recent achievements.

These accomplishments include: conducting over 1,500 seventh and eighth grade tours of AWT member manufacturing plants; developing an Associate's degree at Lakeland Community College with input from member companies; introducing a new manufacturing high school programme at the local career centre; conducting a video contest that drew over 27,000 website hits (all videos may be seen on the organisation's website); launching an AWT Speakers' Bureau; forming a Scholarship Committee to support students in their educational goals; and creating an Ambassador Team to promote rewarding careers in manufacturing at career and job fairs.

In addition, the group attracted nearly 250 students and over 2,500 spectators to its most recent RoboBots competition.

The RoboBots competition, conducted under the guidelines of the National Robotics League, is another way of introducing students to the many rewarding careers in manufacturing.

The AWT Foundation includes more than 75 manufacturing companies with executive-level representatives that understand they must first get students interested in and educated on manufacturing careers before they will have the skilled workforce necessary to sustain growth in the region.

Roll-Kraft, a leading manufacturer of tooling for the tube and pipe and roll forming industry, strongly supports and participates in the efforts of AWT and takes an active roll in bringing students to Roll-Kraft to view its current manufacturing processes.

AWT – RoboBot competition

Roll-Kraft – USA
Website: www.roll-kraft.com

Korea Machinery Fair 2013

KOMAF 2013 (Korea Machinery Fair), which has been held biennially since 1977, will be held again from 16 to 19 October at KINTEX Korea International Exhibition Center. The event is organised by KOAMI (Korea Association of Machinery Industry), and Merebo Messe Marketing, Germany, is the representative for Europe and America.

The fair is divided into several areas, including: motion control and factory automation; machine tools; plastic and rubber technology; industrial plant and equipment; cargo and logistics; heavy electrical equipment; air-conditioning and refrigerator technology; pneumatic and hydraulic technology; test and measurement; environmental technology; parts and materials; nuclear power equipment; and Korea Venture.

Merebo Messe Marketing – Germany
Website: www.komaf.merebo.com

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Australian business acquired

NORMA Group, an international market and technology leader for engineered joining technology, signed an agreement on 10 January to acquire the distribution business of Davydick & Co Pty Limited, Australia. The parties agreed to maintain confidentiality on the transaction details.

Davydick, based in Goulburn, approximately 150km southwest of Sydney, is a distributor for various elements in the transportation of water in irrigation systems. The company is specialised in supplying a comprehensive range of rural irrigation fittings, valves and pumps under its Pumpmaster brand name to around 700 customers throughout Australia, in the agricultural, hardware and plumbing markets. Davydick maintains branches in Melbourne, Adelaide and Brisbane.

With the acquisition of the distribution business of Davydick, Norma Group builds on its water platform and complements its product range in the infrastructure business area. The company expands its distribution network with a focus on agriculture and irrigation.

"We are pleased to grow our existing distribution network in Australia with the acquisition of Davydick," commented Werner Deggim, CEO of Norma Group. "Furthermore, we step into the markets for pumps. The service range of Davydick ideally complements our recent acquisition of Chien Jin Plastic, a Malaysian manufacturer of pipe compression fittings and components for the irrigation, agriculture and water distribution markets."

Norma Group AG – Germany
Website: www.normagroup.com

Specialist plate bending

THE latest Barnshaws plate bending project in London involves the expansion of the Barratt development pipeline in Osiers Gate. The project is one of the key urban redevelopment sites in the London borough of Wandsworth, and sits between Enterprise Way and the River Wandle, a brownfield plot that has been occupied by 20 light-industrial work sheds.

Barnshaw Plate Benders has provided a number of pressings for the development's balconies. The designs from Assael Architecture see a 21-floor landmark tower, four floors shorter than original proposals during planning consultations, plus an assortment of shorter residential buildings with an average height of nine floors each. Within the scheme will be 275 residential units with affordable apartments in a self-contained block.

Barnshaw Section Benders Ltd – UK
Website: www.barnshaws.com

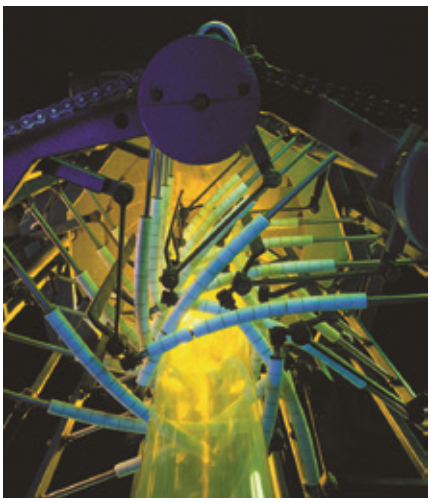
Polymer plant expansion

3M is expanding production of its polymer supply for the fluoroelastomer and polymer processing additives industries globally. The expansion of 3M's plant in Decatur, Alabama, USA, is a capital investment in equipment. This upgraded equipment will increase throughput and output capacity, and 3M expects to complete the expansion in the second quarter of 2013.

The company's fluoropolymers are widely used in automotive, aerospace, chemical processing and a broad base of other applications in the fluoroelastomer and polymer processing industries. "In response to high global demand for polymers, 3M's recent investment in this Decatur expansion demonstrates the company's commitment to the fluoroelastomer industry and ensures supply as industries like automotive, aerospace and polyethylene production continue to grow," said Paula Hubbard, global platform leader, 3M Advanced Materials Division.

The Decatur location is 3M's largest fluoroelastomer manufacturing facility. 3M Decatur also manufactures films, adhesives, coatings and additives for a range of 3M divisions representing multiple industries.

3M Advanced Materials Division – Germany
Fax: +49 2131 14 3857
Website: www.3m.com



3M has expanded its Alabama plant

Addison Saws launches its sawing and tooling website

ADDISON Saws, headquartered in Stourbridge, near Birmingham, UK, is a brand name that specialises in the technical detailing, processes, supply, spares and service support of new and reconditioned cold circular and metal sawing bandsaw machines and tooling for the tube industry.

With more than half a century of specialist ferrous and non-ferrous metals cutting experience, coupled with a market knowledge of a diverse range of environmentally sensitive, hygienic, safety critical, fabrication and general engineering industries, Addison Saws has launched a new, easy to navigate and more informative website for its customers that more accurately reflects its comprehensive range of cold circular and metal cutting bandsaws, core competencies, and extensive and individually tailored portfolio of customer support services.

"This more informative and contemporary looking website marks the first step in our new and forthcoming market communications programme, which we now feel more effectively projects and supports the much larger range of machinery, tooling, spares and service choices for our customers under the Addison banner, including the extensive range of skill sets, market knowledge and expertise belonging to our management and staff," commented managing director Gary Knight.

The newly redesigned Addison Saws website

Addison Saws Ltd – UK
Fax: +44 1384 264955
Email: sales@addisonsaws.co.uk
Website: www.addisonsaws.co.uk

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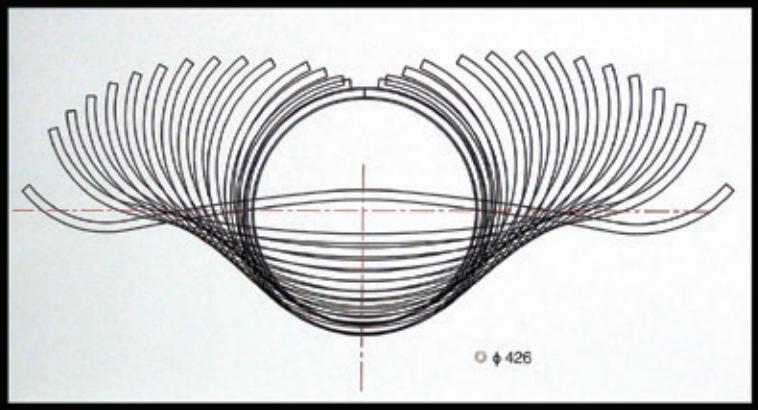

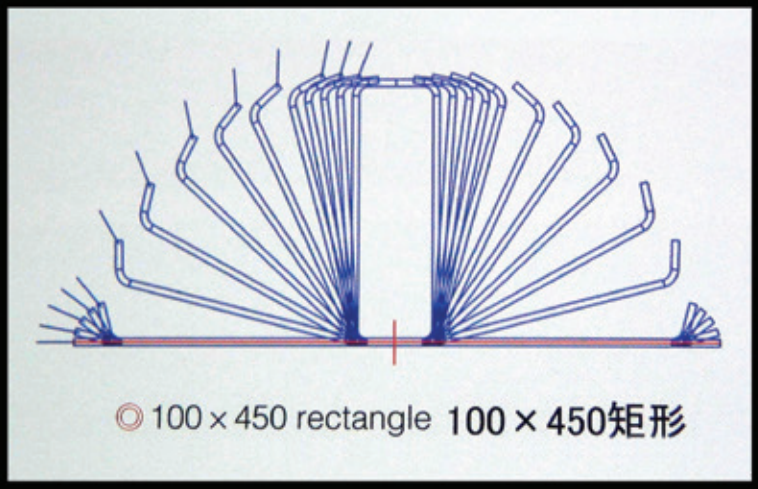

Enjoying a successful Fakuma

THE KraussMaffei Group reports that it enjoyed a very successful Fakuma 2012. Both the visitor figures and the trade fair orders increased considerably in comparison to the previous year. In particular, the visitors and customers seemed impressed by the premium quality of the machines and the powerful applications for efficient production processes.

The feedback to the GX series from KraussMaffei, which was showcased for the first time at a trade fair, was particularly positive. The GX 450-3000 produced a so-called telephone cradle for an automotive interior using CellForm technology with physical foams (MuCell). “Fakuma confirmed its successful introduction. Furthermore, the worldwide demand and the sales figures to date exceed our expectations,” said Frank Peters, vice-president sales. KraussMaffei also showed potential for more efficient processes and production flows, which offer plastics with their options for function integration. The 3-K process with metal injection moulding on a CX 160-750 machine was a visitor magnet. “This technology shows very clearly what potential lies in combined processes for the production efficiency and design of plastic parts with integrated functions,” stated Mr Peters. “We are delighted with the very high influx of customers at Fakuma. This is why Fakuma is and remains one of the most important trade fairs for us.”

For the first time Netstal showcased the new ELION 3200 at a trade fair. Using a complete system for the manufacture of thin-walled lids for cream cheese packaging, customers and visitors were shown a prime example of maximum production efficiency. The innovative hybrid drive concept and the new drive unit Eco-Powerunit for a noticeable improvement in energy efficiency were rated positively. “We were able to significantly increase the number of orders and conducted high-quality customer discussions. We are very satisfied,” stated Dr Hans Ulrich Golz, president, injection moulding machinery.

Also, KraussMaffei Berstorff looks back on an extremely positive Fakuma. “Our expectations were well exceeded; we were also able to welcome many visitors from neighbouring countries and Eastern European states,” said Dr Jens Liebhold, business unit manager at KraussMaffei Berstorff. Very specific requests were received for pipe extrusion, where the trend for complex system solutions and complete systems for the production of peroxide crosslinking hot water pipes or polyurethane-insulated pipes, or the extrusion of large pipes for example remains unbroken.

Detailed requests were also received for the areas of film and foam extrusion, and high-fill and glass fibre reinforced compounds; some products should already be realised within the next six months.

KraussMaffei Group – Germany
Website: www.kraussmaffeigroup.com

Can-Eng ships bright tube annealing furnace

CAN-ENG Furnaces International has announced the shipment of a bright tube annealing furnace for the JMC Steel Group.

The 25,000lb/hr line will be installed in Wheatland, Pennsylvania, as part of JMC Steel's Wheatland Tube Division expansion.

The unit is configured to operate under dry EXO gas for the bright annealing of heavy walled precision cold drawn mechanical tubing.

With an overall line layout stretching out more than 300ft by 14ft wide, the furnace will form the basis for one of the largest bright tube annealing facilities in North America.

The main furnace section measures 60ft in length and weighs approximately 165,000lb. A Q1 2013 start-up is anticipated for the new DOM (drawn over mandrel) complex.

This is the fourth major contract that Can-Eng has undertaken for JMC in recent years, including subsidiaries Atlas Tube, Sharon Tube and Wheatland Tube Company. JMC Steel Group is one of North America's largest producers of tubing used in the OCTG, hollow structural, electrical conduit, sprinkler pipe, and mechanical tubing industries.

Established in 1964, Can-Eng has grown to become a leading designer and manufacturer of thermal processing equipment for ferrous and non-ferrous metals.

Whether manufacturing a simple, manually controlled furnace or a turnkey automated system, Can-Eng focuses on the development of high volume continuous industrial furnaces for challenging applications.

Can-Eng Furnaces International Ltd – Canada
Fax: +1 905 356 1817
Email: furnaces@can-eng.com
Website: www.can-eng.com

The newly redesigned Can-Eng tube furnace

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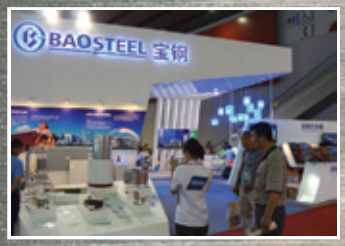

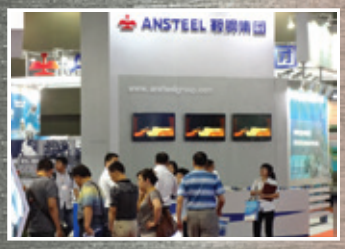

THE 14th GUANGZHOU INT'L TUBE & PIPE INDUSTRY EXHIBITION

The 14th CHINA (GUANGZHOU) INT'L METAL & METALLURGY EXHIBITION

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Contact

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Email: exhibition.julang@gmail.com

Erne Fittings supplies weld-overlay elbows and tees to Brazil

THYSSENKRUPP Mannex and Erne Fittings were recently able to secure a major order of seamless pipes, fittings and flanges for a project in Brazil.

Pipes, fittings and flanges are processed to spools in Suape/Recife and afterwards integrated into the refinery "Abreu e Lima RNEST".

The plant, which is located in Ipojuca in north-eastern Brazil, is a pilot project of Petrobras, Brazil's largest oil company.

In future, oil products with a high sulphur content will be processed into diesel with a very low sulphur content here, using high temperatures and hydrogen ("hydrotreating").

The over 200 cladded elbows and tees with a dimensional range of 457 x (29.4 + 3)mm are made from the heat-resistant base material WP22 and an inside weld overlay of 317L. Compliance with tightest manufacturing tolerances during forming process and weld-overlay, as well as flexible weld-end preparation in accordance with the connection dimensions of the straight clad pipes, ensure problem-free welding of the composite materials.

Erne clad fittings combine high strength with excellent corrosion properties. The inner surface of a high-strength C-steel base material is coated with corrosion-resistant materials (eg austenite, Ni-based alloys). During use, the high-alloy weld-overlay layer prevents direct contact with the corrosive media and the ferritic base material ensures the required mechanical properties with regard to pressure and temperature, such as strength and impact toughness.

In contrast to solid CRA (corrosion resistant alloys), Erne clad fittings enable threefold cost savings: due to the lower price of C-steel compared to high-alloy steels; due to the reduction in material used (the higher strength of the C-steel allows for thinner walls); and as thinner walls mean a significant reduction in the welding and inspection expenses when processing the fittings.

This saving potential is especially high when either large wall thicknesses are required due to high pressures and/or temperatures, or very complex and therefore expensive alloy concepts are needed due to the corrosive load.

Erne clad fittings are manufactured in cooperation between Erne Fittings and Uhlig Rohrbogen. Erne Fittings has produced high quality elbows, tees and reducers since the early 1920s, as a result of which the company has established itself as a premium supplier in the approved field. Uhlig Rohrbogen is a specialist in the field of weld-overlaying for an extremely wide range of industrial applications, such as boiler walls for waste incinerator plants.

Erne Fittings GmbH – Austria
Email: office@ernefittings.com
Website: www.ernefittings.com

Logistics firm celebrates anniversary

RHYS Davies Freight Logistics is celebrating 60 years in the transport industry. The company began as a family business in 1952, and currently has 190 vehicles operating throughout the UK from nine strategically located depots.

Rhys Davies offers tailored warehousing, distribution and handling service across its nine operating centres, providing customers with value added, cost saving services. One example of this is the paint mixing service that Rhys Davies provides for two separate European paint manufacturers at its Birmingham and Cardiff warehouses. This process includes a fully traceable quality sampling and testing process, where samples are taken, measured and sent to the customer for recording purposes.

Gary Phillips, commercial manager of Rhys Davies Freight Logistics, said, "Because the clients are based in Europe it makes more sense for the paints to be mixed at our warehouse rather than them shipping paint colours speculatively. It saves them time, inventory and money."

Rhys Davies Freight Logistics – UK
Email: gary.phillips@rhysdavies.co.uk
Website: www.rhysdavies.co.uk

Giant diameter polyethylene pipe licence awarded

THE KWH Pipe Ltd Group, Finland, and Armco Staco SA Industria Metalurgica, Brazil, have announced the granting by KWH Pipe to Armco Staco of an exclusive licence for the manufacture and marketing of Weholite pipe in Brazil. The Weholite product line, invented by KWH Pipe in the 1980s, consists of high density polyethylene pipe, fittings and fabricated assemblies.

Among the features of the structured wall HDPE Weholite pipe is its availability in inside diameters up to 3,500mm. Armco Staco plans initial offering up to 3,000mm ID. The pipe is used in low pressure/gravity service applications with potable water, storm water, sewage and various other liquids. Weholite fabricated assemblies are designed for special functions such as manholes, detention tanks and even individual family-size sewage treatment units for remote regions. The Weholite pipe's smooth surfaces enhance flow rates compared to steel, cast iron or concrete. With its extra-large diameters, Weholite pipe also provides an enclosed channel to conduct liquids over some distance. The lightweight polyethylene pipe is continuously extruded and thus furnished in any shippable length, which facilitates quick installation. Its corrosion resistant properties ensure long service life. Weholite pipe is joined mostly by extrusion welding, and the joints meet the standards for leak-proof joints.

KWH Weholite licensees have manufacturing operations in nine other locations in Europe, Asia, Africa and Latin America in addition to KWH Pipe direct owned factories in Finland, Nordic countries, Europe, North America and Asia. KWH Pipe has been producing plastic pipe since 1955, and also manufactures solid wall HDPE pressure pipe up to 1,600mm outside diameter.

Armco Staco, with operations in Brazil in Rio de Janeiro, São Paulo, Jacarei and Resende, claims to be the largest manufacturer of corrugated steel drainage pipe and highway safety steel guard rails in Latin America.

Weholite production operations for Armco Staco will be carried out at newly constructed facilities now underway at Resende, Brazil. Weholite product is expected to be available from Armco Staco during the second half of 2013.

KWH Pipe Ltd – Finland
Email: machinery@kwhtech.com
Website: www.kwhtech.com

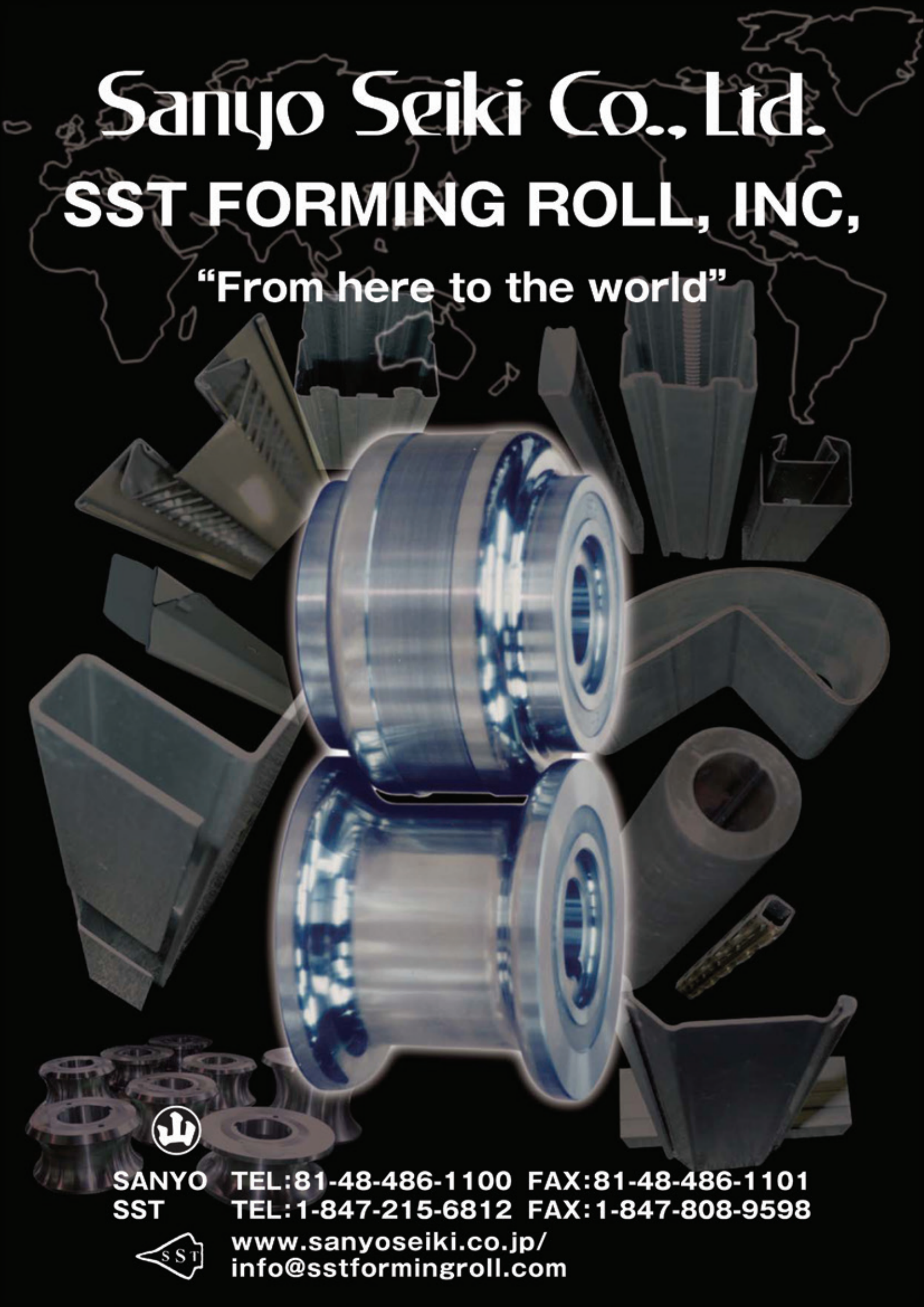
Armco Staco SA Industria Metallurgica – Brazil
Email: fvilhena@armcostaco.com
Website: www.armcostaco.com

This 10,000m³ storm water detention tank project in Scotland consists of DN/ID 2.6m Weholite pipes

Sanyo Seiki Co., Ltd.

