The international magazine for the tube & pipe industries

TUBE & PIPE Technology

管道技術

JANUARY 2013

VOL 26 NO 1 US$33

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Editorial Index

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Vol 26 No 1

January / February 2013

over 25 years

Features this issue:

By: Yuan Houzhi & Liu Xingyi
(Shandong Province SiFang Technical Development Co, Ltd Jinan 250101, China)

The January Issue

Welcome to the latest issue of Tube & Pipe Technology magazine and the first issue of 2013. Best wishes to everyone – hopefully it will be a fantastic year for all our readers.

This issue our main features examine the world of inspection, measuring and testing, and coiling and uncoiling machinery and we have an in-depth six page technical article discussing high chromium casting roll for straightening steel pipe, welded pipe and cold roll formed steel from the experts at Shandong Province. As usual we also have the latest news from every corner of the tube and pipe technology world.

From next issue we are starting a new series of interviews in TPT. We will be talking to some of the biggest names in the industry so if you would be interested in your company taking part please feel free to contact me.

Two big shows coming up are Boru 2013 and Indometal 2013. The magazine works closely with both of these great events and members of the TPT team will be attendance handing out the magazine to new readers and catching up with old friends so please come by and say hello.

Next month we have features on stainless steel production and furnaces and heat treatments so send me a story if this is your area of the industry. Enjoy the issue.

Rory McBride – Editor

Front Cover Story

Fives Bronx supplies in-line mill finishing equipment consisting of straightening machines and hydrostatic machines, used either to straighten, test or finish pipes, tubes and long products (bars, rails and sections). Fives Bronx is also the provider of the world famous Abbey products: tube and pipe mills and finishing solutions.

In 2010, Fives acquired Bronx International Inc with its UK subsidiary Bronx/Taylor-Wilson Ltd (BTW) to form Fives Bronx. The acquisition of Bronx strengthens Fives' metal activities by expanding the Group's offering to new high quality product lines and end-markets, and enhances the mechanical engineering expertise within the group.

Fives Bronx has combined its strengths and expertise to continue to produce the best quality and highest value of service for all of its customers. Fives Bronx promises to uphold its reputation of being a global leader in steel and non-ferrous mill and finishing equipment solutions.

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Four more orders for Reika straighteners

FOLLOWING recent news that several major companies have entrusted Reika with the construction of new tube straighteners the Hagen company has now booked four additional 10-roll straightening machines within the past six months.

The first one will be delivered to Russia early in 2013 and a second will also be installed there shortly – both for seamless carbon pipes. The third is being built for the French precise tube market, the fourth for the Chinese heat exchanger market. All four machines are supplied to leading pipe manufacturers, where they replace Reika's competitors' products because of straight tube ends.

The demand for the straighteners is currently booming, explained Reika sales manager Andreas Zimball: "Countries like Russia and China are investing in new power stations. The heat exchanger systems used demand high precision and resistant steel tubes. These tubes are up to 30m long with up to 25mm in diameter. In order to provide the desired high quality standards for these extremely sensitive pipes, the machines for production also require extreme precision, which is ensured by corresponding technical features. Precision and straight tube ends are, without exception, guaranteed by all Reika 10-roll straightening machines," Mr Zimball said.

The machines are built with robust, rigid and vibration-resistant steel frame structures, material protecting inlet and outlet channels, individual drives to compensate for the roller wear – merits of all roller straighteners from Hagen. The design is completely closed and compact to meet the demands of the market in terms of noise regulations and environment. In addition Reika's experts choose rolls with large diameters in order to guarantee a low-wear operation. The maintenance-free roller carriers are centrally clamped so that the precise and backlash-free angle and height adjustment is ensured. Optimised maintenance and operation is also ensured by the machines' design as there is easy access to the interior of the machine.

According to Reika and its customers this state-of-the-art machine design certainly worked out with the latest 3D CAD systems involving FEM simulations, which the company said beats many competitive products. For example, the adjusting and guiding components are fully protected from scale, dirt and water to prevent corrosion and excessive wear. Customers have been impressed by the automatic, self-learning, network-capable CNC control, ensuring optimal operator comfort and reducing setup times significantly.

"Last but not least, we specifically meet the requirements of our customers," Mr Zimball said. "All our straighteners are made to meet the customer requirements in regards to precise straightening quality." So customers benefit from high material output.

"Our machines ensure high productivity," added Mr Zimball. "Especially the dramatically improved precision in tube straightness and the elimination of unstraightened tube ends that provide customers with a direct economic benefit, so that return on investment is achieved after a very short time." This promise applies to all kinds of tubes and materials: hot rolled, drawn, cold pilgered or longitudinally welded with low and high material strength.

Reika GmbH & Co KG – Germany
Fax: +49 2331 9690 96
Email: info@reika.de
Website: www.reika.de

The Reika 10-roll straightener

Vegas predicts bright outlook for US

A RECORD-high first-day attendance, 'sold' signs on equipment and a packed house at education programmes and special events were the hallmarks of the FABTECH 2012 metal forming, fabricating, welding and finishing event.

Show organisers report that 25,903 people visited the Las Vegas Convention Center to see live equipment demonstrations, compare products side-by-side, and find cost-saving solutions. The FABTECH educational conference held simultaneously with the three-day expo included an unprecedented number of sessions on some of the hottest topics in manufacturing.

"We've received great feedback from attendees and exhibitors," said John Catalano, FABTECH show co-manager. "Attendees were impressed with the size and scope of the show and the vast array of new products and technologies on display. Exhibitors were enthusiastic and report that sales activity was brisk and leads were plentiful."

FABTECH 2012 featured several special events including a 'state of the industry' roundtable with manufacturing CEOs. The CEOs concurred that growth in manufacturing should continue for the next year; however, all said a stumbling block to growth is the lack of skilled workers in manufacturing. The CEOs emphasised that manufacturers need to be more aggressive in influencing parents, having students influence each other and have school be a more active voice in recruiting workers.

FABTECH 2013 will be held 18-21 November, at McCormick Place in Chicago, Illinois.

FABTECH – USA
Website: www.fabtechexpo.com

Diary of Tube Events 2013

20-23 February
Indometal *(Indonesia)*
International Exhibition
www.indometal.net

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

50 years of successful cooperation for KraussMaffei

COSCOLLOLA Comercial SL has been selling products bearing the KraussMaffei and KraussMaffei Berstorff brands in the Spanish market for fifty years. The third-generation family-run company is therefore the agency with which KraussMaffei has cooperated for the longest period of time.

"We are delighted with this long-standing partnership, which is entirely in the interest of our continuous development," said Frank Peters, vice president sales at KraussMaffei. "Together we have built up a strong and successful market position in Spain. I am firmly convinced that we will also remain strong in future and will increase our market shares."

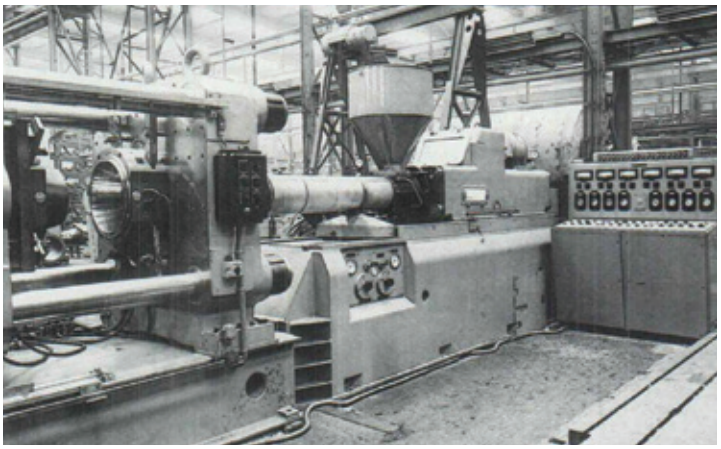
In September 1962 Coscollola (Barcelona) became the KraussMaffei agency for injection moulding machinery in Spain. This cooperation led to the delivery of the first injection moulding machine in January 1963. The machine model at that time was still the MONOmat 150S (manufactured by Eckert&Ziegler). However, the first KraussMaffei V110/700 injection moulding machine came to Spain as early as 1964. In 1966 turnover already exceeded DM 1mn, a respectable result in the then still young plastics industry, not least because Spain, before its accession to the EU in 1986, levied a 45 per cent import tax on plastics machines.

In addition to KraussMaffei injection moulding machinery and KraussMaffei Berstorff extrusion technology, Coscollola offers its customer base a wide range of peripheral equipment for processing plastics.

"We focus on customers and their needs and requirements throughout the entire production period," said Ricardo Coscollola, managing director of Coscollola Comercial SL. "We therefore regard it as extremely important that we ourselves also possess competence in engineering, technical support, commissioning and service. This makes us unique on the Spanish plastics market."

KraussMaffei Technologies GmbH – Germany
Fax: +49 89 88 99 22 06
Website: www.kraussmaffei.com

KraussMaffei V110/700 injection moulding machine, manufactured in 1963



Modern injection moulding cells incorporating GX and LRX robots offer production efficiency and ease of operation

SSP appoints authorised distributor

US manufacturer SSP has appointed Detroit Flex Defense as authorised distributor for its extensive range of instrumentation tube fittings valves, tubing and tools.

SSP features a worldwide network of specialised process measurement and control distributors offering high level of service and expertise for mission-critical installations. The appointment represents SSP's strong commitment to Michigan, USA.

SSP's high performance stainless steel products are available from stock at Detroit Flex Defense.

Also available with prompt delivery are products made from speciality materials such as Alloy 400 and Alloy C-276 as well as special non-standard configurations.

"SSP was impressed with Detroit Flex Defense's knowledge, commitment, professionalism and reputation with customers," commented Jeff King, CEO of SSP. "SSP has high standards for our distributors, who we treat as long-term partners serving the market, and Detroit Flex Defense is an example of the excellence customers expect from SSP distributors. We're glad to have them join the SSP family of premier distributors."

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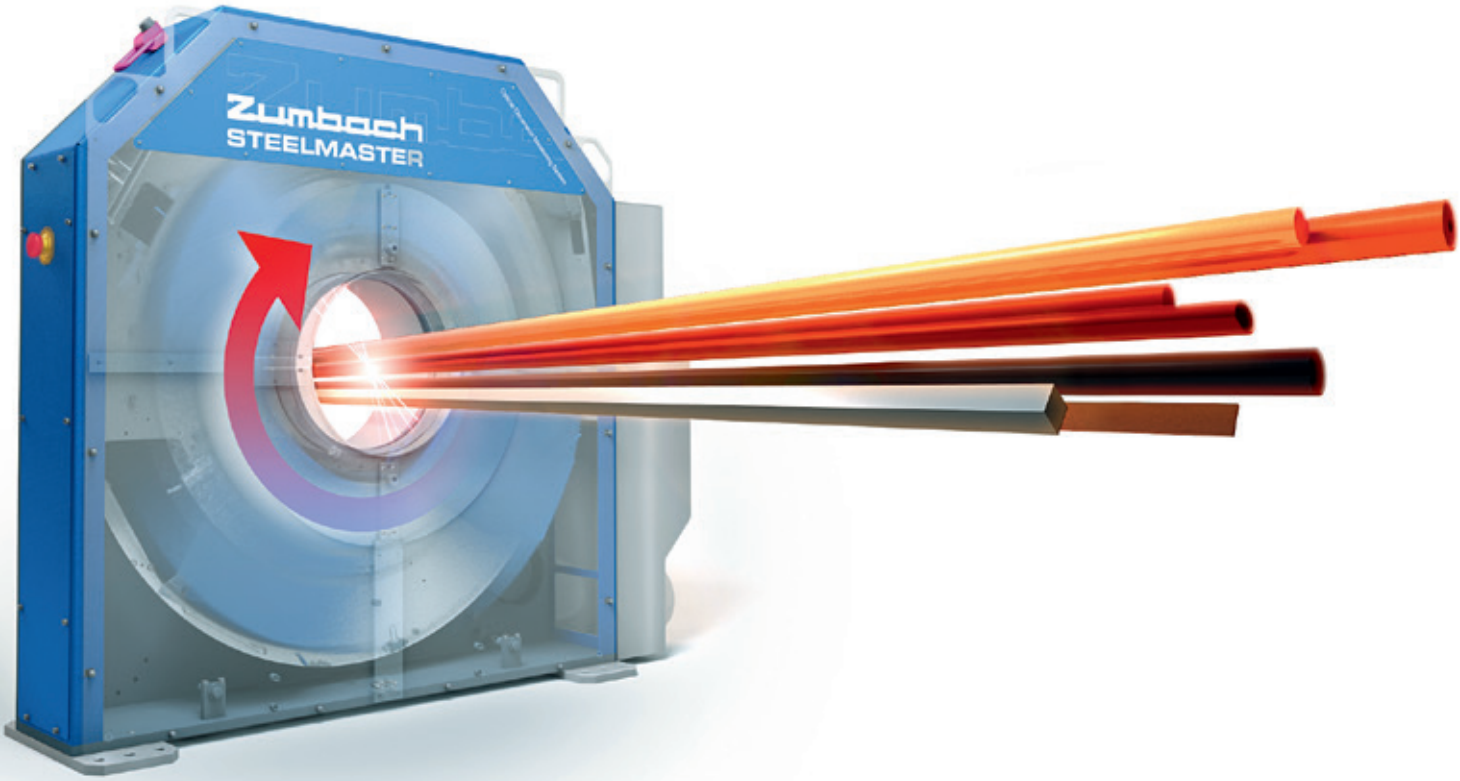

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Brandt announces new tube and pipe sales team

BRANDT Engineered Products has announced a number of additions to its tube and pipe sales team.

Dave MacNeill joins the team as sales manager for tube and pipe. He comes to Brandt from Evraz North America where he held a number of positions over the past seven years, with the most recent position being director of engineering, tubular operations. Registered as a professional engineer, Mr MacNeill also has a strong background in manufacturing and sales. His extensive pipe manufacturing experience in many countries will provide additional value to Brandt customers through his knowledge of their needs and challenges.


Scott Miller

Scott Miller joins Brandt as international business director, tube and pipe. He will be responsible for meeting the needs of pipe manufacturers in Europe, Russia & CIS, Middle East and Africa. Mr Miller is well known by pipe manufacturers in this region as he brings 25 years of experience in the tube and pipe industry with Bronx Taylor Wilson. He has held positions in engineering, project management, and most recently as global sales manager. As Brandt continues to grow and develop its tube and pipe business in these countries, the need for a local presence is evident.

Ronald O'Neill joins the Brandt tube and pipe team as business manager. He comes to Brandt with a background in a various industries including custom plastics, refractory, and building construction where he has held roles in project management, estimating, production administration, product specialist and business development. He also holds a Master of Business Administration qualification from the Richard Ivey School of Business as well as a Diploma in Construction Engineering Technology. Mr O'Neill will be responsible for key accounts in Eastern North America and Latin America.


Harold Klempner


Dave MacNeill

Harold Klempner is the long-term experienced business development manager at Brandt Engineered Products. Mr Klempner has played a key role in the growth of Brandt Engineered Products over the last 25 years. Customers know Mr Klempner as the face of Brandt as he has been involved in every key customer project over this time period. His experience and knowledge of Brandt and pipe manufacturers is a key benefit to Brandt customers. Harold will focus on customers in Western North America and will continue to support all of the tube and pipe customers where required.

"I am extremely excited about our new team," said Jason Klassen, VP sales and marketing at Brandt. "It is the perfect mix of experience and youth, customer and competitor insight, domestic and international knowledge."

Brandt Industries Ltd – USA
Email: tubeandpipe@brandt.ca
Website: www.brandt.ca

Guangzhou industry exhibition

THE 14th Guangzhou International Tube & Pipe Industry Exhibition will take place from 16 to 18 June 2013, at the China Import and Export Fair Pazhou Complex, Guangzhou, China.

With a history of 13 years, the event covers tube and pipe materials, products, equipment and technology. The second On-spot Purchasing Conference will be held during the exhibition. Large-scale companies of the industry will be invited to attend the conference with detailed purchase orders. Visitors with detailed orders will also be arranged to attend the meeting, allowing purchasers to place orders directly with the exhibitors.

The scope of the exhibition will include steel pipe products, steel pipe equipment, fitting products, pipe equipment, flanges and pipe accessories.

Guangzhou Julang Exhibition Design Co Ltd – China
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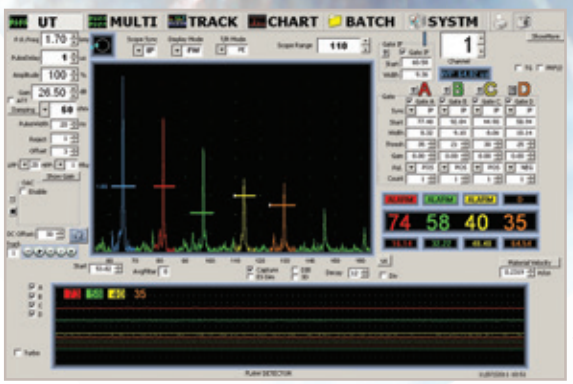

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EFD Induction opens new subsidiary in Brazil

EFD Induction's worldwide network expanded recently with the launch of its Brazilian subsidiary. The new company – with the formal name of EFD Induction Ltda – is based in the city of Sorocaba, about 60km from the metropolis of São Paulo.

"This is a milestone in our growth," said EFD Induction CEO Eivin Jørgensen. "We have previously sold many systems throughout Latin America. But having a subsidiary in Brazil's economic heartland means we can offer better and faster support to customers in the region."

The new subsidiary is headed by Evandro Nishimuni, a mechanical engineering graduate who has previously worked in France and in the Brazilian automotive industry. "EFD Induction and Brazil have so much to offer each other," said Mr Nishimuni. "There is growing awareness throughout Brazil and the continent that sustained economic growth can only be maintained by investing in modern, efficient and proven technologies such as induction heating."

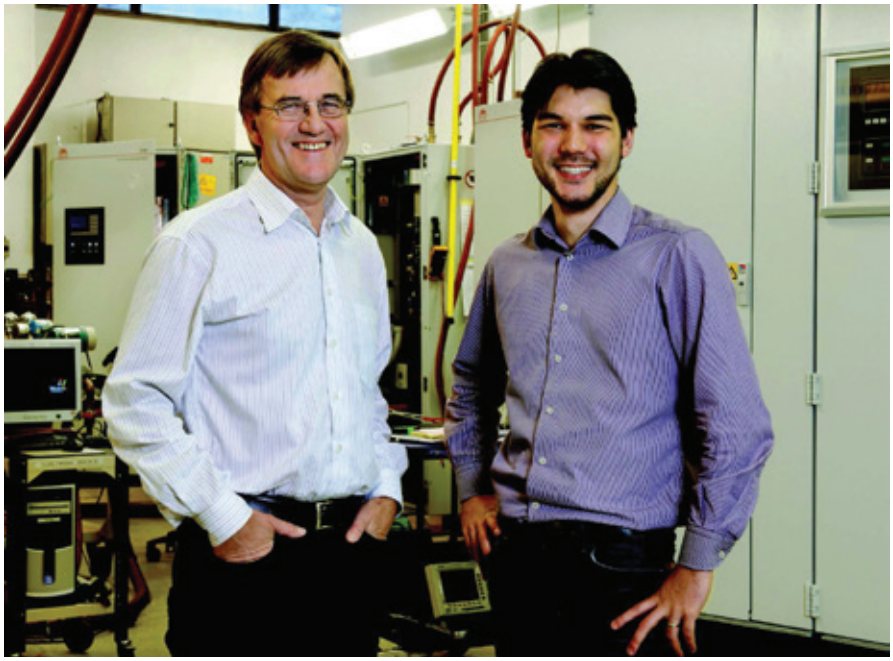
Although the subsidiary is new, Brazil and Latin America is no stranger to EFD Induction products and services. "Absolutely," said Mr Nishimuni. "For instance, several of our mobile Minac induction heating systems are being used to braze hydroelectric turbine stators at the Santo Antônio and Jirau dams, key structures in a new hydroelectric complex being constructed in Amazonia. And Basso, the world-renowned valve makers in Argentina, recently installed an EFD Induction hardening system."

Mr Nishmuni is, however, keen to stress that most of the new company's business will most likely occur much closer to home. "True, if Brazil is the engine of South American economic growth, then the state of São Paulo where we are located is its dynamo. In fact this state alone is responsible for a third of all Brazilian GDP. That gives you some idea of just how economically vibrant the region is."

EFD Induction Brazil currently has three employees – Mr Nishimuni as manager and salesman, Aline Gonçalves as administrator and Carlos Feliciano Ferreira as engineer and after-sales support technician.

EFD Induction – Norway
Email: eni@efdgroup.net
Website: www.efd-induction.com

Evandro Nishimuni (right), heads the new EFD Induction subsidiary in Brazil. Beside him is EFD Induction Group CEO Eivin Jørgensen



USM to exhibit at BORU 2013

USM is attending the BORU fair in 2013 after highlighting Turkey as one of the new leading European economies for the next 20 years. The company returns to the show after a break following a change to its Turkish partnership and said it is very glad to return to a country it enjoys working in.

USM has been working with Turkish factories for more than 20 years and saw significant growth before the big crisis of the 1990s. However, since the beginning of the millennium the Turkish economy has started to bloom.

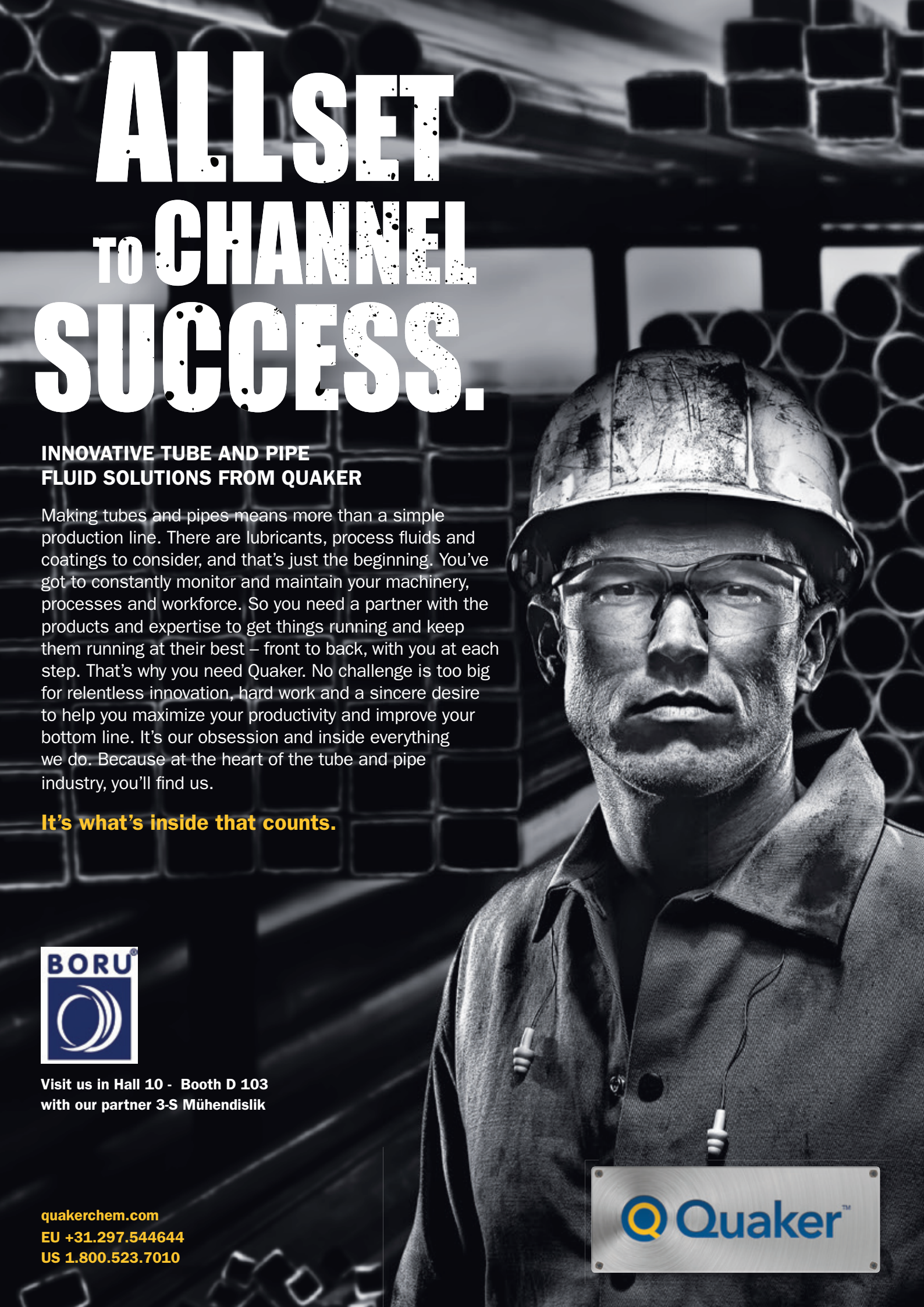
USM said it never lost interest in Turkey and now it is very happy to be a partner of all of the most important tube makers in the country.

USM is very confident that the Turkish tube industry will be even more successful in the coming years and is happy to be a part of this since this as the region adapts to new concepts of working and to using new materials to boost productions.

A new generation of carbide inserts for tube scarfing, a new generation of ferrite cores (only top quality brands) for impeder manufacturing and many other items are now being used. At BORU 2013 USM will display many consumables and machines that are in daily use in the steel tube industry.

USM has been the of the first movers in the European market of consumables in the tube industry in the past 30 years. It is still a leading company in Europe and and one of the most important worldwide, exporting to 84 countries.

USM – Italy
Website: www.usm.it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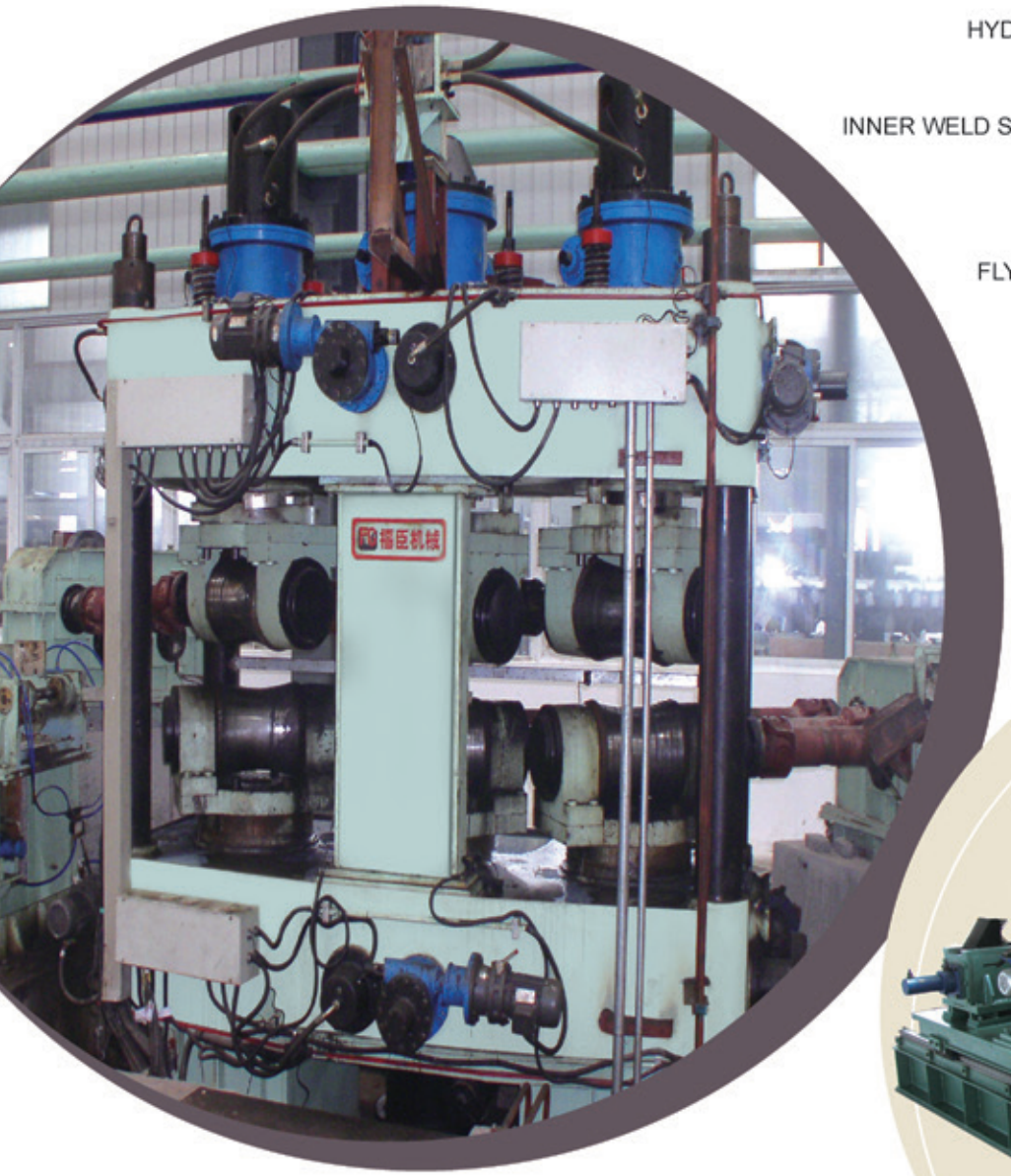

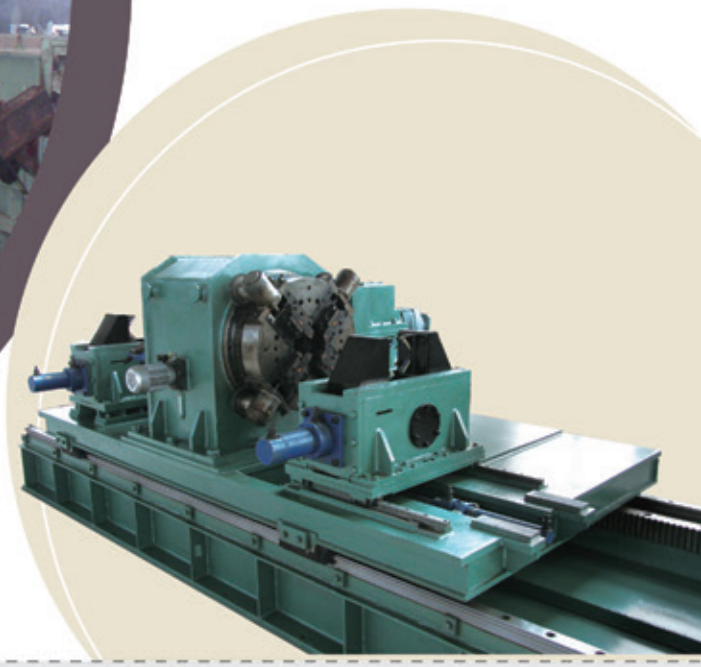

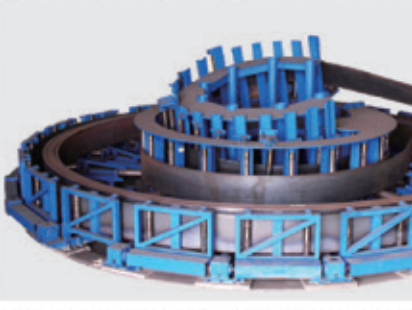

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Further investment at laser cutting plants

BARRETT Steel is offering customers new standards of tube manipulation and processing potential by making further investments at its Lasertube facilities. A LT14 (mini Jumbo) tube laser, the first in the UK, has been installed at the Scunthorpe plant, while a BLM Elect 150 tube bending machine, which offers variable and fixed radii bending in one machine, was due for delivery and commissioning at the West Midlands depot late in 2012. Together they represent an investment of £1.6mn.

