The international magazine for the tube & pipe industries

TUBE & PIPE Technology

NOVEMBER 2012

管道技術

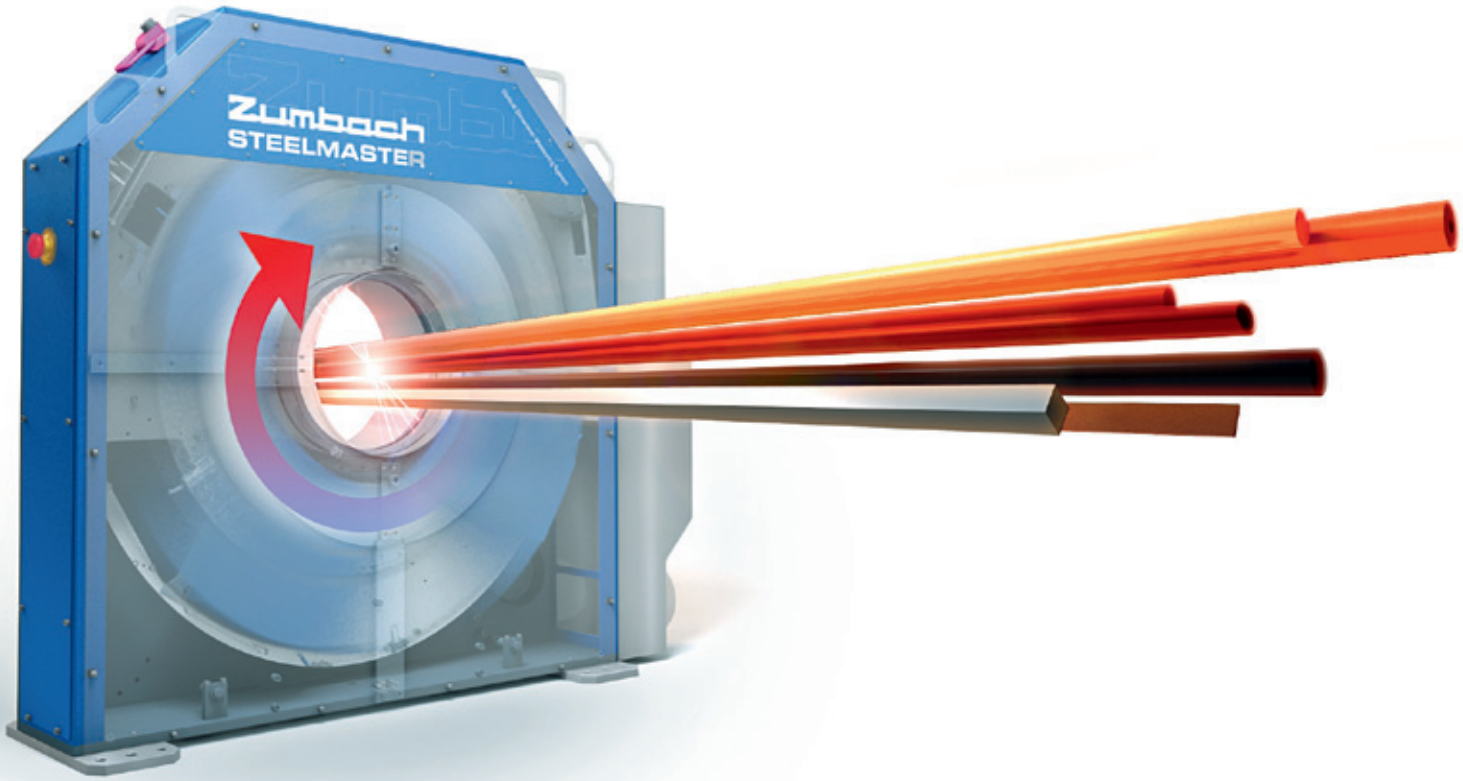
VOL 25 NO 6 US$33

TUBE ARABIA

A NEW ERA IN HOT AND COLD STEEL MEASUREMENT

Revolutionary Rotational Measurement

Revolutionary laser rotation technology results in highly accurate measurement of dimensions down to 1/10th second cycle. STEELMASTER SMR systems from ZUMBACH: The solution for all lines including high speed with 2- and 3-roll block technology, also for short product lengths.



STEELMASTER SMR

Direct link to the brochure (0.6 MB)

Finally the trouble-free answer to the industry demands for rolled steel.
As quality requirements become ever stricter and raw material prices continue to rise, reducing waste is increasingly the key factor for economic viability.

- STEELMASTER SMR measures a complete profile within 1/10 second. The system, with up to 3 synchronous rotating measuring heads can acquire up to 6000 measurements/second due to our innovative laser rotational measurement technology.
- Unique, fully contact-free transmission of both energy and signals by means of induction and encapsulated W-LAN grants virtually zero maintenance and wear-free operation.
- ZUMBACH's highly evolved software guarantees:
  – Continuous error detection
  – Immediate readjustment in case of shape deviations and rolling errors
  – Minimal waste

STEELMASTER SMR - Most probably the best measurement solution currently available on the market for hot and cold rolled steel.

Zumbach
SWISS PRIME MEASURING SINCE 1957

ZUMBACH Electronics
sales@zumbach.ch I www.zumbach.com

SHANGHAI,CHINA 2004 - ERW/API 8”-25”Ø

WOLLONGONG, AUSTRALIA 2006 - ERW/API 8”-20”Ø

ANSHAN,CHINA 2007 - ERW/API 8”-24”Ø

JOHANNESBURG,SOUTH AFRICA 2008- ERW/API 8”-24”Ø

SOHAR,OMAN 2010 - ERW/API 8”-24”Ø

KHOPOLI, INDIA 2011 - ERW/API 8”-25”Ø

SUPERMILL

WORLDWIDE PERFORMANCE

PIPE MILL

ERW/API 20”/24”/26”Ø

CAGE FORMING

ULTIMATE TECHNOLOGY FOR
ERW/API PIPE MILL 20”/24”/26”Ø

- PROGRESSIVE FORMING
- COMPUTERIZED CONTROL
- QUICK ROLL CHANGE
- LOW TOOLING COST

MILLTECH is the worldwide leading company working with **YODER** for the mfg. and supply of ERW/API Pipe Mill O.D 6”-20” / 8”-24” with Full Cage Forming System.

We supply the mill and finishing equipment in Turn-Key package as well as technical assistance for training and operation.

MILLTECH
pm@milltechco.com

YODER

Editorial Index

Winner By Experience...!!!

- Years 27+
- Beneficiary Countries 44
- Customer 175
- Turn key Projects 31
- Tube Mills 131
- Finishing Equipment 651

TUBE ARABIA

Meet us at
Jan 07 - 13, 2013
Dubai, UAE

GALLIUM INDUSTRIES LTD.

www.galliumindia.com +91-129-4150117 mktg@galliumindia.com

Contents

Vol 25 No 6

November / December 2012

Features this issue:

The November Issue

Welcome to the latest issue of Tube & Pipe Technology magazine. This issue we have features on tube and pipe mills and blasting, coating, jacketing and galvanising technology as well as a look at Tube Arabia 2013, which I will be attending again and I hope to see many of you there. The technical feature this issue looks at polygonised controlled rolling of slabs for making oil country tubes and we have all the latest industry and technology news for you as usual. I hope you enjoy the issue.

Tube Arabia 2013 is the third time the show has been held and we are proud to again be a media partner at this growing event. The Middle East has itself experienced some tough times economically over the past few years so I hope to see positive signs at the show that the region is starting to find its feet again. As a location for a conference for the international tube and pipe industry it really is first-class, particularly for bringing together Europe and the UAE as well as Saudi Arabia, India and China. Last time I went to Dubai for the trade fair I found everything was very well organised and the city itself is such a pleasant venue that it makes everything feel very easy. The weather in January is even great for business. Sunny, warm days but cool enough to get plenty done.

Next issue we have show features on Indometal 2013 and Boru 2013 as well as features on inspection, testing and measuring and coiling and uncoiling machinery.

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.

Editor	**Rory McBride**
Features editor (USA)	**Dorothy Fabian**
Editorial assistant	**Christian Bradley**
Production	**Lisa Wright**
Sales & marketing	**Catherine Sayers** *English speaking sales* catherine@intras.co.uk **Giuliana Benedetto** *Vendite & Marketing (Italia)* giuliana@intras.co.uk **Hendrike Morriss** *Verkauf & Marketing (Deutschland, Osterreich, Schweiz)* hendrike@intras.co.uk **Linda Li** 中国大陆，台湾， 香港以及远东地区销售代表 linda@intras.co.uk **Jeroo Norman** *Indian sales* jeroo@intras.co.uk
Advertising co-ordinators	**Liz Hughes** **Andrea McIntosh**
Subscriptions	**Liz Hughes**
Accounts manager	**Richard Babbedge**
Publisher	**Caroline Sullens**
Founder	**John C Hogg**
Published by	**Intras Ltd**, 46 Holly Walk, Leamington Spa CV32 4HY, UK Tel: +44 1926 334137 Fax: +44 1926 314755 Email: tpt@intras.co.uk Website: www.read-tpt.com **Intras USA** Danbury Corporate Center 107 Mill Plain Road, Danbury CT 06811, USA Tel: +1 203 794 0444 Email: doug@intras.co.uk

US Copies only: *Tube & Pipe Technology* (ISSN No: 0953-2366, USPS No: 023-507) is published bi-monthly by INTRAS Ltd and distributed in the USA by SPP, 17B S Middlesex Ave, Monroe NJ 08831. Periodicals postage paid at New Brunswick, NJ. POSTMASTER: send address changes to *Tube & Pipe Technology*, 17B S Middlesex Ave, Monroe NJ 08831.

ISSN 0953-2366

recycle
When you have finished with this magazine please recycle it

Tube & Pipe Technology **magazine is available on subscription, or via membership of the International Tube Association – See www.itatube.org for more membership benefits**

Fives Bronx receives order for straightening equipment

FIVES Bronx, the global supplier of Bronx Taylor-Wilson finishing equipment and Abbey ERW pipe mill solutions, was recently awarded an order for the manufacture of three Series 6CR10 six roll straightening machines. The order was placed by a Chinese company, Tianjin Pipe (Group) Corporation in Corpus Christi, Texas and is the second order TPCO has given Fives Bronx in the past 12 months. TPCO purchased one cold and two hot 6CR10 straighteners, which will process a full range of API grades, with diameters ranging from 114.3 to 273.1mm and length to 15m. The temperature ranges from ambient to 650°C and will process the pipes up to 100mpm.

The Series 6CR10

The Fives Bronx Series 6CR10 pipe straightener also utilises its patented computer aided setting system Compass to achieve size change set-up times of less than three minutes and its unique design allows thin walled tube to be straightened accurately, without surface blemishes, at speeds up to 200m per minute (approximately 600fpm).

Pipe producers can rely on 200 years of industry experience and the success of thousands of installations to make Fives Bronx a good choice for their tube and pipe finishing needs, the company said. Located in all of the leading seamless and ERW pipe mills worldwide, the hot and cold Series 6CR10 machines have a global reputation for quality, durability and efficiency.

Fives Bronx – USA
Email:
fivesbronx-sales@fivesgroup.com
Website: www.fivesgroup.com

Mair Research supplies integrated API finishing lines to Turkish tube manufacturer

SEVERAL years ago Mair Research SpA (Italy) started the commissioning of integrated finishing lines for API tubing up to diameter 13$^{5}/_{8}$" supplied to a major Turkish producer.

Such lines provide a stepless and fully automatic process as follows: cut sampling, ID flushout and bead chopping, chamfering and hydrate sting (two machines in parallel: one triple head up to 13" and up to 34mm).

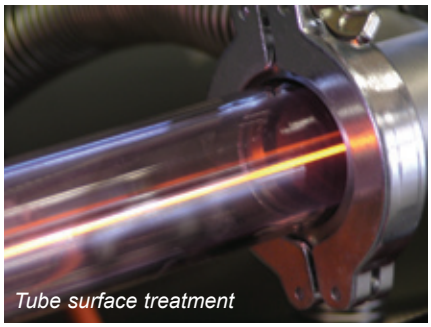
The machines are connected by tube conveying systems with driven chains, as well as a tracking system for the processed tubing. The software system is connected with the lines as well as the bundle storage process.

Thanks to the patented systems the machines are equipped with, the adjusting operations are easy and can be provided in automatic mode according to the tube diameters to be processed.

Mair Research SpA – Italy
Email: salesdept@mair-research.com
Website: www.mair-research.com

API finishing lines

Website launches



Tube surface treatment

PLASMAIT GmbH, a supplier of plasma heat and surface treatment lines for wire, tube and strip production, has updated its company website. Visitors to www.plasmait.com will be able to review short outlines of Plasmait's products. Newly presented on the website is the PV Ribbon Tinning Line used for production of PV Ribbon. The line became the production process of choice for most producers of premium quality PV ribbon worldwide. Updated is also the overview of PlasmaANNEALER, which has been subject to successful installations in copper and copper alloy annealing as well as increasingly in stainless steel and nickel alloy applications.

Visitors, who have the interest to test plasma heat and surface treatment on their specific materials, are welcome to book their trial online. Plasmait runs client trials on three different test lines, one of which is dedicated to PV ribbon lines and another to welding wire applications. Plasma heat and surface treatment tests are performed to various requirements and for many different materials.

Peter Ziger, Plasmait's R&D director, explains that the trial facilities have been utilised by many manufacturers who strive to improve the quality of their wire or tube products, reduce production costs or want to make the production chemical-free and operator-friendly. Plasma treatment will be of most benefit to applications with demanding surface needs or challenging annealing requirements. Such applications are usually found in sectors such as medical, precision mechanical, electronics, aerospace and energy sectors.

Plasmait – Austria
Email: info@plasmait.com
Website: www.plasmait.com

Diary of Tube Events 2013

7-10 January
Tube Arabia
International Exhibition
www.mdna.com

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

25-26 June
Valve World Expo Americas
International Exhibition
www.valveworldexpoamericas.com

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

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

SMS Meer to supply tube welding plant with finishing line

ARVEDI Metalfer Do Brasil in Salto, Brazil, has placed an order with SMS Meer for the supply of an RD 140 HF tube welding machine including finishing line. This is already the second major order Arvedi has awarded SMS Meer within a short space of time.

Just two years ago Arvedi brought a tube line supplied by SMS Meer into service at its plant in Cremona, Italy. "Following our positive experience with the first plant, we decided to have the second tube welding line designed and manufactured by SMS Meer too," said Mario Caldonazzo, CEO of Arvedi Tubi Acciaio.

"SMS Meer's concept is impressive in terms of tube quality, flexibility and productivity," he added.

In future, Arvedi will supply its Brazilian customers with tubes of the highest quality for special applications. Mr Caldonazzo added: "SMS Meer's modern technology creates the ideal preconditions for this." SMS Meer is also to supply the finishing line, thereby offering an integrated solution from just a single source. The new tube welding line is designed for a capacity of 150,000 tons of tubes per year.

The size range covers tube diameters from 33.4 to 139.7mm with wall thicknesses from 1.5 to 8mm. Tube lengths range between 5 and 12.6m. The plant can reach a maximum production speed of 130m per minute.

With its new plant, Arvedi Metalfer Do Brasil will be able to produce high-quality, thick-walled tubes with round, square and rectangular cross-sections. At the same time they meet the stringent requirements of standards such as EN 10219, API 5L, EN 10208, API 5CT, ASTM A513 and EN 10305.

"Thanks to the innovative quick-change systems, the productivity of the plant is on average more than 30 per cent higher than with conventional plants," said Michael Cottin, head of product area tube and pipe welding plants at SMS Meer. "What's more, Arvedi can also adapt flexibly to changes in market requirements for welded tubes. Orders for increasingly small lot sizes with a variety of dimensions require plant solutions with short changeover times and minimal downtimes."

Changeovers to new tube dimensions can be performed in just one-and-a-half to two hours, thanks to the inline and offline quick-changing systems developed by SMS Meer.

The plant is scheduled to go into operation in May 2013.

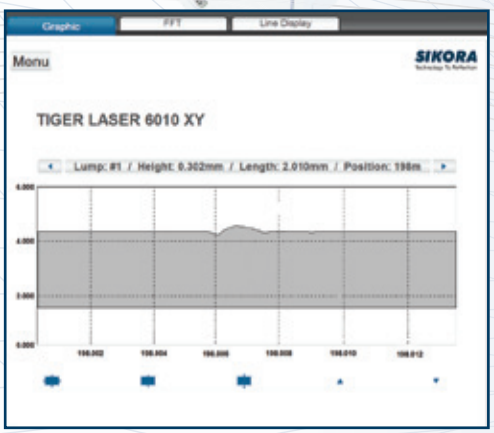
SMS Meer GmbH – Germany
Fax: +49 2161 350 1862
Email: info@sms-meer.com
Website: www.sms-meer.com

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

SIKORA
Technology To Perfection

We work for your success.

Emulsion filtering unit sold

EUROMAQUINA has sold and successfully installed its own engineered emulsion filtering unit FILTRA-4 at a hydrotester in a seamless tube factory called Tubos Reunidos in Spain. The filtering system was developed to have zero maintenance and very good emulsion and process quality. It has also been successfully installed in South America (Brazil, Peru) and Turkey.

Other recent projects include revamped machines sold in Germany and France, and in emerging economies in Africa like Egypt, Kenya and Angola. Euromáquina recently transferred a complete tube and pipe factory from Turkey to Mexico, and will lead the renewed start-up.

This kind of turn-key hand-over of used equipment, partially including integration with new equipment, has so far been implemented with annealing furnaces, slitting lines, tube mills, finishing machines and even galvanising plants.

Euromáquina, SA – Spain
Fax: +34 91 658 62 08
Email: comercial@euromaquina.com
Website: www.euromaquina.com

Large pipe expertise acquired

THE demand for large pipes for the construction of pipelines is currently growing. Schuler AG, Germany, has reacted to this trend and expanded its product spectrum to include turnkey systems solutions for the economic production of large pipes. This was made possible by the company's acquisition of ATIS GmbH, an engineering firm specialising in this field. The respective contracts were signed in April.

Schuler has more than 170 years of expertise in the field of metal forming, as well as extensive know-how in research and development, large equipment manufacturing, project processing, and global service network. ATIS will provide detailed knowledge of the planning, development, delivery and modernisation of complete pipe equipment and systems throughout the world. "This strong partnership offers numerous benefits for our customers," said Jochen Früh, managing director of Schuler Pressen GmbH.