SST FORMING ROLL, INC,

"From here to the world"



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info@sstformingroll.com

Automated orbital welding equipment for UK energy sector

GLOBAL energy products and solutions provider Doosan Power Systems has purchased what it has described as "among the best automated orbital welding equipment on the market" from Arc Machines Inc (AMI), to help meet growing demand from the UK energy sector.

Doosan Power Systems, renowned for building, maintaining and extending the life of power plants around the world, turned to Arc Machines' Daventry-based operation to purchase two Model 415 power sources and a Model 52 weld head. The automated orbital welding equipment is used for critical projects, typically on large, heavy wall pipe, where physical access is difficult or near impossible, and is required by the power plant specialist for manufacturing operations in both the UK nuclear sector and thermal power generation industries.

Manager of materials development for Doosan Power Systems, Daniel Bertaso, said, "Arc Machines' orbital welding equipment provides reliable and high-quality mechanised orbital welding equipment which, when compared to manual welding, improves both productivity and the quality of the weld."

The Model 415 power supply, with state-of-the-art narrow groove welding technology, is especially suited to power generation boilers, nuclear power generation systems, alloy steels and thick-wall stationary pipes. An all-in-one computer controlled GTAW power supply, it has been primarily designed to operate AMI's weld heads and with fixed automation stations as a process controller.

It can control third party positioners as well as welding manipulators, and incorporates powerful processors and controllers designed to meet the challenges of the most demanding welding applications. The Model 415 is easily programmed via a 12" touch screen or keyboard using standard welding industry terminology and clearly organised input fields.

The rugged and versatile Model 52 orbital weld head is suitable for automated welding of pipe, plate or fittings using the cold or hot wire feed GTAW (TIG) process. It is a precision tool with minimal radial clearance for welding pipes of all sizes, including flat plate.

This heavy duty orbital weld head is suitable for use in a variety of diverse industries where weld quality requirements are of paramount importance, including nuclear, power generation, chemical, process industry and the oil and gas sector.

Arc Machines UK Ltd – UK
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Starting 2013 from a new position

SINCE the beginning of this year Büker has moved to a new production site in Meerbusch, Germany, which has led to double space. A modern assembly shop and office buildings on-site is now working place for the Büker team. Due to enlargement this step was necessary to further satisfy its global operating customers.

The company looks back on 25 successful years in the field of pipe-bevelling-cutting-welding and growth. Within the main four business segments: pipe bevelling machines, pressure test machines, assembly equipment and industrial burner Büker offers a complete individual product portfolio across pipe treatment. Repair and maintenance services are completing the business.

2013 will become an extraordinary year. Starting with a new logo Büker will be present at five exhibitions in Europe to show its high quality products and immerse its customer contacts. The company is facing the future while planning employments in sales and R&D to further concentrate on customer needs. "Büker wants to continue on offering market activities addressing to existing problems and giving solutions," says Manfred Bauer, CEO. "We are glad to know that since several years our customers rely on our products."

Büker stands for innovation and individual industry solutions in pipe technology. With the long existing competence of its senior engineers it is excellent in offering special customer services.

Büker Rohrtechnik was founded in 1963 by Emil Büker. In the early beginning the company already reached an excellent reputation as a manufacturer of pipe bevelling machines and also in the field of burner technique for annealing and pre-heating for industrial operations. Today the company is still independent and managed by Manfred Bauer.

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Valve World report

A TOTAL of 10,300 trade visitors from more than 50 countries attended the Valve World Conference and Exhibition, held at the Düsseldorf Exhibition Centre in November 2012. During the three days of the fair, 593 international companies from 37 countries presented innovative technologies, components and systems from the industrial valves sector.

The product range of the valves and fittings sector is particularly broad and deep: at Valve World Expo companies from numerous sub-sectors presented themselves on a total exhibition space of around 15,700m^2. Highlights included valves, their components and parts, actuators and positioners, pumps, compressors, engineering services and software.

"The exhibitors praised the compact diversity of the products presented at the trade fair and the clear presentation in exhibition halls 3 and 4," commented Joachim Schäfer, managing director at Messe Düsseldorf GmbH. "Düsseldorf has been established as an ideal site with further growth potential for the industrial valves segment."

The European trade fair visitors came primarily from Italy, the Netherlands, the United Kingdom, France and Germany, while most overseas visitors came from India.

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Hexagon acquires portable metrology software provider

HEXAGON AB, a provider of design, measurement and visualisation solutions, has acquired New River Kinematics (NRK), a US-based engineering company that specialises in 3D analysis software for portable metrology applications.

Founded in 1994, NRK revolutionised coordinate measurement with the first metrology software to introduce a three dimensional graphic environment for portable metrology. Today, NRK develops and supports the industry standard in portable metrology software solutions. SpatialAnalyzer® (SA), the company's flagship offering, is used to address a broad spectrum of challenges related to large scale measurement with portable metrology devices in manufacturing plants around the world.

"When it comes to industries like aerospace and shipbuilding, where parts are either very large or very expensive, mitigation of continuous rework is an absolute necessity, and NRK's software facilitates this," said Norbert Hanke, president, Hexagon Metrology. "From single part inspection to highly accurate, large scale multi-instrument surveys, SA's advanced analysis capabilities support large-scale manufacturers who have no other option but to make components that fit."

NRK offers a comprehensive solution to connect multiple products from any supplier. From arms and theodolites to trackers and scanners, SA's advanced analysis capabilities combine inputs from any metrology device into a single platform. This is especially important in large-scale manufacturing processes, where larger CAD models and more complex data present additional challenges when it comes to accuracy and productivity.

"Also a strong resource in the field of measurement automation, NRK provides excellent growth prospects for Hexagon as more and more manufacturers look to increase efficiencies," said Hexagon president and CEO Ola Rollén. "Additional opportunities include leveraging Hexagon's distribution network and existing customer base to increase SA's penetration in international markets and growing segments like aerospace, and to team up with Intergraph to strengthen applications in shipbuilding, component fabrication and other large-scale markets."

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Fax: +46 8 601 26 21
Website: www.hexagon.com

New River Kinematics – USA
Email: sales@kinematics.com
Website: www.kinematics.com

Diameter gauge heads in comparison

Laser Series 6000

SIKORA'S Laser Series 6000 measuring devices deliver precise diameter measurement with reliable lump detection. The devices perform at a high measuring rate of 2,500 measurements per second, each with a high single value precision by default. With a dedicated accuracy of 0.2µm and a repeat accuracy of 0.1µm, the diameter of tubes and hoses is continuously measured online.

A wide size range of gauge heads covers a diameter range from 50µm to 500mm. Three gauge head models of Laser 6000 Series are available for product diameters from 0.2 to 78mm, and combine a large number of features which help to simplify daily production routines.

Sikora's R&D manager, Siegmar Lampe, commented, "Our development priority is to maximise the benefits to our users. Thus, we have developed many features for Laser Series 6000 that significantly support the user on the line."

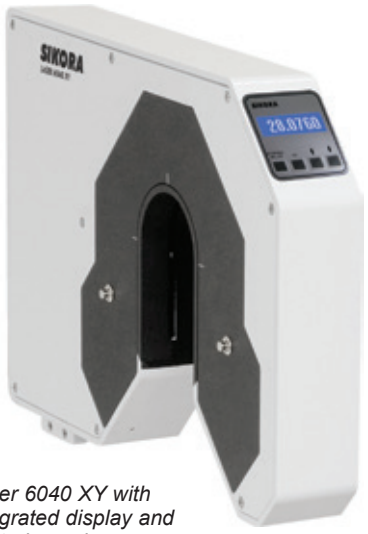
The high measuring rate of the diameter measuring devices progressively and effectively enables the detection of lumps and neck-downs on the product surface. This reduces the cost of investment and increases space on the line, since only one gauge head need be installed.

The LCD display and operator panel are directly integrated into the gauge head providing easier operation and process control. The operator can see the diameter results on the display at a glance. Simultaneously, the panel shows the diameter rated value and the control module can be activated. The control module automatically adjusts the diameter to nominal value via control of the line speed or extruder rpm.

The physical aperture of the gauge head is twice as large as the product range, permitting easy and safe feed-through of the product. A special feature is the pivoting head design. The gauge head can be temporarily swung out of the production line path if required. The bottom of the unit is open, so water and dirt fall through, rather than contaminating the measuring field. The feeding of the connection cables is protected, directly in the gauge head stand.

The Laser Series 6000 offers an optional Wi-Fi interface, which allows direct connection to a smartphone or laptop.

This interface enables diagnostics and quality control with video signal in addition to transmitting measuring results, trends and statistic data. Sikora provides its own app for displaying measuring results, trends, statistics or video signals directly on compatible smartphones. Simply log in via the Wi-Fi interface and immediately you have measuring results on your smartphone. The app also offers the possibility to calibrate the gauge head according to ISO 9000.



Laser 6040 XY with integrated display and control panel

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

New rotary draw bender

IN confirmation of its on-going commitment to meet the market's growing needs, Ercolina has launched a new and improved rotary draw bender: the TB130 Top Bender.

The TB 130, with its 130mm (5") capacity is suitable for producing consistent quality bends in large pipe, tube, squares, solids and other profiles. A strong cast iron design matched with high precision planetary reducer ensures quality, repeatable bends.

An interactive PLC touch screen control offers easy access to auto and manual operating modes, programming, system diagnostics and multiple language capability. Programmable bend angles range from 0° to 180°, with up to 12 bends per program.

Other features include independent springback compensation for each bend; USB port for software updates and unlimited program storage; digital display of counter bend die axis and bend angle; bends to CLR as small as 2D; patented quick-change tooling system with multiple radii available; and no hydraulic components, reducing cost and improving bend accuracy.

Auto load sensing improves bend productivity while protecting machine components.

Electrical components are UL, CSA and CE approved.

CML International SpA – Italy
Fax: +39 0776 404801
Email: info@ercolina.it
Website: www.ercolina.com

High performance saw blades

MORESCHI designs and produces a wide range of saw blades for applications in industrial sectors such as steel and tube mills, foundries, forges, automotive and fittings, and also sells segmental saw blades and band saws.

The company's production programme includes high performance TCT saw blades with different types of coating, up to 2,200mm diameter; friction saw blades up to 2,500mm diameter; HSS saw blades with different types of coating, up to 620mm diameter; segmental saw blades, 275-1,610mm in diameter; customised bodies for saw blades; and band saw blades.

Moreschi designs, manufactures and delivers blades according to the specific needs of customers' cutting processes and plants, and when necessary can develop a customised tool in order to find the best solution. The company also offers sharpening and maintenance services with high technology equipment, and guarantees high performance for the whole life of the blade.

Moreschi is opening a new sharpening factory in Poland, and is also planning an important new investment to take a step forward to innovate and improve production. The company collaborates with universities and producers of plants and machineries, and works with the ISO 9001 quality system.

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Email: info@moreschi.eu
Website: www.moreschi.eu

Portable tube and pipe end preparation

FOR more than 35 years PROTEM has been recognised as a leading manufacturer of portable tube and pipe end preparation machines.

All the machines entering the PROTEM range of products are designed by experienced professionals in machining, themselves having worked on site and aware of the importance of having reliable and robust equipment that is lightweight and easy to use and allows users to achieve a perfect weld end preparation.

Since the cutting process is a cold cutting one, heat affected zones are completely eliminated. The machines can be used in all positions, including over head. They can be remote controlled for works under hazardous conditions, pneumatically, hydraulically or electrically driven, equipped with several devices enabled to cut and bevel in one simultaneous operation, to square, to counter bore, to correct the shape of tubes and pipes with copying carriages.

PROTEM offers a rental service for occasional needs and a total flexibility for specific needs: some ten thousands of PROTEM portable machining equipment has been used worldwide and hundreds of special machines were successfully designed over the past 35 years.

PROTEM owns the leading position on the market of energy generation: nuclear and conventional power stations, of the oil and gas, ship-building, defence, aerospace, food processing, piping systems processing, chemical, petrochemical, pharmaceutical industries for ID or OD mounted bevelling tools: Machining diameters from 8 to 3mm and for wall thicknesses from 0.5 to 100mm and over.

The orbital OD severing and bevelling machines are used for diameters up to 82" and over on request.

Surfacing machines are used for valves and flanges diameters up to 200".

Elbow bevelling machines are also for elbows with no straight length.

The SE25 is the essential complement to orbital welding machines. It allows a perfect preparation of the tubes for the manual or automatic welding operations – very light weight, portable and versatile – for thin tubes, fittings, micro fittings and elbows.

The SE25 clamps on the outer part of the tube through collets. Usually, one collet per diameter is necessary. Motorisation can be electrical or cordless.

The SE25 can be mounted onto a bench support. It is the ideal solution for applications within various fields such as: semi-conductor industry; pharmaceutical industry; clean rooms; food processing; and the aerospace industry.

The quality of its products and its services are the vectors of PROTEM's actions in the respect for sustainable developments.

PROTEM will consolidate these commitments and will pursue its strategy of international development.

PROTEM – France
Email: contact@protem.fr
Website: www.protem.fr

Tube and pipe preparation

Free testing guide app

OLYMPUS NDT has introduced the Industrial Tech Guide App for Android smartphones. Available for download on Google Play, the free mobile application contains two knowledge-based sections designed for technicians performing ultrasonic flaw detection and X-ray fluorescence (XRF) inspections.

The easy-to-use Tech Guide App is a helpful tool for inspectors by providing fast and accurate calculations for their applications. In addition, the application contains descriptions of all Olympus industrial instruments with quick links for detailed product information or to obtain a request for quotation.

For the non-destructive testing (NDT) inspector, the Ultrasonic Tech Guide lists the acoustic properties (longitudinal wave velocity, shear wave velocity and acoustic impedance) of many common materials. It also includes a calculator for common beam parameters (wavelength, nearfield length and beam diameter) used in test setup and interpretation.

For the individual working with an array of metal alloys, the XRF Tech Guide includes an alloy materials guide that provides a quick and easy look-up of the chemistry specifications for common alloy grades using trade names or alloy families. With these specifications in hand, many individuals such as XRF and PMI inspectors, scrap sorters, material handlers, NDT contractors and QA/QC managers can become more productive in the field.

The Olympus NDT Industrial Tech Guide App is also available for the iPhone, via the iTunes App Store.

Olympus NDT manufactures non-destructive testing instruments that are used in industrial and research applications ranging from aerospace, power generation, petrochemical, civil infrastructure and automotive to consumer products. Testing technologies include ultrasound, ultrasound phased array, eddy current, eddy current array and X-ray fluorescence. The company's product portfolio includes flaw detectors, thickness gauges, in-line systems, automated systems, industrial scanners, pulser-receivers, probes, transducers and various accessories.

Menu screen from the new Android app

Olympus NDT – USA
Fax: +1 781 419 3980
Website: www.olympus-ims.com

Induction equipment for tube and pipe

AMBRELL is a leading manufacturer of induction heating equipment. It has experience manufacturing equipment for an array of tube and pipe heating applications including tube and pipe coating curing, pre- and post-weld heating, hot pipe bending, drill pipe heat treatment and brazing inserts onto oil and gas well drill bits.

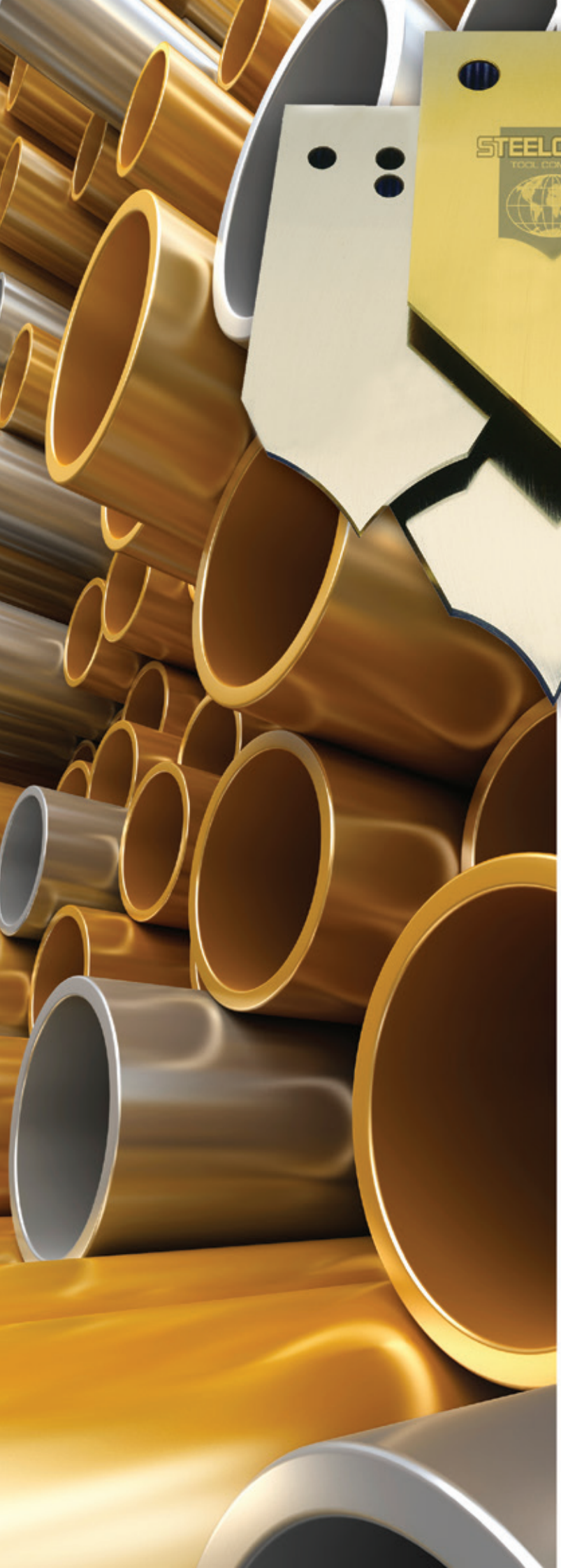
Induction's benefits include rapid heating that saves time, precise control that evenly heats tubes, a clean, non-contact process that minimises the introduction of heat into the local environment and energy efficiency.

Ambrell offers systems over a broad power and frequency range. It has expanded its line of systems to include high power, low frequency systems.

Recently, a company producing oil pipes came to Ambrell with a pipe coating curing application. Pipes ranged from 152mm to 610mm in diameter. They needed to run 1m per minute at the smaller diameter and 0.5m per minute at the larger diameter. Based on these needs, Ambrell provided free laboratory testing along with a system recommendation. The client purchased an EKOHEAT 250kW/10 kHz system with a workhead and multiple coils, and the system was successfully implemented.

Another recent application involved preheating drill bits to temperature to enable the brazing of the cutter inserts into the drill bits. The client leveraged laboratory testing, and successfully raised the drill bit temperature to 600°C.

Ambrell – USA
Website: www.ambrell.com



Don't settle for less cuts than what you should be getting.

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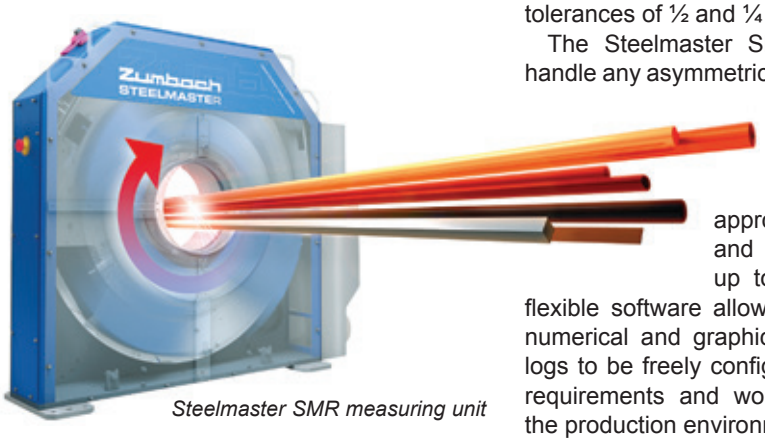
Rotating in-line dimension measurement

ZUMBACH Electronic, the Swiss manufacturer of inline measuring and monitoring systems, has developed a rotation-based laser scanning process that maps round and polygonal shapes up to 6,000 times per second.

To make production processes as efficient as possible, modern in-line measurement devices are required not only to measure parameters such as diameter, ovality, width and height at very high speed, but also to instantly detect shape deviations and rolling errors. Some suppliers claim that in steel production, mechanical solutions are more than adequate for these purposes, but not all manufacturers in the industry agree.



Steelmaster SMR measuring unit

Zumbach's Steelmaster units have been used in steel production for many years as a tried-and-tested solution to improve the monitoring of hot rolling and cold processes. Until now, dimensional measurement and error detection have always been carried out by static or oscillating devices, depending on the application.

The new Steelmaster SMR product generation features an innovative and faster rotational measurement system, opening up a whole new range of applications. The system is based on up to three fully synchronised laser measuring heads of the Odac® series, which use a rotational principle to measure outer dimensions, diagonals, diameters and cross-sections with 360° coverage. Each Odac laser measuring head rotates at a speed of 100rpm and maps the scanned products up to 2,000 times per second to create a precise product profile. In this way up to 600 profiles can be generated every minute. This allows manufacturers to reduce scrap while maintaining stricter tolerances of ½ and ¼ DIN.

The Steelmaster SMR models can handle any asymmetrical, polygonal and irregular shapes made of steel and metal up to a diameter of approximately 135mm and temperatures of up to 12,000°C. The flexible software allows data statistics, numerical and graphical displays, and logs to be freely configured in line with requirements and working practice in the production environment.

Zumbach's EPM method (enhanced profile measurement) for geometries with irregular or asymmetric shape aberrations (eg asymmetric overfill or underfill) is able to capture and calculate polygonal shapes that can occur in certain rolling processes or after subsequent peeling/grinding operations. For any shape it will measure at high accuracy not only minimum, maximum and mean diameters, but also the true out-of-round deviation RONt as defined by ISO/TS 12181-1, as well as the inscribed circle MICI and the circumscribed circle MCCI.