Recent tube laser investments at Lasertube, which include two LT8 tube lasers and an LT20 (Jumbo) tube laser, bring total investment at the plant to £3mn over the past four years. David Cleaver, sales manager of Lasertube Cutting, part of Barrett Steel's tubes division, commented, "These investments open up a wealth of opportunities for our customers, not just in the extra operations and capacity they provide, but also in the speed of response we can offer. They also increase our capabilities for newer and growing requirements in the offshore wind turbine industry and other renewable energy markets where high volumes are required, often to tight deadlines.

"Crucially, these computer controlled operations allow us to guarantee repeatability in terms of accuracy, tolerances and finish. These enhanced strengths also mean that customers can now order stock and tube bending or cutting from one source."

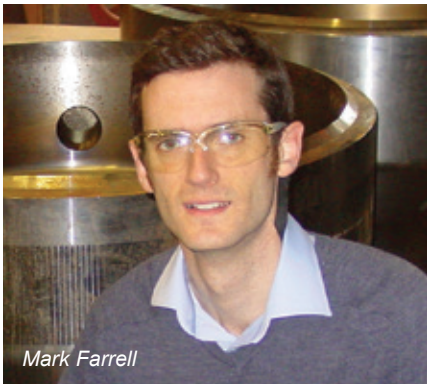
The BLM Elect is typically used by manufacturers of construction machines, agricultural machinery, industrial vehicles, ships, railway equipment, and automotive and motorcycle products because of its ability to deliver precise, high quality bending of medium to large tubes into complex multi-shaped tubular components. It is particularly suited to applications with little or no straight between bends or where tight radius bends are required.

The LT14 can be used to cut round, square or rectangular tubes, open profiles, H-beams or IPE, and special profiles. Typical areas of use for the LT14 include agricultural equipment, heavy construction equipment, the ship building, oil, mining and conveying industries, crane lifts and for bracings in buildings.

Stainless steel products that benefit from laser tube cutting include architectural handrailing, racking systems for shop fitting, architectural feature work, security and architectural fencing, lighting columns and office furniture. Key benefits for the customer lie in the LT14's ability to carry out complex cutting procedures; for example, angles and V-shapes in both closed and open section tubes can be carried out in a single pass.

Barrett Steel – UK
Email: sales@barrettsteel.com
Website: www.barrettsteel.com

New project manager for Arc Energy Resources


Mark Farrell

ARC Energy Resources, a supplier of weld overlay cladding and high quality fabrications, has expanded its client support team with the appointment of Mark Farrell as a project manager.

Mr Farrell, who has a degree in mechanical engineering, brings 10 years' project management experience in the offshore oil and gas industry, having worked for a manufacturer of pipeline components for subsea installations, and dealt with many of the major oil companies. He commented that he is looking forward to working with the Arc Energy project team and, as he lives 30 minutes from Arc Energy's Gloucestershire factory, is particularly pleased that his experience is now helping to support a local business.

He added that he was impressed with the emphasis Arc Energy places on company and staff development to ensure that its highly specialised welding techniques meet the requirements demanded by clients who manufacture a wide range of specialist oilfield equipment.

Welcoming Mr Farrell, managing director Alan Robinson said his experience is an excellent fit with Arc Energy's existing business, and being able to fill a key position locally is a bonus.

Arc Energy Resources recently made a major investment in two new rotating head welding machines, costing £500,000. This has increased productivity and extended the size and scope of work the company can handle, which now includes complicated component geometries for full or partial cladding, and fabrication of a wide range of component sizes weighing up to 15 tonnes.

The company's in-house designed cladding workstations feature state-of-the-art control systems developed to suit its customers' specialised engineering requirements, and can clad bores up to 4m in diameter and areas of restricted access within bores as small as 20mm diameter. Arc Energy also offers in-house test weld, heat treatment, PMI and NDT facilities.

Arc Energy Resources – UK
Email: sales@arcenergy.co.uk
Website: www.arcenergy.co.uk

Universal Tube & Rollform builds a 4" rafted tube mill

STEPHENS Pipe & Steel, LLC, manufacturer and distributor of fence materials in the USA and Canada, has commissioned Universal Tube & Rollform Equipment Corporation to build a 4" tube mill using both new and used materials. The Ardcor rafted tube mill will be used to produce tubes up to 4" in diameter at Stephens Pipe & Steel's Russell Springs, Kentucky plant.

Universal Tube & Rollform will supply to Stephens Pipe & Steel a rebuilt Ardcor tube mill with used stands, side closers, weld pressure and bases. New are the scarfing unit, raft plates, turksheads, shift boxes and gearboxes along with new controls manufactured by Universal Controls Group.

The tube mill will include both new and used materials, keeping cost down and saving time during the rebuild process. Universal Tube & Rollform's knowledgeable engineers provided cost effective solutions by redesigning the original Ardcor mill to be rafted with a second set of Ardcor stands and cone gearboxes.


4" tube mill

For over a quarter of a century Universal Tube & Rollform has established itself as a global leader in the metalworking industry supplying quality used tube, pipe and rollform machinery.

This latest order is an example of how it has expanded capabilities to better serve an ever-growing and diverse customer base. Its partnership with Universal Controls Group, a rapidly growing controls supplier, has enabled it to offer a wide array of cost efficient services.

To complement Universal Tube & Rollform's used tube mill and rollforming lines Universal Controls Group offers expandable mill control systems that are pre-engineered or custom-built to customer specifications. Its pre-engineered systems can cut delivery time in half and keep costs low. Universal Tube & Rollform upholds high standards of integrity and reliability. It is a proud member of the Machinery Dealers National Association, the Tube and Pipe Association International, the Fabricators and Manufacturers Association and the Society of Manufacturing Engineers.

Universal Tube & Rollform Equipment Corporation – USA
Email: sales@utubeonline.com
Website: www.utubeonline.com

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Aicon acquires 3D metrology company Breuckmann

AICON 3D Systems GmbH has taken over 80 per cent of Breuckmann GmbH, Meersburg, Germany. Austrian voestalpine Group, which had held the major interests in Breuckmann, sealed the treaty with Aicon in August 2012.

Dr Bernd Breuckmann, the founder and former owner-manager who retired from active business in April 2012, still holds 20 per cent of shares in the company, and the Breuckmann GmbH brand will remain unchanged.

Breuckmann GmbH is a manufacturer of high-value optical systems for contact-free measurement, digitisation and inspection in three dimensions. The company, founded in 1986, has approximately 40 employees. Since 1995 Aicon and Breuckmann have been in close collaboration.

As the Breuckmann product range completes the Aicon portfolio, the merging offers the possibility to operate in the market as a full-range supplier of 3D metrology systems.

Based on a patented fringe projection technique, the 3D digitisation and measuring systems developed and manufactured by Breuckmann are characterised by fast data acquisition time, together with a high standard of adherence to detail, even in the case of highly complex surface geometries. Applications are predominantly found in the fields of technical and industrial engineering, but also in the context of human body measurements as well as arts and culture.

For Aicon the future cooperation in development, production and sales will open opportunities for economic growth and profitability. Subsidiaries in Asia and America, global dealer networks and two convenient locations in Germany – Braunschweig in Lower Saxony and Meersburg in Baden-Wuerttemberg – offer further synergy potential.

Dr Carl-Thomas Schneider and Dr Werner Bösemann, managing directors of Aicon 3D Systems, commented, "For Aicon the acquisition of Breuckmann is a worthwhile investment into the future. Now, as full-range supplier of 3D metrology systems with more than 100 highly qualified employees, we are on course for further success."

Aicon 3D Systems is a leading provider of optical camera-based 3D measurement systems.

The company, founded in 1990, develops and distributes systems for the business areas of inspection and testing including car safety and tube inspection.

The company's reference list includes automotive manufacturers and suppliers, companies from the aerospace industry, and the areas of shipbuilding and renewable energies.

Breuckmann GmbH – Germany
Fax: +49 7532 43 46 50
Email: info@breuckmann.com
Website: www.breuckmann.com

Exhibitors 'highly satisfied' following EuroBLECH 2012

AFTER five successful exhibition days at the Hanover exhibition grounds, EuroBLECH 2012, the 22nd International Sheet Metal Working Technology Exhibition, closed its doors on Saturday, 27 October 2012.

On a net exhibition space of 84,000 square metres, a total of 1,520 exhibitors from 39 countries presented a top-class range of innovative products for the complete sheet metal working chain. With 60,500 trade visitors from all over the world, the number of visitors at EuroBLECH 2012 equals the visitor number of the previous exhibition, while the number of exhibitors at this year's show had grown by 5 per cent and the floor space by 7 per cent.

The first analysis of the visitor survey showed a significant shift towards highly qualified trade visitors. Some 75 per cent of the visitors came from the industry, and the percentage of visitors from companies with more than 500 employees has increased by 20 per cent. There were, once again, more visitors from the top management, and 40 per cent of all visitors came to EuroBLECH 2012 with the definite intention of buying.

"A first analysis of the exhibitor survey shows that exhibiting companies were highly satisfied with the outcome of the exhibition, even though the current economic situation remains uncertain. However, German exhibitors assessed the business climate as much more favourable than companies from outside Germany," said Nicola Hamann, exhibition director EuroBLECH, on behalf of the organisers, Mack Brooks Exhibitions.

The exhibitor survey shows that the main reason for exhibiting at EuroBLECH 2012 was to approach new markets, attracting new customers and product presentation; and exhibiting companies have achieved these objectives.

Against the background of the prevailing business climate, they were extremely positive about their participation at the show. EuroBLECH 2012 received excellent values from exhibitors and visitors alike in particular for the large number of innovations presented at the show and for its high internationality. Almost half of the exhibitors (48 per cent) and 36 per cent of the visitors at this year's EuroBLECH came from outside Germany.

Other countries in attendance, after Germany, were Italy, Turkey, China, the Netherlands, Switzerland, Austria, France and the USA. Top visitor countries from outside Germany were Austria, the Netherlands, Sweden, Switzerland, Great Britain, Italy, Denmark, the Czech Republic, Poland and India. EuroBLECH 2014 will take place from 21 to 25 October 2014 at the Hanover exhibition grounds.

EuroBLECH
Website: www.euroblech.com

Beta LaserMike appoints new VP of global sales

BETA LaserMike, a provider of precision measurement and control solutions, has announced that Randy Luffman has joined the company as vice-president of global sales.

Mr Luffman will be responsible for further expanding worldwide sales for the company's line of gauging and testing systems. The company's regional sales directors will directly report to Mr Luffman.

Mr Luffman comes to Beta LaserMike from RedZone Associates, where he was managing partner for the company's business of designing, recruiting, training and leading sales organisations for B2B clients.

Previously he was the global sales vice president and general manager for MarketSource, a B2B sales and marketing services firm. Mr Luffman also held the position of director of global sales and technical service for Agilent Technologies. He began his career at Hewlett-Packard, where he served in roles of increasing responsibility, ultimately leading to the position of senior sales and marketing manager for the Americas and EMEA.

"Randy brings a wealth of experience and an impressive track record in channel development and global sales growth," said Ken Wright, president of Beta LaserMike. "He has extensive knowledge of technical sales leadership and possesses a strong background in general management. This is important as we continue to expand our commercial footprint across international markets for measurement and control solutions."

Mr Luffman holds a bachelor's degree in chemistry from East Carolina University, and has obtained an Executive MBA from Harvard Business School.

Randy Luffman

Beta LaserMike – USA
Fax: +1 937 233 7284
Email: sales@betalasermike.com
Website: www.betalasermike.com

Coil-coating plant built

LUVATA, a leader in metal solution manufacturing, heat transfer technology and engineering and design services, has broken ground on its latest facility – a coatings plant in Ramos Arizpe, Coahuila, Mexico. The plant will offer two proven protective coatings for HVACR equipment: ElectroFin® E-coat and Luvata Insitu®. ElectroFin E-Coat provides corrosion protection coating for coastal environments.

The new facility, located 40 miles from an existing Luvata facility in Monterrey, Nuevo Leon, is the company's fifteenth facility in North America. Conveniently located between Monterrey and Saltillo off the Monterrey bypass highway #40, this area is also home to Lennox International, Carrier de Mexico and Whirlpool.

"Our new location in Ramos Arizpe complements its sister facilities in Monterrey and Juarez in meeting the growing needs of our customers in Mexico," said Luvata CEO John Peter Leesi. "Our ability to provide a wide range of product solutions within the HVACR industry will help to maintain Luvata's position as the supplier of choice for our customers." Construction of the new multi-million dollar facility includes 50,000ft^2 of manufacturing space and 7,000ft^2 of office space.

Luvata – USA
Website: www.luvata.com

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KraussMaffei pools US activities

THE KraussMaffei Group has pooled its business activities in the USA with effect from 1 October 2012. As part of this measure, the plant of Netstal USA will be relocated from Devens, Massachusetts, to Florence, Kentucky. Products of three brands – KraussMaffei, KraussMaffei Berstorff and Netstal – will therefore be sold under this single umbrella in future.

With the integration of the sales and service activities of Netstal, the KraussMaffei Group is pooling its strengths and expertise in the market presence in the USA and the sale of products and services of the KraussMaffei, KraussMaffei Berstorff and Netstal brands under a single organisational umbrella. "We are certain that this will be to your advantage since you will be able in future to select the right product for you from the right brand and the right service from our extensive range of products and services corresponding to your needs," said Paul Caprio, president of the American subsidiary KraussMaffei Corporation. All three brands will continue to operate independently on the market.

"I am really looking forward to this challenge," added Mr Caprio. "With the strengthening of our service portfolio, a consistent management structure and dedicated employees, we will be able to actively extend our business activities and satisfy specific customer requirements on a needs-oriented basis."

Mike Sansoucy, former president of Netstal USA, will still be responsible for the sales and the aftermarket activities of the Netstal brand as general manager. Tony Gaudet, head of after sales, will continue to be available to customers as a contact person. The former office of Netstal in Devens will be closed.

KraussMaffei Corporation – USA
Fax: +1 859 28 30 290
Website: www.kraussmaffei.com


Paul Caprio


Mike Sansoucy

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Tubos Reunidos orders RH plant

TUBOS Reunidos SLU, Spain, has ordered an RH plant from SMS Mevac, Germany. The plant will be designed to produce 400,000tpy of steel of high cleanness in terms of inclusions and with ultra-low gas contents for the manufacture of seamless steel pipes. Commissioning is scheduled for the third quarter of 2013.

With this plant, Tubos Reunidos will fulfil the demanded requirements on steel cleanness. In alloyed steel production, the low hydrogen content will be achieved via the LF-RH production route in an electric steel plant. A notable feature is the short cycle time of the metallurgical treatments in the ladle furnace and the RH plant with subsequent cleanness treatment in a separate ladle treatment station.

The treatment cycle time is less than 60 minutes. This makes it possible to install the individual plants in a special arrangement developed for Tubos Reunidos. Thanks to the stationary RH vessel, a short suction pipe can be installed. To achieve the required high utilisation of the plant, two ladle transfer cars will be used.

By means of a ladle lifting device (rocker type), the ladle will be lifted out of the ladle car for the treatments, which leaves the car available for use during the vacuum treatment. Within this project, Tubos Reunidos will receive comprehensive consultation from SMS Mevac to achieve improved metallurgical results.

The scope of supply includes the engineering, as well as the delivery key components including ladle lifting system, vacuum vessels, vessel transport car, TOP burner lance, vacuum pump and snorkel maintenance car, electrical equipment including instrumentation, supervision of erection and commissioning, and metallurgical consultation.

SMS Mevac GmbH – Germany
Website: www.sms-mevac.com

Gold medal

THE chief executive of Sheffield Forgemasters International has been awarded a gold medal for his outstanding services to the steel industry. Graham Honeyman was named winner of the Bessemer Gold Medal by The Institute of Materials, Minerals and Mining (IOM3) after judges decided his work has promoted the manufacture of engineering components of national and international importance.

The award makes a return to Sheffield, as previous city-based winner Harry Brearley was given the award in 1920 following the discovery of stainless steel.

Sheffield Forgemasters International Ltd – UK
Fax: +44 114 251 9013
Email: sales@sfel.com
Website: www.sheffieldforgemasters.com

Inductotherm at BORU 2013

INDUCTOTHERM Heating & Welding Ltd is the European manufacturing and sales headquarters for Thermatool – manufacturer of tube and pipe HF welding, cutting and seam annealing systems, together with Radyne – induction heating technology specialist for line pipe pre-heating and coating systems. Visitors to the Inductotherm Heating & Welding stand at BORU will have an opportunity to discuss their tube and pipe welding, cutting and heating requirements with a number of experienced Thermatool and Radyne applications specialists. Items of particular focus at BORU 2013 include Thermatool's new HCT™ (HAZControl™ Technology) HF welding systems. HAZControl™ Technology simplifies the complex relationships between key HF welding variables, allowing the operator to achieve the best possible weld for varying diameters and thicknesses by using different combinations of weld power and frequency.

Ideally suited to precision and automotive applications, Thermatool's HCT™ system also permits the operator to store weld recipes for optimum production repeatability and reduced levels of scrap.

Also of particular interest is the launch of Thermatool's dedicated spare parts and service department for its large Turkish customer base, which is operating out of Inductotherm Turkey's Gebze Headquarters.

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

Order for a cut-to-length line

CASCADIA Metals Ltd (Delta, British Columbia) has purchased a cut-to-length line from Herr-Voss Stamco. The line will be installed in Cascadia's Brandon, Manitoba facility.

The backbone of the new cut-to-length line will be the Herr-Voss Stamco Precision Leveler®, which will process material with a thickness range of 0.024" to 0.135". This is Cascadia's third Precision Leveler purchased from Herr-Voss Stamco in the last two years.

The line will also include Herr-Voss Stamco's precision EDT roll feed system, which will be coupled with a high speed shear from the same company to form a state-of-the-art cut-to-length system.

Herr-Voss Stamco – USA
Email: sales@herr-voss.com
Website: www.herr-voss.com

New CEO takes helm at EFD Group

BJØRN Eldar Petersen, a Norwegian executive with 20-plus years' experience in the global automotive industry, has been appointed CEO of the EFD Induction Group. Mr Petersen takes over from Eivin Jørgensen, who, as planned, has stepped down on his 60th birthday. "I'm honoured and flattered to be made CEO of this great company," said Mr Petersen from EFD Induction's corporate headquarters in Skien, Norway. "In fact, I was once a satisfied customer of EFD Induction, back when I was a manager at Kongsberg Automotive plants in Hvittingfoss and Rollag, Norway. So I'm already familiar with EFD Induction and how its products play key roles in everything from Formula One cars to wind turbines."

A native of Oslo, Mr Petersen earned an MBA from the Norwegian School of Management before being recruited by Kongsberg Automotive, the multinational manufacturer of driveline systems, power electronics and other critical automotive components. Before taking over at EFD Induction, Mr Petersen lived for more than three years in China, where he headed up Kongsberg Automotive's Asian operations.

For EFD Induction board member Truls Larsen, Mr Petersen's overseas experience and executive role in Asia mesh perfectly with the Group's strategy. "EFD Induction is in the process of becoming a seamlessly integrated global player. It is a process that will no doubt be supported by our new CEO with his strong international background and outlook."


CEO Bjorn Eldar Petersen

Currently the world's second largest induction heating company, the EFD Induction Group comprises 19 companies in Europe, Asia and North and South America. EFD Induction also has a significant stake in an associated Canadian company called Tekna Plasma Systems.

"These are challenging times," commented Mr Petersen. "The global economic outlook is still uncertain. But thanks to the hard work of my predecessor, EFD Induction is well positioned to thrive. We have technologies that are proven to cut costs and improve quality for our customers."

A keen sportsman, Mr Petersen enjoys literature and music, and spending time with his wife Tone and their three sons.

EFD Induction – Norway
Website: www.efd-induction.com

Indowater 2013

INDONESIA's largest international water and wastewater trade show – Indowater 2013 – will be held from 3 to 5 July 2013 at Jakarta Convention Center, in conjunction with Indorenergy and Indowaste. The event takes place every year, alternately in Jakarta and Surabaya.

The trade show is organised by PT Napindo Media Ashatama, in association with Merebo Messe Marketing in charge of the Europe, American & Australia Pavilion. The last Indowater Jakarta in 2011 attracted 336 exhibitors from 24 countries, and 7,200 trade visitors.

Merebo Messe Marketing – Germany
Email: contact@merebo.com
Website: www.indowater.merebo.com

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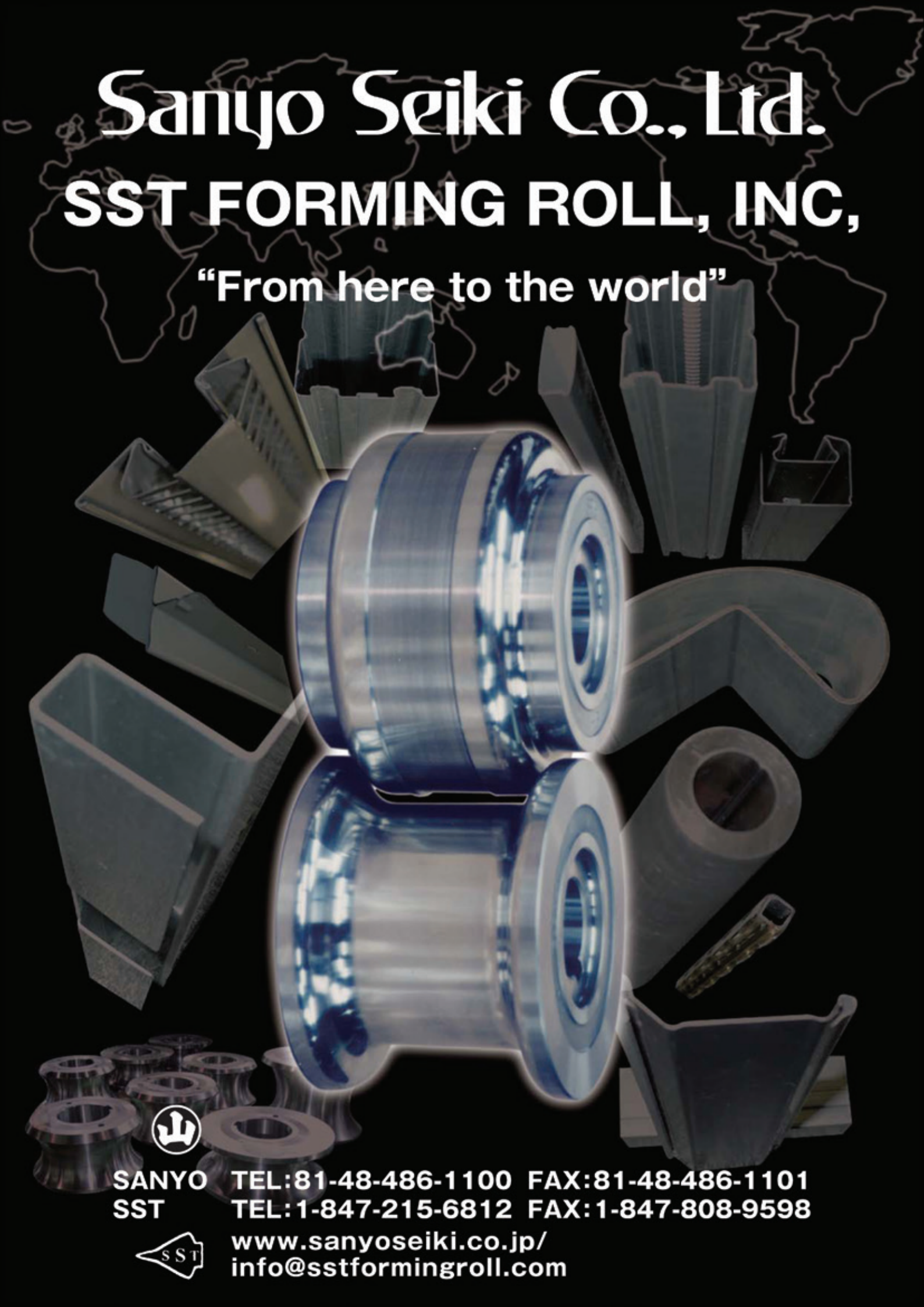

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- **Mike Fitch,** President & CEO, **JSW Steel USA**
- **Perry Roberts,** Senior Director, Procurement, **Energy Transfer Partners**
- **Tigran Atayan,** Executive Vice President, Tubular Products Group, **Evraz**
- **Daniel Valk,** President, **Interpipe North America**
- **Semir Belage,** Manager, Line Pipe Procurement, **TransCanada**
- **Peter Brebach,** Managing Partner, **Iron Angels of Colorado**
- **Dolty Cheramie,** President, **Pipe Exchange**
- **Robert S Mandel,** President & CEO, **Welded Tube of Canada**
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For more information: www.amm.com/events

METALUBE invests in cutting-edge software

HIGH performance lubricant specialist Metalube has gone live with SAP ERP. This globally renowned software solution integrates all core business functions across the entire company. SAP is specifically designed for worldwide organisations such as Metalube and will encompass all areas of the business from accounts, sales and customer relationship management to material resource planning and quality control.

Robert Brown, chairman, Metalube Ltd, said: "This is a significant six figure investment for Metalube and is part of our overall 10-year growth plan, in which we aim to be industry leaders in technology. SAP will also incorporate our subsidiary companies in Brazil, China and India all under one software umbrella – giving everyone who works at Metalube access to live, real time information."

Live information will also give valuable benefits to customers with improved response times and up to the minute prices. Metalube will have access to instant traceability of all raw materials and finished products and operatives will now be able to access and process information at any time from hand-held devices. Robert Brown added: "The advantages are considerable – we can now trace batch numbers; who signed for what, when and where; what's in stock; what's being produced and what's available at a simple touch of a button."

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

Largest ever Davi plate roll

AFTER having purchased several Davi plate rolls in recent years the largest Danish company in wind energy fabricating have purchased a further 4 roll with capacity of 4,000 x 145mm to cold roll mono-piles for offshore wind towers. After the successful installation, the Davi engineers provided an intensive training to Bladt operators on the use of the new Davi iRoll device.