Pipelines have to span huge distances across inhospitable terrains and are often exposed to extreme conditions. Temperatures well below freezing and enormous pressures, such as on the seabed, exert huge loads on the pipes. At the same time, the pressure inside the pipes is being constantly raised in order to extend the distances of the transported materials.

"The stability and absolute quality of the manufactured pipes is therefore all the more important," explained Dietmar Rieser, managing director of ATIS. During their manufacture, pipes are carefully scrutinised using ultrasonic devices, X-rays and water pressure (with a hydrotester). There are two basic methods for the production process itself:

View of a spiral pipe plant

"Large pipes are either welded together as spirals from a long metal coil or bent to an 'O-shape' with a longitudinal weld," explained Manfred Wischnewski, managing director of Schuler SMG GmbH & Co KG.

Spiral-shaped pipes can be manufactured in lengths of up to 24m, with diameters of 450 to 3,500mm and wall thicknesses of 6 to 25mm. The forming and welding stages can directly follow each other (online process). Longitudinal weld pipes with diameters of up to 1,625mm and wall thicknesses of up to 65mm are produced using either crimping presses, U-forming and O-forming presses, or equipment for the step forming process – such as Schuler's Linear Feeding J-Press (LFJ press). Longitudinal weld pipes are usually produced in lengths of 12 or 18m. The new LFJ press can also produce lengths of up to 24m.

A lower-priced alternative to stainless steel pipes, needed for the transport of aggressive or sensitive substances, are lined pipes – a combination of thin-walled stainless steel and conventional carrier pipes.

Schuler AG – Germany
Website: www.schulergroup.com

ATIS GmbH – Germany
Email: info@atis-germany.de
Website: www.atis-germany.de

MJM

(MYUNG JIN MACHINERY)

ERW TUBE MILL SPECIALIST

TUBE MILL LINE

- **ENTRY**
  - UNCOILER
  - SHEAR & WELDER
  - ACCUMULATOR
- **FORMING & SIZING**
  - CAGE FORMING
  - CONVENTIONAL
- **CUT - OFF**
  - COLD SAW
  - MILLING CUTTER
  - DISC CUTTER
- **FINISHING**
  - END FACING M/C
  - STRAIGHTENING M/C
  - HYDROSTATIC TESTER(700BAR)
  - PAINTING LINE
  - AUTOMATIC PACKING M/C

TEL +82 31 498 4530~2
FAX +82 31 499 4538
WWW.MJMMILL.COM
MJM@MJMMILL.CO.KR

Pines ships huge pipe bending machine to India

PINES Technology, an Ohio, USA-based manufacturer of pipe bending machinery, has almost completed its contract to supply ten heavy duty pipe bending machines to Bharat Heavy Electricals Ltd (BHEL). BHEL is an integrated power generation equipment supplier and one of the largest engineering and manufacturing companies in India.

The benders are being installed at BHEL's high pressure and seamless tube plants in Tamilnadu and Ranipet in the southeastern part of India. They will bend pipes ranging from 75 to 250mm in diameter.

The CNC 250 is the largest of these benders both in capacity (pipes up to 250mm) and in sheer weight, coming in at over 97 tons.

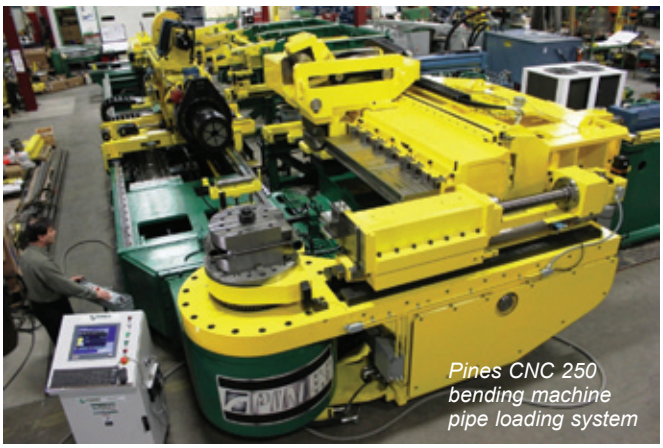
In order to maximise production, the bender was ordered with a pipe loading system that can handle pipe bundles weighing 20 tons and up to 8m in length. Shorter pipes can be loaded in the front of the carriage. Longer pipes load from the rear.

To prevent wall thinning when pipes are bent, the CNC 250 bender is equipped with a 55,000-lbf Pressure Die Assist (PDA) booster. This is a critical requirement for high pressure, energy-related pipe bending applications. Pines has done extensive research on the variables that cause wall thinning and this experience has been incorporated into its booster systems. Tool design, boost pressure, speed and boost sequence are all controlled to produce optimum bending results. Pines Technology originally developed the PDA booster for the US Navy and it is now fitted to a variety of Pines machines.

Controlling the bending operations is a Pines TS 2000 touch screen PC-based CNC control. The control features a user-friendly interface, high resolution graphics, on-screen diagnostics, help screens, owners manual with machine blue prints, and links to Pines service, sales and tooling departments. The control can network with other benders, CMMs and BHEL master computers.

Ian Williamson, Pines CEO said: "We're looking forward to our continued partnership with BHEL as they develop power generation equipment and solutions for the fast growing Indian economy."

Pines Technology – USA
Fax: +1 440 835 5556
Email: info@pinestech.com
Website: www.pinestech.com



Pines CNC 250 bending machine pipe loading system

Norma strengthens in Russia

NORMA Group, a global market and technology leader for engineered joining technology, is continuing its growth path with a new distribution centre in Moscow, strengthening its distribution network in Russia and Eastern Europe.

The group has been selling its joining products and solutions to local distribution companies via the distribution centre in Moscow since July 2012. With the new facility, the company is strengthening its customer relationships in the Russian and Eastern European market since clients benefit from shorter delivery times and superior product availability.

The distribution centre is located in the north west of Moscow near the international airport Sheremetyevo, on the premises of an external logistics services provider. The company plans to also start shipping to customers in Belarus and Kazakhstan from the distribution centre in Moscow.

"After having built a production facility in Russia in 2010 already, we are now extending our distribution network in this region," said Werner Deggim, CEO of Norma Group. "Our new presence in Moscow caters to the growing local and Eastern European demand for engineered joining technology."

Norma Group manufactures a wide range of engineered joining technology solutions in three product categories (clamp, connect and fluid), and offers around 35,000 products and solutions to approximately 10,000 customers in 90 countries. Its joining products can be found in vehicles, ships, trains, aircraft, domestic appliances, engines and plumbing systems, as well as in applications for the pharmaceutical and biotechnology industry.

Norma Group AG – Germany
Fax: +49 6181 6102 7640
Website: www.normagroup.com

Tube bending joint venture

ROSENBERGER and Unison, two of the leading intelligent tube bending machine manufacturers, have announced a sales and marketing joint venture. Both companies will retain their independence, but joined together in a partnership they will deliver all-electric tube bending machine capabilities in sectors diverse as aerospace, marine, automotive and custom products.

There is virtually no overlap in the companies' ranges of products and services, and this will allow the joint venture to deliver a comprehensive range of products unavailable elsewhere in this very competitive marketplace.

Rosenberger, established in the early 1980s, is celebrating a substantial sales pipeline, having recently secured a large contract in the automotive sector with an order value of €1.8mn in 2013 and €1.6mn in 2014-2015.

Unison, which will celebrate its 40th year in 2013, is also enjoying record sales, having recently secured a $2.8mn order with the US marine industry.

News of the joint venture has been received enthusiastically by both Unison and Rosenberger teams.

Global expansion is a major challenge, as both companies seek to develop new markets and exploit new revenue streams. Rosenberger enjoys a renowned reputation in the automotive sector and Unison's products have been developed for aerospace, marine and automotive applications.

"Our objective, working together, is to expand our global footprint particularly in the USA and South American and over time the Asian markets," commented Gerhart Rosenberger. "The joint venture will offer sales offices throughout Europe, specifically Spain, Germany, France and the United Kingdom, and the USA, with an agent network across the globe. Our rapidly expanding business required a global partner. In Unison we have found a business that is prepared to work with us and understand client needs and build long-term relationships with our rapidly expanding customer base."

Alan Pickering, managing director of Unison, said, "I am excited by the prospect of working together with Rosenberger – not only in a sales and marketing sense, but also our relationship will select and integrate the best technology available from both companies. Together we will also reduce customer cycle times, thus enabling us to build more machines for customers per year. We believe that working with Rosenberger will make us more competitive in the market and ensure that we future proof our product ranges."

Rosenberger AG – Germany
Fax: + 49 7683 91900 29
Email: info@rosenbergerag.com
Website: www.rosenbergerag.com

Unison – UK
Fax: +44 1723 582379
Email: enquiries@unisonltd.com
Website: www.unisonltd.com

Sunnen awarded for international trade initiative

SUNNEN Products Company has received the 2012 Global Pioneer Award from the St Louis Regional International Partnership (SLRIP). The award is given annually to a St Louis-based company that demonstrates an exemplary understanding of, and commitment to, innovation for global expansion.

Matthew Sunnen Kreider, president of Sunnen Products, accepted the award at the 4th annual International Trade Night, held at Washington University's Knight Executive Education and Conference Center.

Sunnen has exported its honing machines, tooling, abrasives and fluids since the 1930s, and is the world's largest fully integrated honing company. The company exported 42 per cent of its sales in 2011. Sunnen locations abroad include facilities in Belgium, China, the Czech Republic, France, Italy, Poland, Russia, Switzerland and the UK. The company also has a network of more than 50 factory-authorised distributors to support customers worldwide.

From left to right: Tom Dustman, director, international sales; Mike Haughey, chief operating officer; and Matthew Sunnen Kreider, president

Sunnen was recognised for its success as an international leader of advanced honing technology, as well as its expert technicians, training, services and support.

Sunnen Products Company – USA
Website: www.sunnen.com

PITCO-M®

A SCAN SYSTEMS PRODUCT

Advancing Inspection℠

PITCO M-SERIES
MFL PIPE INSPECTION UNIT

PRICE. PERFORMANCE. VALUE.

- Effective up to 0.625" (15.875mm) Wall Thickness
- Fully Digitized at the Signal Detector for Reduced Noise
- Production Speeds up to 150 FPM (0.75 mps)
- Fully Computerized and Controlled Systems
- Industry-leading Digi-Pro™ Signal Processing Electronics
- Equipment Sizes for 2 3/8" (60.3mm) through 14" (356mm)
- Full Body Inspection
- MFL Longitudinal Inspection
- MFL Transverse Inspection
- MFL Magnetic Flux Density Wall Thickness Inspection
- Eddy Current Grade Comparator
- Better Sensitivity with Hall Elements Detector Sensor

SOON TO BE RELEASED ESP M-SERIES UPGRADE

"In the past, Mechanical designs of the equipment were the differentiators between EMI manufacturers. The software used to interpret the signals has become the turning point for the future."

- Enhanced Ability to Detect On/Off Axis ID/OD Flaws
- Discrimination Between ID/OD Flaws
- Industry-leading Repeatability
- Detect and Repeat on Smaller ID/OD Flaws
- Less Susceptible to Noise Generated by Surface Conditions

www.scansystems.com

Controlling HF weld quality

THERMATOOL Corp held a presentation on 'controlling HF weld quality' by Dr Lesley Frame, manager of materials engineering and development, at the recent FABTECH in Chicago.

Dr Lesley Frame has presented her research at over a dozen domestic and international conferences. Recent investigations include the analysis of distortion in quench and tempered products due to non-uniform phase transformations, the examination of hundreds of metallographic HF weld samples to establish protocols and databases for weld analysis and troubleshooting, and HF welding optimisation experiments on and off operating tube mills with a focus on weld fixture design, coil design, and the welding of high alloy steels.

Dr Frame's presentation covered an overview of HF welding process parameters, introduction to the anatomy of an HF weld (metallurgy and microstructure), protocol for destructive characterisation of an HF weld including metallography and microhardness testing, and discussion of possible weld defects, how to identify them, what they indicate, and how to avoid them. In addition to Dr Frame's presentation Thermatool's executive director, Kris Livermore, discussed 'Trends in the Global Tube and Pipe Industry' and Pete Meglin presented 'Proper Selection of Power, Frequency, and Coil Design'.

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

Dr Lesley Frame

Marmon/Keystone adds new saw in Minnesota

MARMON/Keystone's location in Lino Lakes, Minnesota, USA, recently installed a new Amada 530 CNC band saw. The saw features the most up-to-date technology, which allows for an extremely close cutting tolerance.

"This equipment also increases our cutting capacity to 21" OD at this facility," said district warehouse manager Kevin Fogarty. "We can now be even more productive, all while increasing the quality of our finished cut lengths."

The band saw allows the Lino Lakes facility to meet the needs of existing customers and new business in the Minnesota and western Wisconsin markets.

A leading wholesale distributor of tubular products for over 100 years, Marmon/Keystone inventories more than 15,000 sizes and grades of carbon, alloy, stainless and aluminium tubular and bar products. Service centres and sales offices are located throughout North America, with corporate headquarters in Butler, Pennsylvania.

Marmon/Keystone LLC
– USA
Fax: +1 724 283 0558
Email: sales@marmonkeystone.com
Website: www.marmonkeystone.com

Technical planning of revamp of continuous caster

THYSSENKRUPP Steel Europe has awarded SMS Siemag a contract covering the comprehensive and detailed planning for the revamp of its continuous caster no. 1 at the Duisburg-Beeckerwerth works.

SMS Siemag supplied the continuous caster no 1 in 1974 and modernised it in 1985 and 1998. It is used for the production of high-quality starting material for high-strength steel, ULC and IF steels as well as tinplate, sheet, pipe and tube strip and quarto plate. The revamp scheduled for 2014 is designed to improve the slab quality and expand the product portfolio. The caster will be rated to produce slabs that are between 1,000 and 2,150mm wide and 257mm thick. It is intended to increase the strand length (segments 14 and 15).

Planning also includes the replacement of the present single-fluid cooling system by an air-mist cooling system with adjustable, width-dependent breakdown of the cooling zones (ten control circuits per segment). After the revamp, casting is to be effected dry, starting with segment 9.

SMS Siemag was awarded this contract after more than 400 technical criteria had been reviewed by ThyssenKrupp Steel Europe. SMS Siemag thus continues to be the leading supplier to German flat-rolled steel producers.

SMS Siemag AG – Germany
Fax: +49 211 881 4902
Website: www.sms-siemag.com

Large diameter bending technology for United Muffler

GLOBAL leader in the design, manufacture and supply of tube bending and endforming technologies, AddisonMckee Inc of Lebanon, Ohio, Brantford, Ontario and Bamber Bridge, UK, has supplied a 6" all electric bender to United Muffler of London, Ontario, a major manufacturer of heavy duty mufflers, truck exhaust systems and exhaust accessories and a sister company of Auto-Jet Muffler of Des Moines, Iowa.

The new bender, supplied by AddisonMckee's Lebanon, Ohio facility, has enabled the company to upgrade its large diameter tube bending capability. The machine, a DB150 EB CNC bender, is 100 per cent electric and incorporates a through collet boost providing over 9 tons of force to the end of the tube and thereby improving consistency of the 1-D bending capability for both stainless steel and aluminised tubing.

President of United Muffler Tony DaCosta feels that the new machine has the capability to literally transform his business, commenting that: "Not only has this new all electric bender significantly improved our product quality, throughput and tolerances while reducing process time and start-up scrap, but the additional 6" capacity has allowed us to expand our presence in the on-road/off-road market. The advantage of the all electric technology over our previous hydraulic system has completely changed our business model."

AddisonMckee's DataBend DB150 series of machines are all electric in operation and manufactured to a modular design enabling a number of variants to be offered based upon the same structure.

The machine series achieves noise levels of less than 80 dba, and offers improved repeatability and reduced running costs.

The fortunes of AddisonMckee have taken a turn for the better in recent months as the market climbs out of recession and the company's landmark presence at Düsseldorf is certain to provide further evidence of the company's increasing strength.

AddisonMckee CEO Alastair Tedford said: "The company has emerged stronger this year with an extremely healthy order book. As a management team, we believe this is due to building on the company's core values to offer customers a better service than ever."