An optional module named FPS, especially for three-roll blocks, calculates accurate values corresponding to the diameter values which would be found by manual three-point micrometer screws (if both readings are related to room temperature). This FPS module additionally calculates the 'touch' and 'gap' diameters, which are essential for the initial roll setting.

The dynamic regression analysis included in the software package means that twist and angle of twist no longer influence the measurement result. This results in lower scrap rates and ensures compliance with strict tolerances. The technology also performs regardless of position, vibration, material temperature and light intensity.

Fully contact-free transmission of power and signals ensures maximum operating safety, and an efficient air flushing and cooling system keeps the unit functioning reliably, and can be supplemented if necessary by a water circuit.

All Steelmaster systems can be extended to include up to four measuring units with a single data acquisition and processing system. Any combination of static, oscillating and rotating SMR measurement units may be used.

Zumbach Electronic AG – Switzerland
Fax: +41 32 356 04 30
Email: sales@zumbach.ch
Website: www.zumbach.com

700 bar hydrostatic tester

A NEWLY developed hydrostatic tester with three-stage intensifier and auto length measuring device is being supplied to Russia by EPI Co.

The three-stage intensifiers are able to reach 700 bar testing pressure rapidly and stably, overcoming the limitation of maximum test pressure with two intensifiers. The auto length measuring device can save time when using different lengths of pipe. Without length measuring, the operator should be watching and measuring the pipe length. The packing seal is specially designed and developed for a long lifetime.

After the testing process, an auto drift tester to check straightness is also supplied. This auto drift tester can increase productivity by avoiding the delay of checking by manual testing. EPI has also supplied finishing line equipment such as end facing, hydrostatic tester and bundling for API 12" to the USA.

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Website: www.epi-mfg.com

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The tube & pipe mill installation history of Fives Bronx in the OTC global marketplace is unmatched. With our Abbey products technology and a long history of small to large mill installations in almost every corner of the globe, Fives Bronx boasts the largest O.D. range in the industry – up to 914MM (36") O.D. Fives Bronx engineers have developed mill innovations like our patented Quick Change technology for changeovers in as little as 15 minutes. The system can be retrofitted and reduces downtime, improving overall production efficiency while reducing costs. In addition to tube & pipe mills, Fives Bronx manufactures entry systems, rotary cutoffs, drawbenches and slitting lines.

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Mill Solutions

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Weatherford extends bucking machine portfolio

WEATHERFORD'S ComCAM systems are an efficient solution for all completion services, repair shops and smaller pipe-threading shops. Semi-automated control of power tightening ensures highly accurate makeup and instant reversal from makeup to breakout for premium threaded connections and multi-connection tools with various diameters.

The company has introduced its comfort bucking system, ComCAM-26/200-H, enabling use on larger casing sizes. System models with a clamping range from 1" to 15" and 2 3/8" to 20" are also available.

The new system is a self-contained, free-standing, continuous-rotation torque unit with a maximum torque of 200,000-ft/lb in makeup and break-out direction. This technology also serves a range of pipe diameters from 4 1/2" to 26" without having to change the jaws.

The rotary head is equipped with a 5-jaw gripping system.

The gripping force is continously adjustable according to pipe and coupling material.

The hydraulic backup system incorporates a patented design for virtual compensation of bending and shearing forces when making up or breaking out a tubular connection.

The unit is powered by an independent hydraulic power unit to drive the hydraulic elements and is operated by a control panel with integrated Torque Process Controller (TPC).

ComCAM systems are available in different frame lengths, increasing the adaptability of the product. For instance, the short frame version is compatible with a height-levelling system allowing special production requirements to be met.

Weatherford Oil Tool GmbH – Germany
Email: sales-germany@eu.weatherford.com
Website: www.weatherford.com

ISO 13679 CAL IV

„Some conditions leave no room for choice…"

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*CAL– Connection Application Level
CAL IV is the highest level

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SIO technology gaining universal approval

ADDISONMCKEE, a designer, manufacturer and supplier of tube bending and end-forming technologies, has been commissioned to build an innovative SIO end-forming machine by US-based Eastern Catalytic, a manufacturer of catalytic converters, manifold converters and converter components for the aftermarket and original equipment manufacturers.

At the heart of the design is AddisonMckee's 'Hydra Green' technology, designed to allow the latest end-forming equipment to take advantage of hydraulic power without the constant noise, heat and energy usage associated with traditional hydraulic power units.

While traditional hydraulic systems for end-forming machines use an AC motor continuously driving a hydraulic pump, even when the machine is not in use and no oil pressure and/or flow is required, AddisonMckee's new technology is designed so that the pump is in operation only when there is a demand for pressure/flow.

The company claims that Hydra Green delivers a number of key benefits over a traditional hydraulic circuit in terms of using 50 per cent less electricity due to the significantly reduced duty cycle of the hydraulic pump, minimising heat emissions and reducing noise emissions by as much as 50 per cent. The system also achieves a major reduction in the amount of hydraulic maintenance required, while the smaller hydraulic reservoir uses 65 per cent less oil.

The key advantage of the SIO concept lies in overcoming one of the traditional limitations of a conventional sizing machine with its internal fingers going inside the tube and expanding past the elastic limit, and external fingers going outside to reduce the diameter to the required size. A conventional machine is limited in the range of expansion/reduction that any set of fingers can handle, which means that the tooling needs to be constantly changed and reset to handle a range of tubes. The SIO machine, however, provides six sets of tools in one machine, removing the need for changeovers to meet production requirements.

As the market climbs out of recession, the fortunes of AddisonMckee have taken a turn for the better, and in response to demand from its European customers the company has restored the manufacturing facility at its UK headquarters in Lancashire.

AddisonMckee Inc – USA
Website: www.addisonmckee.com

Hydra Green technology from AddisonMckee

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www.polysoude.com

Fluid tech line

CIMCOOL® Fluid Technology has expanded the Cimmill line of products for tube and pipe customers.

"The Cimmill line was released in February 2012 to better serve the tube and pipe market," stated Bruce Koehler, product manager for Cimcool Fluid Technology. "The Cimmill line was formulated for processors to get better thread quality, longer die and tool life, as well as other performance attributes our customers expect from Cimcool products. When customers started using our Cimmill fluids, they asked if we had products for their other applications. These customers were already seeing more productivity and thought that they could benefit further from our technology."

The Cimmill fluid line expansion includes:

- Cimmill RP 24-7 solvent/oil-based rust protection, used neat. This product will provide over a year of corrosion protection and leaves a protective film residue
- Cimmill RP 365 water-based rust inhibitor, used as-supplied to provide up to a year of indoor corrosion protection. The protective fluid is VOC-free and meets the standards set by the California South Coast Air Quality Management District (SCAQMD) Rule 1144
- Cimmill SC, an alkaline sump cleaner developed to rid sumps of biofilms and built-up debris. It is suitable for cleaning sumps prior to charge-ups and helps provide a clean environment for new fluids
- Cimmill 5 straight-oil, designed for tough cold pilgering operations. This product is chlorine-free, but offers the performance that usually requires extreme pressure lubricants to achieve.

"These additions supplement an already good product line and make it stronger. We knew the tube and pipe industry would benefit from having fluids with better performance, especially considering the growth of natural gas exploration in the United States," said Mr Koehler.

As with all Cimcool products, the new Cimmill line is backed by the company's no-hassle product guarantee, technical support, and offer of a free product trial.

Cimcool Fluid Technology – USA
Fax: +1 800 205 3293
Website: www.cimcool.com

Joint compound

HELDITE sealant can prevent the leakage and seepage of water, steam, gases and oils where tubes and pipes are joined. It was formulated in 1918 to fulfil an increasing demand for a versatile and universal sealant. Heldite is universal, so there is no need to carry a selection of different products. It is suitable for flanged, screwed and compression joints, and will act as a locking agent during joint assembly. It can be used for joining pipework, tubes and rubber hoses with or without a gasket. Because it is a liquid jointing compound, unlike a silicone paste it will not squeeze out of/break off within a joint, which can cause damage to interior working parts.

Heldite Ltd – UK
Website: www.heldite.com

Coil processing with decoiling and recoiling

FORSTNER has been developing and manufacturing machines for professional processing of coils since 1960. From the very beginning the prime objectives of all development have been the easy handling of coils and return of the investments in Forstner lines. The results are field-proven products made with reliable designs ensuring extended operating life. A Forstner multiple decoiling, slitting and cut-to-length line basically includes the following units:

- up to eight powered decoilers with bearing on one side – cantilever
- powered guidelines
- eight-fold coil selector for automatic selection of any available material
- programmable or manual straightener with up to eight rolls
- programmable or manual slitter with up to ten pairs of knives
- electro-mechanical guillotine
- SPS control unit with touch screen

Forstner decoiling, straightening, slitting and recoiling line

Several decoilers are available, up to a maximum coil weight of 12 tons. The decoilers with bearing on one side can be rapidly loaded with a crane, forklift or a coil cart. The practicality of coil selection, the valuable time savings and the well-controlled decoiling procedure ensure efficient fabrication.

Powered decoilers provide advantages for efficient loading and ensure thorough protection of valuable sheet. Even highly sensitive types will be decoiled unscratched.

To meet the requirements of the fabricators of small and medium coils Forstner developed recoiling systems that can be added to the slitting and cut-to-length lines, as well as stand-alone recoilers.

Forstner Maschinenbau GmbH – Austria
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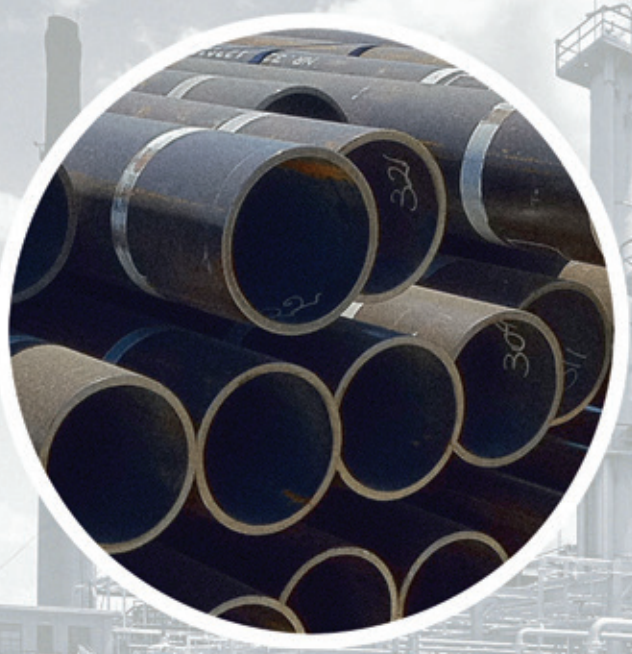

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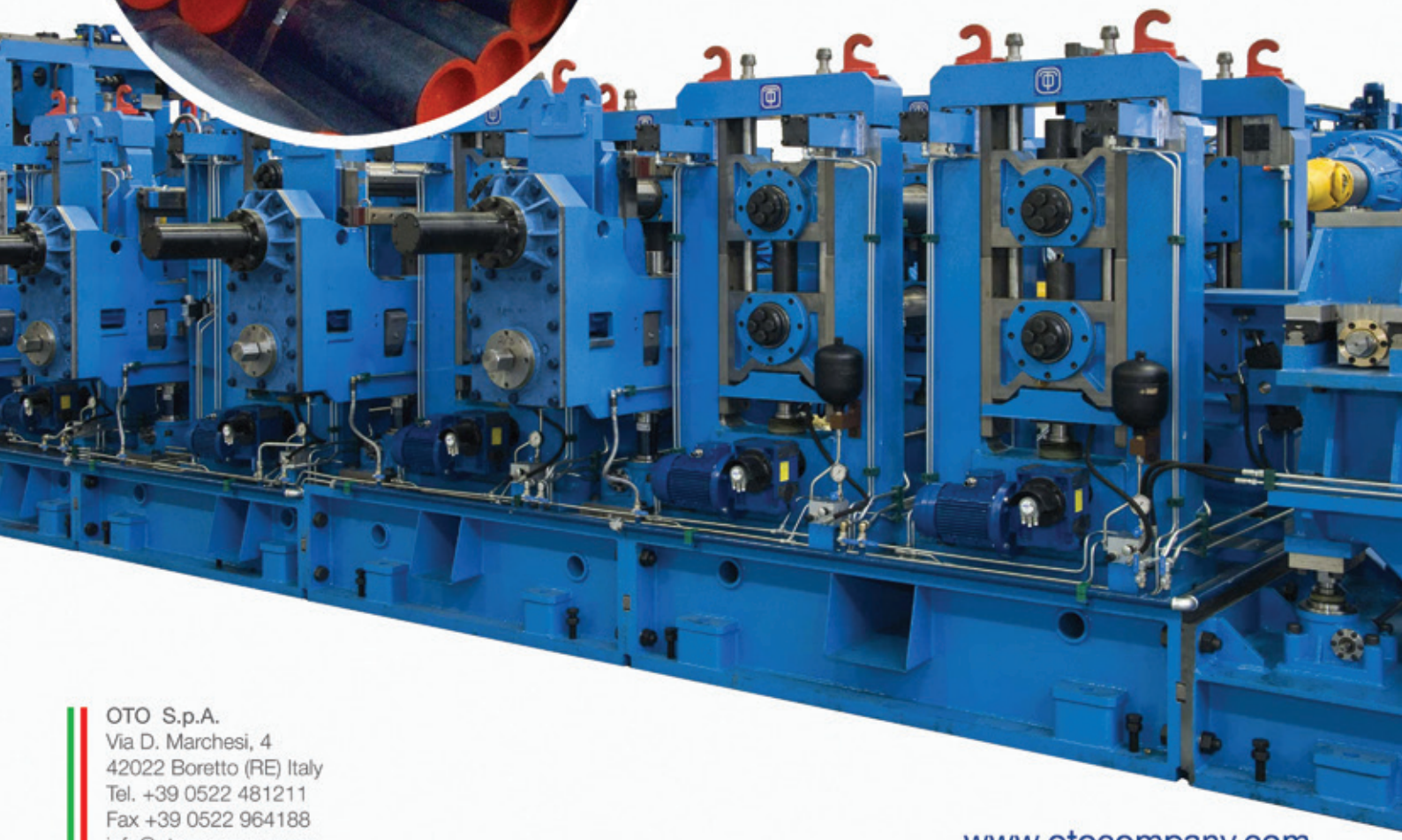

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Fax +39 0522 964188
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www.otocompany.com

Cooperation with research institutions opens new horizons

KBD Engineering's self-programmed control software

KBD Engineering GmbH is a German engineering company for construction, development and production with ten years' experience and more than 80 successful projects in cooperation with leading manufacturers. The company's core competence is thermal treatment systems and their components such as quenching stations, loading and unloading tables or cooling beds.

Research and development is performed in close cooperation with the local Cologne University of Applied Sciences – Faculty of Process Engineering, Energy and Mechanical Systems, and the St Petersburg Electrotechnical University LETI from Russia. As a result of this cooperation the company is able to offer synchronised facilities, and Alexander Demidko, CEO and graduated engineer, states that its self-programmed control software is "absolutely peerless: all parameters of the workpieces will be factored for achieving the best result and the fully automated control system includes technical features which makes the treatment safer, homogeneous and more efficient. Stagnation is regression: we did our homework and are now on course."

The product range includes facilities for a variety of inductive treatments: the Batch-lengthwise system, the Batch-crosswise system, the Swing system and the Compact system.

The model-based control system enables the preconfiguring of a desired hardness, taking into consideration all parameters such as pipe diameter, wall thickness and material. By interacting with the sensory devices, the software monitors the treatment in real-time and is therefore able to react to deviations, trying to avoid serious breakdowns. A remote diagnostic and maintenance tool gives the option to check the status of the machine or to solve potential problems by KBD or the customer itself.

For easy tracking, a documentation module allows generation of data sheets for each tempered workpiece as well as for the whole batch.

KBD Engineering – Germany
Email: t.jee@kbd-engineering.de
Website: www.kbd-engineering.de

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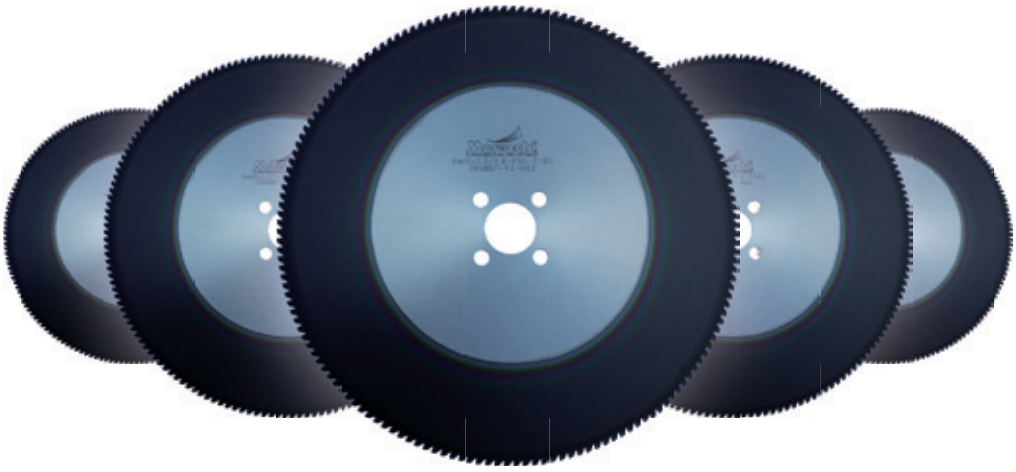
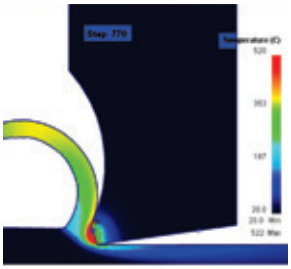
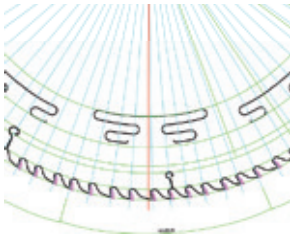




Research and Innovation

Advice



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Manufacturing

Service and Maintenance

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Loc. Ponte Formello 2 - 13A, 24020 Vilminore di Scalve (BG), Italy.

Tel. +39 0346 51341 - Fax +39 0346 51351, www.moreschi.eu - info@moreschi.eu

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Polymers and pests

POLYMERS and plastics are widely used and form the base of a host of materials. As large as their use is, even larger is the threat they face from rodents and pests. Rodents are attracted by the sweet smell of polymers and consequently rodent damage is one of the most widespread complaints from the pipe industry.

Gas pipelines, drip irrigation pipelines, and tubing for wires and cables are some of the most-affected by pests. Damage to gas pipelines can have adverse consequences. Damage to drip irrigation pipelines by rodents and subterranean termites not only defeats the purpose of water conservation but it is also expensive to replace the pipe. Damage to the tubing and wiring harness of automobiles by rodents can cause thousands of dollars in losses.

Conventional methods of rodent and termite control fall short, as they do not effectively control the pests. Also, being toxic they cannot safely be used in all applications. It is imperative to effectively solve the problem of polymer piping damage by pests and also to provide a long-term solution. With this aim, and keeping in mind environmental as well as safety aspects, Rodrepel®™ and Termirepel®™ were developed by C Tech Corporation.

Rodrepel and Termirepel are patented non-toxic, non-hazardous and environmentally friendly aversives specially developed as a master batch for use in polymeric and coating applications. The products are RoHS- and REACH-compliant, and FIFRA exempted.

They deter the pests by making use of the sensory mechanisms. They do not interfere with the properties of the polymer and are completely inert within the polymer matrix, apart from acting as an aversive. Rodrepel and Termirepel do not volatilise and are compatible with all kinds of polymers.

They have undergone extensive testing at testing institutes like the BAM Institute in Germany and the Haffkine Institute in India.

C Tech Corporation – India
Email: dianna@ctechcorporation.com
Website: www.ctechcorporation.com

Carbide end mills

EMUGE Corp has introduced Top Cut™, a new series of high performance carbide end mills. Offered in a wide range of metric and inch sizes, styles and geometries, Top Cut provides versatility in milling a broad array of materials, including hard steel at up to 55 HRC. Suitable for mould and die as well as general milling applications, Top Cut end mills feature a new variable helix flute technology and a newly developed variant of the high heat resistant TiAlN coating. These features, in addition to internal coolant capabilities, enable efficient material removal with minimal vibration and wear.

Emuge Corp – USA
Website: www.emuge.com

The next generation of adhesion testers

Adhesion testers from Elcometer

ELCOMETER has announced the launch of its latest range of pull-off adhesion testers – the Elcometer 506.

These lightweight, portable and easy-to-use adhesion gauges are available in analogue or digital versions and are suitable for measuring the pull-off adhesion of coatings up to 50MPa (7,250psi) either on-site, or in the laboratory.

The design of the Elcometer 506 ensures that a uniform force can be easily applied throughout the range by smoothly rotating the gauge's crank handle, ensuring repeatable results to an accuracy of ±1 per cent.

The Elcometer 506 quick connect coupling allows the simple attachment of 14.2mm, 20mm or 50mm diameter dollies which, together with a wide range of accessories, allows coating adhesion testing on flat, curved, thick and thin substrates – including metal, wood, concrete and other fibrous materials.

The Elcometer 506 test head (actuator) has been designed to be small, ergonomic and lightweight – ideal for single handed testing of coating adhesion even in awkward or confined spaces.

Safe testing on vertical surfaces has also been considered. Using the magnetic clamp accessory the actuator is held securely – preventing accidental damage to the surrounding areas.

For users who require confirmation or verification of the accuracy of their pull-off adhesion gauges, the Elcometer Adhesion Verification Unit (AVU) is also available.

Elcometer – UK
Email: sales@elcometer.com
Website: www.elcometer.com

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The pipe buggy

THE latest addition to PIPE Ltd's extensive handling range is the new Pipe Buggy. Offering a simple and safe method of moving pipe, flanges, fittings and other heavy items around the workshop or site, pipes of up to 12" in diameter and 6.1m in length can be transported with minimal effort and labour.

It is a simple one-man operation to use. Lay the buggy upside down on the pipe; attach the pipe to the buggy, turn it over using the detachable handle and re-attach the handle in the transport position to walk with the pipe to its required location; depositing the pipe is just reversal of the lifting procedure.

The Pipe Buggy comes complete with a hold down ratchet strap and detachable handle. Flat-free tyres are fitted to the Pipe Buggy as standard to avoid punctures that can easily occur on site. At only 31.8kg, with a weight capacity of 450kg, the Pipe Buggy is a lightweight yet robust solution to the problem of transporting pipes, fittings, and anything else that is too heavy or awkward to move by hand.