"iRoll, available on the Apple Store and running on iPad" said Orazio Davi, president, "is the most integrated CYBER CNC and represents the highest level of automation for plate roll."

Davi – Italy
Website: www.davi.com

Truck manufacturer takes on innovative bending technology

GLOBAL design, manufacturer and supplier of tube bending and end-forming technologies, AddisonMckee of Lebanon, Ohio, Brantford, Ontario and Bamber Bridge, UK has been appointed to install another of its innovative DB150 ESRB tube bending machines into the Munich plant of a major supplier to a prestigious German truck manufacturer.

The DB 150 ESRB model has established an enviable reputation as one of the most successful, sophisticated and efficient all-electric multi-stack 12-axis CNC benders incorporating boost to tangent. AddisonMckee's experience of CNC bending technology made the company's appointment a natural one.

One of the key benefits of the DB150 ESRB is its capability to be 30 per cent quicker per manufacturing cycle than conventional bending machines along with the renowned component accuracy and repeatability that have come to be a given with AddisonMckee technology.

The model has also been specifically developed to significantly reduce tube scrap and improve process cycle time at larger tube diameters on tight multi-radii. There are 'green' benefits too, with the elimination of all hydraulic functions combined with retention of speed, power and flexibility, delivering a rigid, clean and quiet unit with automatic repeatable slide setting for tool change.

A tooling height of 450mm facilitates the use of multi-radius and compounded tooling. The bender will alternatively accommodate tooling set-ups designed to minimise tooling changeovers, an absolute necessity in an environment such as a modern truck manufacturing facility where exhaust system components can differ significantly from truck to truck.

AddisonMckee – UK
Email: paspinall@addisonmckee.com
Website: www.addisonmckee.com

The DB 150 ESRB model

Saw blade company appoints regional sales manager

THE MK Morse Company, a leading US manufacturer of professional quality saw blades and power tool accessories, has named James Reid III as regional sales manager for the Eastern US.

Mr Reid is tasked with continuing the expansion of MK Morse market share in his area for the commercial division by focusing on power tool accessories such as hole saws, reciprocating saw blades, hacksaw blades, metal cutting circular saw blades and portable bandsaw blades.

Having previously worked in the cutting tool industry as a sales manager and sales director, Mr Reid brings a wealth of industry experience to the MK Morse Company.

In his new position Mr Reid will report to director, commercial sales, Kim Reynolds. "As The MK Morse Company continues to grow we need experienced sales managers such as James as we strive for the next level of excellence and success. We are confident that his knowledge, work ethic, enthusiasm and professionalism will benefit our distributors," said Mr Reynolds. Mr Reid will look after the Eastern US and Canada region.

MK Morse Company – USA
Website: www.mkmorse.com

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Galvanising and coating line

TENOVA Strip Processing has signed two contracts with Southern Steel Sheet Corporation (SSSC), a joint venture of Vietnam Steel Group with Sumitomo (Japan) and Federal Iron Works (Malaysia) for the production of high quality galvanised and colour coated coils.

The project takes place at the new SSSC plant in the industrial zone of Nhon Phu, Dong Nai Province, 70km from Ho Chi Minh City, and was awarded during the ceremony for the 17th anniversary of SSSC's foundation.

The project will be completed in 26 months and is composed of a galvanising line using cold rolled low carbon steel as feedstock to produce 150,000t/yr of aluminium-zinc or zinc coated carbon coils; and a colour coating line using galvanised products or cold rolled steel to produce 70,000t/yr of colour coated coils. The two lines are based on sophisticated technologies to meet high-quality demand in local market and neighbouring countries, mainly for construction and architectural applications in tropical climatic conditions.

Tenova takes advantage of advanced solutions in strict compliance with regulations and safety norms, in order to guarantee indexes of emissions in line with European or American standards. Tenova took also advantage of a recent Vietnamese policy that grants licenses only to new projects based on advanced technologies for products with high standards, ensuring a quick return on investment.

Tenova SpA – Italy
Website: www.tenovagroup.com

Royalton Industries updates website

TUBE and pipe mill entry equipment, coil end joiners, strip accumulators, coil packaging lines, slitting line upgrades, coil processing equipment and engineering and manufacturing services are all highlighted on the new redesigned website of Royalton Industries, Ohio, USA.

It is easier to navigate, has more selections and you can easily find what you need, request a quote and see a selection of videos.

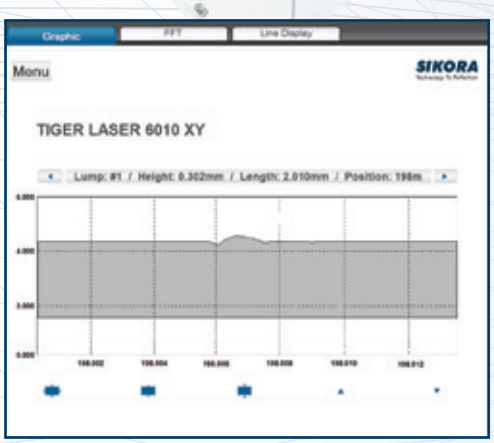
Royalton Industries – USA
Website: www.royaltonindustries.com

www.sikora.net/tiger6000

»A picture is better than a thousand words.«

Stephanie Imöhl,
Head of Procurement & Logistics at SIKORA AG

TIGER LASER 6010 XY



Visualization of a fault at the ECOCONTROL 6000

New: The TIGER LASER 6010 XY measures online the diameter and inspects the surface of hoses and tubes for lumps and neckdowns with utmost reliablity. Defects are graphically visualized at the processor system ECOCONTROL.

TIGER LASER 6010 XY

- Diameter measurement and high-speed surface inspection
- Use of image sensors
- Graphical display and storage of the surface profile of detected lumps and neckdowns

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Forgemasters on roll with South American contract

SHEFFIELD Forgemasters International (SFIL) has retained its position as one of the largest suppliers of steel back up rolls after completing work on a multi-million pound deal for South America. The engineering firm supplied five back up rolls to a new plant in Brazil, on behalf of Siemens Metals Technologies, which is operated by special steels manufacturer Gerdau.

Forgemasters supplied five large rolls for Gerdau's new plate mill finishing stand, each of which weighed 153 tonnes and measured two metres in diameter, as part of a contract for Sheffield-based Siemens Metals Technologies. Martin Wilks, senior sales manager at Forgemasters, said, "The Gerdau contract is an exciting development in the continuation of our relationship with Siemens. The rolls are also the first that have been dispatched to Brazil by SFIL for around nine years and will help to build our profile in South America."

Finished components will be used to roll steel plate for ships, bridges, and pipes carrying gas and water. The order for the huge back-up rolls confirms the company's standing in the global marketplace as a UK exporter.

Specialist techniques were used to produce the rolls, including forging large steel ingots and heat treatment – a process that exposes the rolls to closely controlled temperatures to create highly specific hardness properties.

The rolls were then machine finished to within 0.05mm using computer-controlled machine tools.

Engineers from Gerdau visited SFIL and saw one of the rolls whilst they were at Siemens plc on a training course

Gerdau is a producer of long products in the Americas, and one of the largest suppliers of special steel in the world, with industrial operations in 14 countries. It meets the needs of the civil construction, industrial and agribusiness sector, and also supplies special flat products for the automotive industry.

In Brazil, Gerdau steel is part of the construction and modernisation of eight soccer stadiums for 2014 World Cup and major infrastructure projects for the country such as railways, wind power plants, ports and roads.

SFIL has also gained two more South American contracts, one from Argentina-based existing customer Aluar, and one from new customer Metallurgica Oliva for nine small work and back up rolls.

The work will help to further capitalise on the company's offshore division, Vulcan, breaking into the Brazilian market following the UK Trade & Investment (UKTI) business mission to South America last year.

Mr Wilks added, "Forgemasters is one of very few companies in the world with the capability to supply steel rolls of this size, which puts us in a very strong competitive position internationally. These contracts also show our commitment to extending our reach into the BRIC countries, which are emerging markets and important for British businesses to expand into."

The company is also currently producing large back-up rolls for mills in China, India and Venezuela, and has secured its first contracts for rolls in Romania.

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

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X-RAY 6300 for 270mm diameter PE tube quality control

SIKORA has recently commissioned the X-ray device X-RAY 6300 at DYKA, a gas and water tube producer in Overpelt, Belgium. After extensive discussions, project meetings and development work over a three-year period, the project was successfully realised.

Knut Szemjonneck, sales director hose and tube, said: "At the beginning of our cooperation, DYKA desired to reliably measure single-layer PE tubes during production. By pursuing this goal with Sikora the basic concept for a continuous quality control at the extrusion of plastic tubes was developed. In 2011, the first X-RAY 6000 device was presented to DYKA. DYKA at no point of time questioned the quality of the system. In fact it was intended to present the technology to the staff (who now work with it daily) so they could see the advantages of reliability, operation and support.

"Previously DYKA had tried alternative measuring procedures within the factory, but they were found to show weaknesses and were rejected. Despite these trials being conducted several years ago, the bad memories were still present. The Sikora device demonstration quickly removed any doubts and misgivings the staff held from the past. They were quickly convinced of the advantages and the reliability of the device, discovering that this technology is excellent for process optimisation and control. The obvious next step was setting out the technical specifications in detail and tailoring it to the specific conditions of their extrusion line."

Their extrusion line produced natural gas tubes made of polyethylene with an outer diameter of 250mm and a wall thickness of 25mm at a line speed of 6m/min. For the large diameters that are typical for gas or water tubes the online quality control is of enormous importance for minimising costs. Due to the large diameter of the product the X-ray device X-RAY 6300 was chosen since it covers a diameter range from 30 to 270mm. It was installed between the first vacuum tank and the spray bath. The function of the X-RAY 6300 in this position is to continuously control the quality of PE tubes both quickly and precisely during the production process. After switching on the device all measuring results such as wall thickness, outer and inner diameter, eccentricity and ovality are immediately available. All data is presented numerically and graphically on the processor display system Ecocontrol which has simple operation via an intuitive touchscreen. Ecocontrol provides a clear overview with a graphical line representation of positioning of all measuring devices to the user and utilising the special control module Set Point, DYKA can additionally control the diameter or wall thickness to nominal value continuously by automatically influencing either line speed or extruder rpm. Hence, the X-RAY 6300 fulfils all requirements for process stability and permanent quality control.

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

X-RAY 6300 at DYKA in Overpelt, Belgium

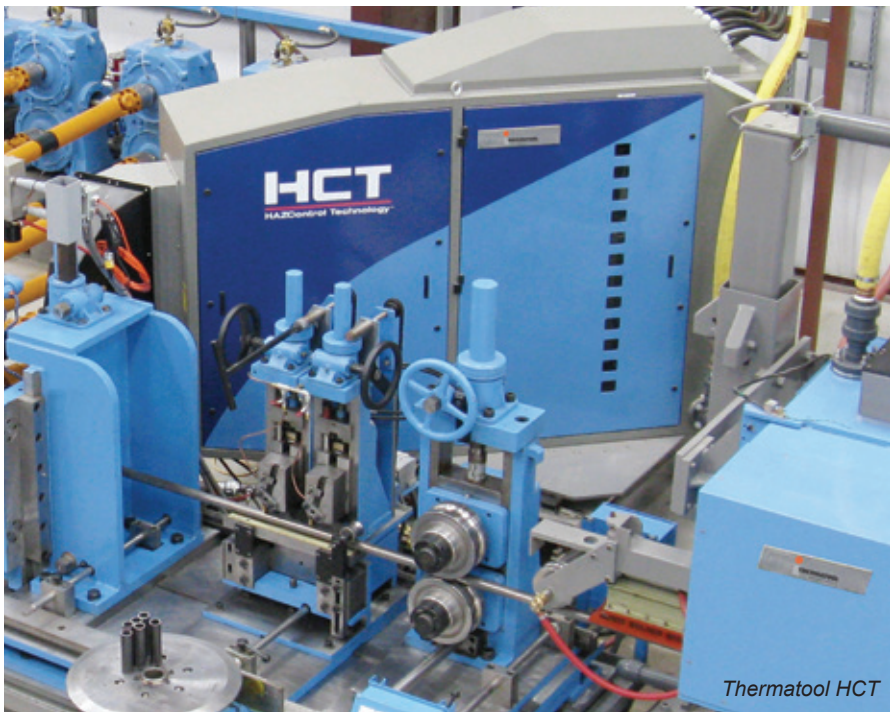
New levels of welding control

THERMATOOL Corporation has introduced a new generation of HF tube and pipe welding system that incorporates an intuitive user interface called HAZControl™ Technology (HCT™), designed to deliver precise, independent control of weld power and frequency on each mill run.

To meet the stringent demand of customers, all tube and pipe manufacturers have worked to more efficiently manufacture products to customer requirements without a compromise on quality. The quality of a tube or pipe manufacturer's end product is primarily dependent on the quality of the weld. A successful weld is rooted in the culmination of process knowledge and industry expertise.

Each producer's approach yields a different product and with influencing variables like power, line speed, frequency, and vee geometry, the weld is as complex and vital as the industry that produces it. Thermatool has introduced HAZControl Technology to simplify the complex relationships between key HF welding variables. The HCT interface enables a user to decide upon the optimal weld parameters that define their product. It then uses predictive algorithms to calculate and plot how power, frequency, vee length and mill speed influence the weld. If any of the defined key variables change, HAZControl Technology guides the operator back towards the approved HAZ width and geometry according to the producer's requirements.

HAZControl Technology represents further development of Thermatool's variable frequency current fed inverters (CFI). True variable frequency, pioneered by Thermatool in 1999, allows controlled adjustment of output welding frequency. Other welding systems can alter frequency only by forcing an operator to change capacitors, transformer taps, induction coils, or other mechanical adjustments, which results in costly downtime.



Thermatool HCT

Thermatool's HAZControl Technology guides operators by a simple visual display of the target HF weld parameters, to control output frequency in real time. The software was designed to reduce set up time and scrap by giving the operator the ability to control frequency in 1kHz increments while maintaining frequency stability of ±1%. The resulting precision ensures repeatable HAZ characteristics across an entire product range, regardless of operators, mill speeds or product. Thermatool's intuitive HCT control panel software allows the operator to save the desired weld parameters of the optimal weld per product and quickly recall the production recipe for repeatability.

Thermatool Corp – USA
Email: info@ttool.com
Website: www.thermatool.com

RingSaw from Reika

GERMAN company Reika recently received another order for a stationary saw based on the RingSaw solution from one of the world's largest pipe manufacturers.

The customer's requirement is to cut tubes up to 180mm in diameter that will be used later in the production of sleeves. These are high-precision tubes according to API standard for use in oil-field applications.

"The customer is cutting to a high precision standard, so there was no better choice than the RingSaw," commented sales manager Andreas Zimball. The customer conducted long-term testing with its material on a RingSaw machine at Reika's factory in Hagen, Germany, prior to making the purchase decision.

"Test results were not only entirely satisfying, but we were able to design an optimised machine on the basis of the customer's material," said Mr Zimball. The customer was quickly convinced by Reika's RingSaw head orbiting the fixed work-piece with benefits including low burr, high accuracy and quick performance.

Reika GmbH & Co KG – Germany
Email: info@reika.de
Website: www.reika.de

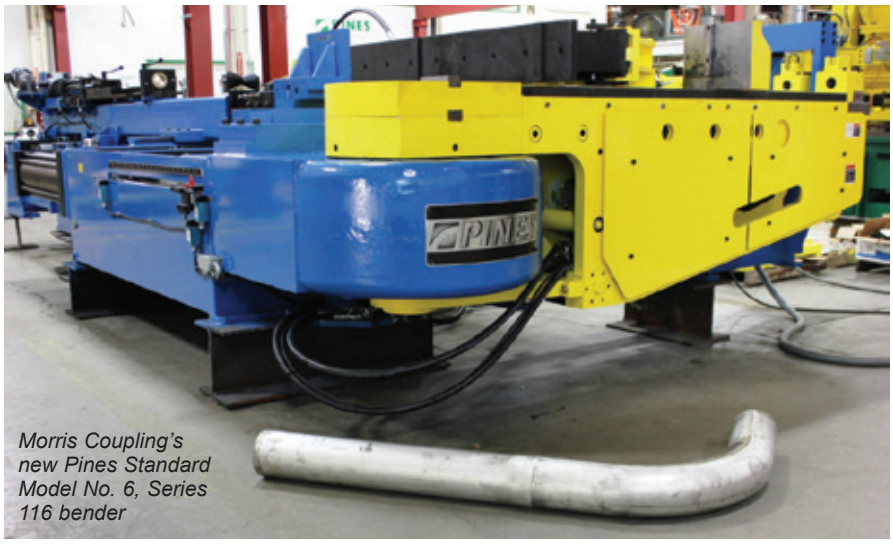
Versatile and powerful pipe bending solution

PINES Technology, an Ohio, USA -based manufacturer of pipe bending machinery, has recently shipped a No. 6 heavy duty rotary hydraulic bending machine to Morris Coupling for its Knoxville, USA facility.

Morris Coupling is a world leader in the manufacture of bent components for pneumatic conveying systems, high-performance exhaust systems, heat exchangers and other industrial products. Morris chose the Pines No. 6 to achieve its high output goals and maintain standards of quality. Its products include short and long radius bends ranging in size from 1½" to 8" OD and bend radii from 2½" through to approximately 72".

The Pines No. 6 is a powerful and dependable work-horse that offers fast set-up and changeover advantages. It is equipped with a Pines "Dial-A-Bend" SE PLC control delivering a high level of performance, precision and flexibility. The control stores up to 1,000 different bending programs.

Offering high production of multiple bend parts, the No. 6 is capable of fast, repeatable bending of pipe and tubing up to 8" OD. Wall thicknesses vary with different materials.



Morris Coupling's new Pines Standard Model No. 6, Series 116 bender

The machine has clockwise rotation, electric solenoid-actuated hydraulic circuit controlled from a convenient push button operating station and cushioned hydraulic cylinders to eliminate shock and extend machine life. The machine is fitted with a special, long stroke mandrel extractor that has electric tangent and CLR (centre line radius) adjustment. Ian Williamson, Pines CEO, said: "Both Pines and Morris Coupling are great American companies that have been in business for nearly 70 years. I look forward to a long, mutually rewarding relationship with Morris Coupling."

Pines Technology – USA
Website: www.pinestech.com

Servo motor driven tube machine from Haven Manufacturing

HAVEN Manufacturing, a designer and producer of tube and bar cutting machines, 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 Haven machine is able to be pre-programmed by the operator to cut multiple length and quantity parts from each individual mill length tube, maximising material use and minimising both wasted time and money.

Haven's Model 873 servo tube re-cut machine

The cut-off process begins when mill length tube bundles up to 30" in diameter are placed into the integrated loader/un-scrambler by overhead hoist or forklift. The tubes are then gently lifted by five elevating slings to load position, where single tubes gravity feed onto an inclined table that controls the feed rate into the re-cut machine.

As each individual tube reaches loading position, it feeds into v-rollers and is ready to advance towards the Haven cutting head. At this point the tube is gripped by a set of slide clamps controlled by the highly precise integrated servo motor and is moved forward into the now-open dual-blade cut-off head to the exact length required. The Model #873 uses the same dual-blade, shear tube recut technology utilised in Haven tube re-cut machines for over 30 years.

As the tube is being cut, the slide clamp retracts to its original position and is ready to advance the tube to the next pre-programmed cutting length. The Model #873 accomplishes the shearing process in fractions of a second and the system can achieve up to 3,000 cycles per hour.

Haven Manufacturing – USA
Email: info@havencut.com
Website: www.havencut.com

Welding with arc voltage control

ALTERNATING current (AC) welding of aluminium and its alloys with arc voltage control (AVC) using the Polysoude PC 350 AC/DC controller and Tetrix 351 source is now possible thanks to a collaboration between Polysoude (concerning AVC regulation) and EWM (concerning source regulation).

The main obstacle with aluminium AC welding is the AVC regulation which does not support any phase jumps. The availability of the AVC function in AC gives Polysoude great competitive advantage.

The word “aluminium” is only a generic term used to describe, apart from pure aluminium, the entire range of alloys which the majority of applications are composed of. Orbital welding of tubing systems and pipelines in aluminium alloy prove to be particularly interesting in the case of cryogenic and nuclear applications, which require a high level of quality. The advantages of an automatic weld process lie in the traceability and the replication of parameters linked to the electronic control of power sources. This replication allows for the creation of an elaborated welding procedure resulting in constant high quality welds.

In 90 per cent of all cases appearance of H2 is caused by contaminated surfaces or humidity absorbed by the oxide layer. In some cases H2 comes from the base material or the filler wire.

Recommendations: using exclusively clean and dry materials; thorough protection of filler wire against any contamination; milling of zones to be welded; good shielding gas cover; and preheating of workpieces (at a temperature of 100°C).

AC current is used essentially for the welding of aluminium and its alloys. In AC mode, the tungsten electrode is switched between positive polarity (acting as a cathode) and negative polarity (acting as an anode). During positive polarity with the electrode as a cathode the oxide layer on the surface of the workpiece is

destroyed (cleaning sequence). During negative polarity with the electrode as anode the heat necessary to melt the material is transferred to the workpiece, the temperature of the electrode can decrease during this time (penetration sequence).

Polysoude – France
Email: info@polysoude.com
Website: www.polysoude.com

transfluid cutting technology handles tubes with a diameter of up to 76mm

READY-to-use solutions are only as good as their integrated process steps. Offering tailor-made concepts to clients that need their tubes to be processed means the German solution provider transfluid's integrated processes must document current technological progress – from semi-finished products to ready products.

High expectations, but this is the only way to guarantee the right results for special requirements. The company is therefore developing all fields in its portfolio, so that it can offer the machines that are required.

In the further development special attention is paid to the chipless tube cutting technology. This method is highly economical when work proceeds from the coil and when chips are to be avoided in the production process or when large amounts of tubes are to be separated. "We have installed our cutting equipment over many years in automated manufacturing units and make them ready for the future," explained Gerd Nöker, CEO of transfluid. The systems are extremely powerful and convince customers through amazing cutting quality independently of material and wall thickness. The software is specially programmed for optimised cutting to ensure that almost no waste originates from the process.

Cutting diameters of up to 76mm is possible

Chipless cutting equipment can be individually equipped for manual loading with a tube bunker or for cutting from the coil with a straightening line. The systems provide a cutting output of max Ø30 x 3 for stainless tubes and offers a production speed of up to 1,600 pieces per hour. The shortest cutting length is 25mm without pulling apart and 55mm with pulling apart, all with a residual length of 110mm. On top of that, more machines for cutting tubes with a diameter of up to 76mm are available. Separated parts can be sorted by customers in up to ten separate containers.

As the tubes are pulled apart when being separated it is ensured that they will not get constricted or deformed in the joint. Any material can be processed in the way as required. Being a future-orientated solution provider, transfluid is pushing ahead the technological progress in tube cutting.

transfluid is a reputable worldwide partner for the manufacturing of tube bending machines and tube processing machines.

Since 1988 transfluid has been developing client-orientated tech-nologies for tube processing and can offer customised solutions: from plant building and mechanical engineering, automotive and furniture industry to ship manufacturing to railing production and conveying systems. Although it is a brand famous all over the world, the company from South-Westphalia, Germany offers local presence through its service offices in Europe and Asia.

transfluid Maschinenbau GmbH – Germany
Email: info@transfluid.de
Website:
www.tube-processing-machines.com

Improved E-Z Fit Red pipe 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

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For rolls,material can be GCr15(EN31),Cr12,D3,Cr12MoV, SKD11,Cr12Mo1V1,3Cr2Mo8V,H13,9Cr2Mo and other kinds.

The ferrite rods plant is the largest production scale,the most complete specifications and varieties base in domestic.

The institute of magnetic application technology of the company is the professional organization engaged in research,development and production of magnetic application devices,developing and producing magnetic rolls for galvanizing line on steel pipes and steel plate separator well know in China.

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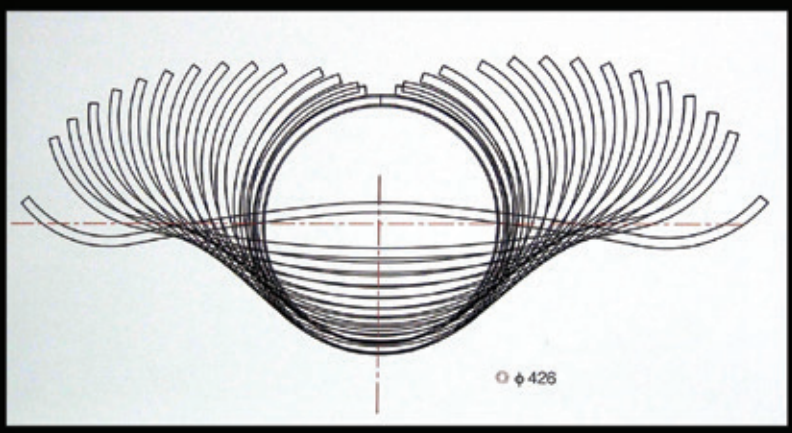

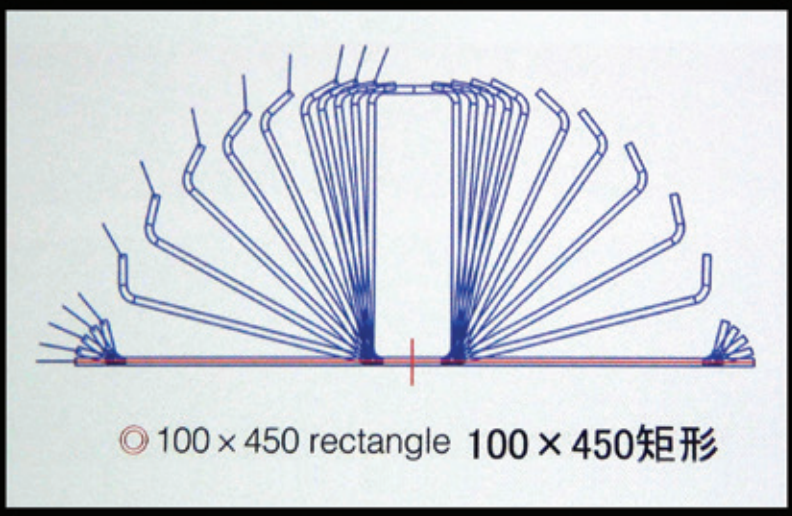

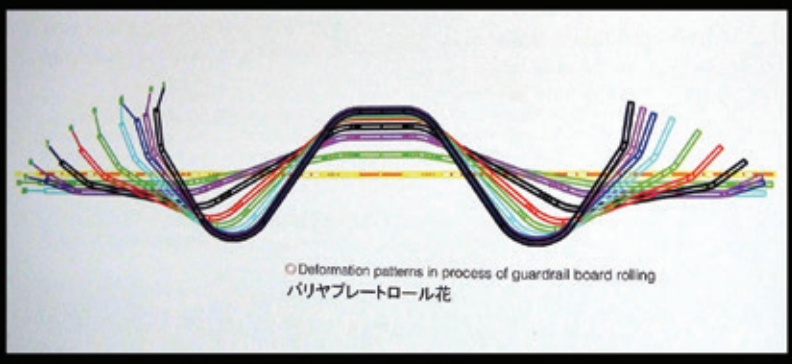

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Cutting and bevelling machines

FOR over 35 years, Protem has manufactured portable tube and pipe end preparation machines. All machines in the company's range are designed by professionals experienced in machining, themselves having worked on-site and being aware of the importance of having reliable and robust equipment that is lightweight and easy to use and allowing 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, even overhead, due to their light weight.

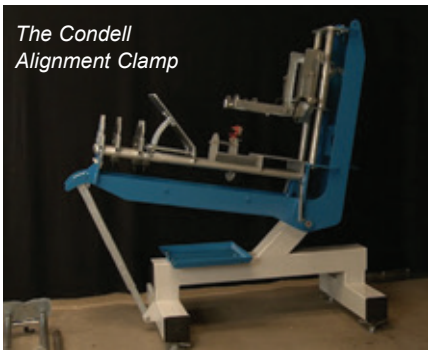
They can be remote controlled for works under hazardous conditions, pneumatically, hydraulically or electrically driven, equipped with several devices enabling cutting and bevelling in one simultaneous operation, to square, to counter bore, or to correct the shape of tubes and pipes with copying carriages. The Protem range includes several types of cutting and bevelling machines such as the CTA series. The CTA model is designed for production or prefab workshops and allows cutting and bevelling of tube sections at the right length.

Protem SAS – France
Website: www.protem.fr

New alignment clamp

IN association with Condell Engineering, PCES Ltd has launched the Condell Alignment Clamp. Invented by Cyril Condell, an engineer with over 30 years' experience in pipe fitting and pipeline fabrications, the Condell Clamp brings pipe fitting into the 21st century. The clamp is a multi-functional alignment tool combining a jig action with clamping. It is a stand-alone workstation featuring an adjustable horizontal bed that lies square to a faceplate, which has a rack and pinion fine vertical movement. It is suitable for standard carbon or exotic materials with a capacity of 1" to 8" pipe.