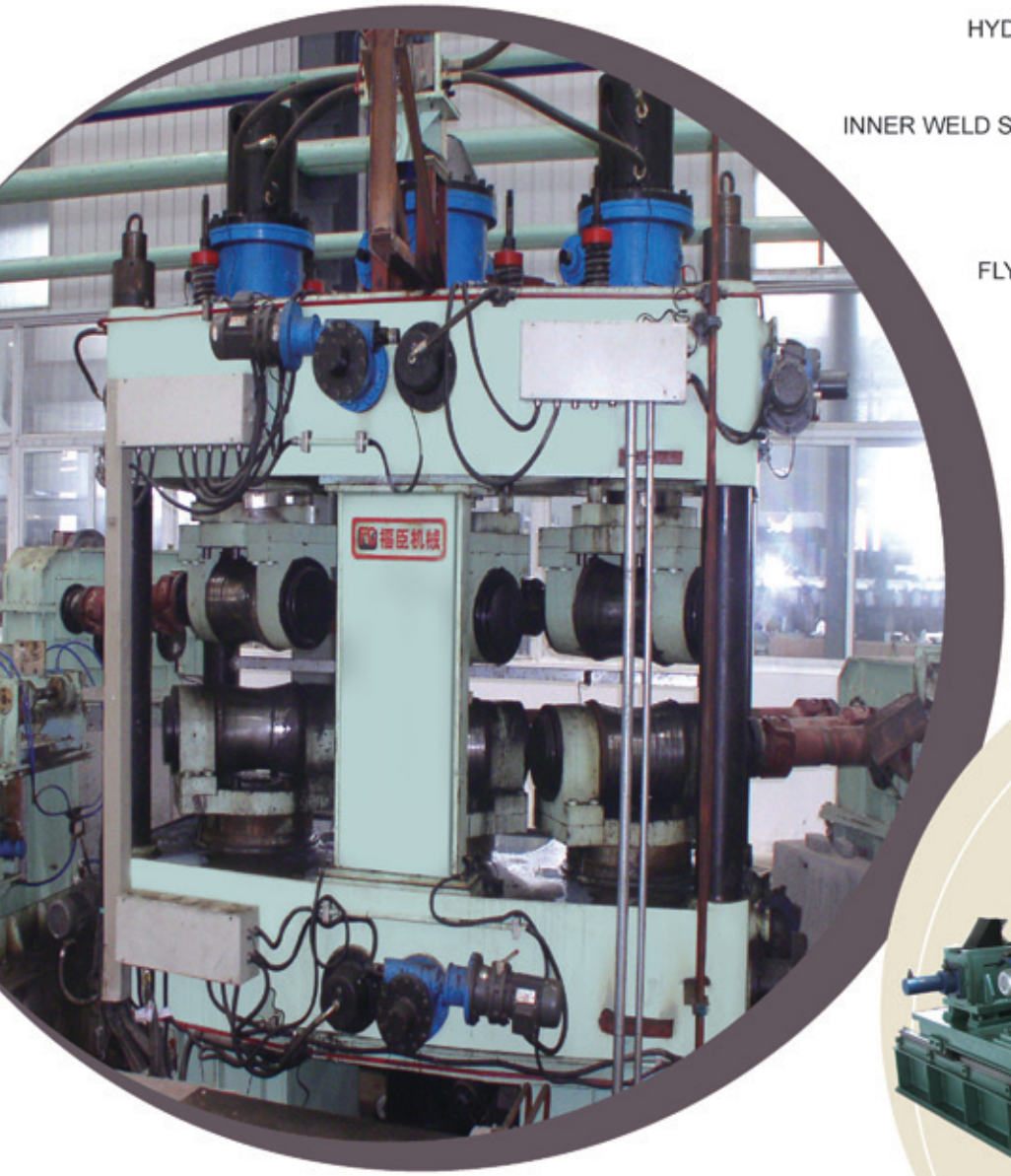
AddisonMckee – UK
Email: paspinall@addisonmckee.com
Website: www.addisonmckee.com

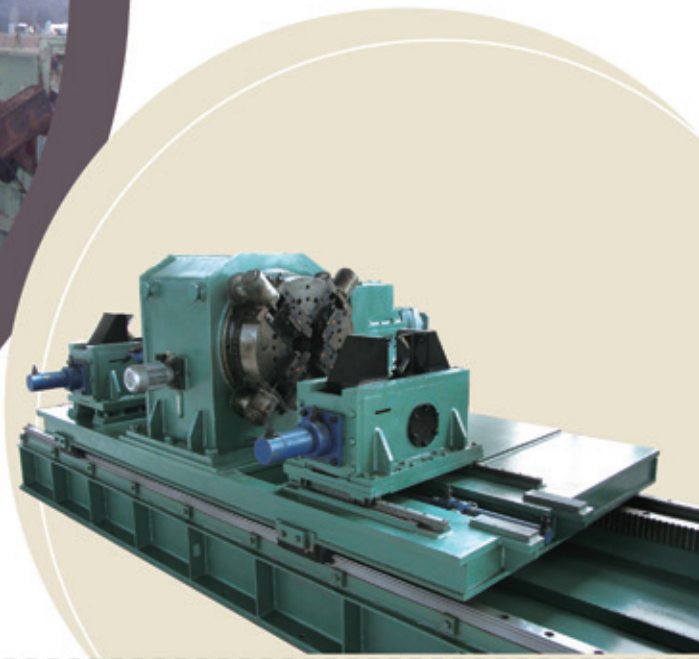
AddisonMckee – USA
Email: jrankin@addisonmckee.com

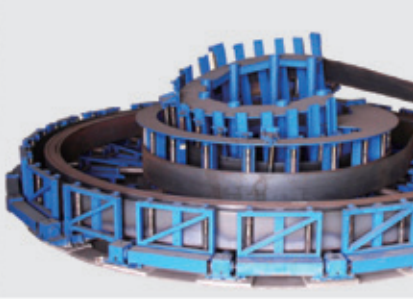
FORTUNE MACHINERY

Constant Innovation for Meet the Infinite Demand

- STRAIGHTENING MACHINE
- HYDRAULIC STATIC TESTING MACHINE
- GALVANIZING EQUIPMENT
- INNER WELD SCAR OFFLINE SCRAPING MACHINE
- CHAMFERING MACHINE
- PIPE CUTTING MACHINE
- FLYING SAW WITH ROTATING CUTTER
- THREADING MACHINE
- STRIP ACCUMLATOR
- . . . . . .







FORTUNE

FORTUNE MACHINERY, TIANJIN, CHINA

ADD:Fumin Economic Zone C, WuQing District, Tianjin China POST : 301700

TEL : 008622-22928211 FAX : 008622-29332199 HP : 13902159364

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

Micro steel mill for Al-Qaryan

AL-QARYAN Steel Company from the Kingdom of Saudi Arabia (KSA) has placed an order with SMS Concast for the design, manufacturing and commissioning of a micro steel mill to be installed in Dammam.

With the process route to be realised in phase 1 consisting of induction furnace, ladle furnace and continuous caster, Al-Qaryan will make its first step into the value adding production of commercial billets. The overall layout considers further expansions by adding a second steel shop and caster as well as a rolling mill for re-bars with a final production of 600,000 tons per year.

The scope of supply by SMS Concast covers all technological equipment. Apart from the above specified key components it includes water treatment plant, dust collection system, shop cranes, material handling equipment and related supervision services.

The signing ceremony for phase 1 of the investment took place on 7 June, 2012 attended by Mr Mohammed Qaryan Al-Qahtani, chairman of Al-Qaryan Steel Ltd, and executive representatives of the group together with Stefan Rutishauser, group managing director from SMS Concast. "We are delighted to support Al-Qaryan with excellent technology," said Dr Joachim Schönbeck, CEO of SMS Concast and the business area SMS Meer.

SMS Concast AG is a company of the SMS group which, under the roof of SMS Holding GmbH, consists of a group of companies internationally active in plant construction and mechanical engineering for the steel and non-ferrous metals industry.

With some 11,000 employees, the group generates sales of over €3bn. Saudi Arabia represents one of the fastest growing steel industries in the Middle East. Over the past few years, the rapid economic development has led to skyrocketing growth in the construction and infrastructure industry, which has boosted steel demand in the country and caught the attention of global steel giants. Saudi Arabia steel consumption has rapidly surged over the past few years on the back of growing investment.

Mr Mohammed Qaryan Al-Qahtani, chairman of Al-Qaryan Steel Ltd and Stefan Rutishauser of SMS Concast

SMS Concast – Germany
Email:
thilo.sagermann@sms-group.com
Website: www.sms-meer.com

Andrea Farinet, professor of economics of LIUC University, interviews Matteo Guglielmone

Which are the general aspects that permit SOMO to succeed in the international market, especially in this economical crisis?

Since 1960 SOMO has always produced customised presses and shears machines supplying the international market. In 2000, when we understood that the market was dominated by our competitors, which were more economically competitive because of their big series production, we faced that we had to look for new business opportunities. The chance presented itself when the manufacturers of stainless steel pipes, which had modest and variable production batches for diameter and length, gave us the opportunity to use our bending know-how and our engineering knowledge to offer them what they were looking for.

In particular we have included special bending tools to avoid losing time for the tools change that usually lead to a down time of the plant. We have inserted a system of extraction and lifting of the tube in order to send it automatically to the subsequent steps of tack welding. We focused our attention on the feeding system and manipulation for handling the metal sheet during forming, using the electronics for controlling the quality of the finished tube by measuring the width of the sheet to be bent and during the bending. Everything is managed by a PLC entirely designed by SOMO, which allows the production of pipes, one different from the other, in sequence with a very fast set up of the machine.

According to your long experience in this business, how did you get such positive results in so aggressive an international market?

Our competitors, international holding groups, producers of machines for realising pipes of large dimensions, have focused their business on the pipeline industry and on a production which has been characterised by big batches and standard production.

SOMO's strategy has been the one to start supplying worldwide companies which produced of small quantity of product that had the requirement to optimise the production and the quality of their products, too. On the same time the demands of some of our customers, leading in the stainless steel pipes market, asked us to study their market to give them the best product for satisfying their production needs.

In 2000 SOMO realised, for example, a 2,000-ton press for an Australian stainless steel tube company; we made a 7m plant for an Italian company; and we are now producing a 9,000t plant for a Chinese company. The business agreement with SOMO increased our customers' production and reduced their costs. Not only because we were able to offer our plants being competitive in the international market but even for the reason that our core business is to understand our customers' needs, helping them from the beginning of their investments, suggesting them even the better economical strategy and look after them even after we sold the plants: to always be there when they need. I can say for all these elements SOMO has been so successful to be perceived as a leader in this market niche.

According to your entrepreneurial experience at the international level, which could be the possible competitive economic scenarios in the future?

China, India and Brazil are considered the new emerging countries that in the future could start making these kinds of investments even if they do not have the complete technology to produce the stainless steel pipes.

The SOMO tube plant

On the other side, in Europe there are companies that still have old production processes and they could decide to change their strategy to beat the international competition, for example, the ones who are producing lower cost pipes with our machines. So that in the future these companies could make new investments for being competitive in the international market.

SOMO Produzione SpA – Italy
Fax: +39 02 93561457
Email: info@somoproduzione.com
Website: www.somoproduzione.com

Andrea Farinet Srl – Italy
Email: a.farinet@andreafarinet.it
Website: www.andreafarinet.eu

Management change

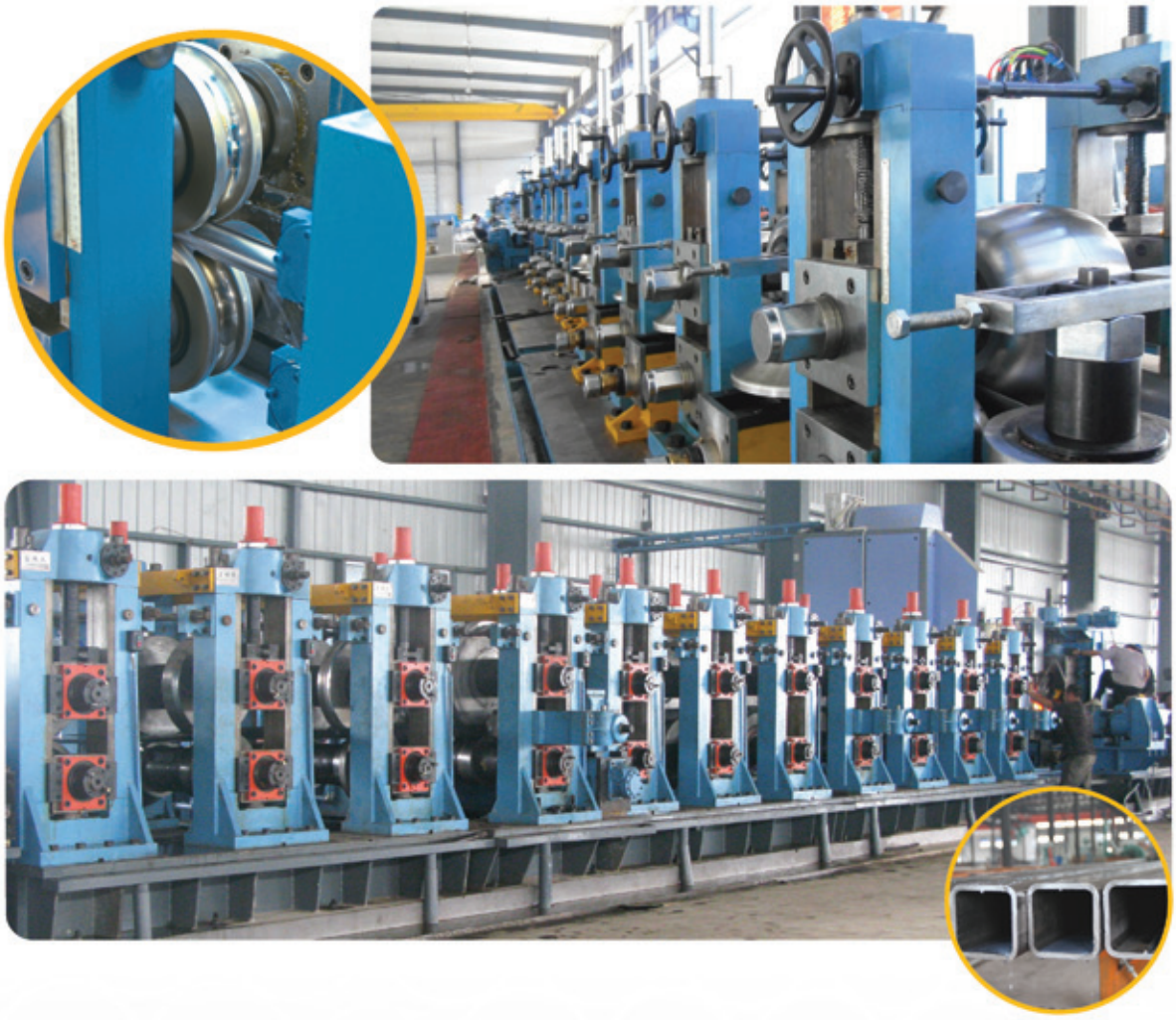
PATRICK E Connell has been appointed president at Kocks Pittsburgh Co, an affiliate company in the USA of Friedrich Kocks GmbH & Co KG in Hilden, Germany. The independent, medium-size, family-owned company has been successful in mill construction worldwide for more than 60 years.

Mr Connell joined Kocks Pittsburgh Co in July of 2005 and served in the capacity of vice-president sales until recently. He succeeds in the new position Mr Sergio A Filippini who has been appointed managing director sales and marketing for Friedrich Kocks GmbH & Co KG in Hilden, Germany.

Friedrich Kocks GmbH & Co KG – Germany
Fax: +49 2103 54 028
Email: v.d.heiden@kocks.de
Website: www.kocks.de

- Tube/Pipe Mill line
- Directly Forming to Square &Rectangular Tube Mill line
- Roll forming machines
- API Pipe Mill Line
- Slitting Line
- Cut to length Line >>

FOREVER



FOREVER

Shijiazhuang Forever Machinery Co.,Ltd.

Add : Shijiazhuang,Hebei,China.
(P.C) : 050091
(Tel) : +86-311-83839996 83836729
(Fax) : +86-311-83839990
(Web) : www.frv.cn
(E-mail) :frvemail@gmail.com daisyli@frv.cn

New appointments at EFD

EFD Induction has announced a number of staff appointments. Peter Runeborg, formerly the segment manager for tube and pipe at EFD Induction Norway, has been made the company's new sales and service manager, with responsibility for selling the firm's complete range of induction heating products and services.

Jan Arve Fuglaas of EFD Induction Norway has been given special responsibility for sales of tube and pipe welding and normalising systems in Asia. Mr Fuglaas will work closely with his colleagues from EFD Induction China to meet the continent's burgeoning demand for high-uptime, high-output induction welders. Previously a project manager at EFD Induction Norway, Mr Fuglaas has more than 20 years' international experience devising pipe welding and annealing solutions.

Bjørn Røsvik has been appointed manager of the standardised systems and direct sales division at EFD Induction Norway. This division deals primarily with Minac and Sinac induction heating systems; solutions that can be used for a wide spectrum of applications, such as brazing, shrink fitting, straightening, and pre- and post-heating.

Bjørn Røsvik, manager of the standardised systems and direct sales division

Jan Arve Fuglaas, new sales manager

EFD Induction has to date installed thousands of heating solutions for a wide range of industrial applications. The company has manufacturing plants, workshops and service centres in the Americas, Europe and Asia. Corporate headquarters are in Skien, Norway.

EFD Induction as – Norway
Fax: +47 35 50 60 10
Email: sales@no.efdgroup.net
Website: www.efd-induction.com

Victor Technologies

THERMADYNE Holdings Corporation has changed its name to Victor Technologies Group, Inc, and the name of its wholly owned subsidiary Thermadyne Industries, Inc has changed to Victor Technologies International, Inc.

"To reposition the company in the marketplace, we are returning to our roots," commented Martin Quinn, the company's chief executive officer. "Victor Technologies will recapture the pioneering spirit and embody the original attributes of the Victor brand: authenticity, reliability and innovation."

Victor is the company's strongest and most established brand, celebrating its 100th anniversary in 2013. "By leveraging the Victor name, we reinforce to the industry our focus on meeting the needs of the end user customer for our products and providing advanced cutting, welding and gas control solutions through each of our brands," said Mr Quinn. "Our vision for the company is 'Innovation to shape the world.'"

Headquartered in St Louis, Missouri,

CEO Martin Quinn

Victor Technologies provides solutions for cutting, welding and gas control equipment under brand names that include Victor, Tweco, Arcair, Thermal Dynamics, Thermal Arc, Stoody, TurboTorch, Firepower and Cigweld.

Victor Technologies – USA
Fax: +1 800 535 0557
Website: www.victortechnologies.com

Roll Mag!c

Energy Saving

Coil to Coil Production

NAKATA provides the Pipe Mill Line supported with the most accurate FEM technology.

NAKATA MFG. CO., LTD.

3-7-6 Tagawa, Yodogawa-ku, Osaka, 532-0027, Japan

tel. +81-6-6303-1900 fax. +81-6-6303-1905

http://www.nakata-mfg.com

SmartFit wins Pipeline Award

PIPE measurement specialist Optical Metrology Services (OMS) Ltd has been recognised by the Pipeline Industries Guild for its innovative pipe measurement and fit-up system, SmartFit™.

At the Pipeline Industries Guild's 55th Annual Dinner, held in London in March, OMS received the Award for Significant Contribution to Land-Based Pipeline Technology 2012, for its SmartFit system.

First introduced in 1996, the objective of the Land-Based Pipeline Award is to promote the development of new ideas in the general field of land-based pipeline technology. Its scope includes any aspect of pipeline engineering, including design, construction, operation and maintenance.

The award is typically for an achievement developed in the last five years, which has been successfully implemented or completed within the last 12 months, resulting in a significant contribution to land-based pipeline projects. The Pipeline Industries Guild supports eight annual awards and competitions throughout the year. This includes three technology awards for 'subsea', 'land-based' and 'utility' pipelines. Entries are submitted annually and judged by an award panel.

Jim Buston, client solutions executive at OMS, who received the award on behalf of the company, commented, "We are delighted that SmartFit has won the Land-Based Pipeline Award 2012, which further confirms OMS's position as a leading provider of innovative pipe measurement, inspection and fit-up solutions to the global oil and gas sector, both onshore and offshore."

SmartFit is a suite of hardware and software tools, which together provide a powerful system for pipeline contractors, ensuring that pipe fit-up, welding and pipe-laying processes run as smoothly as possible with minimal interruptions.