The Pipe Buggy

PIPE – UK
Email: sales@pipe-ltd.com
Website: www.pipe-ltd.com

Servo motor driven tube recut

HAVEN Manufacturing has introduced the latest addition to its product line. The Haven Model #873 servo tube re-cut machine enables manufacturers to cut round, square and rectangular tubing to a variety of precise lengths, quickly and automatically. By feeding the material to be cut through the integrated servo motor controlled linear slide, the machine is able to be pre-programmed by the operator to cut multiple length and quantity parts from each individual mill length tube.

Haven Manufacturing – USA
Website: www.havencut.com

Angle and detail machine

PEDDINGHAUS Corporation, a supplier of CNC technology for the structural steel industry, has added a new model to its Anglemaster range. The Anglemaster-HD utilises Smart Cylinder technology that optimises hydraulic fluid levels for accelerated production.

Equipped with two 3-speed 153-metric ton punch cylinders with triple tool punches, and one 467-metric ton 3-speed shear cylinder with single cut tooling, the Anglemaster-HD can process angles up to 200 x 200 x 25mm (8" x 8" x 1"), and flat bar up to 300 x 25mm (12" x 1").

Equipped with Peddinghaus's Roller Measurement technology, the Anglemaster-HD allows material to be stored outside until production takes place. This method of measurement provides benefits such as streamlined handling and reduced overhead costs.

The Anglemaster-HD also comes standard with an automated material dimensioning system. This allows it to identify the size of a profile and determine the length of punch or shear stroke required for maximum productivity. Using this system, the Anglemaster-HD is also capable of verifying section sizes before initialising a program, resulting in a reduction in operator error.

The system can be optionally equipped with part stamping or carbide scribing units.

Peddinghaus Corp – USA
Email: info@peddinghaus.com
Website: www.peddinghaus.com

Rollers for 12" to 54" pipes

MCELROY has introduced MegaMc® Rollers pipe rollers for 12" IPS to 54" OD (340 to 1,400mm) polyethylene pipe sizes.

The rollers keep pipe off the ground and aid in the pulling of fused pipe along the right of way. The MegaMc Rollers are tip-resistant with a capacity of 9,000lb per unit. The fused joint and pipe roll through the device easily. By keeping the pipe off the ground, the pipe is protected from the damage of being pulled along the ground, as well as excessive pulling forces.

Four years ago, McElroy released Low Profile Rollers for 4" to 20" piping. The new MegaMc Rollers offer many of the same benefits as the preceding rollers, but on a larger scale.

McElroy Manufacturing Inc – USA
Fax: +1 918 831 9256
Email: fusion@mcelroy.com
Website: www.mcelroy.com

Integrated Turn-Key Pipe Testing systems

SMLS

SEAMLESS TUBES TESTING with ULTRASONIC + EDDY CURRENT

SONOTRON™ FB system is equipped with more than 120 test channels and is capable of providing full volumetric and surface coverage of tubes, according to API and other International standards, for outside diameters ranging between 90~460mm (3.5~18in).

Longitudinal and transversal flaw detection, as well as 100% continuous thickness monitoring is carried out in real-time and is graphically displayed as open pipe view, where I. D. and O .D. flaws are color-coded. Detection of oblique oriented flaws in fixed or variable angles is available without reducing testing speed.

The system features precision inspection of short untested ends thus potentially eliminating the need for additional inspection of pipe ends. A robust real-time operating system is used to perform high-level data acquisition and processing of hundreds of channels simultaneously.

SAW , ERW

ULTRASONIC INSPECTION of WELDED TUBES ON-LINE and OFF-LINE

SONOTRON™ ERW is an ultrasonic testing system for detection of anomalies in ERW (Electric Resistance Welded) tubular products. The system can be supplied in stages for:

- **On-line monitoring of strip coil quality before forming**
- **On-line monitoring of internal scarf condition**
- **On-line flaw detection in welds and HAZ (Heat Affected Zones)**
- **Off-line full body inspection of cut-to-length product**

NDT Technologies Inc. Web:www.ndt.ca

20275 Clark Graham, Baie D'Urfe Montreal, Quebec, CANADA, H9X 3T5
TEL:+1-514-457-7650 FAX:+1-514-457-7652 E-mail:info@ndt.ca

Development project for pellet inspection

THE cleanliness of extruded material becomes more important for many applications, especially in the medical-product field, where tube quality is critical.

Similarly for foil tape extrusion or during blow film process it is essential to avoid contamination. Hence there is the need for other measures to detect possible contamination in the pellet and to remove them.

A special challenge is the contaminated pellet itself. Contaminants are most often not only on the pellet surface, but they are also internal and melted down in the pellet. By means of optical testing systems these contaminants cannot be detected. That is the reason why Sikora is currently developing a completely new system that differs in two ways from existing but flawed solutions: The Sikora system is based on X-ray technology and detects also contaminants in the pellet. The smallest detectable particle size is 50µm, at a throughput of up to 500kg/h. Higher throughput is possible by installing several units in parallel.

Flawless pellets before start of production

In addition, the pellet inspection is installed directly in the joint tube between the silo/octabin and the extruder. The system is therefore hermetically sealed and there is zero risk that dust particles can get into the material flow.

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

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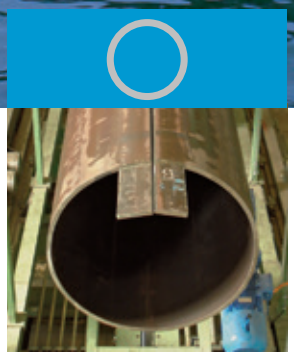

Forming presses for longitudinally welded large-diameter pipes

CRIMPING | U-FORMING | O-FORMING

For the production of large-diameter pipes used in pipeline and offshore applications, Siempelkamp offers pipe forming presses with a press force of up to 720 MN.

www.siempelkamp.com

Multifunctional layered pipes

KRAUSSMAFFEI Berstorff produces multifaceted systems for manufacturing multi-layered pipes with multifunctional layers.

The company reports that there is a trend towards increasingly complex plastic pipes with various functional layers. Reducing material costs plays a large role in this, such as with foam core or mineral-filled pipes. On the other hand, individual layers meet technical requirements for the functionality of a pipe. For instance, barrier layers reduce diffusion, fibre-reinforced pipes increase internal crush resistance and pipes filled with glass fibre reduce linear expansion.

KraussMaffei Berstorff offers extrusion systems using specifically designed multilayer pipe heads. "We will be able to meet all inquiries for producing multilayer pipes involving up to seven layers with our pipe head product line," said Michael Hofhus, manager of the company's pipe extrusion product group. "In addition to that, the well-considered process technology concept of this kind of complex system also plays a critical role. It ensures, for instance, that the layer thicknesses of the barrier layers can be minimised and thus the pipe manufacturer saves on costs. In addition, the market demands for flexible solutions are also met."

KraussMaffei Berstorff's customised co-extrusion solutions are designed for manufacturing pipes with high filler content or foamed pipes. This is necessary, since the portion of filler increases continuously, which allows the processor to create a high-quality product with significantly reduced weight with cost savings. "We offer our customers an intelligent machine arrangement for manufacturing multi-layered pipes with an installation area the same size as a system for manufacturing single-layer pipes," commented Mr Hofhus. "Using our co-extrusion solutions, the processor saves up to 25 per cent on raw material while reducing pipe weight by up to 25 per cent."

The company's direct extrusion systems allow extrusion of mineral-filled pipes in a single-stage procedure. By using these systems for the production of polypropylene pipes filled with barium sulphate, for example, individual components can be processed directly or the finished compound can be used. A second, downstream production process can be completely eliminated. The particular use for these kinds of pipes is as wastewater pipes in large residential buildings due to their noise-dampening properties.

Multilayer adapters are used when manufacturing thin outer layers. These can be installed on any KraussMaffei Berstorff standard pipe head entirely without issue. Due to slight modifications of the flow contour, almost any material (including adhesive, EVOH and PP) can be shaped into a uniform layer.

KraussMaffei Technologies GmbH – Germany
Web: www.kraussmaffeiberstorff.com

More Dreamliner troubles

A fire and a fuel leak raise new questions about the Boeing 787 and public perceptions of plane and maker

In the second such incident in two days, a "Dreamliner" operated by Japan Airlines (JAL) began leaking fuel as it taxied toward the runway at Boston's Logan International Airport on 8 January, forcing cancellation of takeoff. As reported by the *Boston Globe*, the long-range, mid-size, twin-engine jet from Boeing Co (Chicago) had left the gate in preparation for a flight to Tokyo when the fuel spill of about 40 gallons was spotted by the flight crew of another airplane. No fire or injuries resulted, according to an airport official.

The leak occurred on a different plane from the 787 that had experienced an electrical fire at Logan the day before. That plane, too, was operated by JAL, whose nonstop flight connecting Boston and Tokyo has been viewed as a boon for the airport and for the regional economy of the US Northeast.

While analysts began voicing concern about the Dreamliner after the first incident, the craft had already raised alarms. On 5 December, the Federal Aviation Administration (FAA) ordered inspections of all 36 787s in service after it received reports of fuel leaks on two aircraft operated by foreign airlines. Several incorrectly assembled fuel couplings on in-service and in-production 787s were discovered. According to the FAA, these might have resulted in fuel leaks leading to fire or loss of power.

"We're getting to a tipping point where [Boeing] goes from needing to rectify problems to doing major damage control to the image of the company and the plane," Richard Aboulafia, a defence and aerospace analyst with the consulting firm Teal Group (Fairfax, Virginia) told Reuters.

The electrical fire

The same source was careful to note the absence of any indication that the plane itself is flawed. Mr Aboulafia said, "It's just a question of how quickly they can get all the onboard technologies right, and whether or not the 787 and Boeing brands will be badly damaged."

The earlier episode at Logan gives an indication of the extent of the challenge. On 7 January, some 15 minutes after all passengers had deplaned from a JAL Dreamliner flight from Tokyo, a mechanic discovered smoke in the cockpit while performing a routine post-arrival inspection. According to the airport fire chief, a fire crew determined that a battery used to power the plane's electric systems when the engines are idle had exploded.

Again, no injuries were sustained, but Reuters took note of other recent mishaps with the electrical systems of the 787. On 4 December, a United Airlines flight from Houston to Newark, New Jersey, made an emergency landing after the apparent failure of one of its power generators. On 13 December, Qatar Airways said the same problem had prompted it to ground one of its three 787 jets. On 17 December, United said that a second 787 in its fleet had developed electrical issues.

The B787 – Boeing's answer to the A350 from Europe's Airbus – is the American firm's first to be made of carbon composites rather than aluminium, a change that lowers the plane's weight and allows it to burn less fuel. It relies heavily on electrical power to drive onboard systems that in other jet models are run by air pressure generated by the engines. The aircraft was plagued by production problems that delayed initial delivery by three and a half years, and suffered electrical problems during testing that prompted a redesign.

On 4 January, *Bloomberg News* reported that Airbus SAS (Toulouse, France) was poised to maintain a lead in sales of new single-aisle jet models even as it relinquishes the title of world's largest plane maker to Boeing for at least three years. ("Airbus Defends Neo Order Lead as Boeing Takes Delivery Title")

On the basis of deals announced ahead of full-year figures due later in the month, the upgraded Airbus A320neo was expected to end 2012 with a market share of 60 per cent or more in orders for the newest narrow-body aircraft, the backbone of global fleets.

Airbus has reported 1,654 firm orders since the A320neo was offered in December 2010, and the company usually discloses more orders when it unveils annual results. Boeing said that it has 1,064 orders for the 737 Max, a competing jet with new engines that went on sale in late 2011.

Bloomberg reporters Susanna Ray and Robert Wall wrote, "Holding an advantage in single-aisle planes eases the blow for Airbus with Chicago-based Boeing retaking the No 1 position in deliveries for the first time since 2002. The US company is poised to retain the top spot for at least two more years, buoyed by rising deliveries of the delayed 787 Dreamliner."

Mr Aboulafia, the Teal Group analyst, made a pointed observation to Reuters: "While [Boeing] delivered a large and unexpected number of 787s [in 2012], it's possible that they should have instead focused on identifying glitches and flaws rather than pushing ahead with volume production."

Wind energy

A New Year tax credit extension makes a welcome gift for an industry facing ill winds around the world

"The [wind power] industry's rate of growth will slow substantially in the coming few years," the Global Wind Energy Council, based in Brussels, said in a report released in November. A global deal to put a price on planet-warming carbon dioxide emissions would improve the outlook for wind power, the report advised, but such a deal seemed unlikely.

Writing in the *International Herald Tribune*, "Green" blogger Kate Galbraith concurred that 2013 will bring challenges to wind developers around the world. Growth in China is expected to slow, a casualty of constraints on the electric grid. Spain, an important market in Europe, has stalled. Portugal has also slowed down.

But the first week of the New Year brought some unexpected good news to global wind turbine manufacturers in the form of a one-year extension by the US government of a tax credit considered crucial to the industry. The extension, folded into legislation that averted the so-called "fiscal cliff," came as a boon to an industry which has taken political heat for relying so heavily on a government incentive.

The US is one of the largest markets for wind turbines in the world, and it offers developers the tax credit on the basis of power produced. Wind farms under construction by the end of this year qualify for the benefit, which is valid for ten years. ("US Gives a Late Reprieve to Wind Power Developers," 9 January)

According to Ms Galbraith, wind power developers in the US have been stymied by the falling price of electricity, traceable to the rapid spread of hydraulic fracturing ("fracking") and the enormous supplies of natural gas for power plants that this drilling method has produced. Some developers are beginning to focus on wind farms in other countries.

Walt Hornaday, president of Cielo Wind Services, a wind developer based in Austin, Texas, told "Green" that countries with relatively high power prices and limited natural resources present opportunities. His company has begun looking at Canada and Latin America as potential markets for wind farms.

Mr Hornaday said, "There's a lot of places in the world that don't have giveaway prices of natural gas."

Britain, France Stand Out

With its significant offshore wind development Britain has been a bright spot, as has France. Paul Copleman, a spokesman for Iberdrola Renewables, the US arm of a Spanish utility, said that the French government has made a firm decision to develop offshore wind. And in Romania the largest onshore wind farm in Europe became fully operational in December.

Germany will hold elections this year and much depends on the outcome, said Stefan Gsänger, secretary general of the World Wind Energy Association, based in Bonn. However, he told Ms Galbraith that he expects no major change in German support for renewable power, which goes in tandem with the nation's decision to phase out nuclear power.

A promising region is Latin America, which has few wind farms but is becoming more receptive to the technology as its need for electricity grows. Michael Zarin, a spokesman for Vestas Wind Systems, a Danish turbine manufacturer, said he sees Brazil, Chile and Mexico as significant emerging markets for wind technology.

In the US, though – where, in 2012, Vestas imposed painful layoffs at some of its facilities – because the tax credit extension came so late Mr Zarin said that he "anticipates a significant reduction in 2013 installations, relative to previous years."

As for the world's largest market for wind energy, the Global Wind Energy Council does not expect "significant growth in the Chinese market until after 2015." It takes note of the huge and expanding appetite for electricity in China. But, as reported in "Green," wind farms there have been built so quickly "that some have had to shut down because the grid system lacks the ability to transport the power from remote, windy regions to the big cities."

Oil and gas

Are prospective builders of natural gas export terminals in the US about to throw good money (very big money) after bad?

"Just like last time, some of the costly ventures could turn out to be poor investments."

Reporting from Houston, Texas, in the *New York Times*, energy correspondent Clifford Krauss noted that, only five years ago, several giant terminals to receive imported natural gas were built to satisfy the urgent energy needs of the US. But a glut of cheap domestic natural gas from a drilling boom in new shale fields from Pennsylvania to Texas has rendered the billion-dollar terminals obsolete.

Now, Mr Krauss wrote, "The same companies that had such high hopes for imports are proposing to salvage those white elephants by spending billions more to convert them into terminals to export some of the nation's extra gas to Asia and Europe" – where gas is roughly triple the American price.

The problem is that countries around the world are interested in another kind of import entirely: drilling expertise and equipment that will enable them to exploit their own gas reserves through the same techniques of hydraulic fracturing and horizontal drilling that drives shale gas production in the US. Some energy specialists say that demand for American gas – which would be shipped in the condensed form of liquefied natural gas, or LNG – could easily taper off by the time the new export terminals are brought into operation. ("Exports of American Natural Gas May Fall Short of High Hopes," 4 January)

"It will be easier to export the technology for extracting shale gas than exporting actual gas," said Jay Hakes, former administrator of the US Energy Department's Energy Information Administration told the *Times*. "I know the pitch about [how] our price differentials will justify the high costs of LNG. We will see. Gas by pipeline is a good deal. LNG? Not so clear."

Terminal operators acknowledge that probably only a few companies will export gas because it can cost $7bn or more to build a terminal, and financing can be secured only when long-

term purchase agreements – 20 years or more – are reached with foreign buyers. Even so, Mr Krauss reported, at least 15 proposed terminal projects have filed regulatory applications to export gas. If all are approved, they could export more than 25 billion cubic feet a day, equivalent to more than a third of domestically consumed natural gas.

If the rigorous federal regulatory permitting process were not daunting enough, terminal builders also face stiff resistance from advocates for the environment, who envision a frenzy of shale drilling dependent on hydraulic fracturing of hard rocks, which they claim endangers local water supplies and pollutes the air.

Opponents have begun lobbying the Obama administration to reject most of the planned terminals, and protests have already occurred. Sounding another note, Dow Chemical and some other big users of natural gas have expressed concerns that an export boom could threaten to raise natural gas prices for factories and consumers and, ultimately, kill American jobs.

A $1.4bn settlement ends a US probe into the rig-owner's role in the Gulf of Mexico oil spill disaster of 2010

"This resolution of criminal allegations and civil claims against Transocean brings us one significant step closer to justice for the human, environmental and economic devastation wrought by the Deepwater Horizon disaster."

The devastation invoked by Eric Holder, the US attorney general, of course derived from the drilling-rig explosion of April 2010 in the Gulf of Mexico that killed 11 workers and precipitated a flow of millions of gallons of crude oil from a burst well. The settlement announced on 3 January of this year, between the Justice Department and the owner of the drilling rig, obliges Swiss-based Transocean Ltd to pay $1bn in civil penalties and $400mn in criminal penalties and plead guilty to a misdemeanor charge of violating the Clean Water Act.

A series of US investigations has apportioned blame for the nation's worst offshore oil spill among Transocean; the London-based oil company BP PLC, which leased the rig from Transocean; and other partners on the drilling project including cement contractor Halliburton, the Houston, Texas-based company which also has headquarters in Dubai.

The Deepwater Horizon was drilling in water a mile deep about 50 miles southeast of the Louisiana coast when it exploded and burned for some 36 hours before sinking. The Justice Department claimed that Transocean crew members on the rig, acting at the direction of BP supervisors, had failed to fully investigate clear signs that oil and gas were flowing into the well to the bursting point.

BP has already agreed to pay a record $4.5bn in penalties and plead guilty to criminal charges related to the spill, but the deal does not resolve civil claims against the company. The first phase of a trial to identify causes of the blowout of

the well and assign percentages of fault to the companies involved was scheduled to start 25 February in US District Court in New Orleans.

BP had not yet reported for 2012 at press time, but in 2011 the company posted profits of more than $25bn. For Transocean, that year brought a loss of about $5.7bn, attributed in part to the costs of litigation resulting from the sinking of the Deepwater Horizon.

In brief . . .

A uniform patent system has been adopted for Europe. If it goes into effect as expected by early 2014, it would be a step toward a remedy for the country-by-country approach whose time and costs have long been considered an impediment to innovation across the European Union. Meeting in Strasbourg on 11 December, the European Parliament voted 484 to 164 to pass the key plank of the new patent system. Nation-by-nation vetting of the new system was set for February, when governments were expected to sign a treaty creating special patent courts.

The new system would supplement the patchwork of EU patent rules. Under the current system, a ruling in one of 27 countries has no automatic validity in any other. According to the European Commission, the executive arm of the EU, that approach has made the protection of inventions and innovations in Europe 15 times more expensive than in the US.

A new "unitary" patent granted by the European Patent Office in Munich would no longer need to be validated individually in the EU countries where protection is sought. Nor would it need to be translated into all local languages: English, German or French would suffice. The cost of patent protection should initially drop to around $8,450 from around $46,790, the EC said.

Russia is projected to surpass Germany as the largest car market in Europe in 2014. According to the Association of European Businesses, which tracks sales in an effort to promote trade between Russia and the European Union, Russian sales are now approaching three million cars annually.

Russian buyers are snapping up foreign-branded cars. The Solaris from South Korea's Hyundai was the best-selling vehicle in Russia in 2011. And Hyundai; Nissan (Japanese); and Renault (of France) all did well there in the first 11 months of last year, with sales increases ranging from 11 to 23 per cent.

Russia's automobile industry weathered the financial crisis in part through a willingness to embrace foreign manufacturers even to the peril of homegrown brands.

In 2012 the last Volga rolled out of the Gorky automobile factory at Nizhny Novgorod, making space for three foreign manufacturers: General Motors, of the USA and Germany's Volkswagen and Mercedes.

Switzerland's oldest private bank on 3 January acknowledged that, from about 2002 to 2010, the firm – Wegelin & Company, founded in 1741 – helped dozens of wealthy American customers to dodge taxes by hiding more than $1.2bn in secret accounts.

The guilty plea, in a federal district court in New York, obliges Wegelin to pay $74mn in fines, restitution and forfeiture proceeds to the US government.

Although Wegelin is no longer active, obtaining a guilty plea from a company with no business operations in the US was something of a coup for the US Justice Department.

More broadly, the admission of guilt represents a victory for the administration of President Barack Obama in its crackdown on Americans who use offshore banks to evade taxes.

Steel

A stake in two Canadian mines advances China Steel's goal of securing its supplies of iron ore

ArcelorMittal said in a 2 January statement that a group led by China Steel Corp and Posco had agreed to pay $1.1bn in cash for 15 per cent of ArcelorMittal Mines Canada Inc.

According to the ArcelorMittal website, the deal will give the purchasers access to two open-pit mines that together produce about 15 million metric tons of iron ore concentrate a year and more than 9 million mt of iron oxide pellets.

The world's largest steel maker, based in Luxembourg, is believed to be mulling the sale of up to one-third of its Canadian unit, which yields some 40 per cent of Canada's iron ore.