PCES Ltd – UK
Website: www.pces.uk.com



The Condell Alignment Clamp

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Tube and pipe mills and roll forming

RAFTER Equipment Corporation manufactures tube mills and pipe mills, roll forming machines, cutoff machines, and other related mill machinery. It is able to provide equipment for tube sizes from 0.188" (4.76mm) to 16" (400mm) OD.

Rafter has supplied mills using high frequency induction (HFI), high-frequency contact (HFC), TIG/plasma, and laser welding. The equipment has been used for the production of the following tubular products: mechanical, structural, HSS, energy, API, refrigeration, automotive, appliance and many other tubular products.

Rafter has remained busy during the recent economic downturn. A duplicate of the RT-4000 mill sold last year is currently under construction. The mill is capable of producing energy tubing up to 76.2mm OD x 6.4mm wall (3" x 0.25") with material yield strengths up to 1,000 MPa (150,000 PSI). Deliveries of an RT-3000 mechanical mill and an RT-3000 automotive tube mill with full strip entry section will follow later this year.

Last year also brought Rafter many mill upgrade projects. These were mainly weld squeeze box and turkshead straightener retrofits. Most of the upgrades were driven by the customer's need to produce tubes with heavier wall thicknesses and/or using higher yield strength materials.

In 2009 Rafter expanded its offering through an overseas partnership to include uncoilers, levelers, coil end joiners, strip accumulators, flying saw cutoffs and tube bundling and packaging equipment.

Although the mechanical portions are manufactured overseas, the electrical and hydraulic portions will be supplied by Rafter from US sources. In addition, the after-sales service and support will be handled by Rafter.

Last year, Rafter reached an agreement with HKS-Prozesstechnik GmbH (www.hksprozesstechnik.de) to become the exclusive US system integrator for the ThermoProfilScanner (TPS) non-destructive weld seam inspection system. The TPS uses a unique "lens-less" thermal imaging sensor to capture the heat profile of the weld seam just after welding. The heat profile is displayed at the operator's interface and saved for later inspection.

Originally started in 1917 as a roll forming machine builder, the company was purchased, relocated, and transformed into one of North America's premier tube mill manufacturers in 1988.

Since this time, Rafter Equipment has provided nearly 100 tube mills and more than 400 mill accessory upgrades. Its focus is to provide robust equipment that is simple to operate and maintain.

Rafter supports its equipment through personalised and dedicated after-sales service and spare parts. By doing all of this it gives customers the equipment necessary to be both successful and profitable.

Rafter Equipment Corporation – USA
Email: sales@rafterequipment.com
Website: www.rafterequipment.com

Shot blast machine for pipes

CUSTOMERS that buy from OMSG – Officine Meccaniche San Giorgio SpA, based in Milan, are looking for a shot blast machine that can offer innovative technology, superior quality of materials used for the construction and reliability over a long service life.

The shot blast machine with roller conveyor type LAUCO 100 H120 aims to cater for all of those requirements. The companies products are distributed to the world's leading companies in the petrochemical and oil and gas field in Brazil, Norway, India, USA, Middle East and Australia.

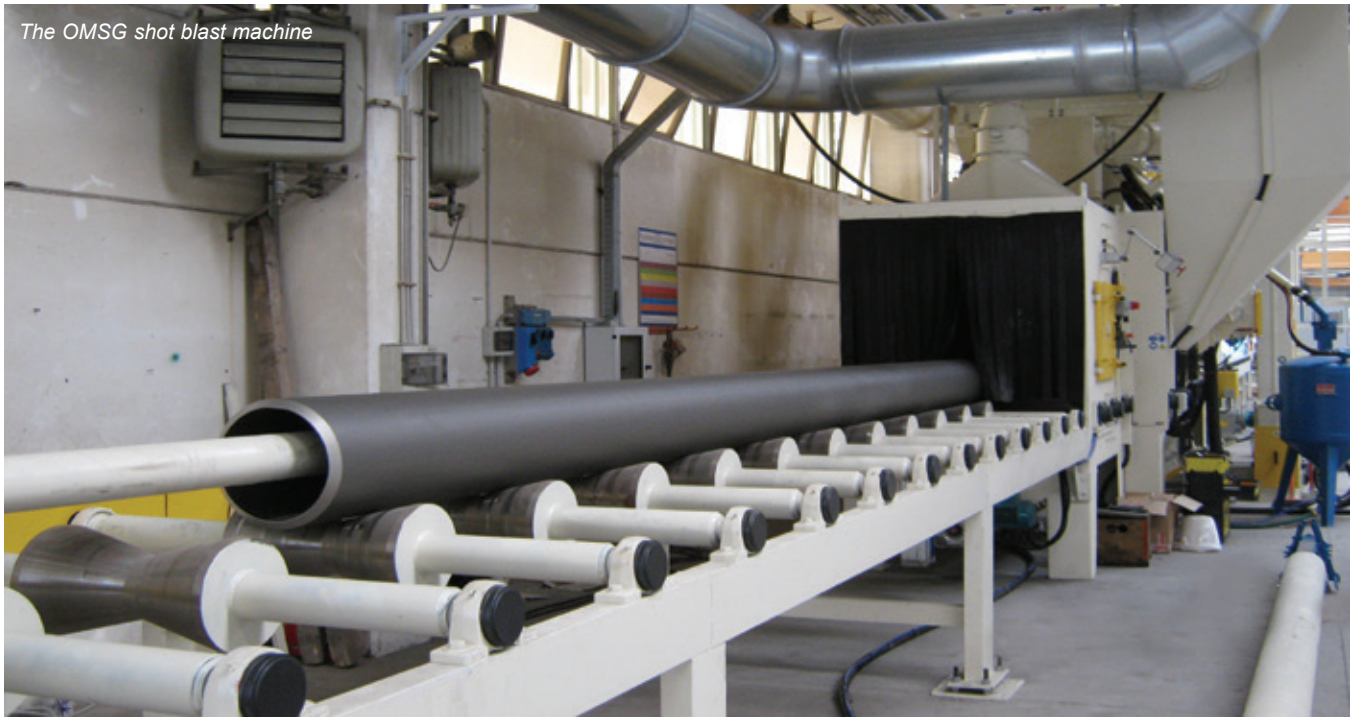
The OMSG machine is suitable for treating pipes with diameters from 200mm to 1,200mm and lengths from 6,000mm to 12,000mm. A distinctive feature of this shot blast machine is that, in addition to the external blasting carried out by means of centrifugal wheels designed and patented by OMSG, it is able to treat, at the same time, the inner surface of the tube using a nozzle of compressed air combined with blasting pot of 300 litres capacity. The obvious advantage is the considerable reduction of working times.

The work-pieces are loaded on a special roller conveyor from an automatic transfer system. Then they are introduced by the roller conveyor into the blast room where, under the influence of the stainless steel shot thrown by the wheels, the pipe is blasted with a degree of SA 2 ½, according to the reference standard ISO 8501-1.

At the same time, a nozzle of compressed air previously selected according to the diameter of the pipe to be treated is automatically positioned at the inside of the pipe and begins the cycle of internal blasting.

At the end of the blasting operation the pipe is emptied of shot remains by an automatic lifting system that allows the pipe to tilt and overturn the shot into the recovery hopper. By means of a transfer system, the pipe is finally discharged from the roller conveyor.

Officine Meccaniche San Giorgio SpA – Italy
Email: info@omsg.it
Website: www.omsg.it



The OMSG shot blast machine

ITL secures SS tube mill order

IN the process of forging its position in the manufacturing of SS tube mills, ITL Industries Ltd has achieved a milestone by securing an order for the supply of tube mills in size 1" to 4" NB with thickness 1 to 6mm, and 3" to 10" NB with thickness of 2 to 9.5mm. This will be first time in India that a 10" NB x 9.5mm tube mill will be manufactured and supplied.

ITL has designed, manufactured and supplied a new concept of double cutting head on the same fly cut off. The system is provided with friction saw and cold cut off saw on the same bed, giving an option to the customer to use friction saw or cold cut off saw as required. This provision enhances the efficiency of the mill, as changeover time is just 120 seconds.

ITL has also successfully designed and developed a dual saw cold cut off saw suitable for 4" to 10" NB round and 90x90 to 220x220 square pipe of thickness 3 to 8mm.

ITL Industries Ltd – India
Fax: +91 731 2721110
Email: info@itl.co.in
Website: www.itl.co.in

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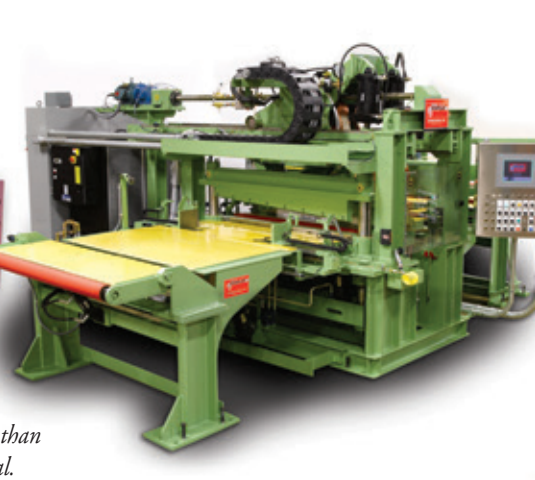

NB Overlap Resistance Zipwelders™ produce fast, high strength welds.

GUILD INTERNATIONAL

www.guildint.com

+1.440.232.5887 USA

New structural steel tools

TO improve management efficiency for companies involved in the structural steel industry, Lantek has released Lantek Steelworks 2012, the latest version of its ground breaking software solution.

The aim of the software is to integrate sophisticated 3D design programs such as Tekla Structures® with the automated manufacture and the control of production processes. European regulations for prefabricated structures cover items such as stress calculations and dimensions so managing this information through the production and build cycles is important for companies within the industry, as is the need for continuous monitoring of costs, capacity and delivery performance. Lantek Steelworks 2012 provides the solution to these requirements.

The solution includes ERP capabilities, which control costs, production, budgeting, planning, purchasing and warehousing. It also links to Lantek's other software, Lantek Expert CAD/CAM automated nesting and CNC programming software for laser, plasma and punching machines, and Lantek Flex3d Steelwork which enables the cutting of I,U,L,T,H round and square sections. This system includes 3D nesting into the profile to optimize material utilization, and produces safe and efficient cutting paths on sawing, drilling, punching, tapping, marking, oxycut and plasma machinery.

In the existing version, which is fully Web based, intuitive operation through hot keys, dynamic filters, shortcuts, built-in email and the ability to export dedicated reports, has been added making the system much easier to use, even from tablets and smartphones, offering users the option of working on the move.

Purchasing and warehousing enhancements keep track of material requirements, help to improve cash flow and make the Purchasing Manager's task much simpler. The dimensions of parts within projects is analyzed and considered against available stock material sizes. Pre-nesting simulation calculates the mix and quantity of material needed, while knowledge of delivery dates and production times ensures that the material is only purchased when it is actually required. Additionally, the system can manage the reservation of material for particular projects either from stock already in the warehouse, or from material ordered from a supplier, making it possible to reallocate scarce material as production priorities change.

For the production stage, Lantek Steelworks can now manage even bigger projects with very large volumes of component parts, keeping track of cost as production continues and the progress of each stage of manufacture, all in real-time. Intelligence within the system collates all the documentation against each project and part, ensuring full traceability from finished component to raw material and supplier.

Lantek Sheet Metal Solutions – Spain
Website: www.lanteksms.com

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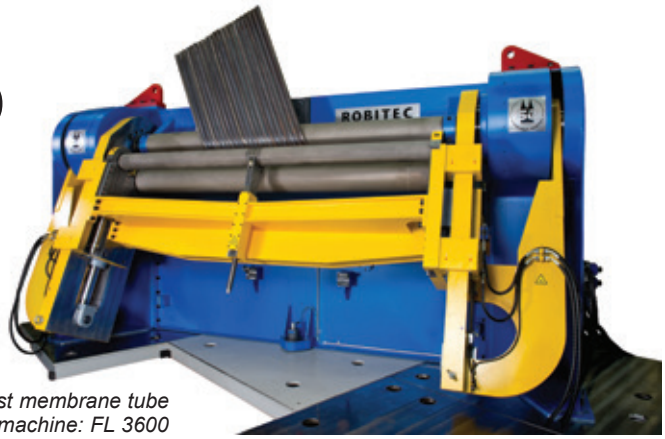
Productivity leap for power plant construction



World's largest membrane tube wall bending machine: FL 3600

POWER plant construction in Asia is booming. New power plants in India or China need to meet the growing energy demands of the aspiring economic nations. Power plant constructors are consequently also making provisions: new production sites are emerging that guarantee efficient production of the components. One example of the required plant technology is the world's largest membrane tube wall bending machine, which has been developed by Schwarze-Robitec specifically for an Indian customer. It makes a vital improvement to the efficiency of the entire power plant construction.

Modern power plant construction is inconceivable without the use of membrane tube walls: before installation, individual tubes are welded to form larger tube walls, membrane tube walls or even finned tube walls. After welding the membrane tube walls, they need to be bent according to the boiler design. Inside the power plant block, fitters connect the tube walls to the actual combustion chamber of the power plant. As a huge conduit system, the tube walls are perfectly adapted to the shape of the block and ensure effective heat exchange. However, the membrane tube walls must be bent in advance, with millimetre precision, as Schwarze-Robitec managing director Bert Zorn highlighted: "Even a minimal deviation in a bend will result in a tube wall no longer fitting the subsequent segment."

In light of this, the design service from the Cologne-based bending specialist is exceptional. The world's largest membrane tube wall bending machine was developed for the Indian customer. The plant is equipped with the latest CNC control. It is able to bend membrane tube walls with widths of up to 3.6m – the previous maximum passage width in plant construction was three metres. Over 25m of tube walls are accurately fed into the machine and bending takes place with a bending angle of up to 135° using a modified compression bending procedure. Unlike in a bending press, this allows the production of high quality bends.

One outstanding feature is the mobility of the huge plant. It can be swivelled by 25 degrees in both directions. This allows diagonal bending of the membrane tube walls without the need to move the long "wall" sideways in the production hall. At the same time, a perfectly balanced bending mechanism guarantees high-precision results. "All components such as CNC control, hydraulics, bending tools, tensioning device and laser alignment are perfectly aligned to each other," explained bending specialist Bert Zorn.

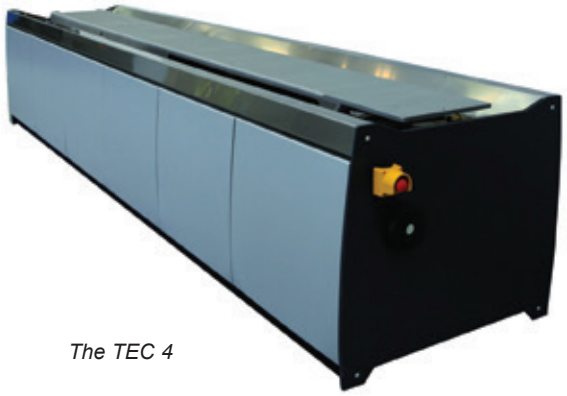
The system secures a huge leap in productivity for power plant construction, as larger membrane tube walls can be pre-finished in future. This reduces installation effort and costs. The system currently supplied is part of a large order for a total of eight bending machines. In the case of the Indian customer, a complete production plant for tube boilers is being created. Mr Zorn added: "We are convinced that the combination of bending technology, CNC control and new passage width is of great interest to many power plant constructors."

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

High-tech extruder control system

THE High-Tech Extrusion group has revealed its new TEC 4s. This control system has already been delivered with orders for extruders in recent months but now it can be also ordered as retrofit kit exclusively for High Tech Extrusion – Theysohn Extruders.

High Tech Extrusion, consisting of the companies Theysohn, Technoplast, Topf and Extruder-Komponenten Salzgitter, is an "all-in-one" provider that has developed a unique series of extrusion lines, tools and pipe heads. After the latest development of the new OMNIA series and the new RK Streamliner pipe head, High-Tech Extrusion now presents the new TEC 4s as retrofit kit.

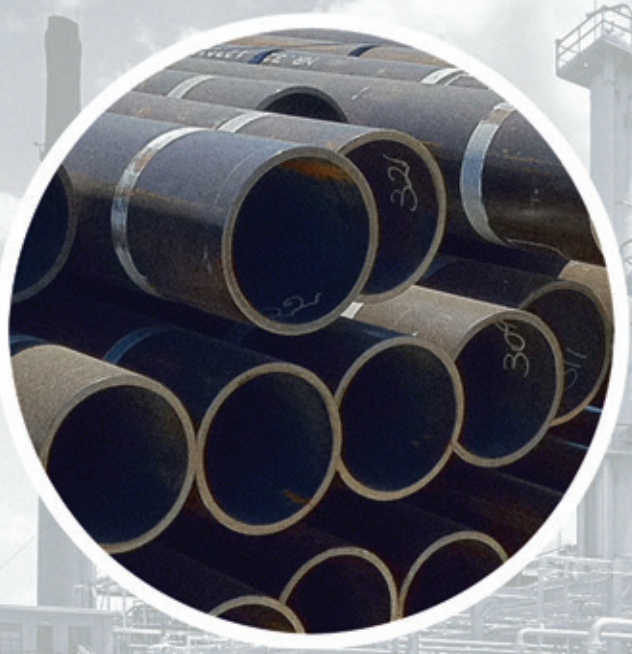


The TEC 4

The new Extruder Control System TEC 4s, developed in cooperation with Siemens according to the newest state-of-the-art techniques, combines simple handling and an efficient control system in a unique way. An operating terminal optimised for heavy industrial conditions enables a comfortable control of the whole extrusion line in combination with the modern HMI software. The 19" touch screen guarantees easiest operation with large soft-keys and intuitive colour and graphic design. The core of the new Theysohn Extruder Control System is a powerful, fanless and therefore maintenance-free industrial PC. The communication between the TEC 4s and all drives, peripheral devices and the whole downstream equipment works through the most efficient bus system – Profibus. Operational reliability and short down-time are achieved by simple wiring because of selected high-class components, an analysis program and remote maintenance via LAN and/or WAN.

The major advantage is that in 99 per cent of all cases the customer can maintain or exchange part of the system. This saves on the visit of a Theysohn technician. A few simple steps without great technical know-how are sufficient to change frequency converters or CF cards and therefore production down-time can be avoided and software updates can be installed simply and quickly.

High-Tech Extrusion – Austria
Email: office@ht-extrusion.com
Website: www.ht-extrusion.com



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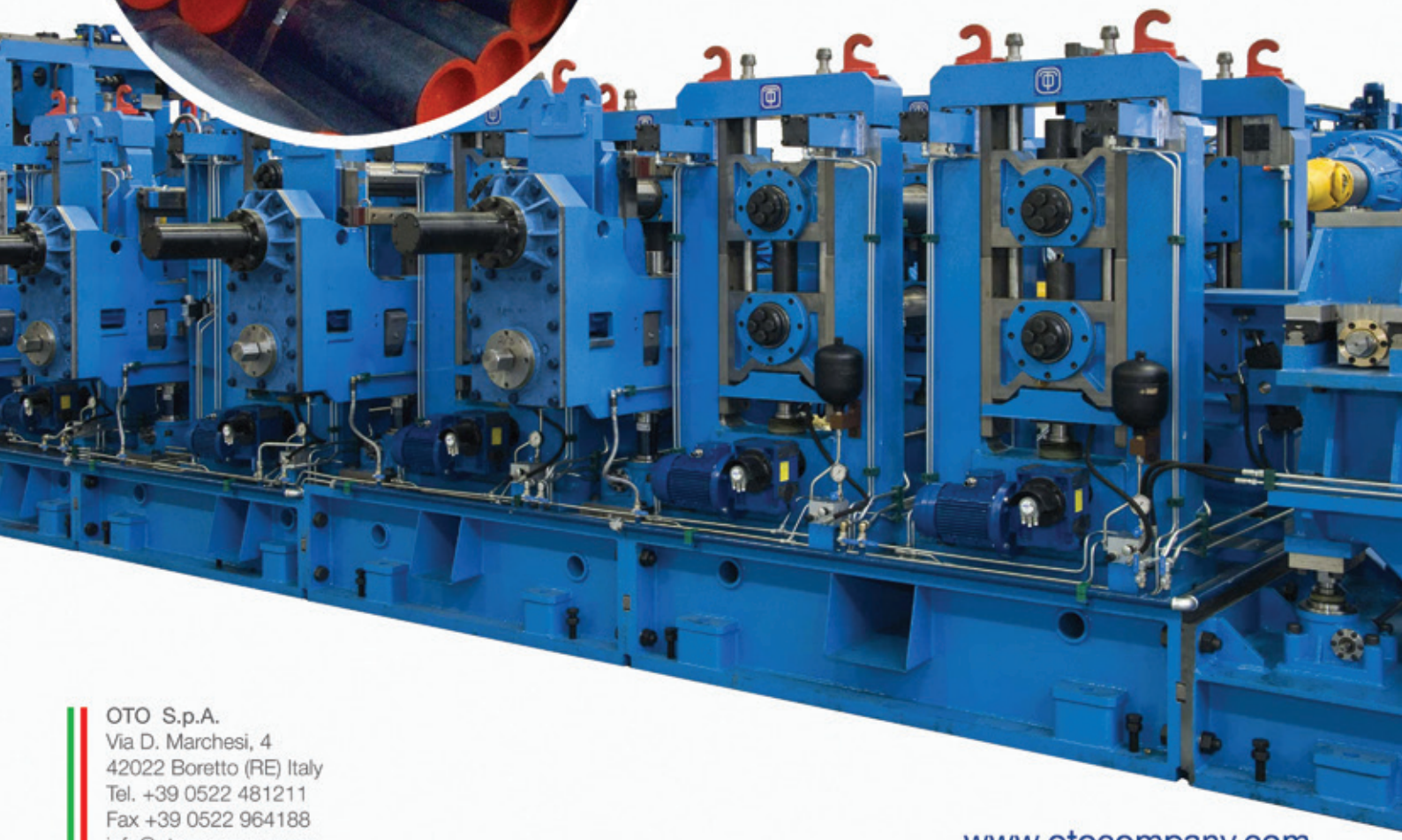

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www.otocompany.com

Improved coupling for pipes

FOR a recent pipe coating project, Dhatec successfully adapted and applied its pipe coupling for clad pipes. Pipe couplings are tools that are applied to improve the stability of the coating process and minimise radial movement between pipes in the coating line. With the new improvements, Dhatec's complete range of pipe couplings is now suitable for application on clad pipes. The range was also expanded with a new line of mini-couplings for pipe diameters 1" to 6".

Pipe coating plants are often confronted with strict demands for undamaged pipe ends and pipe surfaces. At the same time coating plants are aiming to produce at full capacity. In order to stabilise the coating process and to limit undesirable radial pipe movements, the process often needs to be slowed down if couplings are not applied. An unstable coating process due to pipe movements does not only cause damage to pipe-ends, it may also cause thickness variations or air seals in the coating layer, which is of course undesirable.

The coupling is designed to carry pipes over a certain distance, between support rollers in the coating process. The coupling, and all its parts, have to be strong enough to withstand not only a portion of the pipe weight, but also extra forces caused by collision, friction, oval pipes, curved pipes and vibration. The impact of these forces are different in each coating process and therefore different models of pipe couplings are developed to comply with each situation: a standard pipe coupling for normal circumstances and for pipe diameters between 8" and 40"; a premium pipe coupling for improved usability for pipe diameters between 8" and 56"; and a recently developed new range of mini-couplings for pipe diameters 1" to 6". The main goal of the coupling is to line up pipes. However, there are additional design features that can be identified in order to make a pipe coupling fully functional in a coating process: strong construction, shock resistant; strong fixation and line up during coating; easy release during separation of pipes after coating; effective bevel protection; adjustable for a wide wall thickness range; bridge thermal expansion of the pipe in an induction oven (220°C); small and isolating contact surface with the pipe, to minimise heat loss and take any internal cutback in to consideration; allow cooling water to flow through the pipe; and fast and easy application or removal.

Dhatec BV – The Netherlands
Email: info@dhatec.nl
Website: www.dhatec.nl

Welding and clamping table

BERND Siegmund GmbH has further developed its established welding and clamping table systems. The essential change concerning accuracy of welding tables was on the basis of material – the new welding and clamping table is extremely hard.

With a hardness of approximately 700 Vickers, the Professional Extreme is harder than most tool steel or most Japanese knives. The level of hardness is reached by the combination of two processes. Professional Extreme consists of pre-hardened steel, making the new welding and clamping table not only more resistant against rust and welding spatters, but also extremely robust against impact or scratches.

All table components have been completely revised and optimised relating to stability, load capacity and practicability. Professional Extreme is steadier, more load-bearing and more effective with larger foot plates, forming tubes and additional ripping on the table bottom side.

Bernd Siegmund GmbH – Germany
Email: info@siegmund-group.com
Website: www.siegmund-group.com

Laser sensing systems

SERVO-ROBOT is a producer of intelligent laser sensing systems for welding automation, including seam tracking, seam finding, adaptive welding and also weld inspection. The company's systems are applied in the pipe and tube industry improving weld quality and increasing productivity.

The laser vision systems are used in several stages of pipe and tube production, including seam tracking and adaptive welding of inside and outside welds, inspection of seam or weld bead geometry and guidance of ultrasonic inspection probes. Servo-Robot's systems can be integrated to any robot or special purpose welding machines to perform the following functions: joint tracking and adaptive welding for SAW, GMAW and laser welding processes; automatic gap control with real-time root measurement; real-time ultrasonic probe position control; and 100 per cent automatic weld geometry and defect detection.

The intelligent laser sensing systems for welding automation are offered under two product names: Power-Trac is a joint tracking system for robotic arc welding that increases travel speed, eliminates defects and reduces over welding; Auto-Trac is a complete solution for joint tracking and adaptive process control designed for special purpose welding machines and can operate on sheet metal applications as well as on thick wall tubes.

In addition to these advanced sensing systems in the pipe and tube industry Servo-Robot offers the all-new Wiki-Scan handheld welding inspection system, used to manually inspect joints and weld bead geometry for quality control.

Servo-Robot Inc – Canada
Email: info@servorobot.com
Website: www.servorobot.com

Innovation for steel structure

DANOBAT has collaborated in several projects with companies involved within the steel structure industry recently, which has allowed it to share experiences and identify needs that have arisen in the industry.

This has offered great analysis of the requirements of customers, the prospects in the long term and the importance of adapting to the current situation and has helped it in the design and manufacturing of the iDP+ machine.

The iDP+ is a revolutionary combination of two technologies established in the field of the steel construction industry, such as thermal cutting and drilling, allowing it to perform both processes in a single machine. It is a machine capable of drilling, tapping, counter sinking and cutting scarf joints, bevels and castellations and by thermal cutting in a single working cycle. In this way, this solution will allow the companies to be more efficient, maximise the working area and to reduce material manipulation time. It will also improve the quality of the final product.

Danobat – Spain
Website: www.danobatgroup.com

Drilling and cutting of tubes

LIKEST has introduced a new tube drilling machine that it claims can drill and cut tubes/profiles at many different angles at a lower cost, taking less time and with a higher overall level of productivity.

Likest is the first maker of pipe drilling machines for the oil industry in Taiwan. It has developed the three-axis (X/Y/Z) fully automatic tube drilling and cutting machine (with full automatic loading system with cold saw cutting equipment). This machine has a swiveling angle (L 30°, R 45°) for cutting. Its other type of machine is a 21 multi-spindle tube/pipe/drum drilling machine with NC control box combined HMI TFT LCD touch panel. If the user needs to rotate the tube to drill at different angles the machines can also make use of a rotation servo motor.

The ability to use a hydraulic clamping system is also very important. Users can clamp tube sizes of 10" diameter, 20mm thickness although a bigger size is also acceptable. Automatic drilling operation allows for equal or unequal hole distance. Three axes travel and are driven by servo motors as an optional extra.

Likest – Taiwan
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Pipe handling made easy

PIPE has been manufacturing its comprehensive range of pipe jack stands for nearly 10 years, constantly developing and enhancing the range based on customer feedback and catering for increasingly varied demands in the workshop and out in the field.

PIPE's tri-stands are a three leg base pipe stand, which is height adjustable from 27.5" to 48" working height. Available in two base styles, 'fixed leg', and 'folding leg'; identical in their performance, but as the name suggests, the latter has folding legs for ease of transportation and storage. The stands are available with the full range of head styles for rotational or transferal movement of any material of pipe up to 24" (with the optional large Vee-Head).

For larger sizes of pipe, PIPE offers two heavier duty options:

The duo stand is a height adjustable (from 29-43") 4-leg folding pipe stand, available with the full range of head styles, which are the 'quick change' style for completing a rapid changeover. The latest duo pipe stands have just been given a new weight test, enabling them to take up to 2.4 tons per stand.

If customers need to transport heavyweight pipe, but do not have, or cannot use, a crane the Quattro Pipe Stand is the solution.