Elements of SmartFit are deployed in different ways to suit the practicalities of different production processes, both onshore and offshore.

After pipe end measurements are complete, SmartFit also provides software that uses this measurement data to optimise the sequencing and fit up of pipes. Typically, SmartFit consists of a laptop computer system used prior to the pipe firing line, for example, in a 'ready rack' on a pipe-laying vessel or in an onshore pipe holding area.

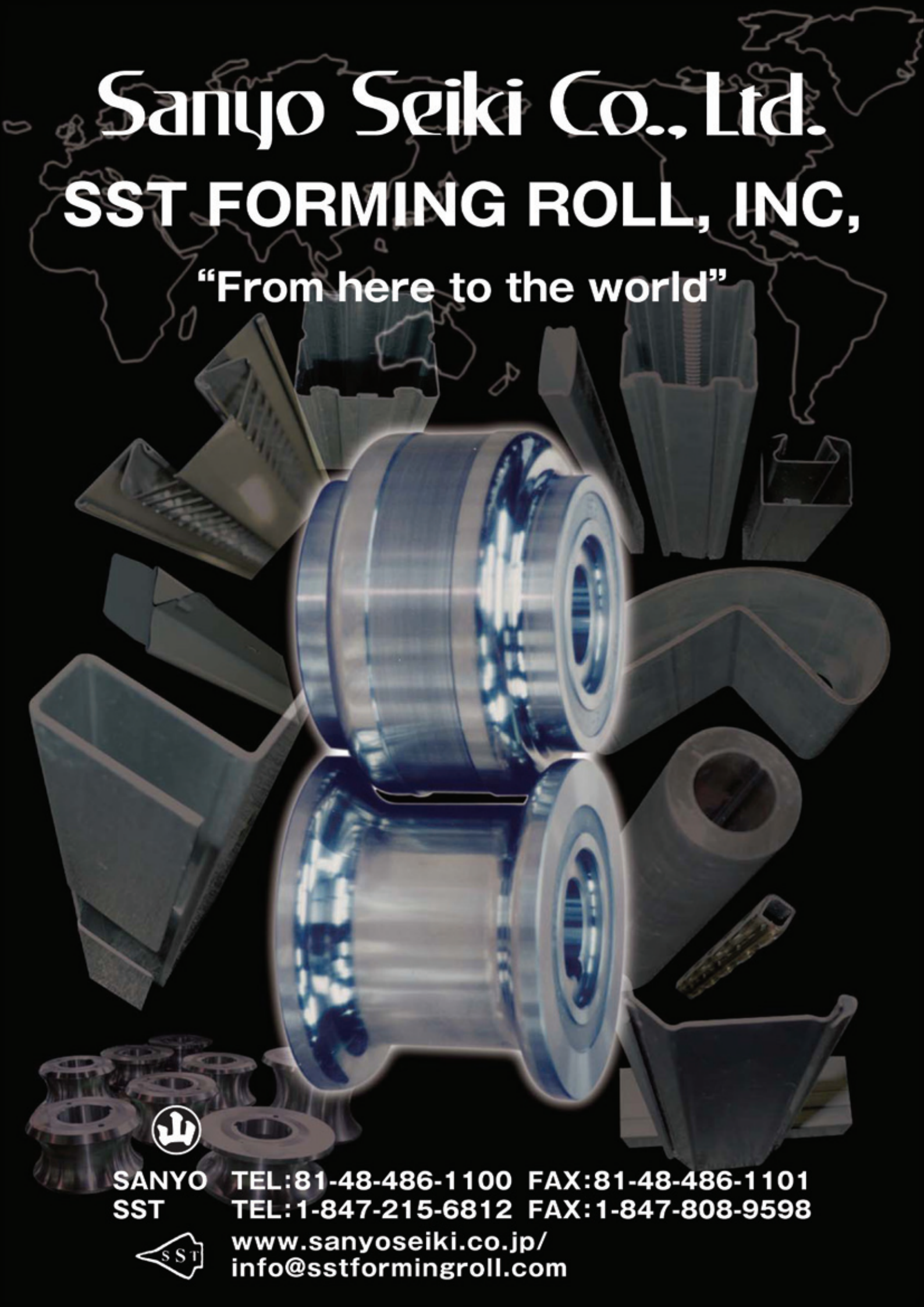
The Pipeline Industries Guild's membership comprises those with interests in pipelines, transporting hydrocarbon products, chemicals, water, wastewater, and many other substances, both onshore and offshore. All are governed by the industry's twin need to combine quality with safety, while at the same time meeting all the latest environmental and legislative requirements.

Optical Metrology Services Ltd – UK
Email: info@omsmeasure.com
Website: www.omsmeasure.com

Sanyo Seiki Co., Ltd.

SST FORMING ROLL, INC,

"From here to the world"



SANYO TEL:81-48-486-1100 FAX:81-48-486-1101
SST TEL:1-847-215-6812 FAX:1-847-808-9598
www.sanyoseiki.co.jp/
info@sstformingroll.com

International steel tube industry heading for expansion

BY 2010 the global production of steel tubes had already recovered from the dramatic downturn of 2009. This positive development in demand continued into 2011, so that, on a global scale, the industry recorded growth figures of around 11 per cent, rising to about 141m metric tons and achieving an all-time production record.

This growth also included the German steel tube industry, with a production surplus of around 7 per cent in 2011. According to the steel tube industry association Wirtschaftsvereinigung Stahlrohre in Düsseldorf, production rose in both seamless and welded tubes. The association rates the level of capacity utilisation as "generally satisfactory". The first half of the year, in particular, occasionally even displayed a record high in incoming order volumes, while the second half showed a slight downturn in order volumes.

Due to the high level of demand, particularly in the automotive industry and in mechanical engineering, manufacturers of precision steel tubes achieved an above-average rise in production. According to the association, the consistently high demand in the energy sector was of special benefit to seamless tube manufacturers. In large-diameter tubes demand was fuelled by a worldwide need for gas pipes and structural tubing for wind power stations. The market for welded line pipes up to 406.4mm in outer diameter, on the other hand, was characterised by a downturn in new orders and by increasing competitive pressure due to worldwide overcapacities. This means that more than half of all steel tubes, both in Germany and worldwide, are produced for the energy sector (oil/gas supply and power plant construction). The other, smaller customer groups are mainly mechanical engineering, the automotive industry, the chemical industry and the petrochemical industry.

According to Salzgitter AG, the essential parameters for the steel tube and steel market in 2011 were set by a very strong domestic economy in Germany, the European debt crisis and expansion into China, Russia, India and Brazil – regions that are becoming increasingly important for the global economy. The USA continues to suffer from the consequences of the crisis in the financial market and is endeavouring to make its energy supply less dependent on imports. In 2011 economic developments were largely slowed down by rising raw material and energy prices and by tighter monetary policies.

Procurement markets for production input material were particularly impacted by China's hunger for steel, as its figures accounted for nearly half of crude steel production throughout the world. According to Salzgitter, this led to an increasing demand for iron ore, coking coal, blast furnace coke and energy and also, as a result, a significant upturn in numerous stock exchange quotations. During the second quarter of 2011 this caused a record high in iron ore and coal prices. Subsequently, however, growing doubts about the stability of the global economy – especially during the last quarter – put considerable pressure on raw material prices.

Major price fluctuations throughout the year were also recorded for metals and ferro-alloys. After an increase during the first six months, prices for materials listed on the stock exchange – such as zinc, nickel, copper and aluminium – went down again considerably during the second half of the year.

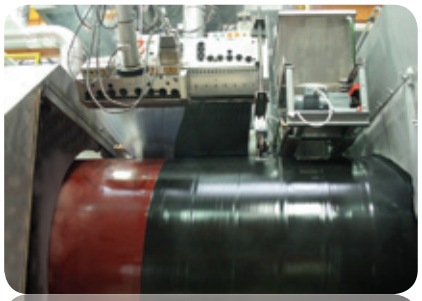
Ocean freight rates, too, were subject to continuous fluctuation during 2011, but ended up being twice as high towards the end of the year. Moreover, the procurement market in 2011 was marked by fluctuating prices for liquid reducing agents and for materials and supplies as well as by inconsistent scrap metal prices and rising oil and gas prices. All these developments caused substantial fluctuations in the prices of semi-finished products.

Messe Düsseldorf – Germany
Website: www.messe-duesseldorf.com

Selmers

Pipe blasting and coating systems
Pipe handling equipment

External blasting



External coating

Internal blasting & lining

Your reliable partner for:

- Pipe handling equipment
- Pipe blasting & coating plants
- Pipeline rehabilitation equipment
- Field joint blasting & coating
- Deck handling equipment
- Spool base facilities

for external & internal of pipe
for onshore & offshore solutions
for shop & in-situ installation

design / engineering / manufacturing / installation / commissioning / training / after sales servicing

www.selmers.nl

Concrete weight coating

Offshore pipe handling

Field joint blast & coat

Spool base equipment

Pipeline rehabilitation

Selmers B.V. Biesland 3 1948 RJ Beverwijk The Netherlands
telephone (+31) 251 211 999 **fax** (+31) 251 220 777 **website** www.selmers.nl **email** sales@selmers.nl

TZCE®

TaiyuanTongze Heavy Industry Co.,Ltd
http://www. tzce.com

Seamless Pipe Equipment Supplier

To Be Expert Service for You

Design	Manufacturing	Installation	Commissioning	Training and Consultant

JM Eagle expands HDPE production

PLASTIC pipe manufacturer JM Eagle is expanding production of solid-wall high-density polyethylene at two of its plants to meet demand in northern US and Canadian markets.

Converting its Sunnyside, Washington plant from PVC to PE production and boosting the number of PE lines at its Meadville, Pennsylvania plant, the company aims to better serve customers seeking products for water and sewer, as well as oil and gas gathering. The Sunnyside plant will also produce PE pipe for irrigation, and both plants will produce products for power and communication application.

"JM Eagle looks forward to better serving customers in the water and gas markets in the northern part of the country, as well as in Canada," said Dan O'Connor, JM Eagle vice-president of PE sales. "This expansion gives JM Eagle a stronger footprint in PE production and distribution nationwide."

Production of PE water pipe up to 36" in diameter and gas pipe was scheduled to begin in mid-July at both plants, with all lines complete by September. The company also plans to manufacture up to 63" diameter water pipe in the future, and is developing PE water pipe in even larger diameters.

The Sunnyside plant previously manufactured only PVC products. The Meadville plant has been producing the corrugated PE product Eagle Corr PE since 2009. JM Eagle had primarily focused its PE manufacturing at its plants in the southern United States.

JM Eagle PE pipe for water and sewer is suitable for municipal and industrial transmission systems for potable water, sewer, drain, mining, irrigation and reclaimed water. It is covered under the company's exclusive 50-year warranty. JM Eagle pipe for gas is suitable for use in multiple applications for distribution, and oil and gas gathering.

JM Eagle – USA
Website: www.jmeagle.com

Regional sales

WALLOVER Oil Company, a manufacturer of metalworking fluids and industrial lubricants, has named Erik Ross northeastern regional sales manager.

A graduate of Glenville State College in West Virginia, Mr Ross brings 13 years of experience in industrial sales where he focused on lubricants and mechanical fabrication and repair.

"We're really excited to bring Erik into the fold," said Bill Pearcy, Wallover vice-president of sales and marketing. "With his background and his years of experience, we think he will be a valuable addition to our sales team."

Wallover Oil Company – USA
Email: billp@wallover.com

Largest ever push pointer built

THE George A Mitchell Company, based in Ohio, USA has recently delivered a 1,500,000lb two die hydraulic tube push pointer for a large tube drawing facility in North America.

The 1,500,000lb machine is the largest push pointing machine Mitchell has ever produced. The tube to be push pointed prior to drawing is an extruded alloy used in piping applications.

The machine will accommodate very small to very large dimensional sizes and wall variations. Mitchell believes the final drawn product will be used for corrosive drilling conditions. In other activities, Mitchell is currently building two 750,000lb two die hydraulic tube push pointers for two domestic steel tube mills and several small push pointers for Indian and US markets.

Other strong manufacturing activity for Mitchell recently has been the design and fabrication of several 500 ton end forming machines to prepare, via cold forming, the ends of the seamless drill pipe and casing tubes prior to machining premium thread for the OCTG market. The tube diameters accommodated by these machines range from 4½" up to 16".

These machines are also capable of pre-forming pipe ends for T&C connections. Along with the 500 ton units for OCTG, Mitchell is also building a 750 ton unit for end forming drill pipe and casing tube to accommodate 20" diameter due was delivered in the summer of 2012.

George A Mitchell Company – USA
Email: sales@mitchellmachinery.com
Website: www.mitchellmachinery.com

Parent-and-child office

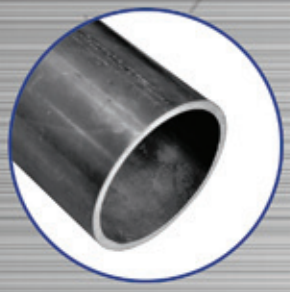
SIKORA now has a parent-and-child friendly office. Fathers and mothers have the opportunity to bring their children into the company in a child-care emergency. In the parent-and-child office, they can continue working while caring for their children. The aim of this facility is to strengthen reconciliation of work and family life.

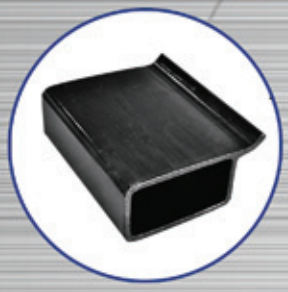
For example when a child-minder is missing or during holiday time the office can be of help to workers. “The facility is a relief and also helps to avoid absenteeism of the working parents,” explains Bernadette Sikora, managing partner of the Sikora Holding GmbH & Co KG.

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

CHINA PROFESSIONAL MANUFACTURER OF PIPE/TUBE MILL 3/4"-25"

ZTZG





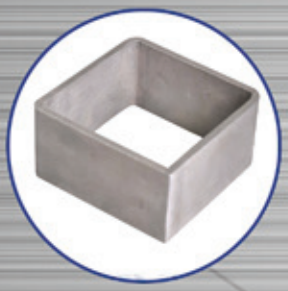
SHIJIAZHUANG ZHONGTAI PIPE TECHNOLOGY DEVELOPMENT CO., LTD.

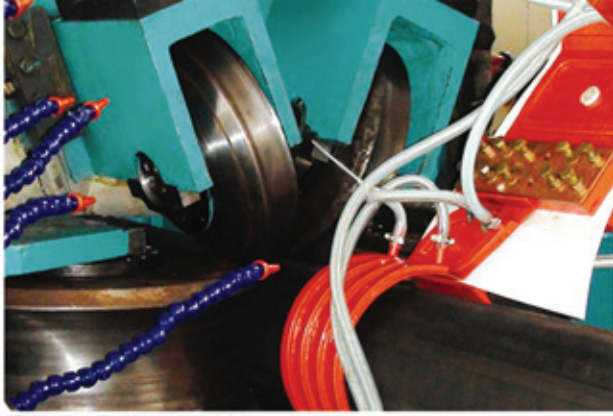
Tel: 86-311-85956158/85956258

Fax: 86-311-85956667

E-mail: Sales@ztzg.com

http://www.ztzg.com





Expansion of UTCs welcomed

THE Institution of Engineering and Technology (IET) has welcomed the announcement that 15 new University Technical Colleges (UTCs) will be created to train 20,000 young people as the engineers and scientists of the future. The UK needs more engineers and technicians to meet the skills needs of industry, and this need will only be met by providing a range of entry routes, both vocational and academic.

Stephanie Fernandes from the IET commented, "We hope that the expansion of UTCs will fill the hole created by the Government's decision to downgrade the value of the successful Engineering Diploma."

The new UTCs will have involvement from around 200 high-profile employers, including household names like Jaguar, Land Rover, British Airways and Virgin Atlantic. They will also have significant input from world-class universities such as Cambridge and Warwick.

UTCs will create opportunities for more than 20,000 young people to train as the engineers and scientists of the future, playing a crucial role in the UK's long-term economic growth.

Institution of Engineering and Technology – UK
Website: www.theiet.org

New website for Precitec

AUGUST saw the launch of Precitec's completely redesigned website. The site features a variety of application areas with product recommendations and full details about all of the Precitec products on newly structured and clearly arranged web pages.

Visitors can also gain a general impression of the company, view job vacancies and apply for a job online. The latest information on publications and participation in trade fairs and conferences rounds out the new platform. The website is currently available in German, and other languages will follow soon.

Precitec's new homepage

Precitec KG – Germany
Fax: +49 7225 684 900
Website: www.precitec.de

(CONFIDENCE)M

Around the world our customers place their confidence in Mazak machines.

Building on this confidence we are continuously expanding our machine range and support network so that we can help our customers to get involved in more and more ambitious projects.

The world's tallest broadcast tower, the Tokyo Sky Tree®, has a frame core made of pipe components, cut with high accuracy by 5-axis cutting on a Mazak **3D FABRI GEAR** laser processing machine.

The constructors of the Tokyo Sky Tree® can be confident it's the best it can be because it is made on a Mazak.

That's the **Power of Mazak.**

www.mazak.eu

Mazak
Your Partner for Innovation

EUROPEAN HEADQUARTERS Yamazaki Mazak UK Ltd, Badgeworth Drive, Worcester WR4 9NF
T: +44 (0)1905 755755 **F:** +44 (0)1905 755542 **E:** sales@mazak.co.uk

Pipeline capacity rises

TEXAS Gulf Energy, Inc is expanding its capacity to provide pipe and vessel fabrication services to its energy sector clients by forming Texas Gulf Fabricators, Inc.

David Mathews, Texas Gulf Energy president and CEO, commented, "The Gulf Coast has seen numerous recent multi-billion dollar announcements of refinery, pipeline and plant expansions which will require substantial fabrication expertise and services. We have received many current client enquiries requesting fabrication, and we believe it provides a substantial opportunity for expansion of our business. For example, in June, a current client and one of the largest mid-Western refiners awarded Texas Gulf Energy a fabrication contract based on the quality of our other services being provided to them. We are currently planning our facilities' expansion, and further information will be provided as soon as possible. We intend that Texas Gulf Fabricators will become a major resource for dependable, on-time delivery of vessel and piping fabrication services as well as modular construction of skid mounted facilities to our Fortune 500 customer base."