As noted by *Bloomberg News* (2 January), China Steel's stake will bring closer a goal of meeting, by 2015, 30 per cent of its iron ore and coal needs from mines in which it has investments. According to the Taiwan-based company's website, China Steel and Posco, the largest South Korean steel maker, will share the output of the Canadian mines proportionate to their interests in the venture.

Bloomberg reporters Yu-Huay Sun and Michelle Yun recalled that Posco, with the Hong Kong-based trading company Noble Group Ltd and Korean investors, recently withdrew its A$1.2bn (US$1.3bn) offer for Sydney-based Arrium Ltd after the board of the Australian steel maker and iron ore producer declined to engage with the group.

Elsewhere in steel . . .

In other news of ArcelorMittal, on 30 November the company won a ruling in a US appeals court that upholds its Usibor patent as applicable to cold-rolled steel

for hot stamping. As reported by *Dow Jones Newswires* (3 December), the company said that, in setting aside a January 2012 ruling in Delaware invalidating the patent as pertaining to aluminium precoated steel products for hot stamping, the decision confirms that the patent is not limited to hot-rolled steel.

ArcelorMittal produces Usibor steel for the American automotive industry at its operations in Indiana. According to the Luxembourg-based company's website, the steel is intended mainly for use in structural and safety parts and meets all the requirements of lighter-weight vehicles. It was designed to be heat-treated and tempered during the hot-stamping process.

Europe's largest steel mill will remain open during a two-year clean-up operation after the Italian government rushed through legislation to keep the ILVA plant going. The move saves 12,000 jobs in the southern Italian city of Taranto. As reported by *euronews* (1 December), the operators will have to invest $5bn to modernise the mill.

An investigation into health and environmental issues had threatened the plant. Estimating that a closure would drain more than $10bn from Italy's economy, the government of Prime Minister Mario Monti stepped in.

According to the company's website, ILVA contributes 75 per cent to the gross domestic product (GDP) of Taranto Province.

A steel tubing producer on the West Coast of the US announced that its first significant expansion in years is set for Cheyenne, Wyoming, some 1,000 miles to the east.

As reported by the *Wyoming Tribune-Eagle* (4 January), Searing Industries, Inc (Rancho Cucamonga, California) said it will produce structural, mechanical and ornamental tubing in a new 200,000ft^2 facility in Cheyenne. Groundbreaking will be in August or September, with commissioning in the first quarter of 2014.

As reported by the Cambodian Information Center on 4 January, two Chinese companies announced their agreement to build a railway, a port and a steel plant in Cambodia.

San Sok Lika, a Cambodian official working with Chinese-owned Cambodia Iron & Steel Mining Industry, said that construction should begin by July. The other participant is China Railway Group.

Chinese companies have invested heavily in Cambodia over the last decade. The projects announced in January include a 249-mile rail line to run from the steel plant, in northern Preah Vihear province, to a port in Koh Kong in Cambodia's southwest.

Dorothy Fabian, Features Editor (USA)

MADE IN STEEL

The biggest trade show for the Italian and International steel industry

3-5 April 2013

Made in Steel, which is supported by Centro Inox, aims at distinguishing itself from traditional fairs thanks to its formula hinged on two elements: “conference and exhibition”. In addition to the business opportunities offered by the presence of top level Italian and international exhibitors and visitors, a full agenda of conferences, debates, workshops and panel discussions makes Made in Steel an ideal place to exchange knowledge and information. This is accompanied by a constant and on-going commitment towards the internationalisation of the event, also underlined by the partnerships signed with the Italian Chambers of Commerce in the United Arab Emirates, Brazil, India, Turkey, Sweden and Germany, and by those being finalised with Saudi Arabia, Russia, Poland and Switzerland.

Made in Steel addresses the whole steel industry, and involves the main industries of users, including building, transportation and power and utilities, stimulating their requests and drawing from them to innovate and receive valuable contributions.
This ‘bottom up’ approach, which follows the natural movement of information from the ‘bottom’ to the ‘top’, represents an innovative idea in the world of exhibitions.

Venue

Halls 2 & 4
Fiera Milano
Milan, Italy

Organisers

Made in Steel
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Email: info@madeinsteel.it

Opening times

9.30am – 6.30pm daily

www.madeinsteel.it

Lights and shades for the Italian steel industry this year

THE first part of 2012 was marked by ups and downs for Italian steel. After a good start of the year, the iron and steel industry slowed down, and some of the industry key indicators went below their 2011 levels.

Production – In the first quarter of the year, domestic steel industry recorded clearly higher figures than in the same period of the year before, to then go down in the following four months. Going into further details, an output of 7.435 million of tons of iron and steel products was recorded between January and March, +6.4% vs. 2011. Since April, however, production data began deteriorating, losing 4.1% in the fourth month of the year, 3.3% in May, 7.9% in June and 7.8% in July. In the first seven months of the year, then, overall output amounted to 17.282 million tons, down 0.7% versus the previous year. Italian steel performed better than the EU, where output decreased by 4.6% between January and July versus 2011. Globally, a 1% increase was recorded, with an overall output of 896.944 million tons.

Foreign trade – More exports, less imports. This, in a nutshell, is the trend of Italian steel foreign trade between January and May (most recent available data). According to statistics published by Federacciai, in the first five months of the year, purchases of iron and steel products from abroad amounted to 6.205 million tons, minus 26.3% versus the previous year. All products are decreasing, in particular flat-rolled products (-31.6%), while products resulting from the first (-9%) and second processing of steel (-7.3%) are doing better. With respect to exports, volumes increased by 9.8%, to 8.208 million tons. The result was achieved especially thanks to the good performance of long (+18.5% to 1.749 million tons) and flat-rolled products (+14.7% to 3.769 million tons), while products of first processing of steel diminished by 1.5%. Breaking down figures by geographical area, between January and May imports from EU dropped by 8.1%, while exports grew by 3.5%; as to non-EU countries, imports diminished by 42% (at 2.620 million tons) while exports increased by 27.4% (2.505 million tons).

Some of the biggest names in the steel industry will speak at the show

Apparent consumption – In the first five months of 2012, Italian apparent consumption of steel amounted to 10.386 million tons, with a reduction of 2.695 million tons vs. the previous 12 months. The percentage drop amounted to 21%.

Prices – The trend of steel prices in Italy closely followed production. In the first quarter, the superindex of carbon steel prices in Italy (calculated by Siderweb on the average of basic prices of coils, hot-rolled plates, galvanized plates, round bars for reinforced concrete, wire rods, beams and merchant bars) rose from €428.13 per ton in early January to €444.09 per ton at the end of March. While production weakened, prices began to fall, more markedly from the second half of May, taking average prices at the end of July to €403.03 per ton, 5.9% less than in January.

2013 theme is: "Work and life"

"Work and life" is to be the theme developed at the fifth Made in Steel, the conference and exhibition of the steel industry that will be held in Milan at the exhibition halls of fieramilanocity on 3-5 April 2013. The decision taken by the Steering Committee of Made in Steel is rooted in the significance of iron and steel work, in the constant and close presence of steel in our everyday lives: in the movement generated in it, in the energy it emanates, in the solidity of the structure it manages to create. Made in Steel intends to be part and parcel of the certainty of the sublimation of man by means of his works. Thanks to the particular care with which the main user sectors will be analysed – building, transportation and power and utilities – the connection between steel and our lives will be more decisively felt, leading each of us to realise how its absence would destroy the certainties on which our life is based. In this direction, Made in Steel will organise a full agenda of conferences that will tackle the relevant supply chains of the user sectors in their complexity, describing their current status and prospects. In addition, looking as always towards the future, Made in Steel will analyse the new geography of steel.

Made in Steel reveals first stars

THE conference section of Made in Steel has been revealed. The full agenda of conferences that will make up the three days devoted to Italian and international steel industry features many speakers who have already confirmed their presence.

Among the illustrious speakers of the opening conference that will be held on 3 April – therefore during the first day of the exhibition – there will be Antonio Gozzi, president of Federacciai, who will represent Italian producers. Thursday 4 April will start with the conference dedicated to the analysis of global scenarios that form the current steel market. For this reason, within a world class context, also speaking will be Juergen Nusser, managing director of Eurometal – the European association of distributors – Gianpietro Benedetti, chairman of the Danieli Group and Gordon Moffat, director general of Eurofer.

On the following day, Friday 5 April, Martin Lindqvist, president of the Swedish multinational company SSAB, and Roberto Vavassori, business development director of Brembo, will be present at the conference dedicated to the transportation industry. During the three days of conferences there will also be the traditional market analyses provided by the Steel Market Outlook and by the Stainless Steel Market Outlook. Achille Fornasini, chief analyst of Siderweb, Alain Le Grix, vice president of ArcelorMittal, and Dmitrij Scuka, CEO of Evraz will be among the speakers of the first meeting. The focus dedicated to stainless steel will feature Markus Moll, managing director of SMR, Antonio Marcegaglia, CEO of the Marcegaglia Group, Thomas Pauly, managing director of Euro Inox, and Susanne Peiricks, CEO of SCHMOLZ + BICKENBACH Europe.

Relationships above all

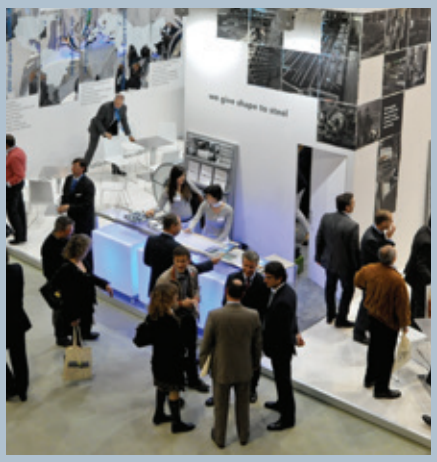
Exhibiting at Made in Steel offers opportunities not to be missed. If your target is making your company international, you cannot miss the chance to reserve your B2B meeting with the representatives of the Italian Chambers of Commerce in India, Brazil, Turkey, United Arab Emirates, Sweden, Germany and Switzerland. Delegates from these countries will be available to understand and provide concrete answers for all your business needs, providing data, prospects, investments and valuable suggestions to guide you and accompany you in your projects. Made in Steel will make an agenda available, where you can reserve your personal interview during the three days of the exhibition. If you are looking for the most effective solution to send fundamental messages on your organisation to your – historic or potential – customers or partners, reserve your private conference in the "Speaker Corner". An equipped conference room in Hall 2 with a floor space 80m^2, a minimum capacity of 50 people up to a maximum of 70, laid out for all your communication needs, at time slots of 50 minutes each, will be available for Made in Steel exhibitors. A unique way of gathering around your company and your products an audience of professionals in strategic sectors for your business, in an exclusive and prestigious setting. If you are looking for a simple and intuitive way for knowing in advance who will visit your stand or who will participate in Made in Steel with you, "Match making" is what you need. The organisation of the conference and exhibition will make available to exhibitors an exhaustive list of the visitors who are present, thus providing a precious opportunity to get in touch with the professionals you are most interested in meeting and getting to know. Customised meetings can also be planned through this "steel" database.

Exhibitor demand increases

Made in Steel increases its exhibition area. The high number of companies that reserved their own area led to the decision to increase Hall 4 by a further 790m^2. This increase proves the ever higher appeal that the conference and exhibition of steel is exercising on the operators of the steel industry and of the three lines on which the 2013 event will focus: power & utilities, automotive and building.

In October, there were more than 20 new reservations. Among producers, the following will be present at Made in Steel 2013: Marcegaglia, Duferco Italia Holding, Stefana and Acciaierie Venete. An exhibition area has already been reserved by producer of steel plants Tenova, and by refractory producer Rosmetallkomplekt Jcs and by stainless steel connection units Bercellesi Berinox.

Logistics will be also represented by Tipes, Kamag Transporttechnik and by Industrie Cometto, while DB Schenker Rail Italia will be present for railway goods transportation and Giori Ricambi among distributors of earth moving machines. Packaging specialists Praim and Antalis Packaging Italia have already confirmed their participation just like, among service centres, Commit Siderurgica and Siderurgica Tocchet, the latter also a producer of open sections. And also Giotta – a company specialised in the trade of metals and scrap recovery – with purchasing groups Iron Group and



Asa Group, trader Stemcor, producer of packaging tips Trafileria Punteria Ghezzi, publisher of specialist magazines RTS, Fae, a company specialised in automation and diagnostic systems, the producer of systems for forging presses Oilgear Towler.

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1961-2011

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Profilmec Group believes in the importance of quality certification in nowadays markets. For this reason, all the companies belonging to the Group are certified in compliance with UNI EN ISO 9001 (updated ISO 9001:2000).
in 2005 Ispadue also obtained the certification ISO/TS 16949, a technical specification for the Automotive Industry. In 2007 Profilmec and Lita got the same acknowledgment.
In 2011 Profilmec and Ispadue obtained the prestigious certification **UNI EN ISO 14001,** an international standard based on voluntary participation that provides for specific requirements of Environmental Management System (SGA).

since 1961 higher and higher

Stainless steel production

The AOD and VOD processes developed in the Fifties and Sixties of the last century prompted striking advances in stainless steel production by 1970 or so, and we enjoy the benefits – lower materials costs, higher productivity, improved quality – to this day. No less dramatic, if less apparent, are the refinements since that time, principally as they relate to environmental concerns.

Having a favourable strength-to-weight ratio compared to most other metals, stainless steel can be engineered to lighter gauges, for important raw materials savings. The comparatively high value of stainless scrap ensures that detritus is melted down rather than sent to a landfill. Owing to their stability at ambient temperatures there is no leaching or run-off with stainless alloys.

The metal distinguished for its satiny gleam is in fact a quintessential “green” material. The professionals whose products and services are reviewed here know this, and they are committed to showing ecology-conscious designers, architects and engineers how to get from stainless steel everything it has in it to give.

Photo: With the aid of the Springmatic measuring system integrated into the bending tool, tube processing companies can bend, measure and adjust in a single stage. Schwarze-Robitec GmbH – Germany

Bending, measuring and further bending stainless steel in one go

THOSE who want to accurately bend steel or stainless steel tubes and tube systems must accept long auxiliary processing times for the generally unavoidable measuring and adjusting process. This is because the rebound behaviour of the materials can differ widely – even if the tubes come from a single batch. The production of prototypes and individual items is similarly time and labour-intensive. The Springmatic optical measuring system provides a remedy here: the new development from Schwarze-Robitec, which is integrated into the bending tool, measures the bent tubes directly while tensioned on the bending machine and immediately starts the required further bending process if desired or saves the required correction value for subsequent bends.

Instead of removing the tube after the bending process, checking it on an external measuring system then retensioning it for subsequent bending, tube processing companies can bend, measure and adjust in a single stage with the aid of Springmatic. Immediately after the bending of a tube, the new optical measuring system that Schwarze-Robitec is integrating into its bending tools records the rebound value, from which the CNC control of the tube bending machine calculates the required subsequent bending angle. Subsequent bending is carried out immediately afterwards – either fully automatically if desired or after clearance by the machine operator. “This integrated form of dimensional stability check and tube post-processing takes only a few seconds per work piece on average. This is contrasted with around three to five minutes required for measuring and adjusting in the conventional way,” Schwarze-Robitec plant manager Jürgen Korte reports.

When developing the measuring system, the tube bending specialists from Cologne placed particular emphasis on a very broad range of applications: Springmatic reliably checks both thick and thin-walled tubes in the broadest range of materials and diameters. The system can be integrated into almost any bending tool and combined with almost all tube bending machines from Schwarze-Robitec. “The measuring accuracy from Springmatic is naturally equivalent to the accuracy of conventional external systems,” Schwarze-Robitec managing director Bert Zorn added. “Furthermore, users not only save up to nine tenths of the auxiliary processing times previously required; in individual item and prototype production, they additionally benefit from a noticeable material saving as almost every component is now also a useable bulk component. These advantages have an effect particularly in tube production for the automotive, machine and plant engineering and shipbuilding industries.”

Schwarze-Robitec GmbH – Germany
Email: sales@schwarze-robitec.com
Website: www.schwarze-robitec.com

Optimising steel production capacities around the world

THE products of Sinico Machine Tool Manufacturing, Italy, have a wide field of application and versatility, and have been instrumental in rapidly expanding Sinico’s market in many countries around the world.

As a result, the company has secured over 1,500 orders, delivered to companies working in a range of different sectors, such as firms in the business of producing components for cars, bicycles, motorbikes, electrical motors, household appliances, power transmissions, hydraulics, pneumatics, pipe fittings, earth moving machinery, chains, tools, rods, nuts and bolts, bearings, dies, doors and windows, and furniture, in addition to contractors.

In Sinico’s offices and workshop, single- or double-bar machines are designed, developed and produced, down to the very last mechanical component, for standard applications or tailored to the customer’s specific needs.

Sinico is specialised in the design and manufacture of automatic rotary transfer cut-off and end-finishing machines, suitable for producing medium and large series of metal parts from tubes, bars, coils, forgings and blanks.

End-finishing operations commonly performed with chip-removing machine tools include facing, chamfering, centring, turning, drilling, threading, tapping, milling, grooving and splining, as well as shaping operations such as flaring, tapering, rolling, pressing, marking and knurling.

Sinico machines can handle all metal materials (steel, stainless steel, aluminium, copper, brass, titanium, Inconel, etc), and all operations are carried out in one chucking. Various different units of measurement, part shape and cleaning control options are also available.

The main features of the latest generation of Sinico machines are: ease of use; performance; quick setup and automatic positioning of units; optimised cutting process; connection with LAN and WAN; self-diagnostics with built-in graphics; user info, maintenance data and functional diagrams viewable on PC; and the option of installing SPC (Statistical Process Control) and messenger (email/SMS) systems in case of machine alarm, as well as remote servicing with web cam.

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Heavy duty unwinding/ winding equipment

QUEINS Machines GmbH, Germany, a supplier of first-class heavy-duty machinery for the cable, rope and tube industry, specialises in manufacturing of heavy duty pay-off and take-up stands, to be used for unwinding/winding of tubes (stainless steel and PEX heating tubes).

These tubes are mainly used for manufacturing of umbilical cables in the offshore industry or as plastic tubes for heating purposes.

The machinery is of floor-traversing type for reel flange diameter of up to 3,600mm (141") and reel weight up to 23 tons (50,000lb). These pay-offs and take-ups are equipped with motorised telescopic tubes for adjustment of reel width.

The winding motors can be either AC- or DC-motors with separate vector drive for perfect traversing controlled by PLC.

Its production range also includes other self traversing pay-off and take-up models for reel weights up to 300 tons.

Queins – Germany
Email: info@queins.com
Website: www.queins.com

Combi line from Italy

THE new combi line LTF 1500/10/5/1.5 stainless steel, for cutting to size of sheet and for cutting strips, is designed and manufactured by Camu, Italy. The line is aimed at small, medium and large users that need to give quick response to market demands, such as those who need to produce small and medium batches of strips or sheets with the maximum reduction of downtime and maximum flexibility of use.

To have such a type of line can be strategic not only to producers of final industrial goods but also to service centres, which prefer to have flexible production availability for small and diversified lots, in order to ensure customers a complete service. Even companies that operate their own machining of plasma cutting, laser, punching, etc, have discovered the strategic importance of having a line for cutting to size of sheets 'just in time'.

Designed to process coils of stainless steel and painted with a high level of quality, the line is suitable for making semi-finished products for virtually all sectors, including white goods appliances, transport, buildings and design. It consists of loading cradle, wrap paper, reel, prizes roll, plasticiser, straightener, circular blade shears, winding scrap, guillotine shears, stacker, tensioner, retractor and unloading cradle.

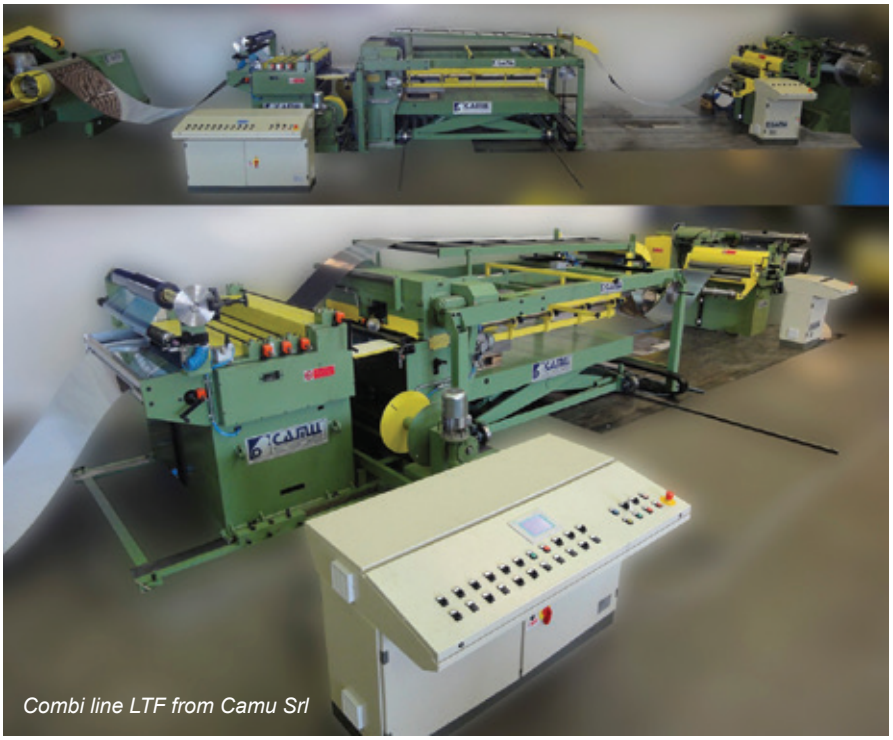
The 10-ton loading cradle is hydraulically moved vertically and horizontally from the control panel. After the reel – a hydraulic expansion and spindle with a power of 3kW – is a press neutral roll and plasticiser for the nylon top guard of the tape. The straightener, together with the shears, represents the 'heart' of the line.

Robust and rigid, operations are carried out practically in the absence of vibration, and the straightener is equipped with seven motorised rollers and two drive rollers. The rollers are driven by a geared motor.

The shears for cutting the strips of sheet metal have a fixed lower shaft, and an upper shaft adjustable in height depending on the thickness. A geared motor transmits power to the shear. The blades are attached in specific positions on the shaft by means of screws and can be moved horizontally with a simple adjustment. Changing blades is also very easy.