Four optional heavy duty caster wheels can be added to the base, and when used in conjunction with the chain hold down device to secure the pipe on the stands, the pipe can then be moved around the workshop or site with ease.

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

Skiving on lathes

THE latest ECOROLL skiving tools allow complete machining on a lathe. The cylinders are pre machined by a skiving head. After an automatic tool change the work piece is finish machined by a separate roller burnishing tool.

In order to ensure sufficient chip removal and clean surface, both tools are equipped with an internal cooling lubricant supply. As a result, side-times are significantly reduced, and machining on a deep hole drilling machine is no longer necessary. Therefore, high investment costs for a deep hole drilling machine can be eliminated, which enables small and middle batch manufacturers to efficiently produce cylinder liners or complete cylinders.

ECOROLL AG Werkzeugtechnik – Germany
Email: mail@ecoroll.de
Website: www.ecoroll.de

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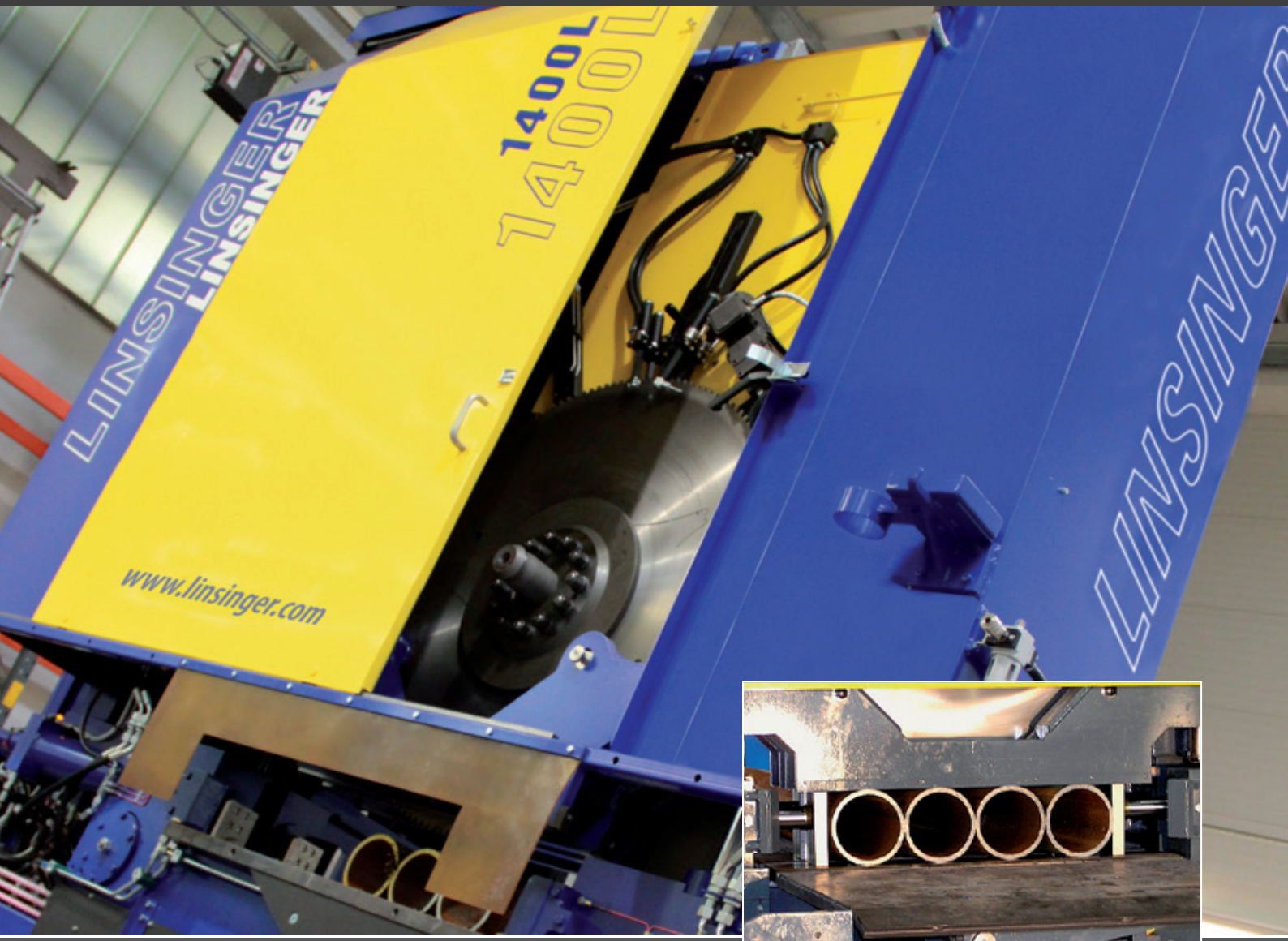
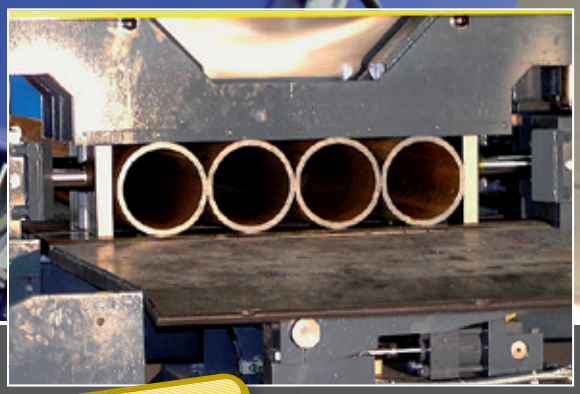
Austria





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Pipe buggy

PIPE and material handling equipment company Sumner Manufacturing offers the Cricket pipe buggy to simplify transport of pipe, flanges, fittings and valves.

The Cricket pipe buggy makes job site transport of up to 6.1m (20ft) pipe lengths, flanges, fittings and valves a one-person job through a unique design that maximises leverage. The Cricket uses a detachable handle and hold-down ratchet strap to quickly and easily allow a single user to attach up to 30cm (12") diameter pipe weighing up to 450kg (1,000lb) to the cart.

Use of the pipe buggy is simple. Lay the strap out on the ground and roll the pipe on top of the strap. Flip the Cricket on top of the centre of the pipe length, insert the end of the strap into the ratchet and tighten the pipe to the buggy. The detachable handle attaches to the side of the Cricket, allowing the user to use leverage to flip it over with the pipe attached. Reattach the handle to the front of the buggy and the pipe is ready to be transported. The reverse procedure detaches the pipe.

The Cricket weighs only 36.3kg (80lb) and can be shipped via UPS. It is available with either 41cm (16") pneumatic tyres or flat free tyres.

Sumner Manufacturing Co Inc – USA
Email: customerservice@sumner.com
Website: www.sumner.com

Plasma welding

MIG-O-MAT develops welding technologies and produces the corresponding appliances and plants in the field of plasma welding. One of the newest developments, which MIG-O-MAT presents is a flexible modular circumferential welding system for microplasma and plasma welding. The system is specifically designed for welding of bellows and tube to tube welding. The system can be fitted with additional features, such as cold wire, arc voltage control module or oscillator. The whole system, including welding generator is controlled by a central 10" touch control panel.

The girth weld control is made with up to ten sectors depending on the angle of rotation, thus providing a maximum of process reliability and flexibility. The input of the welding speed is comfortably carried out in cm/min.

MIG-O-MAT – Germany
Website: www.mig-o-mat.com

Welder range expanded

RITMO SpA has added the new Elektra 315 electrofusion welder to the already wide range of Elektra machines. The range now includes four models: the compact and light Elektra Light, able to weld couplings up to Ø 125/160mm; and Elektra 315, Elektra 400 and Elektra 800, for welding diameters up to 315mm, 400mm and 800mm, respectively.

Elektra 315 is a universal electrofusion welder with a working range from 20 to 315mm, and is suitable for welding pipe/fittings for the transport of gas and water, and for welding fire sprinkler systems (HDPE, PP, PP-R couplings from 8 to 48V). The machine is manufactured in compliance with the most important international standards and is supplied with an optical scanner barcode reading system.

Ritmo SpA – Italy
Email: info@ritmo.it
Website: www.ritmo.it

The Elektra 315

CNC milling machines

TECHNOLOGY and financial resources are necessary but not enough: expert advice is also needed to identify the most appropriate method to achieve the best result.

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In 40 years the company has made constant improvements in order to build an ever-increasing range of products with high standards of precision and quality. It carries out projects to design and acts to advise the customer of any problems. It also offers customers a maintenance contract scheduled at a discounted rate whose value/price rewards both.

AEM 3 Srl – Italy
Email: info@aem3.it
Website: www.aem3.it

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ORGANIZER İhlas Fuarcılık

SPONSOR ITA International Tube Association

Descaling 14 tons of steel bars in one hour

DRAWN steel, also known as bright steel, used in the production of injection parts for diesel engines, must meet strict quality standards. A key stage in the manufacturing of drawn bright steel is the blast cleaning of the raw material prior to the drawing process. Recently, Rösler developed a continuous shot blast system for a leading manufacturer allowing the fully automatic blast cleaning of steel bars with diameters/ cross-sectional dimensions of 24 to 80mm (approximately 1.0 – 3.2"). This system not only produces excellent descaling results but permits processing speeds of up to 60m (197ft) per minute.

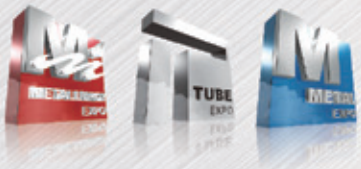
As a fully owned subsidiary of Saarstahl AG, Saar-Blankstahl GmbH is able to procure all its raw steel requirements from the parent company. This is a key factor for the quality of the Saar-Blankstahl drawn steel products sold all over the world. Other factors for the high quality of these products are the comprehensive know-how and state-of-the-art manufacturing lines for the drawing, peeling/stripping and heat treatment processes. In addition, the company, with plants in Homburg and Burbach, can offer in-house high performance quality control technologies like eddy current and ultra sonic testing.

By individually planning and coordinating the manufacturing processes and using special wires and steel bars, Saar-Blankstahl can produce high performance steel products for the most challenging applications, for example, in the automotive industry.

Prior to being drawn into steel bars with standard round, square and hexagonal profiles as well as steel bars with special profiles, the rolled steel must be blast cleaned to remove scale and rust from its surface. Günther Dorscheid, plant manager at Saar-Blankstahl, said: “Blast cleaning is highly critical for meeting the specific customer requirements for an absolutely homogeneous surface, for two reasons: on the one hand, residual scale on the steel can damage the drawing die, which causes scratch marks on the drawn steel products. And on the other hand, scale embedded in the drawn steel can damage the tools during the subsequent machining process. For this reason, after the blast cleaning process the surface of the rolled steel must have a degree of cleanliness of SA 2.5 – SA 3.” This was a key requirement for the replacement of the old shot blast machine with a new blast cleaning system in the Burbach plant. In addition, the customer specifications called for a high parts throughput, high equipment availability, ease of maintenance and a highly efficient dust collection system.

Rösler Oberflächentechnik GmbH – Germany
Fax: +49 95339 24300
Email: b.mueller@rosler.com
Website: www.rosler.com

Cleaning steel bars with diameters up to 80mm



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Concurrent Expos

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第十七届上海国际冶金工业展览会

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- EUnited 欧洲冶金设备协会 European Metallurgical Equipment Association
- ICE 意大利驻上海领事馆商务处 Italian Trade Commission Shanghai
- Austrade 澳大利亚政府贸易委员会 Australian Trade Commission
- U.S. Commercial Service 美国驻上海总领事馆商务处 American Consulate General-U.S. Commercial Service

Contact: Tony Cheng Hotline: 0086-21-5283 0920 Email: tony@21expo.net Website: www.mtmexpo.net

Flame cutting machines

ZINSER GmbH is one of the leading manufacturers worldwide for flame cutting machines and a high-performance partner for oxy-fuel technology and hot air welding. With an in-house team of engineers Zinser caters for individual customer requirements in CNC controls and cutting machine construction. It also offers qualified professional training courses at its in-house training- and technology centre just as clear introductions into the modern technology of CNC user interface and software.

The CNC pipe cutting machine Zinser 1306 produced by Zinser features three axes for oxy-fuel and plasma cutting. The machine was especially designed for the machining of round and square pipes. As it has a cantilever for an additional axis it is possible to cut also on the surfaces of square pipes.

Apertures, notches, cuts over the corners and drum curves as well as the entire end preparation can be performed quickly and at reduced costs. Excellent results at reduced piece costs can be achieved with the Zinser 1306. Furthermore this precision machine is equipped with a hollow shaft through the chuck, which enables the use of an internal ventilation. The Zinser 1306 can also be equipped with a pneumatic jaw chuck, a drilling unit, powerful extraction systems and filter units.

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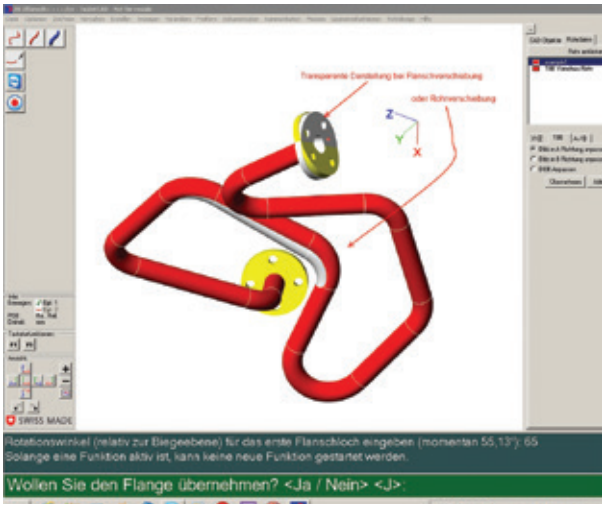
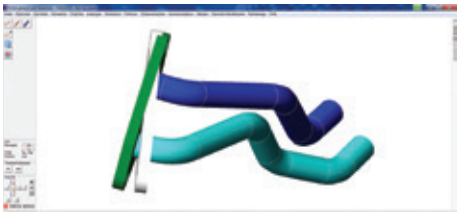
Specialised tube bending software

IN times when tubes were manually bent on hand operated tube benders, tube bending was considered an art. The tube artists always knew about the hidden "causes of defect" because the fitting accuracy was and is still a question of interaction between the material and its variable criteria, such as temperature, weight, transportation, diameter, wall thickness etc and the references to the centreline including the coordinates of the A and B ends in relation to the bend angle, radius and rotation, all of which end up in the tolerance envelope.



Result of the tube corrections for flange and tube



Graphical representation of the alternation of the tube and flange in relation to the original tube (above)

TeZetCAD, the specialised tube software, is made up of sophisticated modules demanded by the continuously developing tube market.

Each person uses a different measuring technique using a different number of measuring points, so that when a tube needs to be re-measured by a different person due to a shift change, holidays or illness, differences between the repeated measurements occur, especially because of the bent tube geometries and their "own life". The measuring plan defines the number of measuring points per cylinder and per bend radius, for example for weak bend angles and/or deviations the number of measuring points may be four or six, with bend angles and deviations which are recognisable you need perhaps only two measuring points, to stay in the pre-defined tolerance envelope.

Many companies work with so-called "planning process versions". The operators pre-process the bending data for the different bending machines' work without using measuring machines. Sometimes it would help if they could measure with a measuring machine in order to optimise the process. With TeZetCAD's new Virtual Measurement function, the measuring arm is replaced by the mouse. Instead of the measurement-sound to confirm the recorded xyz point, the user hears the mouse click. The object-orientated measurement of the flanges as a geometric part is possible in TeZetCAD, because the construction department outputs the flange data in form of surface data, which they deliver with an IGES converter.

The dimensions are captured by the mouse click and can be edited. The fitting of the tube in depth and diameter can be controlled for its accuracy of fit and can be corrected, as well as the screw holes.

To facilitate communication, TeZet integrated Internet access into its software. On the left side of the screen the user has an icon for the Quick Support software and can connect with TeZet without having administrator or advanced user rights. The connection is automatically closed by TeZet at the end of the session.

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indo metal

International metal & steel trade fair for Southeast Asia

20-23 February 2013

The first international metal & steel trade fair for Southeast Asia is set to take place at a time and location where the demand for raw materials and processing technologies in Indonesia and its neighbouring countries is on the rise.

To be held from 20 to 23 February 2013 at Jakarta International Expo, Kemayoran, Indonesia, the trade fair has been generating positive feedback not only from the industry but also from its partner organisations.

Sofianto Widjaja, general manager of PT WAKENI, said: "Initial discussions with potential exhibitors and partner associations from the metal and steel industries reaffirm our decision in organising this exhibition together with Messe Düsseldorf Asia in Jakarta. The theme 'forging ahead in Indonesia's dynamic metal and steel industry' clearly reflects the immense potential and demand for these sectors and indometal 2013 as a dedicated platform that will serve these industries in Indonesia".

Venue

Halls A1 – A2
Jakarta International Expo
Kemayoran, Indonesia

Opening times

10.00am – 6.00pm

Organisers

Messe Düsseldorf Asia Pte Ltd
3 HarbourFront Place,
#09-02 HarbourFront Tower Two
Singapore 099254

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Energy

Whither the American energy industry in the second term of a pragmatist president committed to renewable power?

"Some of the sharpest disagreements between President Obama and Mitt Romney during the campaign were over energy policy, and the president's re-election could be viewed as a defeat for the coal industry and a win for renewable energy, with a murkier outlook for oil and gas drillers."

Writing in the *New York Times* shortly after election day in the US, Clifford Krauss took note of the major energy-related initiatives of Mr Obama's first term, all intended to reduce the country's dependence on carbon-intensive fossil fuels and mitigate their impact on global climate: tighter air pollution regulations on power plants; tens of billions of dollars in loans and other federal support for renewable power; and the negotiation of higher fuel economy standards with the auto industry.

Mr Krauss then considered what a reinvigorated Obama administration might mean for the US energy sector. Here, briefed down, are his most pertinent projections ("For Oil and Gas Companies, an Expectation of Higher Taxes," 8 November):

- Against expectations, President Obama carried both Virginia and Ohio, the two coal-producing swing states. Analysts say that a second Obama administration is likely to continue restrictions on mountaintop mining and press forward with regulations that effectively block new coal-fired generation plants that do not include carbon capture and sequestration.

- The future is less clear for oil and gas companies. President Obama has repeatedly criticised the roughly $4bn worth of tax credits and deductions that oil and gas producers receive annually. The pressure on the government to reduce the national budget deficit, coupled with the industry's political support for Mr Obama's opponent, suggests that at least some of the tax breaks could disappear.

President Obama favours greater use of renewable energy

But, Mr Krauss pointed out, during the campaign Mr Obama "praised the oil and gas drilling frenzy in shale fields across the country over the last four years." The president also offered no suggestion that he would increase regulation of hydraulic fracturing, "fracking," the drilling technique embraced by the oil and gas industry but which some people believe contaminates water supplies. And he reiterated his commitment to seeking greater independence from foreign oil, supporting more offshore drilling in Alaska and the Gulf of Mexico.

- Mr Krauss, who is chief of the *Times*'s Canada bureau, wrote that President Obama's re-election introduces some uncertainty as to ultimate approval of the extension of the Keystone XL pipeline from Canada to the US Gulf Coast. Environmentalists oppose the pipeline on grounds that refining and burning oil from Canada's oil sands contributes to faster climate change.

Mr Obama had delayed approval of the pipeline, but many industry observers predict that he will go along with the project during his second term since the pipeline builder, TransCanada, has modified its route to avoid a sensitive aquifer in Nebraska.

- Obama administration officials have pledged to continue promoting solar, wind, and other renewable power sources, but it is as yet unclear what form that support might take. An early test will be the debate over the production tax credit for the wind industry, which expired with 2012. The industry says the tax credit is vital to the expansion of the wind industry in the US.

Other portents of the energy future

The biggest change in Washington for energy policy may come with the retirement of Senator Jeff Bingaman of New Mexico, a Democrat friendly to oil interests, and his probable replacement with Ron Wyden, a liberal Democrat from Oregon, as chairman of the Senate Energy and Natural Resources Committee.

Wrote Mr Krauss, "Senator Wyden has been more critical than Senator Bingaman of fossil fuels and nuclear power, and he is considered a stronger backer of renewable fuels, in part because Oregon relies on wind and hydroelectric power for its electricity."

A couple of state ballot measures with important implications for energy policy were also put to the vote on 6 November:

- In Michigan, voters defeated a proposed amendment to the state constitution that would have required Michigan to get 25 per cent of its power from renewable sources by 2025. The Sierra Club and other environmental groups had made the proposition a high priority, arguing that it would help stem climate change and promote alternative energy businesses and employment in the state.

But the measure drew strong opposition from business groups and the governor, who argued that a commitment to the goal at the state level was impractical since Michigan gets only a tiny fraction of its power from renewables.

In California, voters handily approved Proposition 39, which will change the way corporations are taxed, raising an estimated $1bn annually. For the first five years, Mr Krauss reported, "More than half of the new revenue will be allocated to a fund aimed at promoting jobs by retrofitting schools and government buildings to increase energy efficiency and the use of renewable power sources."

Oil and gas

Pennsylvania has an estimated 200,000 abandoned oil and gas wells, but knows the location of only 8,257 of them. This illustrates a potential problem for drillers active in the Marcellus Shale that underlies 600 miles of the Appalachian Basin of eastern North America. As noted in the *Ventura County Star* (12 October), abandoned wells can in rare instances serve as conduits for natural gas displaced by new drilling. A subsidiary of Shell Oil Co was drilling in Pennsylvania last summer when a 30-foot geyser of methane gas and water erupted, requiring the evacuation of several homes.

With attention directed to those abandoned wells posing the greatest threat, a division of the Department of Environmental Protection in the state has found and plugged 2,871 of them since the 1980s, but a lack of funding has slowed its pace. According to the division's director, many other US states with large numbers of abandoned wells also spend little money on the effort.

As reported by the Harrisburg, Pennsylvania, newspaper, drillers have an incentive to identify and plug abandoned wells because by law they are financially responsible for any damage that results when their drilling sites intersect with old wells.

Standard & Poor's Ratings Services has said that foreign investors, notably Asian government-owned national oil companies (NOCs), are showing increasing interest in a number of North America's oil and gas resources. Before 2008, investment in Canadian and US oil and gas companies by Asian government-owned NOCs was negligible.

Since then, according to the S&P report released 19 October, concerns about the access and adequacy of energy supplies have been the primary motivation behind the Asian nations' international investments. With a focus on securing access to long-term resource supplies, their NOCs have accelerated the pace of acquisitions and joint-venture activity in North America.

Automotive

Seeking to reduce its dependence on Europe, Peugeot tailors a no-frills sedan for emerging markets

A stripped-down sedan from PSA Peugeot Citroën went on sale on 1 November in Turkey and was to be rolled out in Eastern Europe, Africa, and South America within months. Aimed at middle-class buyers in emerging economies, the Peugeot 301 is meant to gain a foothold for the French auto maker in places with more growth potential than saturated Western Europe.

"We have a vehicle of conquest, and have great faith and hope," David Rio, director of the Peugeot brand's international operations, said in a 8 November interview in Paris.

Mr Rio told Mathieu Rosemain of *Bloomberg News* that the primary competition for the 301 is not considered to be the no-frills models from Renault's Dacia nameplate. The Peugeot car is intended, instead, to go up against the Renault Symbol (or Thalia, in some markets), Hyundai's Accent Era, and the Chevrolet Aveo.

"The 301 is a stretched version of Peugeot's 208 hatchback, which designers say will appeal to consumers in emerging markets," wrote Mr Rosemain. The Paris-based manufacturer is aiming for sales of 150,000 of the units annually by 2014, equivalent to about 4 per cent of its deliveries in 2011.

But Carol Thomas, an analyst with LMC Automotive in Oxford, England, told *Bloomberg* that in her view Peugeot's volume targets were "quite optimistic." Ms Thomas said that a car for emerging markets must be affordable, and Peugeot is pricing the 301 well above some others on its level. In Turkey it starts at $16,700: approximately $1,400 higher than the Renault Symbol and $4,830 above the Dacia Logan from Renault.

Other automotive news . . .

The finance chief for BMW, Friedrich Eichiner, said on 19 October that the German auto maker will submit an investment plan to the government of Brazil for a new assembly plant in that country. Sources with knowledge of the project advised Reuters that the company contemplates a $395mn facility to build five models, including the Mini.

As reported from São Paulo by Alonso Soto, BMW decided to go ahead with the project despite a tax hike on imported cars as well as uncertainty over new rules requiring car makers to use more local content. A fresh Brazilian investment would suggest that BMW is intent on reaping the benefits of the growing market for luxury cars in Latin America's biggest economy.

Steel

Largest scrap dealer in China expects stepped-up use of the product, reducing Chinese steel makers' demand for iron ore

According to the chairman of China Metal Recycling Holdings Ltd, the nation will increase scrap use in steel production over the next three years. Reporting from Hong Kong in *Bloomberg*

Businessweek (9 October), Michelle Yun quoted Chun Chi Wai, who heads China's largest scrap dealer, as saying that this increase would displace some demand for iron ore as more recycled material becomes available.

Scrap may account for more than 20 per cent of steel production in China by 2015, from 14 per cent now, which will put some pressure on iron ore prices, Mr Chun said by phone from Shanghai the previous day. The company controls about 6 per cent of the fragmented scrap market, he said.

"China's steel production growth is set to slow from double digit gains in the past," Mr Chun said. "Meanwhile, there will be more and more recycled steel, which will definitely reduce the use of iron ore."

Supplying context, Ms Yun noted that China, the world's biggest steelmaker, responded to slowing economic growth by cutting production in August to its lowest level in six months. Steel prices fell in September to their lowest level since the 2008 financial crisis.

Mr Chun told *Bloomberg* that, while such suppliers of iron ore to China as the British-Australian producer BHP Billiton and Brazil's Vale SA have shelved new projects – or plan to cut output – China Metal Recycling is looking to expand as steelmakers demand more scrap. His company plans to set up operations close to Zhanjiang in Guangdong province, where its customer Baosteel Group Corp is building an $11bn plant to produce high-grade sheets for automobilve and appliance applications.

China Metal Recycling was also, Mr Chun said, planning to introduce an electronic scrap-trading platform by the end of the year for its network of about 10,000 buyers and sellers.

Ms Yun cited a July report by HSBC Holdings Plc that, by comparison with the 60 per cent scrap usage by American steelmakers, China's scrap consumption is low. Noting the greater energy- and cost-effectiveness of using scrap, Mr Chun of China Metal Recycling estimated that building a steel mill using iron ore would be at least two-thirds more expensive than one using scrap.

Steel producers in Brazil, profits squeezed by rising costs, seek an export tax strongly opposed by the scrap metal industry

The Brazilian scrap metal sector, which employs more than 1.5 million people, has launched an initiative to persuade lawmakers and government officials to block a proposal of the steel industry lobby to implement an export tax on scrap. The levy, submitted by Instituto Aço Brasil, or IABr, to the Ministry of Development, Trade and Industry, is perceived as having potential to allow mills to control costs by limiting the pricing power of the scrap producers.

Reporting from São Paulo on 6 November, Guillermo Parra-Bernal outlined the dispute. Marco Polo de Mello Lopes, executive president of Rio de Janeiro-based IABr, said in a phone interview with the Reuters correspondent that the proposed tax is not an action against the scrap sector but an effort to impose "a barrier to countries that block our exports of steel-related products".

According to Mr Lopes, two-thirds of Brazilian scrap metal is exported to countries which – like China, India and Iran – impose restrictions to the entry of Brazilian value-added products. He said, "Our tax proposal is simply a matter of trade reciprocity".

The main constituent of steel produced in electric arc furnaces is widely used by Gerdau SA, the largest Brazilian producer of long steel; Votorantim Siderurgia, a unit of Grupo Votorantim; and the local unit of Luxembourg-based ArcelorMittal. The opposition view to the steel makers' position was expressed by André de Almeida, a legal director for Instituto Nacional das Empresas de Sucata de Ferro e Aço, a group representing the scrap sector and known as Inesfa.

Mr Almeida said that scrap producers export 0.2 per cent of the 10 million metric tons of scrap produced annually in Brazil and sold at a 33 per cent discount to international prices. In his view, the largest steel groups want the government to create the export tax because they are not willing to pay a fair price for the scrap they consume. He posed the question: "Is it fair that millions of people have to pay in order to sustain the profit margins of those groups?"

Grappling as they are with a domestic output glut and rising costs for such raw materials as coal, Brazil's steel makers seem likely to stand fast in a dispute that Mr Parra-Bernal said underscores the high level of protection that local industrial conglomerates enjoy.

He wrote, "President Dilma Rousseff's administration has stepped up protection of steel and other industrial groups by hiking taxes on imports of some products, slashing taxes on payrolls, and ensuring demand for flat and long steel products by home appliance and auto makers as well as homebuilders."