Texas Gulf Energy, Inc – USA
Website: www.tgnrg.com

Interpower Induction

INTERPOWER Induction from Michigan, USA has announced the acquisition of Melting Solutions Ltd after forming a successful joint venture in 2011. Interpower Induction already offers an extensive range of induction heating equipment for the forging and heat treatment industries in the USA and this joint venture has allowed for successful expansion into the international market with new installations in Europe and Asia. It will now incorporate the induction and gas/oil fired melting equipment into one company.

"These are exciting times for us," said new managing director Douglas Rankin. "By combining the strengths of both companies we will be able to offer an extended range of heating and melting equipment with market leading innovation for virtually any application. Retaining the extensive knowledge of the Melting Solutions' staff combined with carefully chosen appointments on the Interpower Induction side ensures we have the experience and drive to handle projects of any size from design and manufacture to installation and servicing."

Interpower Induction Europe also offers a comprehensive spares and repairs service. Melting Solutions Ltd will remain a trading division and continue to serve new and existing customers.

Interpower Induction Corporation – USA
Email: enquiries@interpowereurope.com
Website: www.interpowereurope.com

Fives Bronx, formerly Abbey International, carries on a long history of unmatched innovation in custom mill designs, from start to finish. The company boasts the largest O.D. range in the industry - up to 914MM, patented Quick Change Technology which allows for changeovers in as little as 15 minutes, and retrofitting options that reduce downtime and increase production efficiency. Fives Bronx also manufactures Entry Systems, Rotary Cutoffs, Drawbenches, and Slitting Lines with the same precision and technological advancement.

fivesbronx

Varnishing line commissioned for the Salzgitter group

THE main target of the Provea project was tube protection against corrosion (most of the tubes are shipped, increasing corrosion risks for the final customer). The old machine used by Salzgitter did not guarantee a good result (tubes used to stick together because of the thick layer of varnish). The outside diameter range started from 20 up to 90mm.

The system designed is fully automatic, from the initial bunch of tube up to the storage table. A conveyor drives the tubes throughout one closed cabinet. The varnishing technology chosen consists of two spray booths, one on each side of the tube. Two specific air guns have been placed on each side of the tube. Varnish projections that do not touch the tube are aspirated by two powerful spray booth systems (equipped with multilayer filters). All electrical panels had to respect ATEX standards, given the type of chemical varnish used.

One of the key technical points was the varnish thickness: it had to be specially controlled. On the one hand, tubes need a certain amount of varnish in order to get enough protection (around 20 microns). On the other hand, the varnish has to dry before packing and the level of varnish consumed has to stay as low as possible. The testing sessions enabled the company to find the settings for the best result. The different settings available on the new line are: the speed of tube (up to 90 metre/minute), the air guns position (relative to the tube), the varnishing spray form, the flow level and so on.

The productivity initially aimed for has been achieved. The quality of tubes has dramatically increased (varnish thickness controlled), opening new markets to the Salzgitter plant. Provea also works on complementary technical systems for the line: pre-heating solutions for tubes and drying systems after varnishing.


Varnishing line

Provea – France
Email:
contact@provea-machine-tube.com
Website:
www.provea-machine-tube.com

Additions to customer focus team

BLACOH Fluid Control, Inc, a specialist in industrial fluid control products, has announced additions to its customer focus team as part of its continued expansion in both US and global markets. Blacoh president Andrew Yeghnazar stressed the company's commitment to service and support, saying, "Customer focus has always been at the heart of what we do. As we continue to grow, our commitment to ensure each and every customer receives the same exceptional care will not waiver."

In recent months, Blacoh has followed an aggressive growth strategy with expanded operations in the northeast US, Asia and Latin America. In making the announcement, Mr Yeghnazar went on to say that the company will continue to invest in the infrastructure needed to support that strategy and the growth it is experiencing globally.

Joining Blacoh are global customer service manager Terri Simmons and technical sales manager Bill Bendel.


Terri Simmons


Bill Bendel

Terri Simmons joins the company following a 20-year career at Dover Corporation subsidiary Wilden Pump, market leader in air-operated double-diaphragm pumps. Bill Bendel brings 14 years' experience from McMaster-Carr, worldwide supplier to industrial and commercial facilities.

Blacoh Fluid Control, Inc – USA
Email: sales@blacoh.com
Website: www.blacoh.com

Welding automation solutions

IN its appearance at the international specialist trade fair Euroblech, Germany's leading manufacturer of welding technology will be focusing on innovative MIG/MAG orbital and submerged arc welding products and the expansion of current product lines. The company will be presenting complete solutions with the aim of emphasising their technological and economic advantages.

In comparison with manual TIG welding, for example, the pipeTruck automatic orbital pipe welding system offers a five- to 15-fold increase in the deposition rate, as well as guaranteeing full X-ray quality.

This, together with alpha Q and the innovative pipeSolution MIG/MAG welding process, means EWM is able to offer machines that are especially suitable for use in the field, at the pipeline and in the workshop. EWM is also set to grab the attention of the specialist audience with its expansion of the Picomig, Phoenix and Taurus model ranges.

The new portable machines in the Picomig 305 Puls series are incredibly powerful and very versatile multi-process inverter power sources in a sturdy plastic casing. The power sources master standard arc and pulsed MIG/MAG welding processes, as well as TIG welding (lift arc) and joining with the MMA process.

Thanks to their highly dynamic inverter technology, the portable, gas-cooled Phoenix 405 and 505 puls and the Taurus 405 and 505 MIG/MAG power sources are suitable for welding tasks in the workshop, on the construction site and during assembly, and in particular at the shipyard and in vehicle construction.

EMW Hightec Welding GmbH – Germany
Email: info@ewm-group.com
Website: www.ewm-group.com

Welder training courses

WELDING Equipment manufacturer, Kemppi (UK) Ltd has started a series of bespoke welder training course at its UK headquarters in Bedford.

These courses, which are designed to train attendees in line with BS 47872 pt 1, include basic health and safety when welding, welding process theory, identification and uses of different materials, testing methods and practical tuition covering MIG/MAG welding, TIG welding and MMA welding. Kemppi has extensive training facilities equipped with the very latest technology and equipment available from the company.

Mike Pixley, managing director Kemppi (UK) Ltd, said: "We have often been asked to provide welder training for customers and have done so, so this new venture hopes to open up our facilities to provide standard and bespoke courses."

Kemppi Oy – UK
Website: www.kemppi.com

Stainless bar depot in Illinois

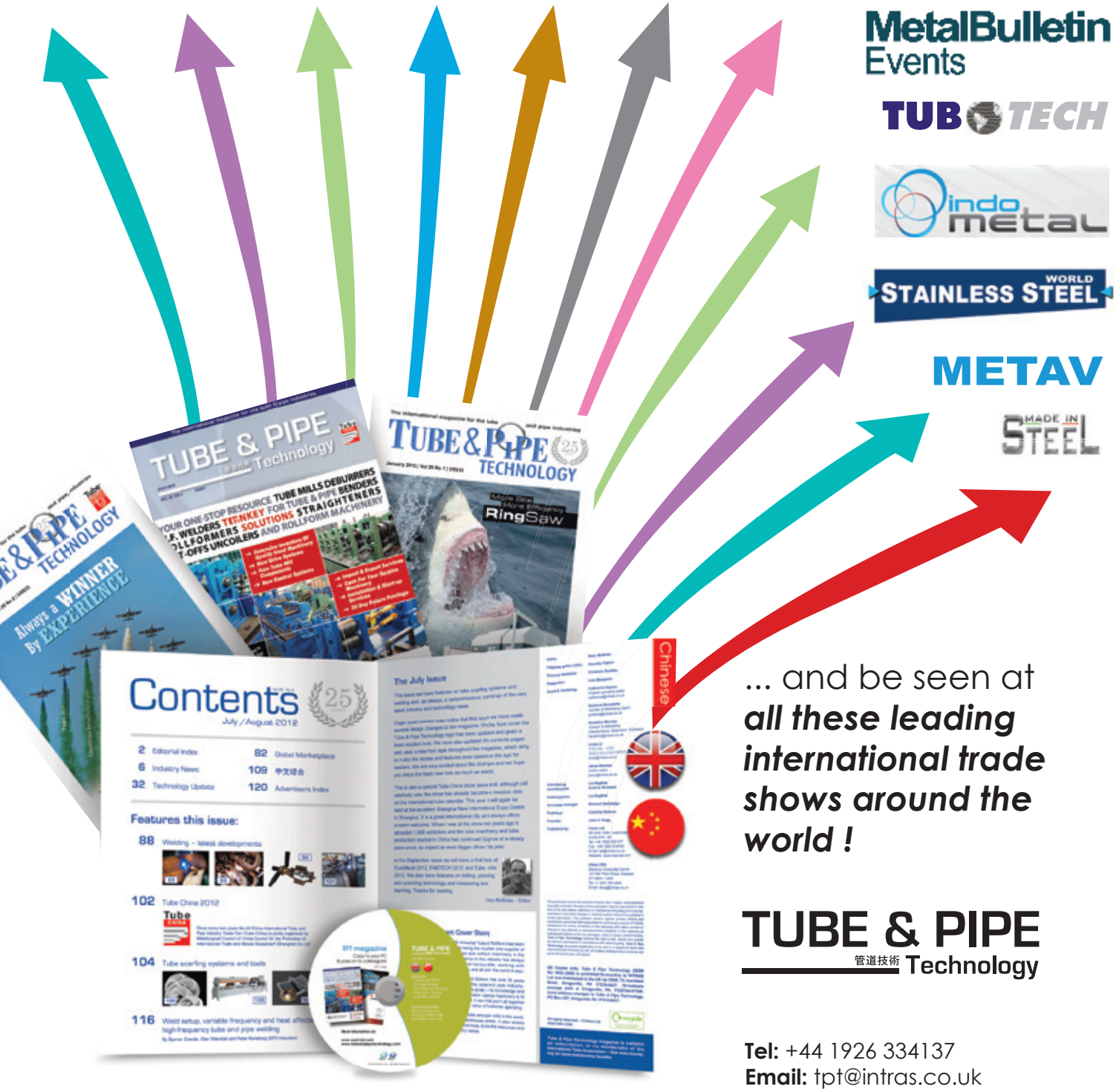
MARMON/Keystone LLC has announced the addition of a new stainless steel bar depot at the its Spring Valley, Illinois location. The 200,000ft^2 building houses state-of-the-art Amada automated CNC saws that can provide value-added services for all cut-to-length orders.

"The stainless bar depot provides a wider range of sizes and grades in one location," said product manager Patrick Gibbons. "This new depot enhances our inventory of stainless bar that is currently stocked at our 26 warehouses. It offers greater accessibility for large-volume requirements, and will provide our customers with faster deliveries."

A leading wholesale distributor of tubular products for over 100 years, Marmon/Keystone inventories more than 15,000 sizes and grades of carbon, alloy, stainless and aluminium tubular and bar products.

Marmon/Keystone LLC – USA
Fax: +1 724 283 0558
Email: sales@marmonkeystone.com
Website: www.marmonkeystone.com

Advertise your company in Tube & Pipe Technology...



... and be seen at ***all these leading international trade shows around the world !***

TUBE & PIPE 管道技術 Technology

Tel: +44 1926 334137
Email: tpt@intras.co.uk

Steel man brings gold back

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. Mr Honeyman commented, "I am absolutely delighted with being honoured with such a prestigious award and I am so proud to be able to bring it back to the steel city. The award is not just about my work, but rewards the dedicated and skilled team at Forgemasters that has worked hard to turn the company around and become a world leader. This accolade adds to the company's creditability and is recognition of innovation and success."

Mr Honeyman studied engineering materials technology at the University of Aston and complemented this degree with a PhD for his study of armour plate welding from Teesside University. He has previously been presented with a silver medal from the Royal Academy of Engineering, a CBE for his services to the steel industry, and was named Overall Director of the Year at the Institute of Directors in 2010.

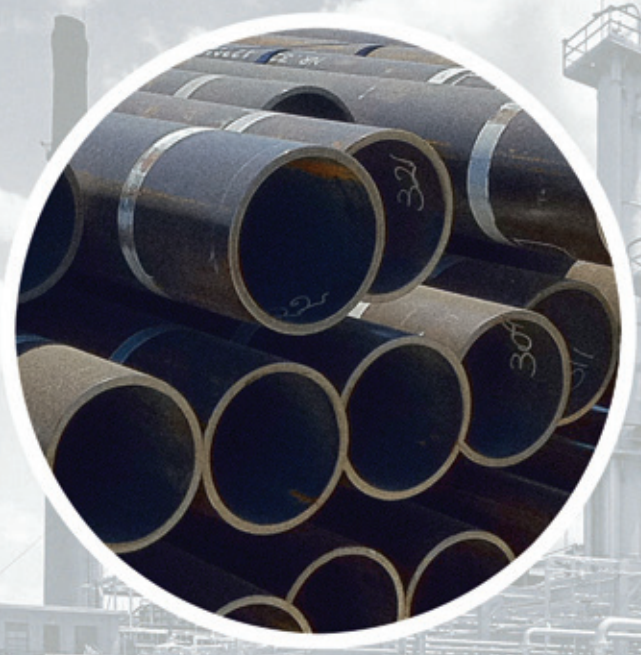
According to the award citation, Mr Honeyman has promoted the development and application of metallurgical processes to enable the manufacture of engineering components of national and international importance. His understanding of metallurgical aspects of the business has led Sheffield Forgemasters International to profitability, with an export market of over 75 per cent.

The Bessemer Gold Medal was established by Sir Henry Bessemer in 1874 and is now included in the Institute's annual award ceremony, which recognises members of the steel industry who have contributed significantly to innovation in the use of steel. Bessemer was an English engineer and inventor who is renowned for inventing the Bessemer process, which was the first method of manufacturing steel on a level of mass production.

The accolade was presented to Mr Honeyman in July, and he delivered the Sir Henry Bessemer lecture in October.

Sheffield Forgemasters International is a supplier of total engineering packages, and specialises in a broad range of heavy forged and cast steel products as well as supplying ingot and bar. The company can design, establish material requirements, produce material specifications and manufacture products, including some of the largest bespoke engineered products in the world, with capacity for castings of up to 350 tons and forgings of up to 275 tons.

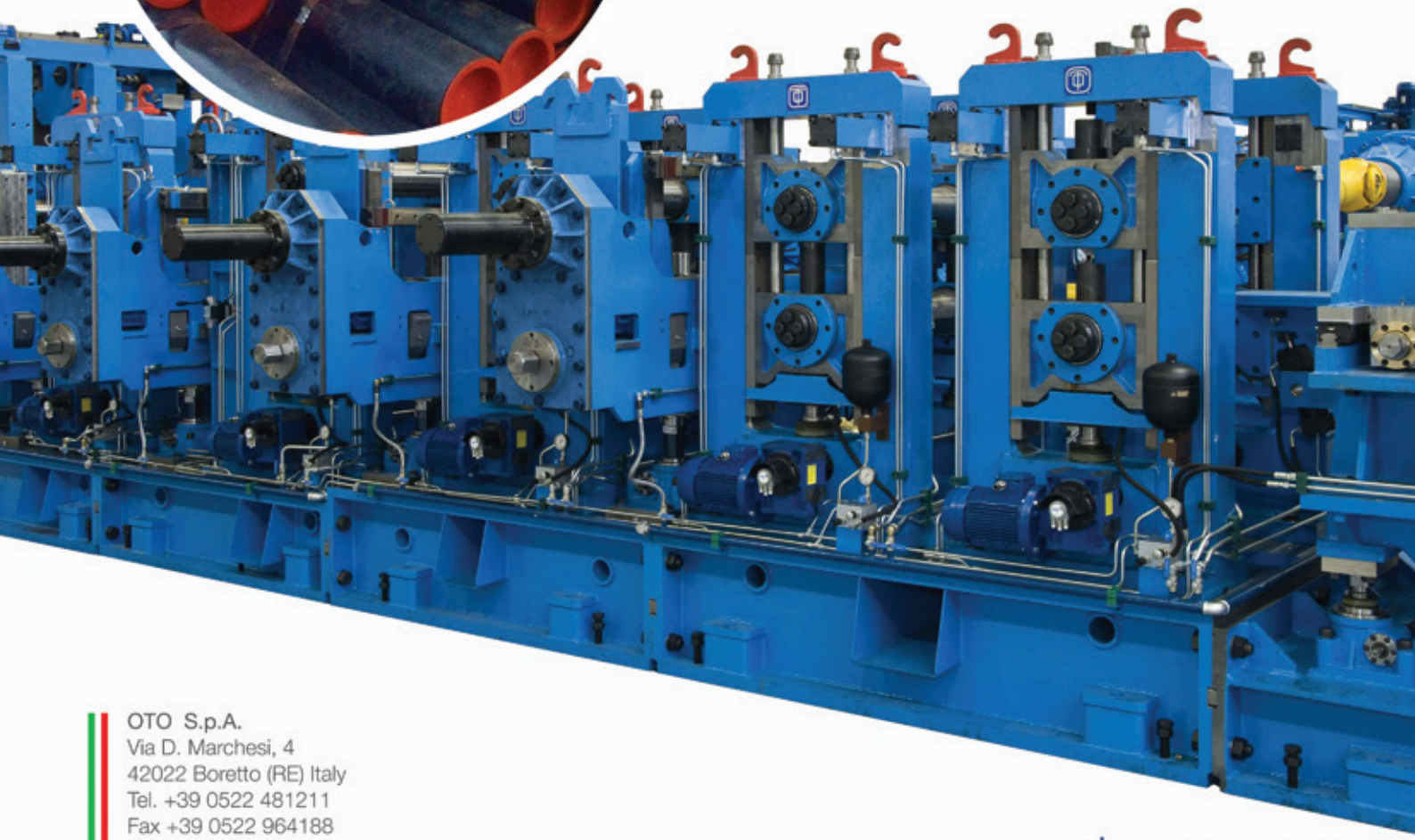
Sheffield Forgemasters International Ltd – UK
Email: sales@sfel.com
Website: www.sheffieldforgemasters.com



OTO®

Take the lead

Turnkey projects for the production of heavy duty structural tubes, oil, water and gas pipes according to API standards.