The guillotine shears for the realisation of cut-to-length sheet are equipped with pneumatic clutch. The automation that leads to the storage of the sheets to the output of the line is composed of a stacker and a hydraulic platform. The stacker is designed for sheets up to 3m in length and is equipped with side rails and support rollers. The two opposing groups are adjustable in width from 500 to 1,500mm. The platform moves vertically along the height of the stack of pack, and the discharge of the pack is made longitudinally.

Strips are conveyed on a 1,000mm-wide tensioner, and the production line is completed with a retractor and a 5-ton unloading cradle.



Combi line LTF from Camu Srl

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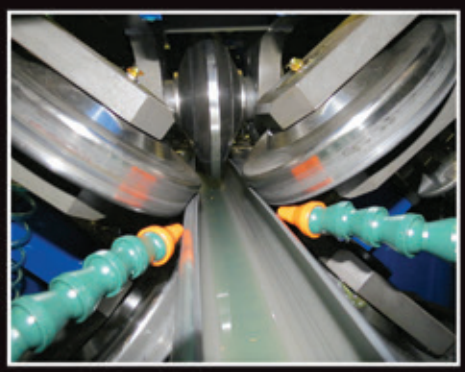
olimpia80

TUBE MILLS

LINEAR CAGE FORMING



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Ultrasonic rotating heads

CONTRÔLE Mesure Systèmes designs, develops and manufactures a complete NDT range of products in eddy current and ultrasonic testing methods, which comprise high performance instruments and systems, probes and transducers, accessories, and complete turnkey machines with its mechanics associated.

Through its products and its remote assistance, Contrôle Mesure Systèmes provides quality and productivity solutions for industrial applications all over the world.

For high quality tubes from diameter 6 to 250mm, welded or not, in stainless steel, titanium, zirconium, but also in carbon steel, CMS proposes a full range of ultrasonic rotating heads named RotoUTscan. Several UT transducers (up to 12) with different angles in accordance with the NDT normatives, are in motion arround the tube with high speed (up to 6,000 RPM), for longitudinal defect detection; transversal defect detection and thickness measurement as well as OD – ID and ovalisation.

RotoUTscan is driven by a fast electronic UTR which is a high accuracy ultrasonic inspection system, for in line high speed flaw detection and dimensional measurements of ID/OD/thickness. Employing PCI architecture, instrument operation is made fast and easy via Windows-based inspection screens and intuitive dialogue boxes for ultrasonic setup.

RotoUTscan can be combined with other CMS equipment like EC rotating heads (RotoETscan) or magnetising units with coil installed together in a strong control bench including centring devices.

Contrôle Mesure Systèmes – France
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Website: www.cmseddyscan.com

Stainless clamp

IN a reaction to the market's growing need for varying types of pipe clamps for ever changing welding applications, Prestige Industrial Pipework Equipment Ltd has re-launched the E-Z Fit Red range.

Offering an alternative to the already established and popular E-Z Fit Gold, the new E-Z Fit Red boasts the widest single clamp range among the fixed leg style clamps, enabling the E-Z Fit Red to cover the range from 1" to 12", in just three clamps.

As with all the other clamps in PIPE's range, the E-Z Fit Red can be used on exotic materials such as stainless steel and duplex by fitting the optional stainless steel shoes and screws, making all contact points between clamp and pipe stainless steel, eliminating the possibility of cross contamination.

The lightweight yet rugged design of the clamp makes it suitable for on-site applications as well as workshop fit-ups.

PIPE Ltd – UK
Email: sales@pipe-ltd.com
Website: www.pipe-ltd.com

Linear cage forming for stainless steel from Italy

OLIMPIA 80 has specialised for over 40 years in engineering and manufacturing a wide range of tube mills for carbon steel, stainless steel, titanium and non-ferrous materials to produce round, square, rectangular and special profiles. The company can also supply turnkey systems, find custom-made solutions, offer suggestions to upgrade old systems, and provide a complete after-sales technical and personnel training service. The company can propose the innovative and patented technology named Linear Cage Forming, in two different solutions: for round tubes; and for square and rectangular tubes.

The Linear Cage Forming system is the result of many years of experience and knowledge in the tube field. This method brings advantages in terms of flexibility, production capability and production cost reduction. The innovation consists in the possibility to produce any tube in any size, included into the mill range, without roll change and in few minutes with an extreme reduction in set up time.

The tube forming system, developed and realised by Olimpia 80, makes use of the latest technologies which allow the user to vary the diameters of the tubes to be produced without any changing of the rolls. The compact system consists of 11 sequential stations, eight of which operate as breakdowns and three operating as finpasses. This combination allows a final and complete closure of the tube before the welding.

The 86 independent axles, operated by computerised servomotors and an easy-to-use operating interface system, help to reach in a quick and simple way the optimal position for the correct tube forming. Strip feeding is assured by a system of independent pinch-rolls, which are installed on the first six stands.

The main advantages of the system are adjustment flexibility; automatic change of tube OD and gauge; significant change over time savings; tool cost reduction for round tubes; labour cost reduction; and easier and faster maintenance. The Linear Cage Forming for square and rectangular tubes, developed and patented by Olimpia 80, can carry out the forming change operation in a very short time and without any replacement of rolls. The system is applied to any part of the production line: forming, welding, sizing or straightening. The line set up is, as a result, totally automatic.

The square or rectangular shaping is directly carried out before the tube welding, with important advantages in terms of power and material cost reduction.

Olimpia 80 has put into operation tube mills with this technology in Germany, Turkey, Italy and USA.

Olimpia 80 Srl – Italy
Fax: +39 0523 86 45 84
Email: olimpia@olimpia80.com
Website: www.olimpia80.com

Welded pipes added to Stellar range

SINCE it was founded, Stellar Tube & Pipe Group has been dedicated to high quality stainless steel seamless tube and pipe manufacturing, and has taken a vital role in the industry.

In order to satisfy customers' needs, Stellar joined with Irestal Group of Spain, to set up the joint venture Irestal (Shanghai) Stainless Pipe Co, Ltd, which professionally manufactures welded pipes. The total investment in the plant is around US$45mn. Its designed annual capacity is around 30,000 tonnes, with continuous process lines, the OD can range from 10 to 219mm, WT 0.5 to 8mm; while with bending process lines, OD range is 273 to 2,500mm, WT 3 to 25mm.

All key machines and testing facilities are imported from leading European manufacturers.

Irestal (Shanghai) Stainless Pipe Co Ltd – China
Fax: +86 21 57457585
Email: info@i-ssp.com.cn
Website: www.i-ssp.com.cn

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Leading high-tech seamless tubes producer


Oscar's 1.4 million ft² facility

THE Oscar Production Group is one of the leading manufacturers of high-tech seamless tubular products from titanium alloys, nickel alloys and stainless steel. It was established out of Tube Drawing Workshop № 4 (TDW-4) which has been successfully working since 1975 at Nikopol Yuzhnotrubny Plant (NYTP), Ukraine.

It specialises in the manufacture of products intended mainly for nuclear-power engineering, aircraft and rocket building, special-purpose machine building, shipbuilding, defence industry and other industries of the national economy using hot-pressing and cold-working technology (cold rolling and cold drawing). Its product line includes tubes of stainless steel grades and titanium, nickel based alloys: 0.3-133mm diameter, 0.08-15mm wall thickness seamless tubes; 16-76mm diameter multilayer (from 2 to 12 layers) tubes with thickness of individual layers of 0.16-0.25mm; extremely thin-walled and ribbed tubes of titanium alloys in a standard size range.

Oscar operates a unique 1.4 million ft² facility equipped with 60 units of basic rolling equipment: ten cold pilger mills, 41 tube rolling mills of roller type and nine drawing mills, and the plant has powerful facilities for thermal treatment of tubes in a non-oxidising atmosphere of ultra-pure hydrogen (bright annealing) and in vacuum. This advantage provides wider possibilities for the manufacture of super high-duty tubes of special stainless steel grades and alloys and titanium based alloys for aerospace engineering, etc.

The company has qualified personnel and all necessary technical facilities for control and testing procedures, set out in domestic and foreign standards applied to manufactured products. It has a certified central testing laboratory, a metrology laboratory and a department of non-destructive testing of pipes.

The quality of products is controlled at all stages: starting with the launch of production until shipping to the customer. All special technological processes are controlled and results are documented in accordance with direct instrumented measurement.

Production of the Oscar Group is certified according national standards and specifications (GOST, TU) and foreign standards (EN, DIN, ASTM, ASME).

Oscar Production Group – Ukraine
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Reshaping stainless steel tubing

MANY producers of round austenitic stainless steel tubing wonder how much reshaping can be performed while not harming the material integrity due to cold working, and how to orientate that section for their mill system.

Taking round product and reshaping, or reforming, into complex shapes is common among carbon steel tube producers but not common to austenitic stainless steel producers. The term “complex shape” does not necessarily require various sharp angles, which have no purpose in fluid or heat transfer applications. Instead, complexity can encompass very thin, tall elliptical shapes that are not easily produced on standard reshaping-capable tube mills.

Depending on the application, five, six, seven or more stands are required to reshape round product into elliptical shapes. It essentially depends on how much material must be physically moved. A well-engineered tooling arrangement will design around a specific amount of material movement that can be accomplished per pass, per horizontal centre (centre between driven stands), etc.

Unlike more common tubing applications, the manufacture of complex stainless steel tubing requires an integrated tooling and mill design to optimise the forming process. Most tube mill system producers do not have this expertise in-house and must work with their tooling suppliers externally to determine the correct material flow patterns that yield satisfactory results.

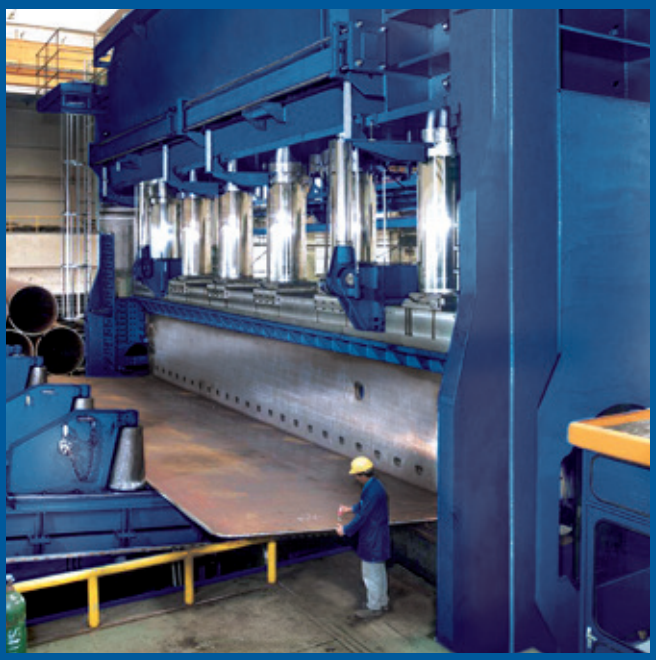
As part of the Formtek Group, Yoder Manufacturing is able to supply tube mills, roll tooling and cut-off equipment, in conjunction with Hill Engineering, another Formtek company. As a whole, they are able to look at the complete manufacturing system and apply appropriate disciplines to yield a system that reshapes round, fusion welded tubing into an ellipse. Based on recent installations, Yoder installed an elliptical tube system that produces a finished product that is 73 per cent thinner than the incoming round tube diameter.

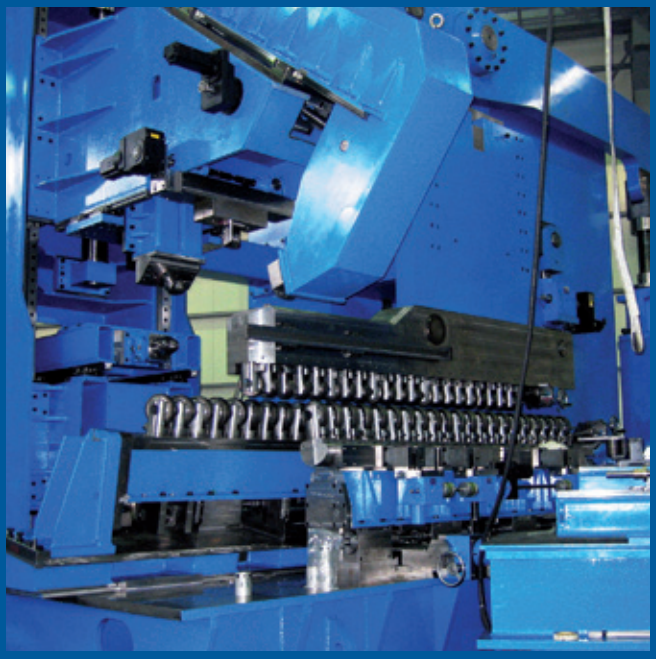
Due to the reshaping tooling designs, the final product had minimal surface marking, typically caused by speed mismatch, which was accomplished by considering the profile orientation through the mill: the tall axis of the ellipse is horizontal, taking advantage of the natural forming state of the driven stands, while reducing the effects of rotational speed differences, due to changes in tool-to-section radii.

Orientating a section like this would normally cause problems for cut-off manufacturers because the system requires a horizontal flow to shear the ellipse to length. Yoder and Hill Engineering were able to determine that designing a cut-off with a complete horizontal cutting motion yielded more advantage to the reshaping process.

Reshaping of austenitic tubing is possible, but the overall manufacturing solution with forming, tooling and cut-off as an integrated system must be considered.

Formtek, Inc – USA
Fax: +1 216 831 7948
Email: yoder@formtekgroup.com
Website: www.formtekgroup.com





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Furnaces and heat treatment

Photo: Sheffield Forgemasters International Ltd, UK

The basic oxygen furnace (BOF) is basic by name and by nature – even if it was named for the magnesia refractory lining, which wears through contact with hot (basic) slags. The process dominated by this furnace accounts for 60 per cent of crude steel output worldwide. And wherever BOF steelmaking is not on the rise, electric arc furnace (EAF) steelmaking is.

The constant in both methods is the furnace: indispensable to all steel making and central to every initiative toward more reliable and cost-efficient production and heat treatment.

Operators in either of the two major technologies know that 100 per cent reliability of the furnace or caster is key to the pour. The companies featured in this section of *Tube and Pipe Technology* know it, too.

They are in the business of leveraging that awareness to ensure improved yields, enhanced quality, and greater productivity all the time.

Forgemasters report increased profits despite difficult trading conditions

ENGINEERING company Sheffield Forgemasters International Limited (SFIL) has reported increased profits with strengths in offshore, power generation and defence markets.

With significant pre-planned expenditure on research and development, training and apprenticeships, continued capital expenditure and environmental improvements, the company reported operating profits of £5.4m for the year ending 30 June 2012.

A concentration on improved productivity and added value has led to a turnover totalling £106.8m despite the challenging, weak worldwide market conditions, acute pricing pressures from international competitors and the continuance of the global economic recession.

Prospects for the year ending 30 June 2013 already show progress on last year, with a high level of optimism contract wise.

Tony Pedder, chairman of SFIL, said: "It is very pleasing to report that despite continuing difficult conditions affecting most of our markets, operating profit for the year increased with our turnover remaining virtually unchanged from last year. In the context of the global economy and our industry, this is a very positive result.

"Our strongest markets continue to be the offshore oil and gas, where our project management company, Vulcan SFM Limited, has been particularly active and successful in meeting the complex needs of our customers, but power generation and defence sectors are also strong.

"Demand in most of our other markets remained subdued and consequently, margins have remained tight."

Mr Pedder added: "As well as continuing to strive to meet the most complex needs of our customers, we have responded to these challenging conditions by focusing our attention on costs and efficiencies.

"Our senior team has constantly sought to adopt lean manufacturing techniques, supply chain improvements and a sound control environment, to good effect.

"We have also continued to focus our efforts on research and development. We believe it is vital to keep pushing the boundaries of our technology and expertise in order to keep enhancing our reputation as a leader in our field. All our research and development activity is now being channelled through our new subsidiary, Sheffield Forgemasters RD26 Limited.

"RD26 will provide services to all our Group companies as well as to third parties. We see this as a rapidly growing part of the Group in the years ahead."

In a year when SFIL won the European Business Award for Import/Export from more than 15,000 entries, Mr Pedder was keen to thank staff for their loyal support and input.

He added: "As ever, the skills of our workforce remain one of the company's major assets.

"We will continue to invest in enhancing that skill base and this is vital in ensuring that we constantly meet the challenges of what is still, and looks likely to remain for some time, a difficult trading environment for the Group and its competitors."

Sheffield Forgemasters International Ltd – UK
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Website: www.sheffieldforgemasters.com

Three roller continuous rolling mill starts operation in Xinjiang China

AN OCTG factory built by Bazhou Seamless Pipe Limited (BSP) has been put into operation in Xinjiang, China. Taiyuan Tongze Heavy Industry Co Ltd is the general contractor for the hot rolling line, which combined with designing, machining, manufacturing, installation and commissioning.

Hot rolling mill

The hot rolling pipe specification is Φ127mm to Φ355.6mm, wall thickness is 5mm to 50mm, and annual capacity is 700,000 tons. The main equipment includes billet preparation, Φ42m mid-diameter rotary hearth furnace, cone-type piercing mill, five stands three roller continuous rolling mill with stand exchange at side, five stands extractor, fourteen stands sizing mill and cooling bed.

Φ42m mid-diameter rotary hearth furnace

The whole hot rolling line equips with hydraulic servo press down for roll gap setting, pipe end reduction, product quality control and tool life control system. Taiyuan Tongze Heavy Industry Co also supplied two pre-finishing lines, finishing line and heat treatment line.

Taiyuan Tongze Heavy Industry Co – China
Website: www.tzce.com

Luvata introduces longest jointless hollow conductor

LUVATA, a leader in metal solutions manufacturing and related engineering services, has introduced Mileon™, claimed to be the longest seamless hollow conductor available.

Luvata's new Mileon seamless hollow conductor

Hollow conductors are used in a number of applications including particle accelerators, MRI scanners, plasma research devices and induction furnaces. Unlike traditional hollow conductors, Mileon gives manufacturers the option for large continuous coils or the flexibility to specify the optimum length, reducing the amount of scrap and packaging materials required.

Mileon hollow conductors are completely jointless and produced in long continuous lengths, measured in hundreds or even thousands of metres. Made from high purity oxygen-free copper, Mileon delivers electrical conductivity of 101-102 %IACS and thermal conductivity of 390W/km.

The newest cancer treatment instruments are carbon-particle therapy instruments, which are used to direct a concentrated beam into a tumour without hurting the surrounding healthy tissue. These instruments use powerful, water-cooled resistive magnets wound with hollow conductors. "Every joint in a magnet causes not only additional work, but they're also a major risk for leaks despite very careful inspection of the joint," commented Paula Tappola, Luvata product manager for hollow conductors. "In most cases a leak inside a magnet cannot be repaired and the whole magnet must be replaced with a new one, causing significant down time and substantial costs."

Commonly requested dimensions and shapes of Luvata hollow conductor profile tools includes round, oval, square and rectangle.

Luvata's solutions are used in industries such as renewable energy, power generation, automotive, medicine, air-conditioning, industrial refrigeration and consumer products.

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CMI to supply tube furnace to Veridiam

Single ended radiant (SER) burner installed on roller hearth furnace

CMI Industry has gained an order from Veridiam, Inc, USA, for a roller hearth furnace for the bright annealing of stainless steel tubes dedicated to nuclear and medical applications. CMI Industry Americas will manufacture the furnace in its workshop in Salem, Ohio, USA. Full commissioning of the furnace is scheduled to be completed by November.

The contract will be managed by CMI Industry Americas. Dave Boyce, CEO, commented, "With this order, CMI Industry demonstrates its added value in the market of bright annealed tubing, and in the tubing heat treat market in general."

Veridiam, one of the leaders in the stainless steel tubing industry for both nuclear and medical applications, chose the best technologies to reach its specific metallurgical and surface quality requirements. Components included in the furnace are natural gas fired combustion system utilising ceramic (SiSiC) radiant tubes throughout; self-recuperative burners with efficiency of approximately 70 per cent; high purity furnace insulation to allow constant 100 per cent hydrogen atmosphere operation; atmosphere jet cooling system with variable frequency control for rapid jet cooling; main gas safety and atmosphere safety systems; and PLC control system with touch screen interface.

CMI Industry designs, supplies and modernises mechanical, heat and chemical treatment equipment and industrial efficiency solutions. In particular, the company supplies cold complexes to steel-makers, with unparalleled references in rolling mills, coating lines, furnaces, chemical treatment installations and special equipment.

CMI designs solutions for reducing the environmental footprint of all types of industrial installations, and its solutions are adapted to the specific needs of each customer.

CMI Industry – Belgium
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Plasma annealing and cleaning for precision tubes

PLASMAIT GmbH, a supplier of plasma heat and surface treatment lines for wire, tube and strip production, has introduced a new PlasmaANNEALER for continuous annealing and cleaning of precision tubes.

PlasmaANNEALER has been designed for continuous heat treatment, degreasing and oxide removal of precision and thin wall tubes.

PlasmaANNEALER can be used on a wide range of ferrous and non-ferrous materials with OD range between 0.1mm to 5mm. Thin-walled tubes with diameter up to 10mm can also be annealed with the new plasma process.

So far Plasmait demonstrated successful annealing and surface cleaning on tubes of various materials including copper, copper alloy, stainless steel and nickel alloy tubes.

PlasmaANNEALER is equipped with vacuum system to ensure controlled atmosphere and exceptionally low usage of purging gas. The plasma-heating zone is complemented with appropriate length dwell zone to allow for annealing of materials like stainless steel and nickel, that require extended time at temperature to achieve complete annealing.

According to Plasmait's R&D director, Peter Ziger, the dedicated tube trial facility is now available to all tube manufacturers who strive to improve the quality of their tubular products. Plasma treatment will benefit applications with demanding surface quality requirements or challenging annealing requirements. Such applications are usually found in sectors such as medical, precision mechanical, electronics, aerospace and energy sectors.

The PlasmaANNEALER

The tube manufacturers who adopted plasma annealing have recognised the value from low cost of ownership in comparison to traditional tube or muffle furnace.

The benefits of plasma treatment include more than 50 per cent lower energy use, ten times lower purging gas consumption, the saving from dry, chemical-free degreasing and surface cleaning. Increased annealing speed by the factor of five of more results in fewer take ups and payoffs and lower cost of maintenance.

Manufacturers of coated tubular products may find plasma surface preparation prior to coating or metallic plating also an area of potential interest.