For his part, IABr's Mr Lopes denied that his group and the mills in general are against exports of scrap. He insisted, "What is motivating us is a trade issue, nothing else".

Pennsylvania clamps down, hard, on breaches of its Steel Products Procurement Act stipulating 75 per cent domestic content

"If you build something with Pennsylvania tax dollars, state law says you have to use American steel."

Summarised by Rich Lord of the *Pittsburgh Post-Gazette*, this "domestic content rule" governs municipal building projects in a leading iron and steel producing state. Mr Lord would go on to show the rule in action. ("State Sues McKeesport Firm for Not Using Domestic Steel," 20 October)

Pennsylvania's Steel Products Procurement Act demands that steel products used in state-backed public works be at least

three-quarters American made, unless no part is domestically available. A lawsuit filed in August in Commonwealth Court of Pennsylvania by the state's attorney general accuses Ryco Inc, a McKeesport company whose subsidiaries perform plumbing and sprinkler installation, of ignoring the domestic-sourcing requirement in two instances.

In 2008, Ryco was engaged to design and build fire suppression systems for Indiana University of Pennsylvania dormitories. Its fee was $670,000. Ryco executives including its vice-president submitted forms pledging to use domestic steel. The complaint against Ryco alleges that the company in fact used imported fittings, "some stamped with a China marking, while others were marked Poland."

Mr Lord also reported that, in 2009, Ryco was hired to provide sprinklers for a middle and high school renovation project, for $139,500. Again, company officials pledged to use American steel but, according to the attorney general's office, instead used metal from overseas.

It would appear that the facts are not in dispute, and that the outcome of the case will likely turn on such technicalities as whether or not the two projects properly come under the provisions of the Steel Products Procurement Act.

Introducing questions of outsourcing, Ryco has argued for an exemption on the dorms project on grounds that its work there was commissioned by a private foundation for the university, rather than by the school itself.

In the meantime, the case invites attention to the unhappy situation of Pennsylvania contractors preparing competitive bids. Mr Lord noted that, in the US, domestic and foreign pipe are comparable in price. But, he wrote, the attorney general's complaint "said that a coupling that cost $35 from a domestic source was listed for $7.67 from a foreign supplier. A larger domestic coupling went for $189.50 versus $45.63 for the import."

Another noteworthy aspect of the Ryco case is the zeal with which Pennsylvania's chief legal officer is pursuing it. Attorney General Linda Kelly wants the company to return the money it received for both projects, plus pay $1,000 per violation and reimburse the costs of prosecution.

Her office also wants a court order banning Ryco from public contracting for five years and is demanding that its vice-president sell any stake he holds in the company.

Ryco's attorney called that "very draconian," according to Mr Lord, who also noted that actions under the Steel Act are rare. The previous such case dates to 2009, when a Kansas-based waste treatment company agreed to pay $85,000 to settle a complaint that it used foreign steel in a new municipal pumping station and as many as 21 previous public projects in Pennsylvania.

Organised labour has lent a hand in these matters, with the Sprinklerfitters Union tipping off law enforcement to alleged violations of the act.

"We've caught quite a few contractors to varying degrees," Gary Bittner, a business agent with Sprinklerfitters Local 669 (Columbia, Maryland) told the *Post-Gazette*. "We focused on the most serious one."

That would be Ryco, said Mr Bittner.

Steel plants coming on

Quebec-based ADF Group Inc has announced plans to build a structural steel manufacturing plant near Great Falls, in north-central Montana, to make oil production modules for companies working in the oil sands of Alberta. As reported by the *Great Falls Tribune* (5 November), the Canadian company said it is buying 100 acres of land on which it will erect a 100,000ft^2 facility over the course of the coming year. ADF Group fabricates complex steel structures for such large-scale projects as airports, bridges and sports arenas.

The company provided steel for the World Trade Center Freedom Tower under construction in New York.

The *Tribune* also reported that Texas-based Bay Ltd already operates – in Billings, Montana – a similar fabrication facility to that projected by ADF Group. In addition to building equipment for oil sands work in Alberta, Bay Ltd is seeking business related to the Bakken oil boom that has spurred a surge of prosperity in North Dakota.

As reported by Paul J Gough in the *Pittsburgh Business Times* (12 October), the distributor Esmark Inc (Sewickley, Ohio) said it was close to finalising its acquisition of a Yorkville, Ohio, cold-rolled finishing mill from Wheeling Pittsburgh Steel Corporation. The Esmark Steel Group planned a $15mn investment to restart the Yorkville plant in January as Ohio Cold Rolling Co, with 160 employees. Additionally, in a joint venture with TCC Steel of South Korea, Esmark is taking a 50 per cent stake in Ohio Coatings Co – a tin plate production operation previously owned by RG Steel.

Elsewhere in steel . . .

China has levied anti-dumping duties on some high-performance stainless steel seamless tubes from manufacturers in the European Union and Japan.

The Ministry of Commerce on 8 November said on its website that the duties, ranging from 9.2 per cent to 14.4 per cent, would take effect the following day and remain in place for five years. The tubes in question are used mainly in overheaters and superheaters at power-station boilers.

According to the ministry, investigators made a final judgment that domestic manufacturers of similar products had "suffered materially" from European and Japanese imports sold below fair value on the Chinese market. The ruling affirmed an initial finding, announced in May 2012, in a probe begun in September 2011.

Dorothy Fabian, Features Editor (USA)

BORU®

International Tube, Pipe, Profile, Fittings, Flat Products and Machinery Fair

28-30 March 2013

The 8th International Tube, Pipe, Fittings and Machinery Fair will be held between 28 and 30 March 2013. There are some new sections and regulations at the fair this year, which the organisers are pleased to announce to all colleagues in the industry.

The target regions for the event are Turkey, North Africa, the Middle East, Turkic Republics and Eastern Europe, and it will include two new sections: iron and steel (flat products); and OCTG and pipeline technology, with a concurrent technical conference at the same venue. Conference rooms will be used free of charge for up to 45 minutes by the exhibitors in order to make their presentations/meetings.

Boru is one of the most important fairs where tubes, pipes, profiles and their machineries are exhibited. Boru Fair is being held every two years as of 2011 after the schedule of the other international fairs and the request of international exhibitors.

Venue

Istanbul Expo Center, Atatürk
Hava Limanı Karsısı, 34149
Yesilköy, Istanbul, Turkey

Opening times

10.00am – 6.00pm

Organiser

IHLAS FUAR HIZMETLERI AS
Ihlas Medya Plaza, 29 Ekim Caddesi,
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Inspection, measuring and testing

Photo: KJM GmbH – Germany

Producers of tubes for medical uses face strict government and industry regulations that hold them liable for lapses in quality. To ensure proper thermal shrink ratios, manufacturers of heat-shrink tube must extrude consistent wall thickness – and certify those thicknesses. Tube makers to the automotive industry must provide product that holds tight tolerances, together with thorough documentation as proof. Plastic tube manufacturers, even as they meet challenges as diverse as the markets and customers they serve, are under a concomitant obligation to substantiate their claims for the safety and serviceability of their products.

Inspection, testing and quality control generally represent high investment, but it is an outlay that the seasoned operator in today's highly competitive tube and pipe market will not begrudge. These are specialities that come at a price – and justify every penny of it.

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.

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 1,200°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
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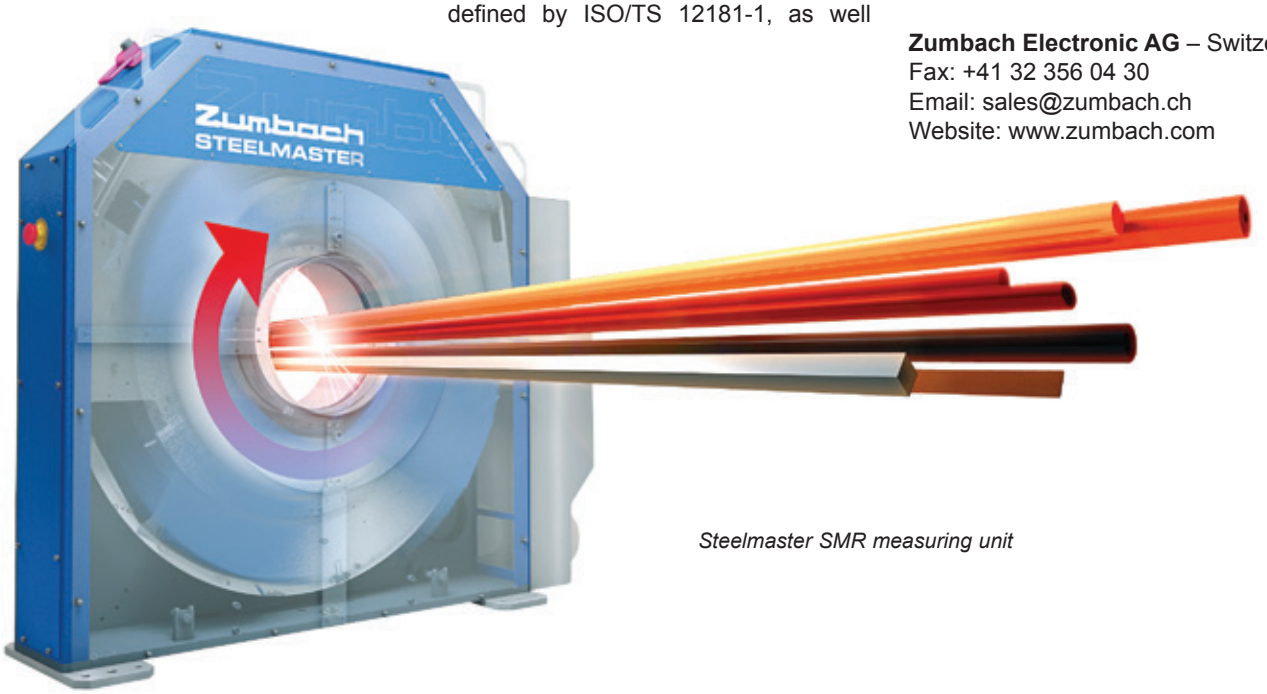

Steelmaster SMR measuring unit

Caliper with plug-and-play connectivity

HEXAGON Metrology has launched the Tesa Twin-Cal IP67 caliper with built-in output connection. The electronic measuring tool is IP67 compliant, with its main components encapsulated and protected from shop floor contaminants such as dust, oil and coolants.

The adaptable calipers can be used wirelessly or with a cable using the new plug-and-play TLC (Tesa Link Connector). The digital caliper is suitable for applications in the metrology laboratory or on the production floor, often in combination with mechanical instruments or stationary machines.

The new plug-and-play TLC allows the user to send measured data from the instrument to the computer via USB, TWIN (Tesa Wireless Interface, available Q1, 2013) or Digimatic option. The USB cable connection allows the caliper to be directly connected to a computer. The wireless module is integrated in the battery cap and enables the operator to retrieve data for optimal SPC monitoring. Digimatic output is a cabled connection that allows Tesa instruments to work with any competitor's interface. The TLC also has an IP67 rating to withstand the same harsh conditions as the caliper.

Tesa Twin-Cal IP67 caliper

Established in 1941, Tesa SA manufactures and markets more than 5,000 dimensional metrology products, ranging from high-precision handheld tools to sophisticated measuring systems. CMM products and vision systems for non-contact measurement are also included. Most of the range is produced under the "Swiss Made" label.

A worldwide direct sales and distribution network is a major asset of the Swiss company whose primary sectors are the automotive, aerospace, watch-making, medical and metal processing industries. Tesa is part of Hexagon Metrology, which offers a comprehensive range of products and services for all industrial metrology applications in sectors such as automotive, aerospace, energy and medical.

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NDT solutions for flaws detection

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.

The CMS product line is used in wires and bars, tubes and pipes, plates and sheets, automotive parts inspection, and nuclear plant. Its features include eddy current instruments, mono or multi channels branded Zet@, special software, acquisition systems, and high-speed data with real-time visualisation.

Optional extas include eddy current rotating heads (for tubes and bars diameter range 1 to 220mm), rotating systems, magnetising and demagnetising units, support coils for surface, subsurface, punctual flaws detection and eddy current probes and coils designed to meet the exact specifications of the customer.

Ultrasonic instrument usc-100 combines high performance with great versatility. It features immersion tanks for pipes inspection, ultrasonic rotating head RotoUTscan for tube inspection in stainless steel, titanium, zirconium and also in carbon steel (diameter range 6 to 250mm) for longitudinal and transversal defect detection, thickness measurement as well as OD – ID and ovalisation. Ultrasonic and eddy current rotating heads (RotoUTscan and RotoETscan) can be combined with other CMS equipment (such as magnetising units with coil), installed together in a strong control bench including centring devices. Supervision software named Probus (to collect information provided by NDT equipment), allows the display of combined signals (UT/ET) and creates inspection reports that can be used as control evidence for quality services and customers. Data stored can be recalled for analysis and quality treatment.

All the systems meet quality standards such as API, ASTM and DIN and can be used on-line and off-line.

Contrôle Mesure Systèmes – France
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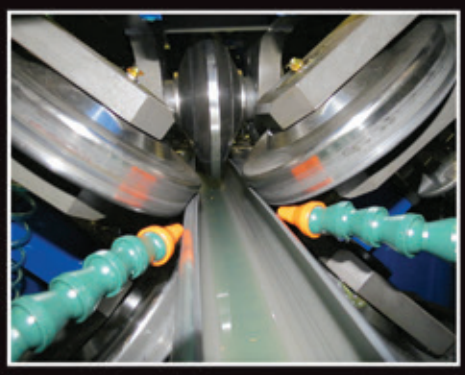

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Service ensures welds are fit for purpose

USUALLY regarded as the most economical way of joining two or more metal components, in terms of fabrication costs and materials usage, welding technology is central to many engineering and manufacturing processes, from producing wings and fuselages in the aerospace industry and platforms and pipelines in the energy and petrochemicals sector, to automotive and rail components, white goods and metal furniture. Since these welded joints are subject to various loads and fatigue during their service life, possibly giving rise to safety and quality issues, it is vital that rigorous testing and inspection procedures are applied, to examine the structure of completed welds and their conformation to specification, as well as determining the skill levels of the welding operators.

UK-based Keighley Laboratories offers a comprehensive weld testing and inspection service, including welding procedure consultancy and approval, welder qualification tests, on-site weld investigation and, through its newly-upgraded Test House, a complete range of destructive, non-destructive and metallography testing facilities.

Under the direction of divisional technical services director Matthew Mellor, the weld test and inspection team's resources are broadly divided between the specialist aerospace field, led by Peter Hanson, and general commercial welding, headed by Jeremy Duignan, both of whom are fully qualified metallurgists.

Mr Mellor, Mr Hanson, and technical director Keith Blower are also approved by the Civil Aviation Authority as weld specimen supervisors, able to witness and verify critical aircraft-related welding on the authority's behalf and invigilate at customer sites. Keighley Labs is UKAS-accredited for weldment testing and certification across a growing list of professional specifications, including relevant commercial BS EN ISO and ASTM standards and aerospace primes like BAE, Rolls Royce, Westland Helicopters, Airbus, Bombardier and the CAA, with the final assessment process now underway for NADCAP approval.

The team is familiar with testing weld coupons only millimetres thick in titanium, aluminium, nickel and cobalt alloys and other exotic metals for aerospace fabricators, as well as carbon steel and stainless steel test plates several inches thick for commercial welders and manufacturers. It covers all forms of welded joint, including butt or groove welds, fillets, lap, edge and tee joints, corners and cruciform, both plate-to-plate and tube-to-tube in similar or dissimilar materials, which are produced using all manual and automated welding methods, from stick and oxy-acetylene techniques, to TIG, MIG, MAG and plasma arc, even brazing and soldering.

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Box end hydrostatic test station

ENVIRONMENTAL concerns place stringent requirements on any piece of pipe that will be carrying oil products either under the ground or under the ocean: it simply must not leak. To ensure the integrity of OCTG, a manufacturer must vet each piece of pipe using a hydrostatic pipe tester or hydrotester. The testing process is simple: the pipe is capped at both ends and completely filled with water. The water inside the pipe is pressurised to a specified high pressure to see if any leaks occur.

Typically, once a piece of pipe has passed that test, it moves downstream on the finishing floor, where it is threaded and then a coupling is attached. Some customers need to test the pipe again at that point, either due to local regulations or to meet their own standards or standards of the regulatory body such as API or GOST. This has ordinarily been done by placing the entire pipe in the hydrotester for a second time. However, a quicker and more effective solution is to conduct a pressure test on only those items that have been added to the pipe, namely the threads and the coupling.

The Brandt box end hydrostatic pipe tester seals both the inside of the pipe and outside diameter of the coupling to prevent leakage. The coupling is filled with water, which is then pressurised up to, for example, 20,000 psi depending on material grade specifications. The PLC controlled computerised sensors and high-resolution cameras monitor for leaks and weak spots in the joint.

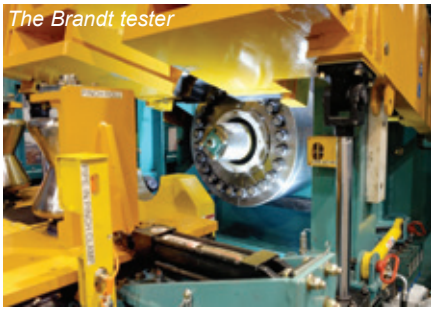
Testing just the threads and couplings not only provides faster cycle times than testing a full length of pipe, it also uses far less water and associated additives. A full-pipe hydrotester may need more than 1,500 litres of water to test a length of pipe with coupling; in contrast the Brandt box end hydrostatic pipe tester may only require 4 litres.

In the Brandt box end method, the pipe is initially positioned against an adjustable stop. A Swedish lever or rotary arms transfer device pick up this pipe and place it onto a series of V-rolls that are already at the pre-set height to match the hydrotester test head's centreline. The V-rolls then convey the pipe forwards to the pinch-clamp, which contains linear bearings, driven V-rolls, an encoder and a timing device that self-centres and drives the pipe into the hydrostatic tester tooling accurately. The lower pipe saddles rise to support the bottom of the pipe within the hydrotesting station. At the same time, an upper clamp secures the coupling to prevent the pipe from moving during the test.

The test head engages the pipe, and a collapsible type urethane seal in the interior of the pipe expands, whilst the external seal is pressurised to seal onto the outside diameter of the coupling. This cavity is filled with water while the purge valve is open, allowing trapped air from inside the pipe and coupling to escape. Once the cavity is filled with water, the water-over-oil hydraulic pressure intensifier is activated, bringing the internal pressure up to a specified test set point.

Leaks are monitored visually using high-resolution industrial cameras directed at the joint, and also electronically with the PLC monitoring both the test pressure and the intensifier position. Pipes that do not require testing can be conveyed through the machine without being engaged by the tester.

The Brandt box end hydrostatic pipe tester can operate in fully automatic, semi-automatic and manual modes. All adjustments, from test pressure to fill pressure to test time, can be controlled at the touch of a button from the operator's HMI station, where alarm diagnostics and maintenance screens provide accurate trouble-shooting.



The Brandt tester

The tester can be completely integrated into higher level computer networks, making test data from each pipe available to other areas of the finish floor, including the drifting station, marking system or bundler. Typical data collected includes pipe grade, outside diameter and length, lot number, test pressure, actual test times, and test results.

Brandt Engineered Products Ltd – Canada
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High precision geometry control

THE precise manufacturing of single components is crucial for the optimal functioning of a system. Even a hundredth of a millimetre counts, and the smallest deviations must be quickly recognised and corrected.

Monitoring the manufacturing processes by means of the latest measuring systems represents a key issue for quality assurance. The measurement of components' geometry can be performed with the high precision optical geometry measuring system "Geometry-Control-System" GKS.

At first glance the operator notices if the dimensions of the work-piece are still within the given tolerances, so that he can quickly respond to the deviation by re-adjusting the manufacturing process or by stopping it. By doing so, it is assured that the given tolerances are maintained, scrap is avoided and the process of manufacturing is optimised.

The measuring principle is always the same: depending on the work-piece size, the measuring system can be mounted with up to four cameras.

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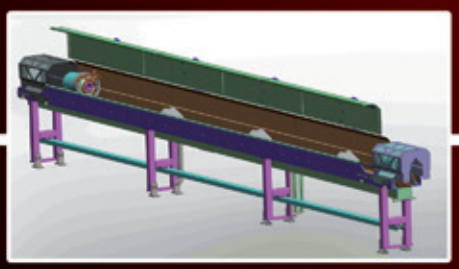

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Safety certification for measurement systems

LASERLINC has announced that it has earned full safety certification for its laser and ultrasonic measurement systems. The certification assures that LaserLinc equipment has passed a rigorous testing programme for electrical safety, electromagnetic emissions and immunity (EMC), laser safety and other parameters. Certified LaserLinc products will carry the ETL Listed mark from certification agency Intertek as proof of product compliance.

LaserLinc's systems are now certified to North American safety standards including UL, ANSI, CSA, ASTM and NFPA. Intertek tested LaserLinc equipment using conformity assessment standards for the CB Scheme, an international programme for the exchange and acceptance of product safety test results among participating laboratories and certification organisations. The CB Scheme was created by the International Electrotechnical Commission for Electrical Equipment (IECEE) and provides entry into over 45 countries.

Intertek certifies that the manufacturer that carries the ETL-EU mark has "gone above-and-beyond CE marking requirements for product safety. It has been independently tested and certified by Intertek to comply with the EU's strict safety standards."

Intertek is a Nationally Recognized Testing Laboratory (NRTL), and is an independent laboratory recognised by the Occupational Safety and Health Administration (OSHA) to test products to the specifications of applicable product safety standards, such as those from Underwriters Laboratories (UL) and other standards-writing bodies.

Intertek maintains a directory of certified products at www.intertek.com/directories. LaserLinc designs and manufactures non-contact, laser and ultrasonic measurement systems. Its scanners link, via the TLAser400 micrometer interface card, to a PC running Total Vu™ software.

LaserLinc's Triton triple-axis laser scan micrometers

Total Vu is LaserLinc's sophisticated yet operator-friendly measurement/data processing package, which runs on any Windows-based computer, providing in-process tolerance checking, trending, SPC, feedback control, data logging, recipes and other features.

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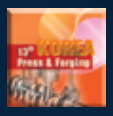

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Advanced ultrasonic thickness gauge

Olympus 45MG ultrasonic thickness gauge

OLYMPUS NDT has introduced the handheld 45MG ultrasonic thickness gauge, an advanced, small-sized thickness gauge packed with measurement features and software options. The instrument is compatible with the complete range of Olympus dual element and single element transducers, making it an all-in-one solution for thickness gauge applications ranging from wall-thinning measurements of internally corroded pipes using dual element probes, to precise thickness measurements of thin materials using single element transducers. Ultrasonic thickness measurements are accurate, reliable and repeatable, and instant readings can be achieved from one side of a material, making destruction of the part unnecessary.

The 45MG features powerful standard thickness measurement features and specialised software options. For corrosion detection applications, the gauge offers optional Thru-Coat® and Echo-to-Echo technology for measuring thickness with no need to remove paint and coatings, and time-based B-scan, which converts live thickness readings into cross-sectional drawings. When used with the code-activated single element transducer option, the 45MG is capable of making accurate thickness measurements on many materials, including metals, plastics, composites, glass and ceramics. This feature allows for very precise measurements with a resolution of 0.0001" or 0.001mm.

The optional single element High Penetration feature enables the gauge to take measurements on very thick or highly attenuating materials, such as cast metals, rubber and fibreglass.

The Olympus 45MG is built for use in a wide range of weather conditions and difficult inspection environments. Its sealed case is designed to meet IP67 requirements in order to withstand the rigours of very wet or dusty environments. The transflective colour LCD with QVGA resolution provides readability, from bright sunlight to complete darkness.

The 45MG features a simple keypad that can be operated with either the left or right hand for easy access to all important gauge functions. It is designed for use with all single and dual element thickness gauge transducers, and offers standard features such as sound velocity readings, time-of-flight readings, differential mode, and reduction rate mode.

An optional data logger provides internal storage capacity of inspection data equivalent to more than 475,000 thickness readings, or 20,000 waveforms in various file formats, while the MicroSD card slot provides additional storage. The GageView interface program allows for data transfer with a standard USB cable.

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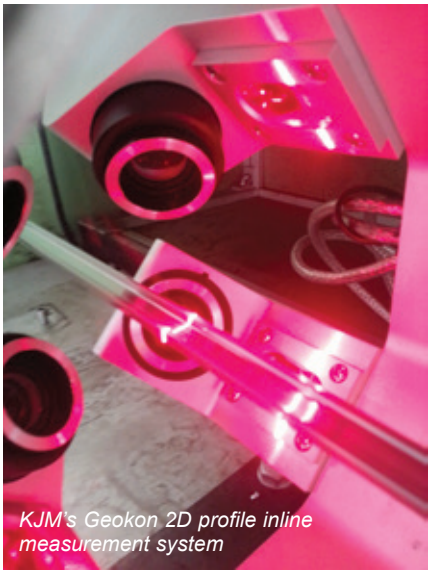
Website: www.olympus-ims.com

Digital inline profile projector



KJM's Geokon 2D profile inline measurement system

KJM GmbH, Germany, has developed Geokon, a high-precision 2D profile inline measurement system for all types of profiled products during production.

Four sensors acquire four images of the object. The data is then analysed on the system computer by image processing software. Rectangular profiles as well as complex profiles can be measured.

The profile types can be entered as CAD-data in the DXF file format using the "Teach-In" program. This allows new products to be defined very simply. The technical drawing must be saved in DXF-format and entered into the "Teach-In" program.

The measurement parameters are then defined, as in CAD programs, by entering dimensions, creating a name (eg R15), defining tolerance or intervention levels and saving the parameters. For a new measurement, only the article to be measured must be selected.

The results are displayed numerically as well as graphically. An exclusively numerical display of important dimensions in large numbers can be selected. Values outside of tolerance are highlighted in colour. Measurement results are saved, printed or transferred to computer-aided production data acquisition PDA or QM-systems, according to customer requirements.

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Raising calibration standards

SCAN Systems is a company that offers expertise in the areas of OCTG tubing, casing and inspection. It has pioneered numerous revolutionary products designed to serve the OCTG tubing, casing and NDT inspection industries. One particular area in which it excels is in creating artificial reference indicators and precision flaws to create test standards for NDT inspection equipment.

As inspection technologies have advanced the need has become greater for accuracy and precision in artificial reference indicators (ARIs). As per API specifications and the industries ever growing demands, the equipment used for testing must be calibrated against known standards.

Often the very nature of the products that NDT companies are dealing with will cause great challenges in creating ARIs, whether working with the need to create a transverse flaw in between API pipe threads to simulate a fracture, or a requirement to manufacture a flaw 19ft inside a pipe.

In many applications around the globe, flaws are often created by hand, utilising Dremel tools or grinding equipment. These methods lack in precision for width, depth, and geometry. In addition, ID flaws in pipe are nearly impossible without cutting the standard at the location you intend to place the flaw.

The EDM process works well in applications that require ARIs to be created in larger parts. It is often used to manufacture flaws in OCTG tubing and casing. In certain configurations, an EDM machine can offer portability giving the operator the flexibility to create the test standard in the field or production facility.

Great care and consideration needs to be given when setting up the material that will ultimately become the test piece for phased array, UT or EMI inspection to be done in the future. It is these points in time that patience and attention to detail can make or break the entire NDT process.

That is why Scan Systems invented the EDM NotchMaster product line offered through its EDM Specialties Division. The NotchMaster is the world's first portable EDM unit designed to create precision flaws in both the ID and OD surfaces of pipe or any other ferrous material. The portable power supply along with specially designed tooling allows the NotchMaster, using the EDM process, to slide inside the pipe, easily creating a precision flaw at the precise location required. Through this innovative process, the EDM NotchMaster is able to create longitudinal flaws, transverse flaws, oblique angled flaws and wall reductions of nearly any geometry. The development and manufacturing of the NotchMaster was a sign of Scan Systems' dedication to solving some of the most important problems faced by inspection companies in the field.

The EDM NotchMaster can create precision flaws and control the depth of the cut within two thousandths of an inch. The width of the notch is controlled by the electrode material chosen for the application. Typically, the electrode material is available from 0.006" to 0.040" wide. A flaw created by EDM will create a width that is 0.005" wider than the selected material.

The depth of the flaw is tightly controlled, often through the use of a digital micrometer. The micrometer can control the depth of the notch to two thousands of an inch. In addition, in certain configurations, EDM can be utilised to create flaws in the ID of tubular products such as OCTG. Years ago, a joint of tubing or casing would have to be cut in half in order to create a flaw in the ID of the pipe. With EDM technology, the tooling has advanced to allow an EDM notch to be created in the ID of the pipe up to 96" up inside the tube.

Once flaws are created, a replicate of the flaw is one way to examine the true measurement. A catalyst and base material can be used to form a mould – much like a dentist would form a mould of your teeth. The mould that is created can be used to verify an ARI that was created inside a pipe.