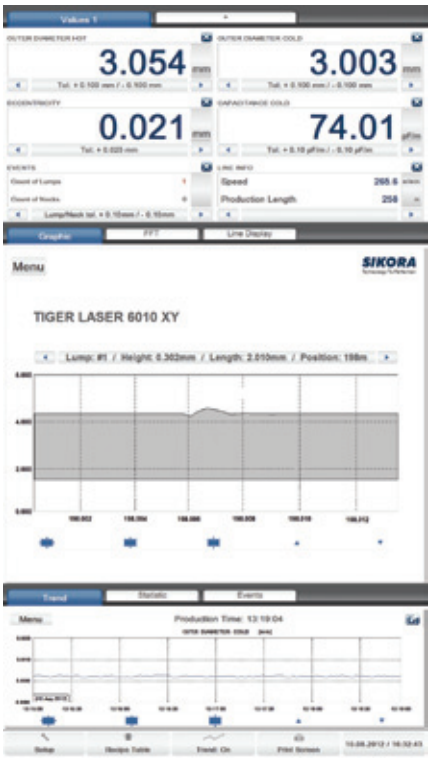


OTO S.p.A.
Via D. Marchesi, 4
42022 Boretto (RE) Italy
Tel. +39 0522 481211
Fax +39 0522 964188
info@otocompany.com

www.otocompany.com

Diameter measurement with highly precise surface inspection

FOR high-speed diameter measurement and simultaneous lump detection of hoses and tubes Sikora already offers the Laser Series 6000. With the Tiger Laser 6010 XY Sikora now presents an additional innovative diameter measuring system, with special focus on the combination of diameter measurement with lump inspection. Characteristic for this gauge head is the extremely precise and reliable inspection of the product surface for lumps and neckdowns. Optionally, the Tiger Laser 6010 XY can be combined with a device of the Ecocontrol-series to visualise detected faults. With the clear presentation manufacturers can evaluate faults realistically. There is also the possibility to store the pictures with the processor system Ecocontrol.



Monitor image of the Tiger Laser 6010 XY

The measuring principle of the Tiger Laser 6010 XY is based on the analysis of two high-resolution image sensors as they are common in digital cameras. The image sensors measure and inspect the product from two measuring planes. With this technology the surface profile of the product is optimally inspected for faults. Due to the high measuring rate, the Tiger Laser 6010 XY detects lumps with an even higher detection probability than the Laser Series 6000. In particular with the visualisation of the product surface the lump can be assessed, without a labour- or time-intensive rewinding process.

Tiger Laser 6010 XY

Hose and tube manufacturers decide for a device of the Laser Series 6000 for diameter measurement and fast lump detection of products with a bigger diameter from 0.2 to 78mm.

For diameter measurement and fast lump detection of products with small diameters from 0.1 to 10mm the Tiger Laser 6010 XY is the optimum solution. The Tiger Laser 6010 XY detects faults with extremely high probability and reliability. The manufacturer identifies and evaluates the faults directly at the Ecocontrol. As a result, labour- and time-intensive rewinding processes can be saved. Moreover, Sikora offers the Laser Series 2000, which measures product diameters from 50µm to 500mm.

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

One-stop shop for cold rolling

THE Atlas brand (DB Engg) was formed 60 years ago, and has evolved to become one of India's largest tool equipment manufacturers, currently with over 600 employees and an annual turnover of over $20mn. The forming rolls division was established 25 years ago, and produces over 24,000 rolls per year.

With specialist knowledge of various steel grades gained over six decades, and with an in-house design team, the company provides a complete one-stop shop for customers in the cold rolling industry.

By incorporating world-leading roll forming software the company is able to provide technical advice on rolls and optimisation of production processes. This approach, combined with ISO-certified quality standards, has helped Atlas to become a leading Indian manufacturer of rolls for the production of tubes and other roll formed open and closed sections.

The company can design and produce tube forming and open section-forming rolls ranging from 50 to 800mm in diameter. Before production all roll designs undergo a simulation and finite element analysis to achieve a meticulous final product. All manufacturing is done in the company's state-of-the-art manufacturing workshop with over 15 CNC turning centres.

The ISO-certified in-house heat treatment facility has a capacity of over 300tn/month, allowing the company to maintain world-class standards for all of its products.

Over the last few years the company has made significant inroads in the worldwide tube and section manufacturing industry by supplying to Australia, North and South Africa, the Far East, Canada, Russia, the Middle East, Europe, and various mill OEMs in India.

Atlas Knives (DB Engg) – India
Fax: +91 11 26386453
Email: sales@atlasknives.com
Website: www.atlasknives.com

MAC expands range

"THREE Technologies, one company" has been MAC's company statement for decades. The company has now expanded this to four technologies, by adding laser inspection equipment for detecting welding imperfections in tube and pipe.

This technology, produced by MAC's partner Xiris, detects weld undercut, sunk welds, pinholes, weld height and weld register (mismatch).

A high-speed video camera combined with fast data capture and analysis rates provides detection of defects down to 0.015mm in size on a typical laser welding tube mill. Weld types such as ERW, TIG and SAW, among others, are also inspected. Direct integration with the tube mill's marking system allows for weld defects to be marked instantaneously without halting the mill.

The WI2000p laser can collect up to 250 profile images per second, providing the mill with real-time trend reporting, simplifying mill set-up, and minimising downtime and material scrap.

For customers that need 100 per cent inspection coverage of their material for defects such as cracks, slivers, inclusions and other discontinuities, MAC also offers eddy current and ultrasonic equipment that can enhance the inspection line capabilities.

Magnetic Analysis Corporation – USA
Fax: +1 914 703 3790
Email: info@mac-ndt.com
Website: www.mac-ndt.com

Welded tube being inspected for weld zone quality issues by the WI2000p laser

Butt fusion welding machine

RITMO machines have been used on pipe in a building site located in southern Sweden, in Halmstad. The duct will use PE 100 SDR 17, OD 160-135mm. In order to be completed, this work will require approximately one full year, during which extreme changes in climate will occur (from -20°C in the winter, to +30°C in the summer).

The proximity to the sea will also affect the conditions of the wind and humidity, which can change abruptly. Moreover, the building site crosses the centre of the city and intersections with lots of traffic.

The technician of GPA Flowsystems AG (Ritmo's local distributor) suggests the contractor (MTA Bygg & Anlaggning) to work with Ritmo's butt fusion welding machine Delta 355 all terrain, and Elektra 400 electrofusion machine.

The Delta 355 all terrain allows a high level of mobility and versatility: the generator on board makes the welding machine totally independent, and the wheels assure a fast positioning. These features were highly appreciated both for the short execution time given, and because they created a minimum discomfort to the citizens. Furthermore, the Delta 355 All Terrain provides certified weldings, thanks to its welding control system – Easy Life.

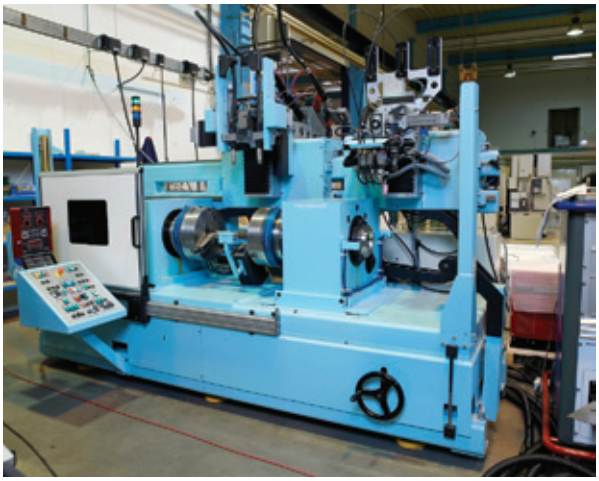
Wherever a butt welding was not possible, the contractor used the Elektra 400 equipped with a scanner for bar code reading and automatic detection of the welding parameters.

Kenny Constanzo, a technician from GPA said: "We have a strong sense of environment protection in Sweden, and this project has brought several environmental challenges on an every day basis. At its completion, the building site will have crossed the entire city through urban obstacles such as narrow streets, big intersections… and through "secular" obstacles such as trees… Just to give you an example, we decided to make a detour and leave a wonderful example of Walnut Caucasus intact, rather than bring it down. It is thrilling to admire that plant. I know for a fact that when a challenge comes up Ritmo is always there. The welding machines are proving themselves to be trustworthy both under the sun as under Sweden's snow. The project that is taking place is at the forefront and Ritmo is indeed opening our road."

Ritmo SpA – Italy
Fax: +39 049 9901993
Email: info@ritmo.it
Website: www.ritmo.it

The site in Halmstad, Sweden

Hire wire welding of boiler tubing



FOR boiler manufacturing in the energy industry, increased efficiency and lower emission levels are increasingly important. Overall life cycle costs have to be reduced, which is only possible by the use of advanced materials such as P92 and T92, which guarantee high temperature strength with reasonable resistance to oxidation. This concerns every new plant, as well as the modernisation of existing plants.

For boiler tubing, only mechanised TIG hot wire welding can be considered for these new materials as a compromise between quality and productivity.

During the prefabrication process of boiler tubing for power plants an important number of welds have to be carried out in the workshop. Special attention should be paid to the features of the weld lathe at the beginning of the assembly line. Here, different concepts and types are presented and discussed.

During energy production in fossil fuel-fired power plants, various types of fuel are burned inside a combustion chamber. The released heat is conducted to the tube bundle inside the surrounding boiler shell; steam produced inside the tube bundle is used to power steam turbine generators for electricity production.

The boiler erection operations can be divided into three main parts: making available the appropriate pipes with matching dimensions, made of the requested material, corresponding to the specified quality level, shipped at the desired date; prefabrication work such as cutting, joining and bending of the pipes in the workshop; and final boiler assembly with the prefabricated parts on site.

Pipes available on the market are generally of fixed lengths, which depend on production methods and transport limitations.

During prefabrication, the pipes are welded together to get appropriate lengths for the pre-assembled units. These are shipped to the site where they are used to construct the boiler.

Use of "straight tube welder" in boiler manufacturing

The prefabrication can be organised in two different ways, which results in different structures concerning the production line and the required equipment.

The first prefabrication technique consists of welding several pipes together (depending on the length of the delivered pipes, for example two or three sections); the final shape of the pre-assembled unit is arrived at by joining them with bends.

This prefabrication technique requires a welding machine for the joining of the tubes at the beginning of the production line. At this stage of operation the workpieces are still rotationally symmetrical, so the welds are carried out usually on rotating tubes with the torch at a fixed position. On the commonly implemented welding lathe the tubes are clamped, centred and rotated at the desired travel speed to carry out the weld. The proper welding operation is performed by means of the welding torch, which remains in a fixed position.

The welded tubes are taken out of the welding lathe and, after testing of the welds and an in some cases necessary heat treatment, they are assembled using corresponding bends and form pieces.

A significant number of welds have to be realised, either manually, or by means of orbital welding. The production time of these pre-assembled units can be considerably influenced by the number of welding machines and staff available to execute this work.

In the second method of prefabrication, many pipes are welded together. The final length corresponds to the total length of the pre-assembled unit, which can be up to 100m. Several bending operations are then carried out to transform the pre-assembled unit to its final shape.

This type of prefabrication requires virtually all welds to be carried out by the welding lathe or tube welder at the beginning of the assembly line. The total production time of each pre-assembled unit is influenced strongly by the capacity of this machine.

Due to the importance of these straight tube welders their design has been continuously improved and adapted to the specific needs of production. With the increase in efficiency of power plants, higher service temperatures became necessary and new heat-resistant materials had to be developed, making welding operations more and more delicate.

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

Electrical upsetters for tubes

CEMSA has announced a new series of electrical upsetters for use by manufacturers that have to upset tubes/pipes mainly in drilling/perforation sectors.

This technique is made possible by a new design of the front of the existing model RIO 100 SC SP, where a special clamping system, new current carrier contacts and the "in dies" more powerful forging press, hold and move the tubes automatically. The accuracy along the full process is guaranteed by a sophisticated, but easy-to-use, control system.

Special care is devoted to control and monitoring the heating progress and the forging speed in order to keep micro-structural grains within the international strict limits fixed for the related applications. These new models can be equipped either with single phase or with three-phase DC dedicated transformers, designed for continuous service. Sizes of the tubes for "in-dies" upsetting will depend upon the relevant thickness. Productivity will be again depending on the solution chosen and will be confirmed on dedicated offers.

Cemsa SpA – Italy
Website: www.cemsa.it

Rafter ships seam unit

RAFTER Equipment Corporation has shipped a model RT-7000 seam orientation unit (SOU). The machine will be used by a major North American tube producer to hold the weld seam directly underneath the seam annealing inductor. The SOU is sized for pipes up to 8.625" OD x 0.375" wall. Pipes sizes above this diameter up to 16" OD can be passed through the unit.

Rafter manufactures tube mills and pipe mills, roll forming machines, cut-off machines, auxiliary and other related tube and pipe mill machinery.

Rafter Equipment Corporation – USA
Fax: +1 440 572 3703
Website: www.rafterequipment.com

Extruder control systems

HIGH Tech Extrusion group's TEC 4s control system, which has already delivered several orders in recent months, can now also be ordered as a retrofit kit exclusively for High Tech Extrusion – Theysohn extruders.

The TEC 4s Extruder control system, developed in cooperation with Siemens using the latest state-of-the-art technique, combines simple handling and an efficient control system.

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 provides easy operation with large soft-keys and intuitive colour and graphic design.

The core of the new Theysohn extruder control system is a powerful, fanless, maintenance-free industrial PC. Communication between the TEC 4s and all drives, peripheral devices and the whole downstream equipment works through the efficient Profibus bus system. Operational reliability and short downtime are achieved by simple wiring because of selected high-class components, an analysis program and remote maintenance via LAN and/or WAN.

The company states that in 99 per cent of cases the customer can maintain or exchange parts of the system, saving the visit of a Theysohn technician.

A few simple steps, without great technical knowledge, are sufficient to change frequency converters or CF-cards, so production downtime can be avoided and software updates can be installed simply and quickly.

Following a check for compatibility of main drive and dosing unit, the space requirement for the new control cabinet is assessed. The existing control cabinet is replaced, together with the installation of the 19" touch screen.

This solution provides an upgrade to state-of-the-art management of the entire extrusion line with its existing components, while overall investment remains manageable in comparison with the acquisition of a brand new extruder.

For reliability, the system features two independent operating systems (Windows XP Embedded and WinAC RTX). In case of emergency, the main motor can be started independently from the PLC.

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. The group operates internationally with four production sites in Austria and Germany as well as sales offices in Russia and India.

High Tech Extrusion GmbH
– Austria
Fax: +43 59 692 2202
Email: office@ht-extrusion.com
Website: www.ht-extrusion.com

Eliminating scrap and increasing productivity

HIGH energy costs can strongly influence competitiveness in the steel industry. In particular, scrap and offcuts in the production of slabs, sheet metal and pipes require a great deal of energy when they are remelted. Using LAP measuring systems significantly increases measuring accuracy. The amount of scrap is reduced almost to zero, and energy costs are permanently lowered.

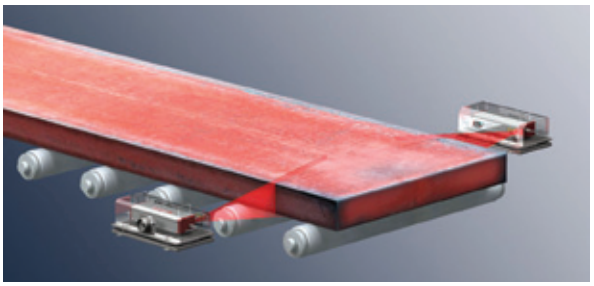
LAP GmbH is a specialist in the development, production, installation and commissioning of laser measuring systems for measuring the dimensions of unfinished and finished products in the metal and steel industry. “Preventing scrap, which takes a lot of energy to melt down, is one of the basic rules of steel production. Our LAP measuring systems are excellent in this regard, especially the ANTARIS SCAN sensors in conjunction with our evaluation software, Slab Check,” noted Dr Axel Schulz, sales manager for the steel industry at LAP.

LAP laser measuring systems check the dimensions of long and flat products including slabs, billets and pipes. LAP fabricates laser-supported systems for the contact-free measurement of distance, width, thickness, length, diameter, contour and flatness for the entire process chain from continuous casting to the finished product.

LAP laser measuring systems enhance cost-effectiveness by reducing scrap and increasing throughput. “The more scrap is produced, the higher the production costs,” stated Dr Schulz. “Let me give you an example. Let’s assume that you produce 1,000,000 tons of sheet metal a year with sections measuring 5,000mm x 45,000mm x 10mm with an optimisation potential of 50mm on each side when cutting the width. Each ton of steel sheet metal sold yields a profit of €400 per ton with a sales price of €650 per ton and scrap price of €250 per ton. If you could reduce the amount of scrap when cutting to size by just 2 per cent, you could save or earn, actually, up to €8mn.

The sensors of the ANTARIS series use a triangulation method. A laser beam is reflected off the surface of the measured object and and is projected by a lens system and deflection mirror onto a light-sensitive target camera. Depending on the distance from the measured object, the position of the point of light changes. The signal processor calculates the distance between the sensor and surface of the steel products from this data.

LAP laser measuring systems, especially ANTARIS SCAN sensors, enhance cost-effectiveness by reducing scrap and increasing throughput



By using LAP measuring systems, you avoid excess slab weight for example. This helps guarantee the per metre weight in sheet metal production, for example. Not only do you save material, you refine production in the energy intensive steel industry. “In addition, these savings mean that the LAP measuring systems pay for themselves quickly, as the calculation example shows,” noted Dr Schulz.

For more than 25 years, LAP has been providing laser-based systems for the highly precise measurement of geometric quantities such as position, width, thickness, length, diameter and the flatness of products in industrial production. The systems offered by LAP are distinguished by their superior precision under extreme conditions. Hundreds of these systems are proving their usefulness everyday in steel and rolling mills.

The customers of the company, which presently employs more than 180 people, include Baosteel, Posco, ThyssenKrupp Steel, Vallourec and Mannesmann and other leading steel manufacturers.

LAP also manufactures laser projection systems. These generate points of light, lines, crosses or outlines of any shape such as true-to-scale shapes generated from CAD files.

The employees of LAP serve customers throughout the world from company headquarters in Lüneburg and an international network of branches and technical sales representatives.

LAP Laser – Germany
Email: lap@ofischer.com
Website: www.ofischer.com

Automated weld monitoring

AUTOMATIC welding processes require remote monitoring cameras to be able to properly verify equipment set-up, monitor weld quality and alert the operator to other welding issues before they result in production problems.