Since the introduction of plasma heat and surface treatment process in the wire industry in 2003 Plasmait continuously improved the process and widened the application scope to include annealing and surface treatment of tubes and flat products.

With more than 52 deployments of plasma treatment lines worldwide Plasmait established itself as a trusted supplier to the wire and tube industry.

Plasmait GmbH – Germany
Fax: +44 7810 810 656
Email: info@plasmait.com
Website: www.plasmait.com

Furnace rollers from the Ukraine

RESEARCH & Production Corporation Trubostal Ltd was created in 1989, and currently numbers more than 1,000 employees and two factories. Total working area is 46,000m^2. The company's plant for production of centrifugally cast tubes and items is described as the largest in Europe in regard to that type of product.

Production capacity of liquid metal is greater than 20,000 tons per year: seamless centrifugally cast tubes of OD range from 100 to 1,625mm, wall thickness from 7 to 250mm, length up to 6,250mm, in more than 200 grades of steel, alloys, cast iron, bi-metallic combinations, as machined, heat-treated, as well as articles of the centrifugally cast tubes (furnace rollers, bandages for crushers, metal moulds for centrifugal casting, radiant tubes, muffles, casings of hydraulic cylinders, valves, motors, crane rope drums, rings, slitters, press-moulds, flanges, pillars of manipulators, wear-resistant tubes of pulp-ducts, bushings for slush pumps, construction columns, piles, etc).

Metal-removal machine tools, facilities for heat treatment and NDT allow the company to produce centrifugally cast tubes and articles at the level of worldwide standards. About 60% of products are exported. The quality management system has been certified in compliance with EN ISO 9001:2008.

The company's plant can produce fittings of the diameter range 24 to 1,420mm: elbows, bends, tees, pipe crosses, reducers of carbon- and alloyed steels. Some of these products are supplied to thermal power stations and atomic power stations. Thanks to the possibility of independent manufacture of moulding tools, new standard sizes of fitting are constantly mastered.

R&PC Trubostal Ltd – Ukraine
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Changes at SECO/Warwick

SECO/Warwick SA, Poland, has announced that the joint venture with Winfor GbR, Germany, in SECO/Warwick GmbH was dissolved at the end of 2012. SECO/Warwick SA acquired 49 per cent of the shares of SECO/Warwick GmbH from Winfor GbR.

The managing directors, Thomas Wingens and Karol Forycki, left SECO/Warwick GmbH on 30 November. Thomas Kreuzaler temporarily took over as managing director beside his other group functions.

Nespi International GmbH, Germany, has been acquired via SECO/Warwick GmbH, with 100 per cent of the shares. The acquisition of Nespi, a furnace engineering company specialising in retrofits, repairs, service and spare parts supplies for many type of furnaces, is a further step in the strategic growth of SECO/Warwick, one of the fastest growing heat processing equipment manufacturers.

SECO/Warwick GmbH reinforces with Nespi International GmbH the activities particularly in the German and Western European markets. Group CEO Pawel Wyrzykowski commented, "The focus of the SECO/Warwick Group is a satisfied customer. After our successful development in some key world markets we would like to emphasise on our offer for our German speaking customers now."

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Website:
www.secowarwickeurope.com.pl

Extrusion billet casting machine

VTORMET of Russia will be installing a Rautomead RX 1100 single stand horizontal casting machine to manufacture brass extrusion billet at its factory in Mtsensk, Oryol Oblast. The casting machine will be fed from a separate melting furnace, and feedstock will be carefully selected scrap.

This is the second Rautomead machine to have been purchased by Vtormet, the previous one having been a smaller RT 650 horizontal continuous casting machine, commissioned at the customer's plant in August 2012.

These horizontal continuous casting machines were developed by Rautomead in the 1980s. Since then, the process and control systems have been refined to suit modern factory environments.

Rautomead Ltd – UK
Email: sales@rautomead.com
Website: www.rautomead.com

“It’s a great feeling to build something step by step with a team and to reach very challenging targets.”

Bjørn Eldar Petersen – EFD Induction, Norway

Tell us about your role at your company, and what you specialise in.

I think the CEO’s role has two main aspects. On one hand it is about providing strategic direction for the entire organisation. It’s about defining what we want to be in the future, and ensuring everyone knows where we’re going and how we’re going to get there. The second, and equally important role, is to be active in day-to-day decision making; making sure our actions are aligned with our long-term objectives.

What’s the best thing about your job?

There’s no one single thing – it’s a combination. There is of course the challenge of strengthening a worldwide organisation. Then there’s the satisfaction that comes with building something together with a competent team. Finally, there is the interaction with impressive and demanding customers, and with technologies and employees.

What is the toughest aspect of your job? And what is the most difficult part of being the CEO of a large company?

As CEO one is faced with many tough situations and decisions – it’s part of the job. However, one should create understanding among internal and external stakeholders as to why particular decisions have been made by sharing relevant background information. Creating this understanding, and getting people behind a decision is one of the main challenges in a global company.

What’s the most exciting project you have worked on during your career and why?

There have been many, some with positive excitement, others with negative. The former includes building a global aftermarket business in the automotive sector. It’s a great feeling to build something step by step and, together with a dedicated team, to reach very challenging targets. The latter includes some unpleasant experiences with industrial action that spilled over into violence and workplace aggression. It’s definitely not a positive situation when employees fear for their safety.

What is the longest you have worked without sleep and what is the worst crisis you have faced?

I think it would have to be the situation I mentioned in my last answer. Wildcat industrial action and violence is not normally part of one’s business education – it certainly poses challenges. At the same time one gains a lot of experience in a short time. But it’s not something I want to go through again!

How do you see the tube and pipe industry changing over the next five years following the global recession?

Actually, I’m pretty optimistic about the industry. Once the global economy fully recovers there will be a tremendous need for investing in infrastructure and manufacturing. And despite some hiccups, the BRIC economies look set to remain robust.

If you were not involved in engineering or the tube industry, what career would you love to have chosen instead?

I was a semi-pro footballer in Norway for a number of years, so I suppose I

Bjørn Eldar Petersen

would have liked to be a professional player. Or an author writing books that people would find instructive and enjoyable.

■ **What advice would you give to someone trying to make it in the tube industry? If a student or young person wanted to get involved what should they do?**

Think and act globally. By this I mean: learn foreign languages and about foreign cultures. Don't be limited by the context you grew up in. Technologies, markets and geo-political realities are in constant flux, so learn to be flexible.

■ **What is your favourite book and author?**

My favourite book is War with the Newts by the Czech writer Karel Capek. My favourite author is Lars Saabye Cristensen.

■ **What book are you reading at the moment?**

The Hakawiti by Rabih Alameddine.

■ **What's your favourite film?**

Betty Blue, a French film from 1986 directed by Jean-Jacques Beineix.

■ **What sports/activities do you enjoy and do you still find time to take part?**

As I've already said, I was a semi-pro footballer for a number of years. So football is of course a sport I still enjoy – although the time I can devote to it is rather limited!

■ **Who is your hero and why?**

Nelson Mandela and Mahatma Gandhi, because of the strong will and uncompromising efforts to fundamentally change their societies for the better – and to do so using non-violent means.

■ **What is your favourite restaurant/meal?**

My favourite restaurant is 'Statholdergården' in Oslo. It's where I had my wedding dinner with my wife and a couple of close friends, so it's natural I have a special fondness for the place.

■ **If someone was visiting Norway for the first time what is the one essential thing that they should do?**

Dress warm.

■ **What's your favourite city/ place to visit when in need of relaxation?**

I tend not to re-visit the same place very often. But for relaxation I would choose Cyprus and Boracay in the Philippines. Shanghai is definitely my favourite city.

■ **If you were stranded on a desert island, what two luxury items would you take?**

An MP3 player with a huge storage capacity. And I guess a water scooter could be useful – and fun!

■ **Who would you least like to be trapped in a lift with?**

Mr Methane.

CV

Name: Bjørn Eldar Petersen

Firm: EFD Induction

Title: Chief Executive Officer

Location: Skien, Norway

Work history:

Recruited by Kongsberg Automotive after graduating with an MBA from the Norwegian School of Management.

Various management positions within Kongsberg Automotive, including a three-year stint as head of Asian operations.

Became CEO of EFD Induction on 15 October 2012.

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这一栏目专为我们的中文读者介绍国际管道行业的最新技术和行业新闻的综合信息。

电熔焊机系列扩大

RITMO SpA公司在已经很广泛的Elektra系列机器增加了新型Elektra 315电熔焊机。

新系列机器有四种机型：能焊接Ø125/160毫米管接头的紧凑及轻型Elektra Light焊机；能分别焊接315毫米、400毫米和800毫米直径的Elektra 315、Elektra 400 和Elektra 800焊机。

Elektra 315电熔焊机和配件

Elektra 315焊机是通用电熔焊机，工作范围为20到315毫米，而且适合焊接输送气体和水的管子/管件，以及焊接消防喷淋系统(8到48V的HDPE、PP和PP-R管接头)。此焊机是按照最重要的国际标准制造的。

该焊接提供光学扫描条形码读取系统，能自动设置焊接参数，并有Ø4到4.7毫米的通用适配器。Elektra 315有一个直观的控制面板和内置存储器，能存储500个焊接循环，可使用Ritmo 传输软件将数据传输到个人电脑/笔记本电脑。还可以直接生成PDF格式的报告。

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X-RAY 6300用于直径270毫米的聚乙烯管道检测

SIKORA最近在位于比利时Overpelt 的气管和水管制造商DYKA公司试运行了X射线检测装置X-RAY 6300。3年多来经过多次讨论、无数次项目会议以及大量的开发工作之后，该项目终于成功实现。

软管和钢管销售主管Knut Szemjonneck回忆道：“刚开始合作时，Dyka需要在生产过程中可靠测量单层聚乙烯管。按照此目标，Sikora开发了塑料管道挤出连续质量控制的基本理念。2011年，第一台X-RAY 6000设备送给了DYKA。DYKA对系统的质量没有丝毫质疑。实际上是为了向员工（现在每天都在使用该设备）展示该技术，让他们看到可靠性、操作以及支持上的优势。先前，DYKA尝试了其他测量程序，但是发现了一些不足之处，被淘汰了。尽管这些尝试是几年前的事，但这种不好的记忆历历在目。Sikora的设备很快消除了员工们的疑虑和过去的担忧。他们很快就被设备的优点和可靠性所征服，发现该技术非常适合过程优化和控制。很明显接下来就是指定详细的技术规范并按照挤出生产线线的具体情况定制。”

位于比利时Overpelt的 DYKA公司的检测仪X-RAY 6300

这些挤出生产线以6米每分的线速度生产外径250毫米、壁厚25毫米的聚乙烯天然气管道。对于典型的大直径气体和水管道，在线质量控制是成本最小化最重要的因素。对于大直径产品，可选择我们的X-RAY 6300设备，它覆盖的直径范围是30到270毫米。该设备安装在第一台真空罐和定径机之间。打开设备立即就可得到所有测量结果，如壁厚、内径和外径、偏心率、以及椭圆度。所有数据都呈数字和图片显示在通过直观的触摸屏操作的处理器显示系统Ecocontrol上。Ecocontrol用图形化线为用户清晰地表示所有测量设备的位置并利用专门的控制模块Set Point, 使DYKA还可以通过自动影响线速度或挤出机转速连续控制直径或壁厚到标称值。因此，X-RAY 6300能满足所有过程稳定和恒久质量控制要求。

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万能而强大的弯管解决方案

位于俄亥俄州西湖的Pines Technology公司是一家弯管机械制造厂，最近为美国宾夕法利亚州伊利Morris Coupling公司在田纳西州诺克斯维尔的工厂运送了第六号重型旋转液压弯管机。


Morris Coupling的新型Pines标准机型第六系列116弯管机

Morris Coupling是全球领先的气动传输系统、高性能排气系统、换热器和其他工业产品弯曲零部件制造商。Morris选择Pines的第六号弯曲机用来实现产出目标以及保持高标准质量。他们的产品包括外径1½"到8"以及弯曲半径2½"到72"的短半径和长半径弯曲。

Pines第六号弯曲机是一台强大而可靠的重负荷机器，具有快速设置和切换的优点。该机器配备有Pines "Dial-A-Bend" SE PLC控制装置，具有高性能、精度和灵活性。该控制单元能存储1000个不同的弯曲程序。

该机器能生产多个弯曲部件，能够快速、可重复的弯曲外径8"的管道。

弯曲壁厚随材料变化。该机器是顺时针旋转的，有电动电磁铁操纵的液压回路，该回路由方便的按钮操作站控制，还有缓冲液压缸避免冲击并延长机器寿命。

该机器配备有特殊的长冲程芯棒抽出机，具有电切向和(中心线半径)调整功能。

Pines 首席执行官 Ian Williamson说："Pines和Morris Coupling公司都是美国重要的公司，已经从业近70年。我们期待与Morris Coupling有一个长期、互惠互利的关系。"

Pines Technology – 美国
网址: www.pinestech.com

火焰切割机

Zinser GmbH公司是世界领先的火焰切割机制造商之一，也是氧燃料技术和热风焊接高性能合作伙伴。Zinser的内部工程师团队实现个别客户对数控和切割机构造的要求。我们还在内部培训和技术中心提供合格的专业培训课程，清楚介绍现代数控用户界面和软件技术。

最突出的是Zinser生产的三轴数控管道切割机，用于氧燃料和等离子切割。该机器专门用于圆形和方形管道加工。因为增加的轴有一个悬臂，因此还能够在方管表面进行切割。在转角和鼓起曲线处以及整个管端开孔、切口和切割准备能快速完成，而且切割成本低。使用"Zinser 1306"切割机能以降低的生产成本实现较好的切割结果。此外，这台精密的机器配有穿过夹头的空心轴，这样能够使用内部通风设备。Zinser 1306还可以配备气动抓头、钻孔装置、强大的抽出系统以及过滤单元，还有通过网络连接的外部电脑编程功能。

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焊接控制的新水平

THERMATOOL Corporation公司推出了新一代管道高频焊接系统，包含直观的用户界面HAZControl™ Technology (HCT™)，设计用于精确独立地控制轧机运行时焊接功率和频率。

为满足客户的严格要求，管道制造商已经致力于按客户需求更有效地生产产品，同时保证质量不打折。

Thermatool HCT

管道制造商最终产品的质量主要取决于焊接质量。成功的焊接植根于顶级的工艺知识和专业技能。每个生产方法生产的产品都不一样，受到变量如功率、线速度、频率以及V形外形的影响，因此焊接是生产最复杂、最重要的。

Thermatool推出了HAZControl Technology控制技术，用来简化高频焊接主要变量之间的复杂关系。HCT界面使用户能够用最佳的焊接参数来定义生产。然后利用预测算法计算和绘出功率、频率、V形长度以及轧机速度是如何影响焊接的。如果已定义主要变量改变，HAZControl Technology控制技术会引导操作者按照生产者的要求回到规定的HAZ宽度和尺寸。

HAZControl Technology控制技术代表Thermatool的变频电流型逆变器(CFI)。Thermatool在1999年开创的真值变频可控制调整焊接输出频率。而其他焊接系统只能通过操作者强制改变电容器、变压器分接头、感应线圈或其他机械调整来改变频率，这样会导致昂贵的停机时间。

Thermatool的HAZControl Technology控制技术引导操作者通过目标高频焊接参数简单的视频显示实时控制输出频率。该软件使操作者能够将频率控制在1kHz增量同时保持频率稳定在±1%，从而减少设置时间和废料。最终的精度确保整个生产范围HAZ特性的可重复性，不管操作者、轧机速度或产品如何。Thermatool直观的HCT控制面板软件允许操作者保存每个产品最佳焊接所需焊接参数并快速记忆生产单以便以后重复使用。

高频焊接频率被证明是关键的工艺参数。结合选择正确的功率和频率为管道制造商提供生产最好焊缝的灵活性，即使是焊缝设置和材料改变。

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锯切理念赢得更多的客户信赖

德国公司Reika最近收到来自全球最大的管道制造商之一的另一份订单，订购基于RingSaw方案的固定锯床。

客户的要求是切割直径达180毫米的管道，稍后将用于生产套管。这些是符合API标准的高精度油田管道。

“客户们都在以高精度标准进行切割，因此没有比RingSaw更好的选择，”销售经理Andreas Zimball评价道。客户在做出购买决定前，在Reika位于德国哈根的工厂用RingSaw已进行了长时间的材料切割试验。

“试验结果不仅完全令人满意，而且我们还能根据客户的材料设计和优化设备，”Zimball先生说。

客户很快就被说服了，Reika的RingSaw锯头绕固定工件转动，该锯床的好处是，低毛刺、高精度、高效率以及快速。

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数控铣床

技术和资金来源是必须的，但还不够：还需要专家意见来找出最合适的方法来达到最好的结果。AEM 3提供的机床包括：数控铣床、数控车床、立式钻床，使其能在快速周转时间内为客户工厂建造整个系统。技术部门以极好的软件系统以及内部质量手册来确保质量。40年来，公司不断提高以制造高精度和质量标准的不断增加的产品系列。它完成了一些设计和解决客户所有问题的项目。还为客户提供有折扣的定期维修合同，提供价值/价格回报。

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1小时完成14吨拉拔钢棒材除锈

拉制钢，也称为光面钢，比如用来生产柴油发动机注塑零件，必须符合严格的质量标准。生产拉拔钢的关键阶段是拉拔前原材料的喷砂清理。最近，Rösler为主要的制造商开发了连续抛丸系统，能全自动喷丸清理直径/截面大小24到80毫米（大约1.0 - 3.2"）的钢棒。该系统不仅除锈效果极好，而且处理速度能达到60米（197英尺）每分。

作为Saarstahl AG集团的全控股公司，Saar-Blankstahl GmbH公司能按母公司要求生产所有粗钢。这是销往全球的拉拔钢材产品卓越品质的关键因素。产生优质产品的其他因素包括综合性专业知识以及一流的拉拔、去皮/剥皮以及热处理生产线。此外，公司在Homburg 和 Burbach有工厂，能提供内部高性能质量控制技术，如涡流检测和超声波检测。通过单独的计划和协调生产过程以及使用专用钢丝和钢棒，Saar-Blankstahl能生产高性能钢材产品，用于具有挑战的应用，如汽车行业。

在用圆形、方形和六角形型材拉拔成钢棒以及用特殊型材拉拔成钢棒之前，轧钢必须抛丸处理来清除表面铁锈。Saar-Blankstahl工厂经理Günther Dorscheid说：“抛丸清理对满足客户对达到绝对均匀表面的要求来说是非常关键的，有两个原因：一方面，钢材上残留的铁锈会损坏拉丝模，导致拉拔钢材产品上留下划痕。另一方面，嵌入到拉拔钢材里的铁锈会造成后续加工工具的损坏。因此，在抛丸处理后，轧制钢材表面清洁度必须达到SA 2.5 – SA 3级。”这是用新的抛丸系统替换Burbach工厂内旧的抛丸机的关键要求。此外，客户需要高部件产出，高设备可用性、易于维护以及高效除尘系统。另一个非常重要的要求是将新的抛丸系统集成到现有生产线中。工厂经理指出：“尤其是最后一点是真正的挑战，因为该部分建筑中桥式起重机高度相对低。”

清洁直径最大达80mm的钢棒

Günther Dorscheid补充道：“在与其他制造商谈判后，我们只发现Rösler已经展开。我们参观了Untermerzbach的工厂，对所看见的印象非常深刻。”尽管Rösler此时还未建造一个比得上抛丸系统，但已经有来自Untermerzbach的客户向公司下了订单。选择Rösler的关键因素是值得信赖的机器理念以及Rösler愿意将其连续抛丸系统REDL 6-30/100根据Burbach的Saar-Blankstahl就地空间条件进行改造。当然，Günther Dorscheid以前与来自Rösler管道抛丸机的同行的经验也起到了作用。REDL 6-30/100抛丸机能抛丸处理圆形、方形和六角形，横截面24到80毫米（大约1.0到3.2"）的钢棒。钢棒运输在退火工具钢制成的运输辊上完成。遇到“轻质”部件，轧辊上的特殊压力会防止棒材滑动。加工速度可根据加工部件以每分钟12到60米（39-197英尺）的范围单独调整。即使是遇到表面锈蚀严重（锈蚀等级为“C”）的钢棒，清洁度也能毫不费力地达到SA 3等级。

Rösler抛丸机配备有6台型号为EVO 38的高性能抛丸涡轮机，每台装有30千瓦的驱动电源，抛出的介质量为每分钟430千克（946磅）。这些双盘式涡轮机的关键部件是由耐磨材料如硬质量工具钢和锰钢制成的。机壳是由联锁激光切割部件制成，设计极其坚固，而且寿命很长。滑入离心锁定飞锯片无需磨损较快的螺丝和弹簧。此外，EVO涡轮机帮助简单、快速地更换锯片。

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transfluid切割技术处理直径最大76毫米内的管道

即用型解决方案是唯一能与集成工艺步骤媲美的。为客户提供管道加工定制概念意味着德国南威斯特伐利亚解决方案提供者transfluid的集成工艺必须记录当前的技术进步——从半成品到制成品。很高的期望，但也是保证特殊获得所需结果的唯一途径。因此公司开发了所有组合系列，以便能提供所需的机器。

进一步的发展需要特别关注的是管道无屑切割技术。这是一个极其经济的方法——比如当加工从卷材开始，当生产过程中需避免切屑或者当大量管道需要分开时。“多年来我们在自动制造装置内安装了很多切割设备，并能满足未来使用，”transfluid首席执行官Gerd Nöker解释道。这些系统非常强大且通过神奇的切割质量令人信服，不管是何种材料和厚度。该软件是专门程序化的，用于优化切割，确保加工过程几乎无浪费。

无屑切割设备可以单独配备从管槽手动加载或从带有矫直线的盘卷加载。这些系统能切割最大Ø30 x 3 的不锈钢管，切割速度高达每小时1600件。最短的切割长度是不拉断的25毫米及拉断的55毫米，余长都是110毫米。另外，有更多的管道切割机可以切割直径76毫米内的管道。切开的部分可以分到10个单独的容器内。

可提供直径最大达76mm切割

当分割时管道随着被拉开，确保他们不会被挤压或接合处变形。任何材料都可以根据要求以此方式加工。作为一个面向未来解决方案的提供者，transfluid推进管道切割技术进步。

transfluid是全球著名的管道弯曲机和加工机器制造合作伙伴。自1988年以来，transfluid为管道加工开发面向客户的技术，并提供定制解决方案：从厂房和机械工程、汽车和家具工业到造船、栏杆生产和输送系统。作为闻名世界的品牌，我们位于德国南威斯特伐利亚的公司通过在欧洲和亚洲的服务处提供当地服务。

transfluid Maschinenbau GmbH – 德国
电子邮件: info@transfluid.de
网址: www.tube-processing-machines.com