Once the replicate is made, it will be sectioned and put under an optical comparator to measure the exact depth of the flaw. The replicate material can also be used to help examine the angle and surface of a flat bottom hole. These replicates of the ARIs created for that test piece can be filed with the certification paperwork for any audits that may occur in the future.

The Notchmaster is applicable not only to OCTG tubular products, but to other industries as well, such as the line pipe industry, forging industry, aerospace and automotive products. The tool has been the best of its kind on the market for two decades and will prove itself valuable to any company in an industry that requires calibration standards.

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Website: www.scansystems.com

Utilising cloud computing for coating inspection data

UNTIL recently there have been two different streams of computing procedures, one for industry and another for consumers. For example, design data could be transferred using CAD-CAM systems for industry and the Internet could be used for e-commerce with consumers buying or downloading books and music. The differences between these two streams have now become blurred with the introduction of cloud computing, which allows file sharing to any location for very affordable fees.

The history of coating inspection processes in the field shows that seventy years ago the industry was totally dependent on skilled individuals and their ability to visually inspect for defects in the coating process. Sixty years ago mechanical, magnetic coating thickness gauges were introduced making measurements of thickness possible in the field. These were followed by electronic gauges, initially analogue designs with moving needle meters indicating the thickness and then digital designs with the thickness displayed as a numeric value.

With the utilisation of microprocessors in the design of hand-held gauges in the late 1970s, improved measurement accuracy was coupled with the ability to collect batches of data and print the results. Further computer-like features soon became available and were developed until the modern gauge with the large memory for readings in multiple batches, wireless data communication via Bluetooth® and data management software support became commonplace. These types of electronic gauges now cover a broad range of measurement parameters such as surface profile, climatic conditions, coating thickness, material thickness, gloss, viscosity, etc.

However, the provision of cloud computing via the Internet has again revolutionised the way data can be shared, making remote communication without a network, or even a computer, extremely simple and cost effective.

It is already clear that in the emerging markets access to the Internet is via mobile devices, such as a Smart phone, a tablet computer or a feature phone. In fact it was reported in the *Financial Times* on 7 May 2012 that "This year has seen a momentous change in the shape of the global Internet. More people now access the web on mobile phones than PCs in China, home to the world's largest population of Internet users. North America and Europe are not far behind in making that digital switchover, as are fast-growing Internet markets such as Turkey and Indonesia.

"Games developer Rovio, which claims a billion downloads for its original Angry Birds game, had 100m downloads for its latest sequel after just three months – figures rarely attained in traditional PC or console gaming."

A method for sharing inspection data using mobile devices is required to speed communication and decision making and this can now be achieved using the Elcometer ElcoMaster™ 2.0 software. This software enables simple and quick communication between gauges and either computers running the software or mobile devices operating with Android systems and utilising the ElcoMaster™ for Android program.

The cloud allows data to be transferred, stored and accessed through an Internet provider's hardware, without the need for a local computer. There are a number of providers such as Dropbox, Amazon Cloud Drive, Google Drive, Skydrive, etc, and these services can be accessed using both personal computers and mobile Internet capable devices.

Imagine an inspector working at a remote site with no access to a computer network, or a number of inspectors working at different places on a large site or even on different sites, all needing to quickly communicate data to a central point. It would even be practical for several inspectors at several sites in different countries with a client in yet another country to communicate quickly and simply using the cloud drive as a commonly accessed database resource.

The inspection measurements can be taken on the structure and stored in the memory of the gauge. These readings can then be transferred from the gauge to any smart phone or tablet using Android via the Bluetooth communications and using the Android-based ElcoMaster™ Mobile software. This data can be e-mailed to the cloud. The specific cloud drive can then be accessed by any authorised device in any country on any continent to share the information, quickly, accurately and at a low cost.

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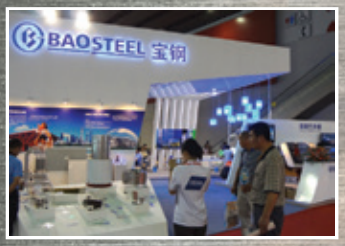

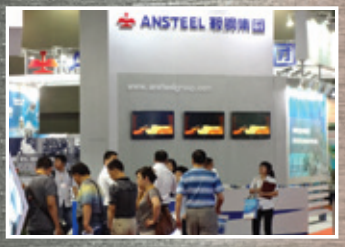

THE 14th GUANGZHOU INT'L TUBE & PIPE INDUSTRY EXHIBITION

Governed By:
Ministry of Commerce of the People's Republic of China Department of Foreign Trade

Approved By :
The Department of Foreign Trade & Economic Cooperation of Guangdong Province

Organized By :
Guangzhou Julang Exhibition Design Co., Ltd.

INVITATION

Show time: 16-18June, 2013

Venue: Ground Floor, B Area, China Import and Export Fair Pazhou Complex
(No.380,Yuejiang Zhong Road, Guangzhou, China)

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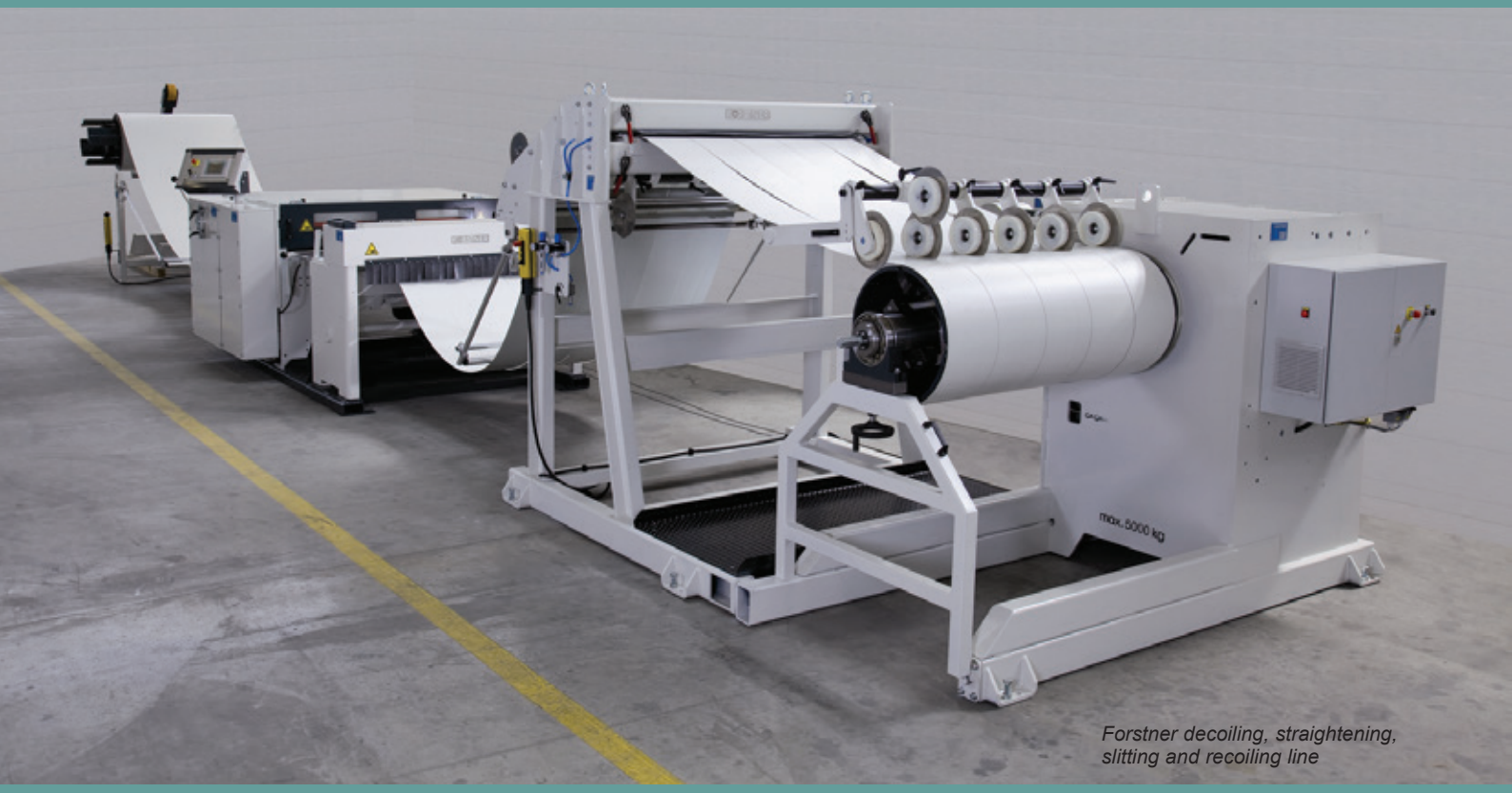
The 14th CHINA (GUANGZHOU) INT'L METAL & METALLURGY EXHIBITION

Coiling and uncoiling machinery



Forstner decoiling, straightening, slitting and recoiling line

In the oil and gas industries, coiled tubing refers to metal piping, normally 1" to 3.25" in diameter, used for interventions in oil and gas wells and sometimes as production tubing in depleted gas wells, which comes spooled on a large reel.

Coiled tubing is often used to carry out operations similar to wirelining. The main benefits over wireline are the ability to pump chemicals through the coil and the ability to push it into the hole rather than relying on gravity. However, for offshore operations, the footprint for a coiled tubing operation is generally larger than a wireline spread, which can limit the number of installations where coiled tubing can be performed and make the operation more costly.

A coiled tubing operation is normally performed through the drilling derrick on the oil platform, which is used to support the surface equipment, although on platforms with no drilling facilities a self-supporting tower can be used instead.

Coil tubing has also been used as a cheaper version of work-over operations. It is used to perform open hole drilling and milling operations.

PCT delivers world's largest traversing RTP coiler

PCT has recently delivered the world's largest traversing RTP coiler to a major US pipe manufacturer. The coiler is designed to enable efficient and cost effective coiling of 50mm to 190mm nominal bore RTP pipe. Free standing coils weighing up to a record breaking 8.6 tonnes can be achieved in a safe and controlled process which requires minimal physical effort from a single operator. The uniquely designed coiler is rail mounted in order to traverse the coiler as opposed to the pipe, ensuring safe coiling without applying strain from any off-axis bending of the product. PCT is well established as the market leader in large diameter coiling equipment for plastic pipe and continues to develop and expand its product range. With the demand for ever longer lengths of continuous pipe increasing, PCT foresees a lot of interest in this technology in 2013.

PCT's Bryan Friend commented "Pipe manufacturers are beginning to realise that providing pipes in the traditional 'stick' lengths is no longer a viable option. Installing pipelines using 'stick' lengths is incredibly inefficient due to the unavoidable bottle neck of butt welds or electro fusion joints every 12 or 20m. Installing long lengths of coiled pipe takes a fraction of the labour force and the number of welds is reduced by a factor of 10-20 greatly increasing the pipelines integrity whilst lowering maintenance costs".

With all PCT machinery, the new RTP coiler comes with many automated features as standard with optional extras such as automatic strapping and automatic integrated unload arm available. PCT Ltd is a privately owned company based in Newcastle, UK, with subsidiaries in the USA and China. The company designs and supplies coiling and packaging solutions for flexible products such as plastic pipe, sub-sea umbilical and power cables, flow-lines and steel wire rope.

PCT – UK
Email: coiling@pipecoil.co.uk
Website: www.pipecoil.co.uk

Tube processing lines

IMEC Tubes develops and produces tube processing lines, using more than a decade's experience to offer turnkey solutions for tube finishing, handling and bundling.

The company analyses customers' production requirements and develops custom-built layouts, offering new series of patented machines to provide safe and efficient solutions.

In addition to scarfing, rolling, brushing, end facing, storage, bundling, coiling and quality control (air-water and eddy current), one of the company's latest designs is the patented permanent magnetic inside bead system. The system does not need a generator or tow-bars, and activates and de-energises magnets using an electric input.

IMEC – Italy
Email: sales@imec-tubes.com
Website: www.imec-tubes.com

Coil processing with decoiling and recoiling lines

FORSTNER has developed and manufactured machines for professional processing of coils since 1960. From the 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 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; and SPS control unit with touch screen.

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 saving 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 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.

The company recently introduced the new AUG 200 recoiler for small coils up to 200kg. This cantilever recoiler has a connecting terminal plug and works with torque regulation. The recoiler handles strips wider than 100mm and maximum 0.75 x 1,000mm, or 0.6 x 1,250mm mild steel 400N/mm^2.

Forstner Maschinenbau GmbH – Austria
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Website: www.forstnercoil.at

Kent Corporation breaks the 1,000 FPM mark

KENT Corporation, the specialist in tube mill entry systems and strip accumulator systems, recently installed an entry line to mill speeds up to 1,000FPM. The line included an automated uncoiler, shear and end welder, and Kent's latest design horizontal HVS style accumulator.

The tube mill line runs 0.03" x 0.5" to 0.135" x 4" diameter tubing. Kent's latest electronic controls and latest mechanical design allowed accumulator fill speeds in excess of 1,650FPM in order to offer enough storage to change coils and make end welds. Kent offers complete tube mill entry equipment, accumulators, tube mills, cut-off, end finishing and consumable items.

Kent – USA
Email: sales@kenttesgo.com
Website: www.kenttesgo.com

Heavy duty unwinding/ winding equipment

QUEINS Machines GmbH, Germany, a supplier of 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 the 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 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.

Queins – Germany
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Website: www.queins.com

Tube coiling: low or high production speeds, small or large diameters

AS with any machine that is introduced to a processing line, a tube coiler needs to be properly sized and have the necessary features to meet the needs of the application. Items such as passline, processing speed, diameter size and coiling diameter all play a role in how the tube coiler is arranged and designed.

Many tube coilers are designed with a specific market focus, such as automotive brake line, automotive fuel line, welding wire and wire products or energy-based pipe products.

Tube coilers are not limited to smaller diameter tubes, such as 12.7mm (0.5"); there are tube coilers that can coil pipe products up to 88.9mm OD x 6.4mm wall thickness (3.5" x 0.25").

Several types of tube coiler are on the market and all have their respective advantages. There are tube coilers that orientate their coils horizontally and vertically, tube coilers that process only one coil at a time with a slow change of spools, and coilers that have quick change spools, so no production is lost or slowed.

Production speeds can dictate special characteristics such as coil holders that act like tube coil accumulators to allow the tube coil holders to change spools without stopping production. The method of switching tube coil holders is also dependent on production speeds: low speeds can typically be accomplished by hydraulic motion control methods with one or two holders, while high speeds tend to require electric motion control methods with two or three holders.

More advanced tube coilers have built in cut-offs so as to index the tube to the next empty spool without any assistance from the operator. The automation takes care of cutting the tube, holding a few coil wraps while the system is switching tube coil holders from a full to an empty unit. Tube coilers are an acceptable alternative to inline tube cutting. They must be designed properly so as not to be a bottleneck in processes and a variety of styles and options exist to fulfil the desired production goals.

A low speed tube coiler for small diameter tubing

Formtek, Inc – USA
Fax: +1 216 292 2898
Website: www.formtekgroup.com

Redefining the installation of large diameter HDPE pipe

LOW Ovality technology from Pipe Coil Technology Limited (PCT) allows large diameter HDPE pipe up to DN315 to be coiled as free standing coils or reeled onto drums. This innovative technology has been used in Europe for many years now and is rapidly increasing in popularity worldwide due to the many advantages it offers. There are still many pipe manufacturers that continue to manufacture large diameter HDPE in the traditional 12 or 20m 'stick' lengths regardless of its final use. This is not only highly inefficient to store and transport but also drastically decreases the overall integrity of the installed pipeline as butt welded and electro fusion joints are still the most common inherent failure in a pipe designed to last 100 years.

Low Ovality Technology not only reduces transport costs by maximising the amount of coiled pipe per load but also greatly increases the integrity of the finished pipeline. For example, DN160 pipe can be coiled in 900m lengths allowing for a much quicker installation time by removing up to 73 butt welds per 900m coil, and with less joints the pipeline's integrity is significantly increased. For larger projects, 4,600m of DN160 can be put on a reel increasing the efficiency of modern ploughing technologies. With new ploughing technologies and the need for longer continuous lengths and larger diameters in coil form, Low Ovality is well positioned to remove the constraints of butt welding backlogs and joint failures during the installation and life time of the pipeline. Reels of this size would require an escort on highways, however, the cost savings made through a much more efficient installation process far outweigh the additional transportation costs and with fewer joints, maintenance costs of the pipeline are also considerably reduced.

Even with pipe sizes that can already be coiled with standard coiling machinery, Low Ovality can make a big difference to profit margins through its ability to supply longer lengths of coil within existing coil dimensions, increasing the pipe length per truck and so reducing overall transportation costs. Transporting thinner walled pipes in coil format also becomes a possibility with Low Ovality as it is capable of coiling pipes with SDR up to 21 and 26 while maintaining coil and pipe stability.

Pipe Coil Technology Limited – UK
Email: chris.spratt@pipecoil.co.uk
Website: www.pipecoil.co.uk

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。

管道电动镦头机

CEMSA宣布推出新系列电动墩头机，用于钻孔/穿孔领域管道墩头制造。该技术是通过对现有RIO 100 SC SP机型的前面进行新的设计来实现的，这里有一个特殊的夹紧系统，新的载流子触体和“模具上”更大功率的锻造机，自动夹紧并引动管道。全过程的准确度是由一个高级且易于使用的控制系统来保证的。

应小心控制和监控加热进度和锻造速度，以保持微结构粒子在相关应用严格的国际范围内。这些新机型可以配备单相或三相直流专用变送器，设计用于连续工作。

“模具”墩头管道尺寸取决于相关厚度。而生产率将再依靠选择的解决方案，而且将由专门用途确定。

Cemsa SpA – 意大利
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网址: www.cemsa.it

租用锅炉管道焊接机

对于能源行业锅炉制造，提高效率和减少排放正变得越来越重要。整个使用周期成本必须降低，这只能通过使用先进的材料，如P92 和 T92才能实现，这些材料能确保高温度强度以及合理的抗氧化。这关系到每一个新工厂，以及现有工厂的现代化改造。

对于锅炉管道，只有机械TIG热丝焊接能够用于这些新的材料，才能实现质量和生产力之间的折中。

发电厂锅炉管道预制期间，很多重要焊缝必须在预制车间进行。组装生产线开始时应特别注意焊接车床的特点。此处，描述和讨论不同的概念和类型。

在化石燃料燃烧发电厂能源生产时，各种燃料在燃烧室内燃烧。释放的热量进入到周围锅炉壳体内的管束上面；管束内产生的用于蒸汽动力涡轮发电机发电。

锅炉安装操作可以分为三个主要部分：用所需材料制作尺寸匹配、符合指定质量水平的适合的管道；预制车间内的预制工作，比如管道切割下料、连接和弯曲；最后用预制好的部件现场组装锅炉。

市场上能用的管子一般是固定长度的，具体取决于生产方法和运输限制。

预制过程中，管道焊接到一起，达到适合预组装单元的长度。然后将他们运到现场用于锅炉构建。

预制可以用两种不同的方式组织，根据生产线和所需设备不同的结构而定。

第一种预制方法是将几根管道焊接到一起（取决于到货管道的长度，比如两节或三节），预组装单元的最后形状是通过将他们连接到一起带上弯头而实现的。

该预制技术需要生产线开始处有焊接来连接管道。该操作阶段，工件仍然是旋转对称的，因此焊缝通常是在固定位置用焊炬在旋转的管道上焊接而成的。在常用焊接机床上，管子被夹住、对准中心并以所需行进速度旋转进行焊接。正确的焊接操作是用仍在固定位置的焊炬进行的。

焊接好的管子拿出焊接车床，然后进行焊缝检测，在某些情况下需要进行必要的热处理，然后用相应的弯曲件和构件组装。大量焊缝需要通过手动或轨道焊接完成。这些预组装单元的生产时间受到焊机数量和用来执行这项工作可用的人力的大大影响。

锅炉制造中使用“直管焊机”

在第二种预制方法中，许多管道被焊接在一起。与预组装单元总长度一致的最后长度可高达100米。然后进行几个弯曲操作将预组装单元转化成最后的形状。

这种预制方法要求几乎所有焊缝在装配线开始时用焊接车床或管道焊机完成。每个组装单元的总生产时间受到机器能力的大大影响。

这些直管焊机非常重要，因此他们的设计一直不断提高并在适应生产的具体需求。电厂效率的增加、更高的工作温度成为必然，必须开发新的耐热材料，焊接操作越来越精细。

Polysoude SAS – 法国
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软管管件弯曲

特殊的要求需要特殊的解决方案——或只是一个高效、可定制的解决方案。对于单部件软管管件，transfluid Maschinenbau GmbH开发了一个“双”解决方案，而且还将在系统内根据不同的用途配备不同的模块，主要不同是在装载系统内。管件主要是机械加工的，非常短，相对厚壁管件以及密封部件（密封头或软管部件）在任何情况下都不能损坏。“有成本效益的加工选择都是我们强调的重点，”transfluid首席执行官Gerd Nöker表示。“大量的部件主要是为小尺寸生产的。这里重要的是速度。”

用于1"以下的管件弯曲机配备有容量为600公升的散料料斗。这个好处是任何尺寸都可以加载。伺服电动或液压设备确保强大的动力。因此在6到7秒的非常短的时间内就能够完成弯曲，包括整个运输。特殊的支撑部件确保密封锥面以及软管连接保持完好。内径8毫米以上的管件弯曲通过transfluid系统使用内部芯轴弯曲，这样可以排除弯曲成椭圆形。

直径75毫米以内的组件用坚固的加载系统运输。因这些管件重量大，加载系统要防止部件不受控制的滑落。工件由一个特殊的托盘提供，从搬运系统移出并放到弯曲机上。这些尺寸管道通常是用有内部芯棒的弯曲机弯曲。最大椭圆度为3%。对于大型组件，特殊的支撑连接器确保每个部件在过程中以最佳的方式卸料。法兰以及其他密封件仍然很安全，不受损坏。即使是对于这种尺寸的管件，整个加工时间也最多只要25秒。

transfluid Maschinenbau GmbH – 德国
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网址: www.tube-processing-machines.com

最大的Linsinger圆盘锯是步入新时代的一步

来自奥地利Linsinger公司的圆锯机KSA 2200 DPD开发了钢坯切割新尺寸，4分钟就可以切割800毫米的钢材。第一台此类型的机器由奥地利技术专家提供给了韩国。锯切技术最新的里程碑是2.3米：这是KSA 2200 DPD锯片的直径，这可能是用于钢坯锯切的最大构造的硬质合金立式圆锯机。最近的创新使其结合了该尺寸机器的巨大性能以及与无与伦比的效率。“因此，我们现在准备分割先前带锯机占据的市场。”Linsinger首席执行官Hans Knoll表示。

Linsinger将一些技术创新融入到这架高性能锯机中，尤其引人注目的是：双动力驱动（DPD）是一种全新的齿轮概念带两个驱动链，全部是在Linsinger的R锯机资格中心开发的。这优化了传输并保证符合公差的完全精确的切割——所有这些都是以极快的切割时间进行的：KSA 2200 DPD只需要4分钟可切割800毫米直径的钢坯（材质42CrMo）。“这表明新时代真正开始了。DPD无疑是过去几十年最重大的行业创新，”Knoll强调说。DPD只不过是Linsinger专利Lincut®圆盘轧机差不多的一个，它配备了“mega-saw锯”。它的切割盘不是焊接的而是螺丝连接的。可以根据需要在任何时候单独、简单地更换掉他们。安装的时候，工具可以重新安装上。不必要高价运输到打磨中心。因此不再需要打磨中心。

有了Lincut®，Linsinger有一种最有效的解决方案来加工有难度的材料，直到钛金属。该系统已经在全球40多台机器上运行了，而且长期以来在三班倒的操作中证明了自己。“竞争者最多也只能开发类似的工艺，”这是从用户群得到的信息。KSA 2200 DPD是第一次在

硬质合金圆锯机 KSA 2200 DPD

韩国使用。客户（环形辊压厂）已经从Linsinger订购了四台机器；头两台已经交货，而且目前正在现场安装。其他五台机器很快也将被订购，而这不是同时的：韩国工业是技术领先的，因此对最好的技术非常重视。几十年来Linsinger的名字一直与技术和创新连到一起。KSA 2200 DPD是另一个对此具有说服力的列子。Linsinger正致力于进一步的发展。

Linsinger – 奥地利
网址: www.linsinger.com

直径测量以及高精度表面检查

Sikora提供了Series 6000系列激光检测仪用于软管和管道高速直径测量和同步凸起检查。Tiger Laser 6010 XY Sikora检测仪现在多了一个创新型直径测量系统，主要用于直径测量结合凸起检查。其检测头能够非常精确、可靠地检查产品表面凸起和凹陷。作为选择，Tiger Laser 6010 XY还可以与电控系列装置结合，对检测到的缺陷视频化。有了清晰的呈现，制造商就能够真实地评估缺陷。还可以用处理系统Ecocontrol来储存这些图片。

TIGER LASER 6010 XY

Tiger Laser 6010 XY的测量原理是建立在两个高分辨率图像传感器分析基础之上的，这种传感器常见于数码相机内。图像传感器从两个测量平面测量和检查产品。用该技术可以最佳地检测出产品表面轮廓缺陷。由于测量速度更快，Tiger Laser 6010 XY检测凸起缺陷的检测概率甚至比Laser Series 6000系列还高。尤其是产品表面的视频化使得凸起缺陷可以被评估，无需人力或耗时的倒回过程。

软管和管道制造商赞成Laser Series 6000设备用于产品直径测量和快速凸起缺陷检查，可进行0.2到78毫米的更大直径的检查。对于0.1到10毫米的小直径产品直径测量和快速凸起检查，Tiger Laser 6010 XY 是最佳方案。Tiger Laser 6010 XY 能以极高的概率和可靠性检测缺陷。制造商可以直接在ECOCONTROL系统上识别和评估缺陷。这样，可以节省耗人耗时的倒回过程。此外，Sikora还提供Laser Series 2000系列，测量直径50微米到500毫米的产品。

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Rafter发送RT-7000焊缝定向装置

RAFTER Equipment Corporation公司发送了一台RT-7000型焊缝定向装置(SOU)。

该机器将用于北美重要的管道生产商，用于将焊缝直接保持在焊缝退火感应器下面。SOU用于8.625" OD x 0.375"壁厚的管道。超过该直径的16" OD以下的管道可以通过该装置。

Rafter生产轧管机、辊轧成型机、切割机、辅助设备、以及其他和管道轧机相关的设备。

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激光钻孔和研磨技术

DANOBATGROUP集团是领先的机床公司，有着55年多的经验以及1300多名工人。Danobat生产不同类型的机器，包括：研磨机、车床、铣床、冲床、弯板机以及钻孔装置。

Panel bender提供整套定制解决方案，用于钣金加工工艺，并用集成解决方案为每种需要提供快速响应。

这些机器包括冲孔机、冲切和激光冲切联合机、自动弯板机以及光纤激光切割机。由于机器的模块化技术系统，所有机器整个生命周期都可以集成任何自动化原件。

整个冲孔机系列都是全伺服电动的，以最小的消耗达到最大的效率。冲孔机与不同技术结合，如直角剪或光纤激光器，在一台机器内就能够获得不同工艺的集成。冲切联合机对于矩形部件和大生产量来说是理想的系统。激光冲切对于不规则形状部件和大附加值部件加工来说是非常灵活的系统。机器和操作者之间的相互作用是另一个要强调的价值。所有Danobat机器都是符合人体工学设计的，为操作和维护提供好处。其中最显著的好处是Danobat的Easy Turret系统，可提高访问并减少工具更换时间。对于软件，Danobat机器包含Smart Tech系统，使信息解释对顾客来说更容易，而且能够直接与Danobat技术援助服务连接。机器设计人体工学的应用也意味着维护的巨大进步，因为纳入很多活动部件以及改善了关键点的访问。

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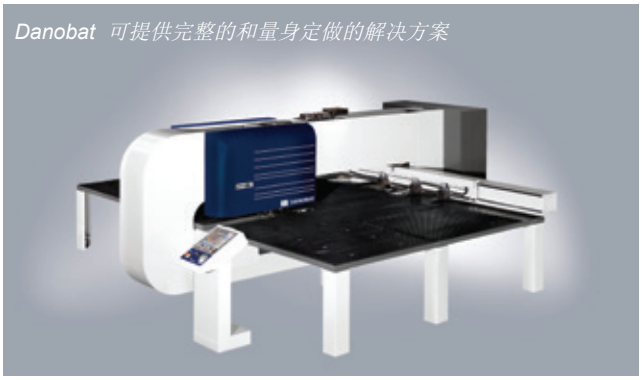

热熔对焊机

RITMO机器已经用于位于瑞典南部哈尔姆斯塔德建筑工地管道上。管道将使用PE 100 SDR 17，外径160-135毫米。完成这项工作需要大约1年时间，期间将会遇到非常极端的气候变化（从冬天的零下20度到夏天的高温30度）。也将受到靠近大海风力和湿度条件会突然改变影响。此外，建筑工地穿过城市中心和十字路口，有大量的交通。