Because it is typically too congested or dangerous to have an operator directly monitor the welding tip while under operation, Xiris has developed the XVC-O wide dynamic range view camera, which can be mounted right at the welding tip to allow the operator to remotely view the welding process.

Combining sophisticated sensor technology with advanced electronics to provide high contrast, wide dynamic range images, the Xiris XVC-O View Camera for weld monitoring is suitable for a wide range of welding applications including MIG, MAG, TIG, plasma and laser. By delivering clear views of the brightest features of a welding torch tip while still being able to see the weld pool and surrounding darker background, the cameras can improve weld quality, lower the defect rate and improve efficiency.

Xiris Automation Inc – Canada
Website: www.xiris.com

30t under-roller rebatch line

PCT has supplied a 30 ton under-roller rebatch line to one of the world's major umbilical manufacturers located in the UK. The under-roller rebatch line is able to rewind hose between two reels, allowing the user to either supply a specific length from one drum to another or to recoil a badly wound drum.

The line consists of two take-up/payoff units facing each other where a single traverse unit controls the product lay on the take-up drum. The lines can also be run in either direction.

A clever feature of the under-rollers is the ability to swap the traverse unit from one machine to the other so that either machine can be the take-up. The traverse unit also includes a dancer arm that provides feedback to trim the speed of the payoff unit. The units are designed to take drums up to 4m in diameter by 2.6m wide and a weight of up to 30,000kg.

The rebatch line is fully compliant with EU health and safety standards and has been fitted with a number of safety features. These include safety fencing that completely encloses the line, and sensors fitted to entrance points that automatically reduce the speed of the winding to safely allow operators to work within the area.

PCT Ltd is a privately owned company based in Newcastle, UK, with subsidiaries in the USA and China. The company designs and supplies coiling, handling and packaging solutions for flexible products such as plastic pipe, sub-sea umbilical, power cables, flow-lines and steel wire rope.

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

Circular blades for aluminium

THE MK Morse Company has introduced Metal Devil NXT aluminium cutting circular saw blades. The Metal Devil 'Xtreme Technology' blades for cutting aluminium take the next step in providing users with an optimal cutting solution. The new offering will include ten aluminium cutting blades ranging from 137 to 356mm ($5^3/_8$" to 14") diameter.

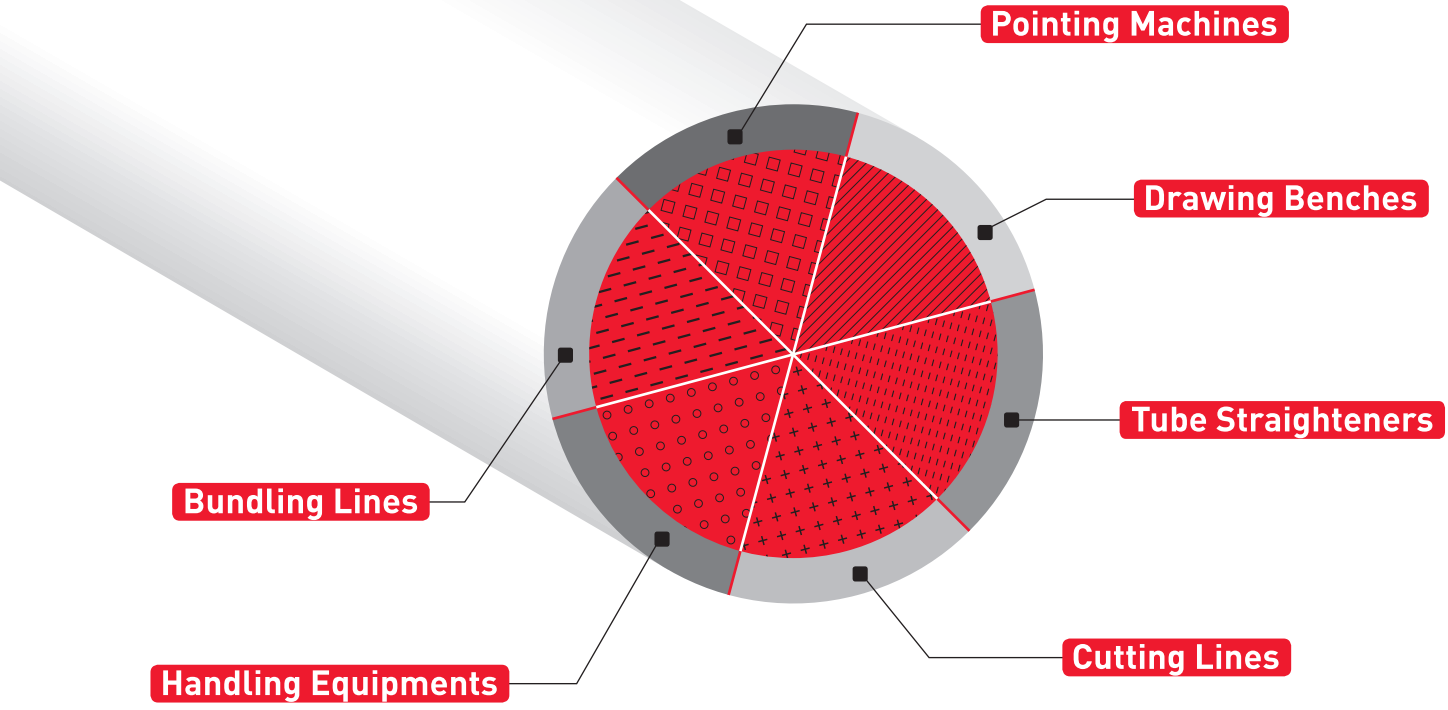
NXT cutting technology provides advancements in using carbide grades and tooth geometries. Metal Devil NXT aluminium provides smooth, fast cuts and long life in a wide variety of aluminium shapes and solids.

For fifty years MK Morse has been providing professional quality products and dependable service. The company offers a wide range of hand tool and power tool accessories, including hole saws and arbors, reciprocating saw blades, jigsaw blades, portable band saw blades and hack saw blades, as well as industrial quality band saw blades and metal cutting circular saws and blades.

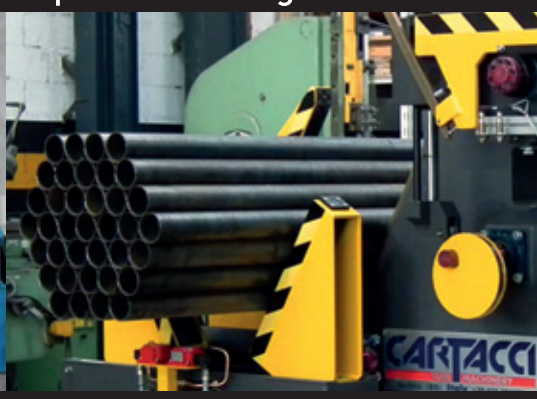
MK Morse Company – USA
Email: mkmorse@mkmorse.com
Website: www.mkmorse.com

CARTACCI
TUBE MACHINERY

All together now!



Solid experience for single machines, assembled in complete finishing lines



Italy - Via Comonte, 33 - Seriate (BG) - Tel. +39 035 294371 - webmaster@cartacci.com - www.cartacci.com

Laser drilling and grinding technology

DANOBAT Group is a leading machine-tool company, with more than 55 years of experience and more than 1,300 people working for it. Different type of machines are manufactured by Danobat: grinders, lathes, milling machines, punch presses, panel benders and drilling units.

Danobat Sheet Metal offers complete and customised solutions for sheet-metal processing processes, always offering fast, efficient responses with integrated solutions to each of their needs.

The wide range of machines is composed of punching machines, punch-shear and punch-laser combi machines, automatic panel benders and fibre laser cutting machines. Due to the Modular Tech system, all these machines are prepared to the incorporation of any automation element throughout machine life.

The whole range of punching machines is totally servo-electric, to reach maximum efficiency with minimum consumption. The combination of the punching machine with different technologies as right angle shear or fibre laser, enables the integration of different processes in a single machine. The punch-shear combi machine is the ideal system for rectangular parts and large production volumes. The punch-laser combi machine is the perfect flexible system for processing parts with irregular contours and great added value.

Interaction between machine and operator is another value to highlight. All Danobat machines have been ergonomically designed, providing both operating and maintenance benefits. Among the most noteworthy benefits is the Easy Turret system by Danobat, which improves access and reduces tool change time. Regarding software, Danobat machines incorporate the Smart Tech system, which makes interpretation of messages easier for the customer and enables direct connection with Danobat technical assistance service. The application of ergonomy in machine design has also meant a great advance in maintenance thanks to the incorporation of numerous mobile elements and improvement of the access to key points.

Danobat – Spain
Website: www.danobatgroup.com

Danobat offers complete and customised solutions

Largest Linsinger circular saw

THE circular sawing machine KSA 2200 DPD from Linsinger, Austria opens up new dimensions in cutting steel billets as it can cut 800mm steel in just four minutes. The first machine of this type has just been supplied to South Korea by the Austrian technology expert.

The latest milestone in sawing technology measures 2.3m: this is the diameter of the KSA 2200 DPD saw blade, which is probably the largest constructed carbide vertical circular sawing machine for steel billets. Recent innovations allow it to combine the huge performance capacity of a machine of this size with unbeatable efficiency. “We are therefore now preparing to succeed in a market segment that was previously reserved for band saws,” explained Linsinger CEO Hans Knoll.

Of the number of technical innovations Linsinger has incorporated in this high performance saw, a particular one stands out: double power drive (DPD) is a completely new gear concept with two drive trains that has been fully developed in the Linsinger R saw competency centre. It optimises transmission and guarantees a completely precise cut with its clearance – and all of this at extremely fast cutting times: the KSA 2200 DPD only needs four minutes to saw through a steel billet with a 800mm diameter (material 42CrMo). “This shows that a new era really has begun. DPD is without a doubt one of the most important industry innovations of the past decades,” emphasises Mr Knoll.

DPD is just as much a Linsinger patent as the LINCUT® disc miller, with it the “mega-saw” is equipped. Its cutting plates are not soldered, but screwed on. They can be individually and simply replaced at any time as required. The tool can even be reequipped when installed; costly transport to a sharpening centre is unnecessary. A sharpening centre is no longer required.

With Lincut®, Linsinger has one of the most efficient solutions for machining difficult materials right through to titanium. The system is already running

Carbide Circular Sawing Machine KSA 2200 DPD

on more than 40 machines worldwide and has long proven itself in three-shift operation. “The competitors are, at best, only at the stage of developing similar processes,” is the information which comes out from user groups.

Linsinger – Austria
Website: www.linsinger.com

In-pipe manipulators for ferritic and austenitic pipes

Ibass GmbH & Co KG – Germany
Fax: +49 821 3497164
Email: info@ibass.com
Website: www.ibass.com

Ibass constructs in-pipe manipulators for steel pipes of 40 to 1,000mm diameter

IBASS in-pipe manipulators can be used for grinding, inspecting, welding, retrieving or suctioning, condition-based maintenance, examination or sanitation work of pipes, in applications such as nuclear or coal-fired power plants, refineries, oil rigs and offshore drilling platforms.

Ibass can also support customers in the assembly of pipe systems for which they provide flawless welding seams. While the customers install and weld the pipes, Ibass grinds them from inside in the assembly procedure, ensuring that the welding seams are flawless.

The company inspects and treats austenitic and ferritic steel pipes with inside diameters of approximately 40 to 1,000mm. Options are practically only limited by the number of bends in the pipe system. Their radiuses should be greater than the 1.2-fold of the pipe diameter (which is very narrow and unusual). From six or seven bends or more, the frictional resistance of the pipes becomes too great and the effort considerable.

With straight pipe systems, diameters of less than 65mm are also possible. There are hardly any limits with regard to the pipe length: 200m can be navigated without any problems. With lengths beyond that it is a matter of the drive, the technology and also the price.

Ibass in-pipe maintenance manipulators consist of a driving unit, the required working unit and a camera. They are operated electrically and pneumatically and pull the cables along behind them.

The benefit of this modular design is that the individual parts are inserted separately into the system through pipeline internal components such as fittings, and they can then be reassembled in the fitting, for example. This allows almost all types of pipe systems to be navigable. In new installations all closure welds can be dealt with.

The range of working units includes inspection cameras, grinding attachments, grippers and welding apparatus. Inspection units include visual inspection units, eddy current testing units, dye penetration units and ultrasonic flaw detectors.

Nondestructive
ECT/UT Technology,
RAYNAR

www.raynar.co.kr/english

Eddy Current Tester

Model : Ray-3000EX Series

- On-line/Off-line ECT for Pipe and Tube
- Data management for quality control

- Maximum 10" Carbon Steel Pipe by Encircling ECT
- Applicable to Array type & Encircling type coils

Roll Inspection System

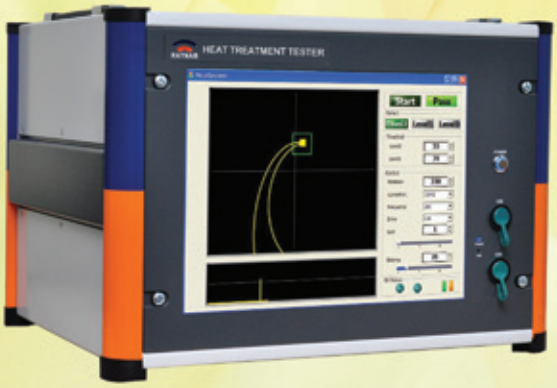
Model : RAY-8000AE Series

- Roll Inspection system using array ECT probe
- ECT and/or UT sensors mode operation
- 16 channels array ECT probe
- Minimization of lift-off and dead-zone

Heat Treatment Inspection Equipment

Model : 4000HT

- Real Time Inspection for all parts of an Auto Mobile
- Interfacing with parts feeder



Tel. 82-42-931-8410~1 Mob. 82-10-3656-5579 Fax. 82-42-931-8412

Room 201, Jangyoungshil-kwan, 1688-5, Sinil-dong, Daeduk-gu, Daejeon-city, Korea 306-230

Web : www.raynar.co.kr/english E-mail : raynar@raynar.co.kr

RAYNAR

Analysis with easier operation

SPECTRO has brought onto the market the third generation of its SPECTROMAXx stationary metal analyser. The company has improved operation of the instrument with the use of toolbar buttons, a user management system and a separation of operation from programming of the instrument.

The SPECTROMAXx is used mainly for material testing in foundries and for incoming and outgoing inspections in the metal industry. Users are able to determine all of the elements used in the metal industry, including trace analysis of carbon, phosphorous, sulphur and nitrogen. Calibration modules are available for base metals: iron, aluminium, copper, nickel, cobalt, titanium, magnesium, zinc, tin and lead.

"The SPECTROMAXx is an extremely important analytical instrument for the metals industry and can be found around the world," commented Kay Tödter, who is responsible for stationary metal analysers at Spectro. "During its redevelopment, we took many of our customers' ideas into consideration. In this age of smartphones and tablets, users expect a completely different ease of operation from a complex analytical system, compared to a just few years ago."

The SPECTROMAXx simplifies operation in several ways. The measurement is no longer controlled through the menu, but with symbols and toolbar buttons. Once a procedure has been started, only the functions that are logical at that point in time are active in the control software – all other commands are hidden. The metal analyser also offers a user management system that permits rights for individual employees to be determined. "Temporary workers or summer jobbers are able to start single measurements, whereas trained laboratory technicians, for example, have extended or complete access to all control functions and parameter settings," explained Ms Tödter.

Separation of the operating module from the method development module is another major advantage of the new instrument's software. Information needed for operation is directly accessible without having to change the method data.

The analytical diagnosis system also has been improved. The instrument independently monitors all operating parameters, and even shows when the spark stand needs to be cleaned depending on the type of samples being analysed.

The SPECTROMAXx is delivered together with Result Manager analysis archive software. The Result Manager documents when a given sample was analysed and the measurements the instrument delivered. This enables paperless documentation that is also suitable for audits.

Spectro Analytical Instruments GmbH – Germany
Fax: +49 2821 8922200
Email: spectro.info@ametek.com
Website: www.spectro.com

Siempelkamp

Maschinen- und Anlagenbau

RELIABLE, ROBUST AND PRECISE

Heavy Plates Forming Presses

DISHING | STRAIGHTENING | BENDING

For the production of heavy plates Siempelkamp offers forming presses with a press force of up to 720 MN.

www.siempelkamp.com

Norma starts new assembly system in Gerbershausen

ENGINEERED joining technology firm Norma Group has put a new assembly system into operation in its Gerbershausen, Germany, facility. The system manufactures joining elements for exhaust pipes for an internationally operating automotive group. The new 'Euro Coupler' joint caters to the needs of the automotive industry to build more lightweight passenger cars, avoid leakage and reduce CO_2 emissions.

The assembly system, which will produce about 70,000 joining elements for exhaust pipes per week, was put into operation by Christine Lieberknecht, prime minister of the state of Thuringia, on 14 September.

"The upgrade of our production facility in Gerbershausen highlights the growing demand for our innovative weight and cost saving joining solutions," commented Werner Deggim, CEO of Norma Group. "We register demand for our engineered technology from industries across the globe, which also secures the future of our production in Germany."

Klaus-Hartmut Scherf, the Gerbershausen plant manager, added, "The major order combined with the new assembly system substantially strengthens our local business. We welcome this opportunity to create additional jobs in the region."

The Gerbershausen production facility was founded in 1992 and stretches over 23,700m² in total. Each day, about 150 employees at the facility manufacture approximately 1.5 million joining elements, which are shipped around the world and applied in the automotive industry, the aviation and shipbuilding sector as well as in infrastructure projects.

Norma Group manufactures a wide range of innovative engineered joining technology solutions in three product categories (clamp, connect and fluid), and offers around 35,000 products and solutions to approximately 10,000 customers in 90 countries.

Norma Group AG – Germany
Fax: +49 6181 6102 7647
Website: www.normagroup.com

(from right) Christine Lieberknecht, Klaus-Hartmut Scherf and Jens Wahl

Sikora measuring technology

COLMEC SpA, developer and manufacturer of extrusion lines for rubber and silicone, has recently opened up a new technology centre at its headquarters in Busto Arsizio, Italy. The new centre allows for internal technical tests as well as the development of new projects in a fully equipped production environment.

On an area of 3,000m^2 there are in total four extrusion lines with the latest technologies as well as devices and machinery for mixing of rubber and silicone. In addition, there are several innovative measuring and control devices from Sikora integrated in the extrusion lines that are used during production for monitoring quality and cost reduction. In a research area, specially equipped for tests, customers have the possibility to test these new technologies and devices.