管道外部和内部抛丸机

购买米兰OMSG – Meccaniche San Giorgio SpA公司产品的客户们正在寻找具有创新技术，使用优质材料构造以及服务寿命里可靠的抛丸机。

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加工件由自动传送系统加载到一个特殊的滚筒输送机里。

通过滚筒输送机送入抛丸室内，在轮子抛出的不锈钢丸影响下，管道抛丸到符合 ISO 8501-1参考标准的SA 2 ½级。同时，根据被喷丸管道的直径预先选定的压缩空气喷嘴自动定位在管道内部，开始内部喷丸循环。

抛丸加工结束时，通过自动提升系统将管道倾斜和翻转，把抛丸送入回收斗中，以清除管中的剩余喷丸。通过传送系统，管道最终退出滚动输送机。

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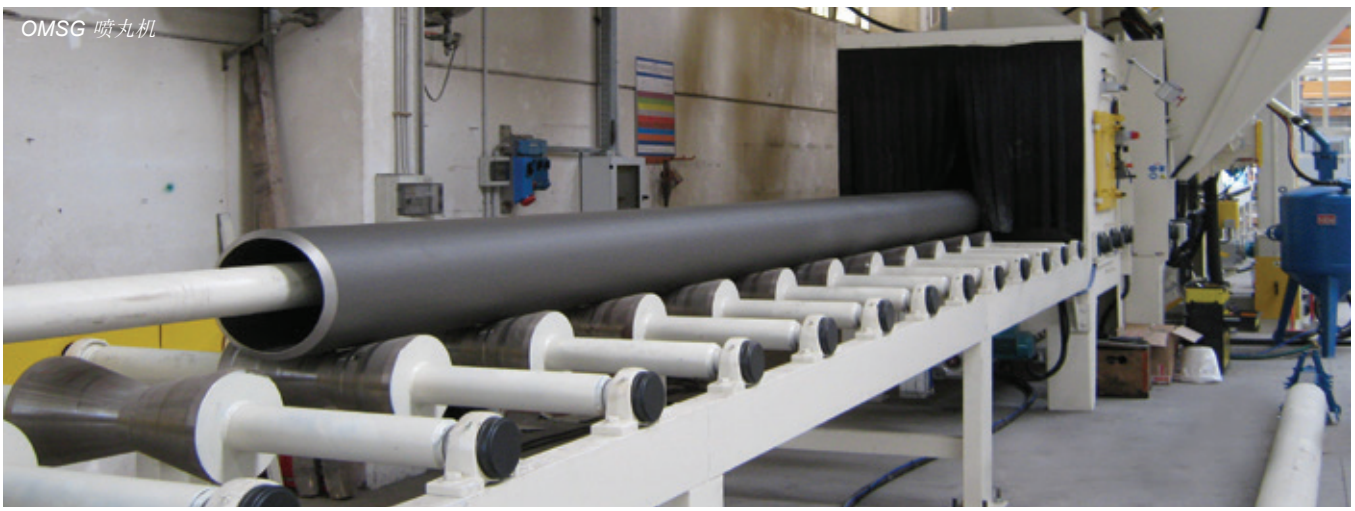


OMSG 喷丸机

Plasma annealing of thin-wall and small diameter tubes: efficient, high-speed alternative to traditional radiance annealing

by: Igor Rogelj, Commercial Director, Plasmait GmbH, Peter Ziger, R&D Director, Plasmait GmbH, Primoz Eiselt, MD, Plasmait GmbH and Andy Houghton, Promet Consulting Ltd

This article outlines plasma annealing of thin-wall and small diameter tubing. The principles of plasma heat and surface treatment are explained as ion bombardment on material surface. The workings and functionality of the plasma annealer and its components are outlined.

Plasma annealing is compared to the traditional tube/strand type annealing in terms of:
- Process layout;
- Production speed/output;
- Power and gas consumption;
- Maintenance;
- Mechanical and surface properties;
- Quality control with inline defect detection.

The focus is given to small diameter and thin wall tubing with demanding surface and mechanical requirements in the medical, aerospace, automotive and instrumentation tubing sectors.

The article concludes that plasma annealing offers a cost effective alternative to traditional tube/strand annealing in the small diameter and thin wall tubing of many ferrous and non-ferrous materials.

Plasma annealing advantages in process efficiency and finished product quality more than outweigh marginally larger capital investment in the annealing plant for many applications.

Introduction to plasma treatment

Plasma is ionised gas. Electrically charged particles make plasma different from a normal gaseous state of matter. Charged particles can be accelerated in the electric field and directed to a target.

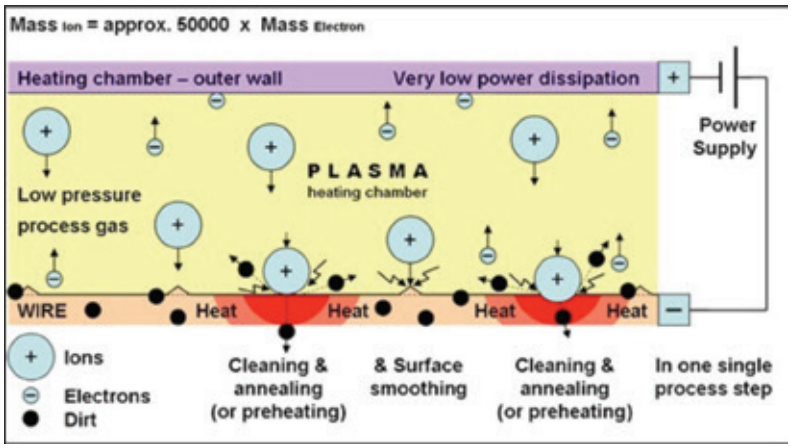
In the plasma annealing chamber the electric field accelerates ions towards the surface of the processed material and electrons towards the edge of the heating chamber. Shown in the schematic in Figure 1, the electric field in the heating chamber accelerates charged particles between the outer wall of the plasma chamber and the processed material. Electrons have virtually no mass and carry no energy. Hence they do not heat the plasma chamber as they hit the plasma chamber. It is only the radiation from the glowing material surface that conveys heat to the plasma chamber. This makes plasma annealing an efficient technique to heat the material, resulting in only a very small percentage of power lost as heat dissipated into the environment.

To achieve high impact heat treatment and sufficiently high temperatures one has to apply vacuum to the plasma chamber. The plasma chamber is filled with low-pressure inert gas to prevent chemical reaction between the gas and the processed material. The processed material is fed through the sealing system to the heating chamber, continuously thereby exposing the wire surface to ion bombardment.

The effect of ion bombardment on the material surface is threefold:
1 Efficient heating;
2 Micro surface smoothing (increased micro roughness); and
3 Surface cleaning; ie degreasing and surface oxide removal.

The degree surface treatment depends on material being processed and the choice of purging gas.

Figure 1: Schematic of plasma treatment in the plasma chamber



Plasma annealer and its components

Plasma heat and surface treatment has so far found its place in many continuous annealing and cleaning applications in wire and tube production. Over 60 plasma continuous annealers have been installed in industrial applications to date. The deployments benefited many ferrous and non-ferrous applications for production of round and flat wire as well as tube.

An example of a plasma annealer designed for continuous high-speed annealing and surface treatment of stainless steel tubes with diameters of up to 3mm OD is given in Figure 2. In Figure 3 is a photo of a plasma annealer integrated in a vertical hot dip tinning line for flat copper wire of widths up to 8mm or tube with diameters up to 3mm OD.

A typical plasma annealer consists of five components:
1 Plant frame;
2 Sealing system with vacuum pumps;
3 Heating module with power supply;
4 Cooling section with gas supply;
5 Controls.

Plant frame is made of a steel structure usually in a horizontal configuration (Figure 2). A guiding rail is fitted on the steel frame to allow for horizontal adjustment of heating module, sealing system and dwell module. This simplifies string-in procedure, which can be done in a few minutes.

The sealing system (Figure 4) in combination with vacuum pumps maintains low-pressure inert gas atmosphere in the heating chamber by preventing air from entering the heating chamber. The sealing system does not touch the processed material. This prevents from excessive wear of the sealing dies and avoids compromising material surface. The vacuum system sucks out the gas that has been contaminated with the surface deposits removed from the processed material. Solid particles are deposited in the vacuum pump filters. The rest of the contaminated gas is taken away via the exhaust pipe.

The processed material is led via the sealing system through the heating module (Figure 5) where it is exposed to plasma treatment. Power supply is PLC controlled to ensure appropriate power input during the operation. Multiple heating modules with power supplies can be installed in the annealer to meet the heating requirements of specific applications.

Figure 2: Plasma annealer for stainless steel tube with inbuilt transport system

Figure 3: Plasma annealer as part of copper wire or tube tinning line

Non-ferrous materials and some stainless steels recrystallise quickly during annealing. The majority of steels on the other hand require different times at temperature or temperature profiles to recrystallise to a desired crystal structure.

The time at annealing temperature required to achieve recrystallisation is also called dwell time or soaking time. Appropriate length of the dwell section may be necessary to meet the needs of specific materials to recrystallise.

An appropriate length dwell module is located immediately after the heating module to allow appropriate dwell time for the specific application.

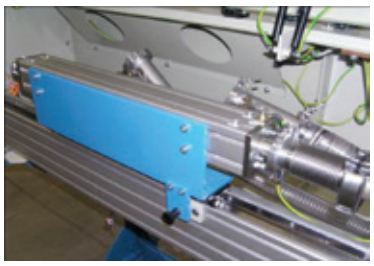


Figure 4: Sealing system

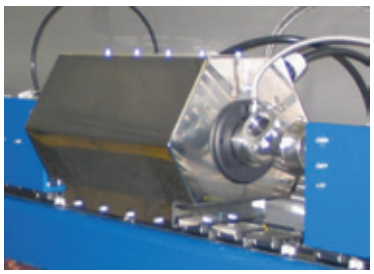


Figure 5: Heating module

Figure 6: PLC controls

The cooling section is located after the dwell module. A plasma annealer can be equipped with water cooling, gas cooling or a combined system depending on the type of material and surface requirements of the finished material.

Plasma annealers are usually supplied with an inbuilt transport system to ensure appropriate speed and tension control of the material in production (see capstans in Figures 2 and 7). The inbuilt transport system is then integrated with the takeup and payoff as necessary.

Every plasma annealer is equipped with PLC controls and touch screen HMI (Figure 6). The PLC controls allow computer assisted adjustments to all production parameters for all components of plasma annealer. Individual components of plasma annealer are visualised for user-friendly operation. The controls allow the operator to store production parameters for different products produced on the line.

Plasma annealer for production of tubes can be equipped with an inline defect detection system, which records the location and indicates the size of any puncture in a tube wall. The drop in pressure the vacuum system is detected by the PLC and recorded in defect detection database.

Plasma annealer vs traditional tube/strand furnace

Slow annealing speeds in the traditional tube or strand furnace mean that the annealing of stainless steel or nickel alloys tubes has to be performed in multi-line configurations.

Multi-line production requires considerable capital investments in transport systems, payoffs and takeups. Multi-line configuration takes extra floor space and requires more manpower for material manipulation. The material processed on a multi-line furnace also locks-in a significant amount of working capital.

The production speed of a plasma annealer can be up to ten times the speed of the traditional tube furnace. This allows for a considerable reduction in the number of lines for the same annealing output.

In some cases plasma annealing can run in-line with a drawing machine or a coating process, which can further simplify production and reduce material manipulation.

Comparison of production costs

Plasma offers considerable energy savings compared to the traditional tube furnace. Ion bombardment on the material results in heating being directed to the material, with only minor radiation losses in the heating module.

The energy efficiency – which is measured as heat induced in the material vs total power of plasma annealer during normal production – is for plasma annealer between 70% and 85%, subject to application. The energy efficiency of a traditional tube furnace is about half that value. Energy efficiency of a traditional tube annealer drops further in case of under-utilisation and when energy used during lengthy heating up is considered.

Energy used for running multiple takeups and payoffs in a multi-line tube furnace also adds to the total cost of energy required to run the annealing plant. This should be taken into account when energy balance is compared for the two alternative annealing processes.

Furthermore, the plasma annealer requires up to 80% smaller power connection, which can be a substantial additional cost saving.

Replacing a traditional tube furnace with a plasma annealer brings substantial energy related saving. Energy savings will depend on specific application, production patterns, the type of furnace (electrical or gas fired furnace) and of course the price of energy to the producer. The actual energy savings are therefore specific to individual producers and cannot be quantified in general.

Plasma annealing consumes noticeably less purging gas than the traditional tube furnace. On one hand this due to fewer lines in operation. On the other hand, further reduction in purging gas consumption comes from the gas being fed to the vacuum system at low pressure.

Production that uses expensive purging gas such as hydrogen would record high gas savings by using plasma annealer as an alternative to the traditional tube furnace. The type of purging gas used in plasma annealing depends on application and surface requirements of the finished product. Nitrogen is commonly used in non-ferrous applications. Hydrogen, argon, helium or their mixture can be used on stainless steel applications that require good surface finish. Forming gas can also be used in ferrous applications.

Figure 7: PlasmaANNEALER for SS tube

The actual gas savings from using a plasma annealer instead of a traditional tube furnace will depend on specific application, production pattern and the cost of purging gas.

No part of the plasma annealer touches the processed material, which minimises mechanical wear of annealer components and prevents contamination of the processed material surface. The maintenance of the plasma annealer involves regular changing of vacuum pump filters and oil in the vacuum pumps. Electrode and protective glass tube in the heating module have to be cleaned regularly. Replacing the glass tube takes a few minutes. The electrode tubes and glass tubes in the heating module of a plasma annealer are much shorter than the tubes in the traditional furnace and also less costly. Plasma annealing is started in a matter of minutes and does not require lengthy heating up and cooling down periods common for traditional tube furnaces.

Comparison of finished product quality

High speed annealing does not only bring operational savings. Rapid heating and reduced time of recrystallisation brings the benefits of small grain size. The photo in Figure 8 depicts a glowing 0.5mm stainless steel wire at the exit of plasma chamber. The wire was annealed at a speed of 6m/s. The microscopic photo in Figure 9 indicates homogeneous annealing across the cross-section of the wire and grain size below 10 micron. High speed plasma annealing features small grain size and delivers homogeneous crystal structure in the longitudinal and transversal direction, which in turn improves the material's susceptibility to cold working. For example, plasma annealed materials that have been recrystallised and feature homogeneously small grain size in all directions and superior surface finish demonstrate better drawability and considerable lower drawing die wear rate. Annealed materials with small grain size will also better resist surface cracking during the bending process. Homogeneous grain size is also a benefit to producers of tubes for heating elements, where small radius bending is applied to the material.

A plasma annealer allows the operator to manipulate annealing temperature via power input on a power supply instantaneously and with a high degree of accuracy. This gives the operator the ability to target mechanical properties with a great degree of accuracy. Development of new products with different mechanical specifications is therefore quicker and easier with a plasma annealer than with a traditional tube furnace. Traditional tube furnaces require time to adjust to different annealing temperatures, which makes new product development time consuming and costly. The speed and flexibility of new product development will offer an important advantage to producers of tubes for high tech applications in the medical, aerospace, automotive and precision mechanics fields.

Plasma treatment facilitates simultaneous heat and surface treatment on the processed material. Dirty deposits, soaps, lubricants and oxide layers break under the ion bombardment in the plasma chamber or burn at high temperature. The ashes (carbon) are sucked out of the plasma chamber by the vacuum system and deposited in the vacuum pump filters. Volatile components of the residues evaporate and are filtered out through the exhaust pipe.

Plasma treatment is not designed for removal of excessive amounts of dirt and soaps on the material surface. Excessive surface contamination has to be removed prior to plasma treatment with an appropriate conventional pre-cleaning system. Plasma surface treatment is only effective on a surface with minor contamination and should be regarded as a fine surface cleaning, effective only for removal of thin layers of surface deposits.

Some wet drawn materials do not require conventional pre-cleaning. Wet lubricants tend to evaporate in low pressure, high temperature environments and are exhausted through the vacuum system before they reach the annealing zone.

The effect of ion bombardment on the surface of the processed material manifests itself in a clean and degreased surface. Removal of a thin oxide layer is also achieved in many stainless steel, copper and copper alloy applications with appropriate production settings.

A plasma treated surface without the oxide layer is highly susceptible to coating and would create a strong bond with polymers or metals.

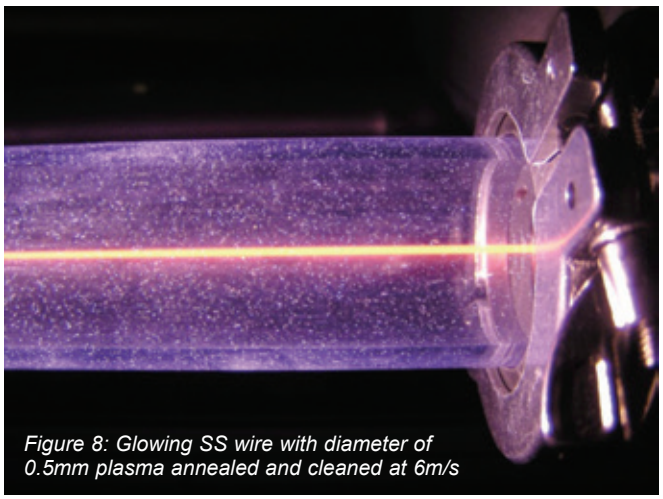
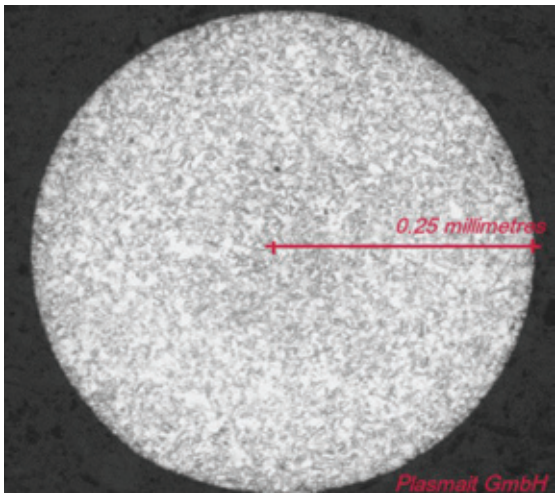


Figure 8: Glowing SS wire with diameter of 0.5mm plasma annealed and cleaned at 6m/s

Figure 9: Cross-section of 0.5mm SS wire annealed in plasma at a speed of 6m/s



	Traditional Tube Annealer	Plasma Annealer
Process type	**Multi-line / low-speed**	**Single line / high-speed**
Energy cost	**High**	**Low**
Purging gas cost	**High**	**Low**
Labour cost	**High**	**Low**
Maintenance cost	**High**	**Low**
Production uptime	**Low** – Long cooling down and heating up	**High** – Immediate start and stop
Commissioning time	**Long**	**Short**
Production line footprint	**Large**	**Compact**
Annealing power/temp. control	**Limited / slow**	**Accurate and immediate**
Capex – furnace	**Low**	**High**
Capex – payoffs and takeups	**High**	**Low**
Working capital locked in material	**High**	**Low**
Grain size of finished product	**Large**	**Small**
Inline defect & surface quality detection	**None**	**Included**

To maximise the adhesion in subsequent coating, a plasma annealer has to run in-line with the coating process, whereby non-oxidising atmosphere has to be ensured to the point of coating.

Steels build a thick oxide layer if exposed to oxidising atmosphere at high temperature. Materials that have undergone plasma treatment must be cooled down in a protective atmosphere in order to prevent surface oxidation. A plasma annealer is equipped with a gas cooling system that cools the material prior to its exposure to the air. On the exit of the material from the cooling section (ie at temperatures close to room temperatures) stainless steels, copper and copper alloys create a thin invisible layer of oxide, which passivates the surface and protects the material from further oxidation.

Plasma surface treatment leaves the surface clean, dry and without catalysts for further oxidation, common for chemically treatment processes. The dry, chemically-free plasma cleaned surface therefore retains its bright surface finish longer than chemically cleaned surfaces.

The table above summarises a qualitative comparison of a plasma annealer with a traditional tube furnace for small diameter and thin wall tubing in terms of required investment, cost of operation and finished product quality.

Conclusion

The evaluation of the effectiveness and efficiency of the plasma annealing for production of small diameter tubes (OD below 6mm) has shown favourable results. The benefits of plasma annealer in comparison to the traditional tube or strand furnace are evident in many operational aspects as well as in the quality of the finished product. The savings offered by plasma annealing in terms of gas and power consumption, manpower and maintenance alone should make many producers of small diameter tube consider plasma seriously. Good quality of the finished product and flexibility in new product development alone may be sufficiently good reason for a specialist tube producer to invest in plasma annealing.

The capital investment in a plasma annealing plant is in most cases much higher than the capital investment required for a traditional tube furnace. Nevertheless, the difference in the total investment for each alternative becomes comparable when the investment in all periphery equipment including multi-line transport systems, multiple takeups and payoffs as well as costs of floor space, power connection and commissioning are included in the total.

Extra capital investment in plasma annealing can be quickly repaid once on-going production savings are taken into account. Some of our calculations show that the repayment periods for small diameter and thin wall copper, copper alloy, stainless steel and nickel alloy tubing could be less than one year.

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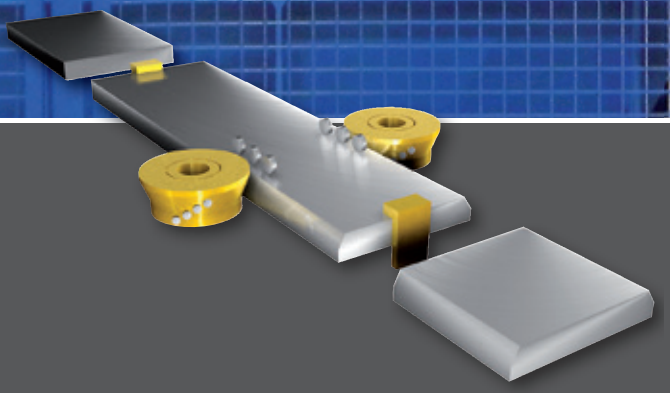

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