GPA Flowsystems AG (Ritmo的当地分销商)的技术员建议承包商(MTA Bygg & Anlaggning)用Ritmo热熔对焊机Delta 355 All Terrain以及Elektra 400电熔焊机进行工作。

Delta 355 All Terrain允许高度可移动性和多功能性：机载发电机使焊接机器完全独立，而且带车轮，能快速定位。对于短期施工时间，这些特点，对于给定执行时间短的任务来说是非常受欢迎的，因为他们为民众带来的不适感最小。此外，Delta 355 All Terrain凭借焊接控制系统 - Easy Life提供有保证的焊接。

在不能进行对焊的地方，承包商可以使用Elektra 400，该机器配备有扫描仪，用于条形码读取，以及焊接参数自动检测。GPA的技术人员Kenny Constanzo说：“在瑞典我们有很强的环保意识，并且该项目每天都会遇到几个环境挑战。完成后，该建筑工地将已经穿越整个城市，穿过城市障碍，如狭窄街道、大的十字路口……，并穿越一些“重大的”障碍物，如大树……，举个例子来说，我们决定绕道以及原封不动的保留高加索核桃树就是一个很好的例子，而不是将其推到。欣赏这些植物令人激动！我知道遇到挑战时，Ritmo总是在那里。这些焊机已证明在阳光下和在瑞典雪地下都是值得信赖的。该项目是在最前线的，而且Ritmo真正打开了我们的道路。

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钢材表面改善

OLIMPIA Surface为所有用途管道均匀表面精加工生产干式、经济型系统。

公司与客户合作完成了几个项目，不锈钢表面改善（恒定的粗糙度）；不锈钢表面加工（研光和镜面抛光）；碳钢表面改善；以及碳钢管道除锈，以便进行更好、更顺利的无损检测。

长材的双相和超级双相表面精加工对核能应用非常有用，核工业的高精度和表面精加工要求是强制性的。不锈钢、双相钢和超级双相钢无缝管表面精加工和材料切除不需要频繁的工具更换；特殊钢种（高精度、稳定的质量是必须的），尤其是核工业应用管道。

新客户启动试验在Olimpia的生产设备装置进行，该装置在Olimpia的工厂实际生产是每天运行24小时。改进设计首先是开发Olimpia设备自身生产效率以及优化设备可行性。

这可实现恒定的质量，不依赖人眼或人的经验，这些主要属于手工活或工艺品。几家国际客户已经确认并依赖Olimpia的技术用于各种用途无缝特殊钢管道表面处理。Olimpia的表面加工系统适合研光、抛光、磨切和粗糙度控制。

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MAC扩展产品线

“3种技术，1家公司”已经成为MAC公司几十年的宗旨。公司现在已将技术扩展到了四种，增加了激光检测设备，用于检查管道焊接缺陷。

该技术是MAC的合作伙伴Xiris生产的，用来检查焊缝咬边、凹陷、气孔、焊缝高度和焊缝记录（错位）。

高速摄像机结合快速数据收集和分析速度在典型激光焊接钢管轧机上能检测到小到0.015毫米的缺陷。焊接类型，如ERW、TIG 和 SAW，以及其他，都可以检测。直接集成到轧管机标识系统里可以即时标识焊缝缺陷，无需停止轧机。

WI2000p激光机每秒能抓获250个外形图像，提供轧机实时趋势报告，简化轧机设置，使停机时间和废料最少化。

对于需要100%检查材料所有缺陷的客户，如裂纹、裂片、夹渣和其他不连续性，MAC也提供涡流和超声波设备，可加强检测线能力。

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WI2000p激光器检查到的焊管焊接区质量问题

用技术取代弯管的“艺术性”

在用手动弯管机弯曲管道的时代，管道弯曲被认为是一种艺术。管道艺术家们总是知道隐藏的“缺陷原因”，因为装配精度在过去是、而且现在仍然是材料和其可变标准之间相互作用的一个问题，比如温度、重量、运输、直径、壁厚等，以及中心线的参照，包括与管道弯曲角度、半径和旋转相关的A和B端的坐标，所有这些都最终包括在公差范围里。

几乎所有技术进步都是朝着生产力、节省时间和工业自动化方向进行的，但创新常常是没人希望的时候开始发挥作用。新市场定位就是在没人希望的时候出现的。专家发现的Niches，他们将想法变成了一个可能激发市场飞速更新的模式。

比如管道专业软件TeZetCAD，世界一流的世界领导者对弯管艺术下了一个新的国际定义。这些日常工作中的零星小事常常使工人的生活更加容易。因而一个平凡的创新往往引起轰动。就像奥运会的口号“激励一代人”，往往百分之一秒或1毫米就决定了胜或负。或者像由很多美味特色小食品构成的自助餐一样，TeZetCAD由很多精细的模块组成，这些都是不断开发的管道市场需求的。

每个人使用不同的测量技术，使用不同测量点，因此当一根管道因换班、假日或生病而由不同的人重新测量时，可能就会出现重复测量的差异，尤其是由于弯管的几何形状以及其自身寿命。测量计划制定每个筒体和每个弯曲半径的测量点数量，比如对于弱微弯曲角度和/或偏差，测量点的数量可能是4或者6，有可以辨识的弯曲角度和偏差的，仅需要2个测量点，保持在预定义的公差范围内。

很多公司使用的是所谓的计划流程版。操作者预处理不同弯曲机弯曲数据，加工不使用测量机。但有时如果能用测量设备测量将帮助优化加工。TeZetCAD的新功能叫做“虚拟测量”已经引入市场并再一次提供了全球性创新。虚拟测量测量臂是用鼠标取代的。不需要众所周知的测量声音来确认记录xyz点，用户只需要点击鼠标就可。法兰作为外形的一部分，目标的定位测量在TeZetCAD也是可以的，因为设计部门输出法兰数据是以表面数据的形式输出的，是用IGES转换器传输的。这些数据尺寸是用鼠标点击抓取的，而且可以编辑。管道深度和直径的装配可以控制装配精度，而且可以纠正，以及螺栓孔。很多公司不让员工使用互联网连接。但是在某些情况下，有可能会更好，尤其是当问题出现而且工作无法继续时。该行业已经养成习惯，通过网络开展培训、支持或远程维护。为促进交流，TeZet将互联网接入集成到软件中。屏幕左方，用户有一个快速支持软件图标，能连接到TeZet，无需管理员或高级用户权限。结束时，TeZet会自动关闭连接。

时间就是金钱。每个商人都知道生产机器站着不动也会花钱。从主管到生产管道最开始以及对比测量和纠正有时比操作者喜欢的更长。现在在监控器的左边有一个中间有红色的头的新按钮，供机器操作者使用，使他们能够访问需要的数据用与纠正和重新开始生产。

装配精度的先决条件是管端，他们的位置不能改变，即使是设计部分创建了新的管子通道。新的可能是可以在工作台上人为改变管道数据，无需改变A、B端。平行于此的是改变的原管以所选颜色出现在屏幕上，以及每次改变，原始管道的改变清楚的显示出，以便用户得到改变的图像显示。另一方面，还能改变管端，当扩展部件造成新的定位，以缩短或加长管端，无需更换管道通道以及管端，包括扩展部件。

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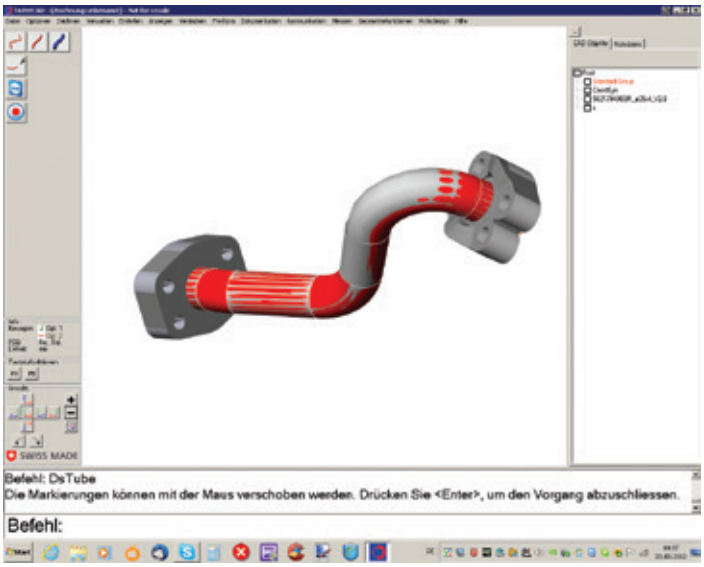

High chromium casting roll for straightening steel pipe, welding pipe and cold roll formed steel

By Yuan Houzhi and Liu Xingyi
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New high chromium alloy casting roll researched and developed by Shandong Province Sifang Technical Development Co Ltd (SDSF) for straightening steel pipe, HFW/ERW welding pipe and cold roll formed steel. It can successfully meet the production requirements of advanced steel pipe production mills and high grade alloy steel pipe production lines and the service quality and service life of that can be comparable to D2, X155CrVMo121, SKD11 classic forging steel roll and match the world's most advanced levels.

The casting roll has significant advantages compared with the same kinds of forging roll in its manufacturing method and manufacturing cost and has a marked improvement in energy resource saving and material saving.

1 General

The roll itself is the key component of the mill and the first aim of a rolling mill is to meet the different standards demanded in each country. At present in China various rolling mills and technical equipment levels have been measured that easily compete with those built around the world and the technical level of rolling steel now matches the world's most advanced levels of machinery.

In recent years China has introduced and constructed an increasing number of steel pipe production lines that meet world-class standards and some of the types of lines are not found anywhere else in the world. Now China's steel pipe production industry is one of the largest in the world and as a result the consumption of rolls is also the largest in the world. The production of advanced steel pipe mills and high grade alloy steel pipe make high demands of the roll itself.

Through cooperation and technical innovation the quality and production process and productivity are continuously increasing in the roll manufacturing industry in China.

2 Straightening pipe roll, HFW/ERW welding pipe roll and cold roll formed steel roll

The material design of rolls is a basic part of machinery design. The material used for steel pipe straightening rolls, HFW/ERW welding pipe roll and cold roll formed steel roll in traditional design is alloy forging steel.

Usually D2 and H13 are used in the design in America, X155CrVMo121 and X40CrMoV5-1 in Germany , SKD11 and SKD61 in Japan, Cr12MoV, 3Cr2W8V, Cr12, 9Cr2Mo and GCr15 in China.

D2, X155CrVMo121 and SKD11 are about the same with Cr12MoV. They are cold working die steel with high carbon and high chromium, and it is a basic kind of cold working die steel.

In production, D2, X155CrVMo121 and SKD11 forging steel rolls, which are used in advanced rolling pipe mills, specially under the condition of speedily cooling and speedily heating, are all designed to avoid the phenomenon of crack on roll face and looseness of roll shaft.

Now Cr12MoV forged steel roll is only used in small size roll for welding pipe production lines in China and the great majority of mills are still using low class forging steel roll consisting of Cr12, 3Cr2W8V, 9Cr2Mo and GCr15.[1] These rolls have poor wear resistance and the service life is only $^1/_2$~$^1/_3$ of above mentioned imported forging steel roll. For example, the sticking steel phenomenon has appeared in the use of domestic forging steel roll used in mills on stainless steel welding pipe production lines, and the wear is produced on the roll surface to use domestic GCr15 roll in 500x500x20mm square pipe mills when used more than once per month.

The straightening pipe roll, HFW/ERW welding pipe roll and cold roll formed steel roll belong to special-shaped roll. This kind of roll is possessed of the features of complex shape, more size and small batch, etc. Especially when producing HFW/ERW welding pipe roll and cold roll formed steel roll, one drawing only produces one or two products, the maximum weight of product can be up to 8-10 tons per piece and minimum weight of product can be up to 58kg per piece. This kind of roll is difficult to produce to use forging tool steel – the inside hole can not be forged and the utilisation factor of material is lower than 50 per cent. D2, X155CrVMo121, SKD11 and Cr12MoV materials have narrow forgeable temperature area and large forged difficulty so the material has low utilisation factor and high energy consumption. Because the roll has complex shape and a big differential on wall thickness, the heat treatment has greater difficulty.

China national standard "cast iron roll" and "cast steel roll", which was applied in 2009 only contains the rolls for rolling

plate, strip and hot section steel, and not contain the rolls for rolling steel pipe and cold roll formed steel.

New high chromium alloy casting roll researched and manufactured by Shandong Province Sifang Technical Development Co Ltd (SDSF) is different from the above mentioned forged alloy roll, and the roll has greater advantages in terms of roll quality, service life, production method and production cost and the roll has remarkable effect in energy saving and material saving.

New roll manufactured by SDSF had been extensively used to all key enterprises for producing seamless steel pipe and many large-scale enterprises for producing HFW/ERW welding steel pipe and cold roll formed steel, and the market share of straightening roll for seamless pipe manufactured by SDSF is up to 80 per cent in China. New roll has been exported to many countries in Asia, Europe, Africa and new roll has been appraised as a "quality product" by China Cold Roll Formed Steel Association of China, the Iron and Steel Association and Tianjing Steel Pipe Co Ltd.

This new technology has achieved proprietary intellectual property rights and two Chinese invention patents and one Chinese utility model patent, two invention patents and also two utility model patents are being applied for. This new technology has created excellent foundations for developing advanced alloy roll with national independent brands.

The project of "The researching and application of new roll for steel pipe and cold roll formed steel" has won second prize in the China metallurgy science and technology awards, second prize for the Shandong province scientific and technical progress and first prize at the Jinan city scientific and technical invention awards.

3 Researching and developing of new roll for straightening steel pipe, HFW/ERW welding steel pipe and cold roll formed steel

3.1 The principle of researching and developing

The roll is one of the main consumption parts in rolling steel production. The roll quality is not only related to production cost and productivity of rolling steel, but also reflects the quality of rolled steel to a great degree. With the development of rolling technology and continuously increasing of rolling mill speed and automation level, the service condition of roll is changed due to rigour on a day-by-day basis and the production process has a high requirement for quality of roll. The marked trend for enhancing the quality of roll is to increase the composition content of alloy elements, such as the use of high chromium alloy roll in the 1970s and the use of high speed steel roll in the 1980s. Because of high alloying of roll material the roll is difficult to forge in production.

With continuous development and successive success of new processes and advanced equipment the centrifugal casting process of roll was held by many countries in the world in 1970s and the centrifugal casting roll process was successfully developed by many enterprises at home in the 1980s, and this roll could replace some imported product and part of this roll could be exported. The external layer of centrifugal complex casting roll is high alloying casting iron or high alloying casting steel, and it has high hardness, excellent wear resistant and excellent heat crack resistance properties.

At the present the back up roll for heat rolling plate and strip steel by centrifugal complex casting method has been successfully manufactured at home, its weight is up to more than 80 tons for every piece and it has achieved good effects[2]. The centrifugal complex casting roll for cold rolling plate and strip steel has also been successfully manufactured at home and it has also achieved good effects[3].

Before the 1980s high speed steel roll was produced using the forging method. High speed steel casting roll has won a great success in managing to achieve a fast development in recent years, but this method was usually only used to produce circle roll under many condition.

Through researching and testing many times the experiment principle is determined as following: suitable for the working environment and up to as ideal a state as possible using a simple process and saving material and energy resources.

The design plan of high chromium alloy casting roll made using the above principles is different from that of foreign forging steel roll and high chromium alloy roll for rolling plate and strip steel.

3.2 The researching and developing of roll material and preparation method

If utilising casting method with original chemical composition of D2, X155CrVMo121, SKD11 or Cr12MoV roll the property of this roll is certainly very poor compared to that of forging method and the product can not satisfy the requirement of production. Because of having certain limitations in the way of heat crack resistance and wear resistance, and meeting severe challenge of high speed steel roll[4], high chromium alloy casting iron roll used extensively in heat steel mill for plate and strip steel before the 1990s is continuously decreased in used number in heat mill of late years, so it has certain problems in adhering to design plan of high chromium casting iron roll.

Through systematically analysing the service condition and service features of straightening steel pipe roll, HFW/ERW welding pipe roll and cold roll formed steel roll, the new high chromium alloy material and shaped method of casting roll were confirmed. Through adding strength carbide elements and modification agents used to change shape and distribution of carbide and to fine crystal, which can enhance the wear resistance of material in essence, the new high chromium alloy material in serial that can be suitable for working condition of speedily cooling and speedily heating and normal temperature was developed. Since alloying of Mo, Nb elements, etc, the comprehensive property of roll is increased.

C and Cr are the most essential and most important elements in high chromium material. Their content determines the number of carbide, the ratio between M7C3 carbide and total carbide, hardness, toughness and quenching degree of material.

The distribution of Mo element in each phase of high chromium alloy is about 50 per cent into Mo_2C, about 25 per cent into M_7C_3 carbide, it can be to enhance hardness and wear resistance. About 23 per cent of Mo element is into matrix to enhance quenching degree of material.

W atom and C atom have strengthening combining force and they can enhance the stableness of high temperature resolution of material, so that red hardness is enhanced. When quenching in high temperature the part of W carbide is melted into matrix, the quenching degree is increased.

Ni element can strengthen matrix and improve comprehensive property of material and can increase quenching degree.

B element into matrix can enhance microstructure hardness and impacting toughness of the matrix, strengthen supporting action of carbide to matrix, so that the wear resistance is increased of the material.

Ti and N elements can be fine eutectic structure and to form stable Tic unclear. After adding N carbon-nitrogen compound with high melt point can enhance the heat property.

Adding Nb element can deposit out Nb particle, that is rigid phase, with high hardness (2,000Hv), high melt point, regular shape, small grain and even distribution, and it can effectively control the solidified deviation of alloy, so that to enhance comprehensive property and save Ni or Cr elements.

Adding special complex modification agent can effectively improve and fine M_7C_3 carbide changed strip shape distribution into block and spherical shape distribution, enhance the evenness of distribution, so that the strength and impacting toughness are increased, and another, it can bear a action to decrease adding number of Ni, Mo and Cu elements.

Through a lot of testing and comprehensive various factors the new high chromium alloy material with high quality and extensive utilisation was designed.

Pointing to some problems of complex roll shape, more product size, small production batch and poor pour property, etc, the new solidified casting process with intelligence control temperature in serial was invented and it can achieve high grade shaped of complex roll shape. Based on various working condition, technical requirement and material type the heat treatment process was determined.

Because of no ready production lines for working high chromium alloy roll to copy and imported, so all production processes included machining process and technical equipment must be designed by ourselves, specially to solve many problems on machining high precision hole curve of steel pipe roll, machining high hardness material, etc. The compared main process chart of new alloy roll with that of similar product made at home and abroad is as shown below.

Because of developing success in the way of roll material and preparation method the process replaced forging by casting is achieved for producing straightening steel pipe roll, HFW/ERW welding pipe roll and cold roll formed steel roll.

3.3 The compared effect of saving material and saving energy of new roll preparation method with that of traditional forging steel roll

Through some examples to explain.

According to fairly good process level included melting used of intermediate frequency furnace, forging, heat treatment and machining, to account the power consumption of every ton steel and to change into standard coal consumption from energy consumption of generation power at home at the present for finished roll of per ton in the example.

3.3.1 Straightening steel pipe roll and welding pipe roll with shallow hole shape

The world's biggest roll for straightening steel pipe mill as example, the finished roll weight is 4.584 ton.

3.3.1.1 The accounting result of comprehensive energy consumption of forging roll production process of similar products at home and abroad

Total comprehensive energy consumption of every ton of finished product is 2.595 ton standard coal and the utilisation coefficient of material is 54.1 per cent.

Main process chart A of new roll manufacture:

material → melting → casting → block → tempering → roughing → finishing

Main process chart B of new roll manufacture:

material → melting → casting → block → annealing → roughing → quenching and tempering → finishing

Main process chart of forging roll manufacture of similar product at home and abroad:

material → melting → billet → forging → roll block → annealing → roughing → quenching and tempering → finishing

3.3.1.2 The accounting result of comprehensive energy consumption for roll production process A of SDSF

Total comprehensive energy consumption of per ton of finished product is 0.8794 ton standard coal, is only 1/3 of finished product consumption of per ton of similar forging roll at home and abroad, and the utilisation coefficient of material is 87.5 per cent, is twice that of forging roll of similar product at home and abroad. Manufacturing every ton of finished roll can save of 0.704 ton of metal material.

3.3.2 The welding pipe roll with deep hole shape

The sizing roll of world's biggest Ø660HFW/ERW welding pipe mills as example: the weight of finished product is 1.258 ton.

Figure 1: *Straightening steel pipe roll, HFW/ERW welding pipe roll and cold roll formed steel roll*

3.3.2.1 The accounting result of comprehensive energy consumption of forging roll manufacturing process of similar product at home and abroad

Total comprehensive energy consumption of finished product per ton is 4.407 ton standard coal, utilisation coefficient of material is 35.5 per cent.

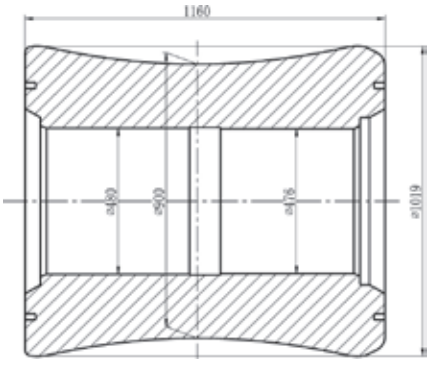

Figure 2: *The drawing of the world's biggest roll for straightening steel pipe mill*

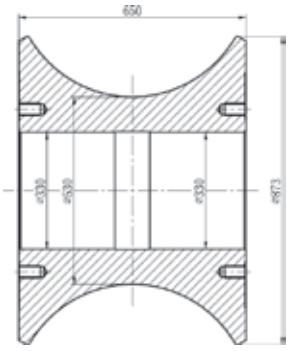

Figure 3: *The drawing of sizing roll of world's biggest Ø660HFW/ERW welding pipe mills*

3.3.2.2 The comprehensive energy consumption of new roll manufacture process B of SDSF

Total comprehensive energy consumption of finished product per ton is 1.246 ton standard coal, is only ¼ that of finished product of similar forging roll per ton at home and abroad, and the utilisation coefficient of material is 77.5 per cent, is more than two times that of similar forging roll at home and abroad. Manufacturing finished roll of per ton can save of 1.527 ton of metal material. The compared comprehensive energy consumption of new roll manufacturing process with that of similar forging roll at home and abroad.

4 The compared property of SDSF new high chromium alloy roll with that of similar roll at home and abroad

4.1 Chemical composition

The chemical composition of SDSF new high chromium alloy roll is different from that of similar roll of other countries in the world. At the present

Table 1: *The comparison of comprehensive energy consumption of finished roll production per ton*

Manufacturing process	Comprehensive energy consumption (ton standard coal)	Utilisation coefficient of material (%)
Forging roll manufacturing process of similar product at home and abroad	2595–4407	35.5–54.1
SDSF new roll manufacturing process A	879.4	87.5
SDSF new roll manufacturing process B	1246	77.5

SDSF new material is first selected for straightening steel pipe roll at home and also has full approval in the way of selecting material for large scale HFW/ERW welding pipe roll and cold roll formed steel roll at home and abroad.

The chemical composition system of SDSF material is different from between the chemical composition of forging steel roll and that of high chromium alloy roll for plate and strip steel rolling.

4.2 Microstructure

The carbide of SDSF material is mainly M_7C_3, its microhardness is up to 1800Hm. The microstructure appeared as no continuous strip state, block state, particle state and chrysanthemum state, and the content of carbides about 20 per cent. According to service condition of various roll the matrix is selected as austenite, bainite, martensite, and mixing matrix of austenite, bainite and martensite etc. The macrohardness is up to HRC 50-65. The matrix of D2, X155CrVMo121 and SKD11 is martensite and the content of M_7C_3 carbide is about 15 per cent.

4.3 Comparing hardness and quenching degree sampled from product

See table 2.

4.4 Comparing mechanics property sampled from product

See table 3.

4.5 Comparing wear resistance in the field: The result is compared using the same equipment and rolled same steel pipe

Comparing wear resistance on straightening mill of world's advanced heat treatment production line, see table 4.

The compare wear resistance on straightening mill of world's advanced Φ250MPM mills, see table 5.

4.6 Comparing wear resistance testing sampled from product in the laboratory

See table 6

5 Summary

Persisting in taking the road of "speciality, precision, characteristic and new" and "continuous innovation", persisting in taking the researching direction of "the problems of customers and the problems in the field are our researching

Table 2: *The compared hardness and quenching degree of new roll of SDSF with that of high grade similar roll in the world*

Brand	State	Average value of surface hardness HRC	Hardness average value distanced 30mm from surface [HRC]	Hardness average value distanced 60mm from surface [HRC]	Hardness average value distanced 120mm from surface [HRC]
D2	Quenching, tempering	59.5	59.6	59.9	59.8
X155CrVMo121	Quenching, tempering	58.2	58.8	57.9	57
SKD11	Quenching, tempering	57.7	57.3	57.1	54.6
SDSF High chromium alloy roll	Tempering for eliminating stress	58.8	58.4	58.6	58
SDSF High chromium alloy roll	Quenching, tempering	60.1	59.9	59.5	59.3

Table 3: *The compared mechanics property of SDSF new roll with that of high grade similar roll in the world*

Brand	State	Sampled direction	Tensile strength MPa	Impact toughness J/cm²
D2	Quenching, tempering	radial	733	3.1
X155CrVMo121	Quenching, tempering	radial	711	3
SKD11	Quenching, tempering	radial	750	3.5
SDSF High chromium alloy roll	Eliminating stress in casting	radial	500	13.5
SDSF High chromium alloy roll	Quenching, tempering	radial	540	7.5

Material of roll, shaped method	Straightening number after worn 1mm at radial of roll
X155CrVMo121 forging roll	10,000 ton
SDSF High chromium alloy roll	12,000 ton

Table 4: *Comparison of wear resistance for heat straightening*

Material of roll, shaped method	Straightening number after worn 1mm at radial of roll
X165CrMoV12KU forging roll	19,000 piece
9Cr2Mo forging roll	13,000 piece
SDSF High chromium alloy roll	38,200 piece

Table 5: *Comparison of wear resistance for cold straightening*

No.	A	B	C	D	E
Material	**X155CrVMo121**	**D2**	**SKD11**	**SDSF High chromium alloy**	**SDSF High chromium alloy**
State	Quenching, tempering	Quenching, tempering	Quenching, tempering	Tempering for eliminating stress	Quenching, tempering

Table 6: *The material number of wear resistance testing in the laboratory*

Testing result:

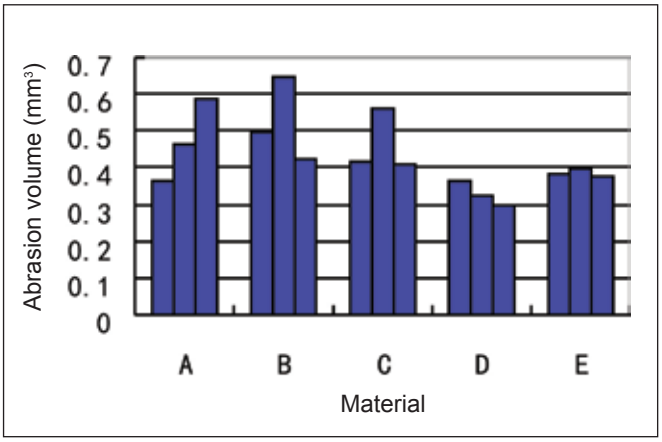

Figure 4: *Abrasion volume of material*

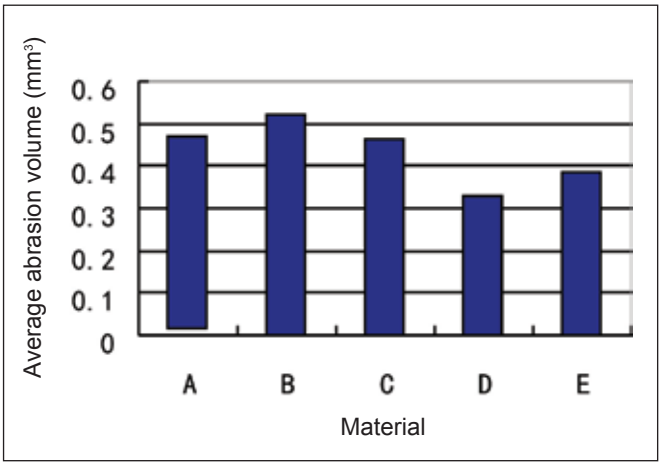

Figure 5: *Average abrasion volume of material*

subject", persisting in taking the researching principle of "never copy, attaching great importance to innovate and stride", adopting the researching method of "researching production process must be combined with researching equipment", persisting in taking the aim of "international advanced level and innovating China's national brand" are our some realisation for successfully researching and developing new roll replaced forging by casting under the pressure of heated market competition day by day of late twenty years.

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