The lines cover diverse application areas. One extrusion line is used for the production of rubber profiles with a combined vulcanisation system (hot air/molten salt curing system). An additional line, with high-speed hot air curing, is suitable for the production of rubber and/or silicone profiles. There is a third extrusion line available for silicone cable sheathing. In this line Sikora's 3-axis diameter gauge head, 3-axis lump detector, spark tester as well as the Centreview 8025 for the measurement of the wall thickness, eccentricity, diameter and ovality assure the highest product quality.

The fourth line is a testing line for the production and vulcanisation of rubber hoses, in particular for the automotive sector. Especially, radiator hoses are manufactured at this line. Due to the specific demands on the hoses, quality has to be assured during extrusion. For this reason, measuring and control technologies that continuously monitor and control product parameters are directly installed in the line.

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

Extrusion line for rubber hose

Adress:
PM s.a.s.
Via Montegrappa, 109
30030 Salzano (VE)
ITALIA

Web page and e-mail:
www.pm-eng.info
pm@pm-eng.info
Phone: +39 041 5745047
Telefax: +39 041 5745058

SHEET METAL WORKING MACHINES AND PRODUCERS OF SPECIAL PROFILES

PM is specialized in the producition of sheet metal working machines and in particular roll forming lines. Experience, innovation and state of the art computer design place PM among the **leading companies** in the sector. PM machines are characterized by high engineering standards, quality, flexibility and efficiency.




Based on our experience, we decided to enrich our services with a **profiles production department**. This department is equipped with 20 section fast change (with cassettes) production lines, with more than 300 products.






We are producing a **wide range of profiles** for various sectors, such as: for the roofing and the building industry in general, for the automotive industry, shelving systems, metallic doors and windows, tubes, etc. Based on the specific customer's requirements we integrate in our roll forming lines processes like punching, embossing, tapering, clinching, seaming or laser welding, etc.

Bending of hose fittings

SPECIAL solutions are required for special requirements – or just one efficient, customisable solution. For one-part hose fittings, transfluid Maschinenbau GmbH has developed a 'twin' solution and will equip its systems with different modules depending on the application, varying mostly in the loading system.

Fittings are mostly mechanically processed, extremely short, relatively thick-walled and their sealing elements (sealing head or hose part) must not be damaged under any circumstances. "Cost-efficient processing options are an aspect on which we place great emphasis," commented Gerd Nöker, CEO of transfluid. "Large amounts of pieces are mostly manufactured for small sizes. And what counts here is the speed."

The fittings bending machine for sizes up to 1" is fitted with a bulk material hopper with a capacity of 600 litres. The advantage of this is that fittings of any size can be loaded. A powerful drive is ensured by servo-electrical or hydraulic equipment. Bending can be therefore done in short cycles from 6 to 7 seconds, including the entire handling. Special supporting elements ensure that the sealing cone and hose connections remain undamaged. Fittings starting with inner diameter of 8mm are bent by the transfluid system using an internal mandrel, so that bend ovalisation can be ruled out. Components with dimensions up to a diameter of 75mm are transported by using a robust loading system. As the weight of these fittings is so high, the loading system prevents the components from uncontrolled falling. The work pieces are provided on a special pallet, taken from the handling system and supplied to the bending machine. These sizes are generally bent by machines with an internal mandrel. A maximum ovalisation of 3 per cent is given.

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

Steel surface improvement

OLIMPIA Surface produces dry and economical systems for the constant finishing of the tubes for all applications.

The company has achieved several projects in cooperation with its customers for stainless steel surface improvement (constant roughness); stainless steel finishing (satin finishing and mirror polishing); carbon steel surface improvement; and removal of rust from carbon steel tubes in order to perform a better and smoother ND test.

Duplex and Super Duplex constant finishing on long products is especially useful for nuclear applications where high precision and constant finishing are mandatory. Stainless, Duplex and Super Duplex seamless tubes constant finishing and material removal do not require frequent tool changes; and special steel grades (where high precision and constant quality are mandatory), especially for nuclear application tubes.

Olimpia 80 Srl – Italy
Website: www.olimpia80.com

LUT in operation at the output of a hot Pilger mill

Laser-ultrasonic wall thickness gauges

MONTREAL–based Tecnar, a supplier of sensors for advanced process control, has successfully implemented more than a dozen laser-ultrasonic wall thickness (LUT) gauges in various seamless steel tube mills around the world. The capacity to deliver precise wall thickness data directly comparable to handheld, cold, UT measurements even over a mandrel and without any hazardous radiation has fuelled the industry's interest for this technology over the past 15 years.

However, operating advanced optics and lasers in the close environment of 1,200°C steel tubes circulating at over 5m per second and bouncing around by several centimetres has proven to be quite a challenge to the technology's reliability. Through the development of specialised high power UT detection lasers as well as the implementation of numerous reliability features resulting from extensive in-situ experience, including remote system monitoring and maintenance, Tecnar has managed to achieve reliability levels well within the industry's very demanding standards.

The company has installed LUT gauges at the output of various mills such as mandrel mills, reelers, rotary sizers, stretch-reducing mills and even hot pilger mills. The data has proven invaluable to operators who can immediately detect and correct process problems, such as piercing eccentricity, heavy centre wall and heavy ends.

Tecnar – Canada
Email: mchoquet@tecnar.com

Tube end form tooling and equipment

ANFORM UK has a wealth of experience spanning nearly 25 years in the making and building of tube end forming machines and tooling.

Anform supplies tooling worldwide to exhaust and tube manipulation companies including F1 teams and has built up a reputation for the supply of quality tooling and equipment at a very competitive price. Anform can offer custom made tooling to suit the customer's requirements and this gives more flexibility over standard stock tooling. This also gives the customer the option to have tools that meet its requirements better and improves production times. Anform is flexible in what it can deliver from design and development to pricing and production.

Along with a high quality product the company offers full customer support in order to provide complete satisfaction and peace of mind at all times.

Anform UK
Email anform.uk@hotmail.com
Website: www.anform.co.uk

Transporting plate roll

AFTER a long and tough commissioning, with full positive results, a Davi 4,000 x 255mm, claimed to be the heaviest 4-roll ever built, has been completely dismounted and loaded onto 17 trucks, to be delivered to its new home, at the buyer's site.

Company president Orazio Davi commented, "The front and rear frames as well as rolls of this machine are the heaviest parts of this plate roll, made in high tensile material, to resist to the high load of 6,500 tons available to roll the heavy plates the machine has been purchased for. They are so oversized (large and heavy) to require the transport with very special trucks, one for each of these components, due to the weight of more than 80 tons each."

A team of highly professional riggers ensured the load of all 17 trucks required to transport the entire machine, nine of which were special oversized trucks, making it possible to arrive at the final destination without delays.

The customer, one of the largest Russian manufacturers of heavy fabrication, is keen to put the machine into operation, to start production of heavy-duty vessels for the nuclear industry and offshore components.

Davi – Promau Group – Italy
Fax: +39 0547 317850
Email: davi-sales@davi.com
Website: www.davi.com

MX 850 injection moulding machines produced in China

KRAUSSMAFFEI has been developing MX machines made in China using CleanForm technology certified according to GMP (Good Manufacturing Process) guidelines for the manufacture of plastic products for medical and technical applications in cleanrooms. With the solution concepts based on the CX and EX Series, KraussMaffei is the world's only manufacturer of injection moulding machines to have already successfully implemented several cleanroom cells up to Class 5 according to DIN EN ISO 14644-1.

MX 850 machines are ideal tools for daily tasks in all industries. "Our special solutions in injection moulding machinery and high efficiency with innovative strength were the main factors in the last few years that allowed us to successfully establish ourselves on the Asian market," explained Frank Peters, vice-president of sales at the injection moulding segment of KraussMaffei. He added: "KraussMaffei stands for top machine quality, technical and user-oriented innovation and reliable service."

Multiple component machines and large machines with compression moulding functions for the production of complex components are used, in particular, in the automotive and electronics industry. With its MX swivel plate and compression moulding machine for multicolour television screen frames and windshields, KraussMaffei has positioned itself on the Asian market just as successfully as with the CX Multinject for multicolor and multiple component applications in the low and medium clamping force ranges. Combined processes from injection moulding and reaction process technology, among others, SkinForm or ColorForm processes, make full use of the material-specific properties and produce components with excellent surfaces in a single work step. Haptic requirements are also met, as well as high-gloss lacquer surfaces.

One step ahead in terms of cleanliness injection moulding machines from KraussMaffei offer ideal requirements for successful production under clean conditions. The CX Series was therefore successfully certified according to Cleanroom Class ISO 5, ISO 14644-1 and also, as an isolator principle, GMP Sterility Class A. "KraussMaffei has been a reliable partner for many years for the medical and pharmaceutical industries with its CX and EX machines. The all-electric EX CleanForm sets the highest standards throughout the industry in regard to the production of sterile components," said Dr Karlheinz Bourdon, vice-president technologies at the injection moulding segment of KraussMaffei.

KraussMaffei Technologies GmbH – Germany
Website: www.kraussmaffei.com

The MX 850 injection moulding machine

Mechanical surface treatment

HEINRICH Kreeb GmbH is a producer of tools for mechanical surface treatment. These tools are used for de-burring, grinding, matt finishing, brushing and buffing of most materials.

The company's range includes abrasive nylon brushes that are manufactured as circular, disc or end brushes, and are used for the removal of light or medium burrs (eg after punching). Besides abrasive flap wheels for the treatment of plain surfaces, the company produces flexible sanding stars for the grinding of contoured workpieces.

For de-burring, fine grinding and satin finishing, Kreeb processes abrasive, non-woven synthetic web. From this raw material various items such as flap wheels, discs and disc brushes for grinding machines with planetary heads or linear working units are made.

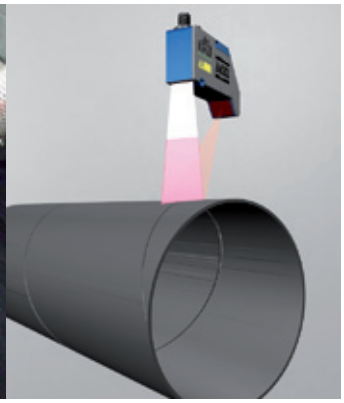
Brushes from Tampico, sisal and wire as well as cotton polishing mops and felt wheels for the achievement of glossy surfaces complete the extensive range.

In addition to its manufacturing site in Göppingen, Germany, Kreeb produces in Haan, Germany, where the subsidiary bi-flex Birkenstock GmbH & Co KG is located.

Heinrich Kreeb GmbH & Co KG – Germany
Fax: +49 7161 9274 14
Email: info@kreeb.com
Website: www.kreeb.com

Success stories for Tube & Pipe Manufacturers only!

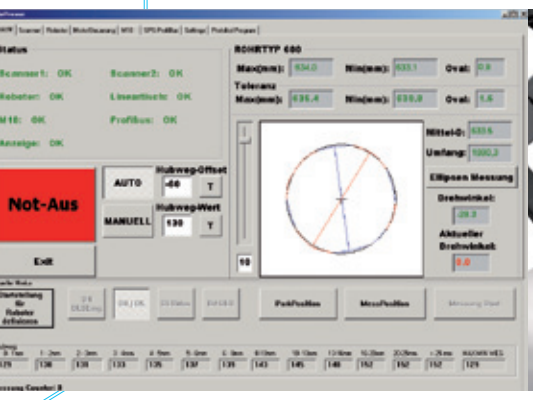
>> Made by MEL 3D Laserscanners – leading in optical measuring



Seam tracking & control

For welding MEL laser scanners are equipped with a water cooling and operate reliably at up to 500 °C. Various welding processes, longitudinal or spiral welds MEL's scanner and software detect the groove position and keep the torch following it. Also different seam shapes can be followed and checked perfectly.

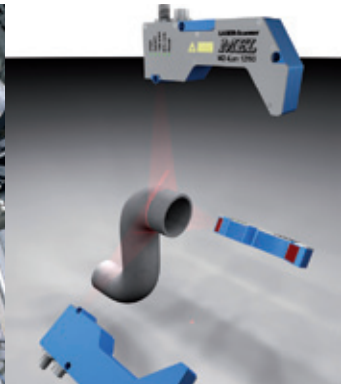
>> **Your benefit:** zero-defects, high productivity, most effective workflow



Geometric control of tubes

By non-contact detection of ovality and errors in the flange profile of cast iron pipes, two MEL M2-iLAN laser scanners collect data for the following bending process. The MEL software then takes complete control of all components involved in the bending process, to reach perfect circularity.

>> **Your benefit:** fitting cast iron pipes, short cycle times



Tube bending control

With three laser scanners, a 360 degree scan will check if the tubes shapes are fine. Deviations will be measured and according to custom specific parameters the MEL software takes control of the bending process to reach perfect shapes.

>> **Your benefit:** 100% correct shapes, 100% happy clients

>> **MEL M2-iLAN Laserscanner**
with ethernet port, image recognition in sensorhead, modular water-cooling and protection window

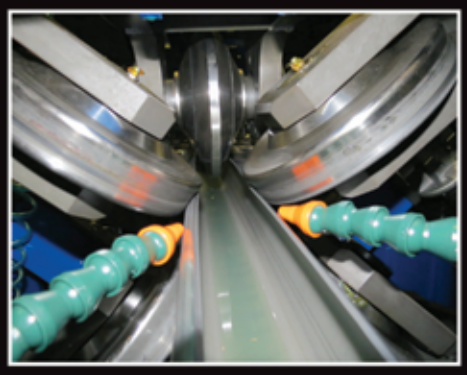
Feel free to send your request to:
b.rohloff@melsensor.de
and get your own success story!

MEL
Intelligente Sensoren & Messsysteme
www.melsensor.de

olimpia80

TUBE MILLS

LINEAR CAGE FORMING



PATENTED

OLIMPIA 80 s.r.l.

ZONA INDUSTRIALE: Cà Verde - 29011 BORGONOVO V.T. (PC) - Italy - Tel. +39 0523 86.26.14 / 86.28.80 - Fax +39 0523 86.45.84

olimpia@olimpia80.com • www.olimpia80.com

New tube ferrite

ERNST Blissenbach GmbH has introduced a new ferrite into its line of inside tube scarfing systems: a true impeder giant. The custom-made ferrite MRSH 180 x 200 x 80mm – which additionally includes a MRSH 73 x 200 x 36mm ferrite – guarantees the largest ferrite volume possible for inside tube diameters ranging from 240 to 320mm. It is connected to the hydraulic inside tube scarfer H 179 320 – 10.000 (inside tube diameters ranging from 179 to 320mm). Compared to traditional impeder designs for this diameter range the solution also has the added benefit of easy installation.

Another advantage is the use of this massive round, fluted ferrite as opposed to small ferrite rods significantly reducing the risk of fracture and guaranteeing consistent performance. The design also makes allowances for optimum cooling of the super ferrite by providing a sufficient number of fluted cooling fins.

Comparisons between the BLISSart impeder and designs that are industry standard reveal that in its solution the ferrite is not only found in the upper part of the impeder but the impeder is also filled with ferrite all around. This contributes to a huge increase in impeder efficiency, even in large tube diameters.

Just like all the other impeders in the BLISSart product family, the IHZ 240 320 – 82.000 features an impeder guard tube coated with SAFE-COAT, which significantly increases tool life due to its resistance to heat. In addition, water jets are positioned on top of the impeder to immediately flush away any spatter accumulation.

Ernst Blissenbach GmbH – Germany
Email: info@blissenbach.de
Website: www.blissenbach.de

Third generation of self-propelled fusion machine

FIFTEEN years ago, McElroy introduced the first self-contained, self-propelled, all-terrain fusion machine – the TracStar 500. The company is now releasing the third generation of the machine.

The new McElroy TracStar 500 Series 3 features major additions over previous models, including an indexer-mounted heater and facer, economy engine throttle setting and hydraulic clamping. With the heater now included as an attached part of the machine, users no longer have to manually place the heater in the carriage during the fusion process. The economy engine setting saves fuel by throttling down when idle. The addition of hydraulic clamping helps reduce operator fatigue and saves time by clamping pipe into jaws of the carriage with the push of a lever.

"TracStars revolutionised how people thought of the fusion process," said Chip McElroy, president of McElroy. "TracStars continues to evolve with customer-provided suggestions having a key role in how designs are evolving. Many of the advancements on the new machine are customer-driven."

The TracStar 500 Series 3 is capable of fusing thermoplastic pipes from 6" IPS to 20" outer diameter in size (180 to 500mm). The fusion carriage can be removed and lowered into a ditch for fusions in tight spaces. Power for the heater is supplied by an on-board generator, while a hydraulic-pump system driven by the engine provides the power for the facer, dual-speed track system and more. Dual hydraulic pipe lifts help to load and unload the pipe into the carriage.

Two versions of the TracStar 500 series 3 will be available – a standard model and an Automatic TracStar 500 Series 3. The Automatic version offers control and monitoring over the heat, soak, fuse and cool cycles. The system guides the operator through a step-by-step procedure for fusing pipe. Both the Automated and standard versions have the ability to record fusion parameters with McElroy's DataLogger®.

McElroy's complete line of TracStar fusion machines can traverse mud, loose soil, snow and grades up to 30 per cent. The TracStar has the ability to manoeuvre into position under the pipe. All TracStar machines allow for butt fusion of most fittings without special holders and have mitred inserts for fabricating ells in the shop or field.

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

Cut to length

THE growing demand for rolled products has increased the demand for speed and precision in cutting: working speed of thickness up to 3mm is 80m/min with an accuracy of ±0.25mm on the length (cut with rotary shear). For thicknesses up to 8mm working speed is 40m/min cutting accuracy ±0.25mm on the length (cut with rotary shear).

For thickness from 4 to 20mm, the speed is 40/20m/min with a length tolerance ±0.5mm (cut with flying shear). But in recent years there has been also the spread of high strength steels whose superior mechanical properties require – for cutting and levelling – forces and higher powers involving the critical review of the entire mechanics of machines that make up these lines.

The importance of the levelling (not to be confused with the straightening that only serves to remove the residual curvature of the winding coil) is generally underestimated. The operation is, however, of fundamental importance for the quality of the sheet. If levelling is not perfect, the plate may seem flat but retain residual stresses in it.

Euroslitter – Italy
Email: info@euroslitter.com
Website: www.euroslitter.com

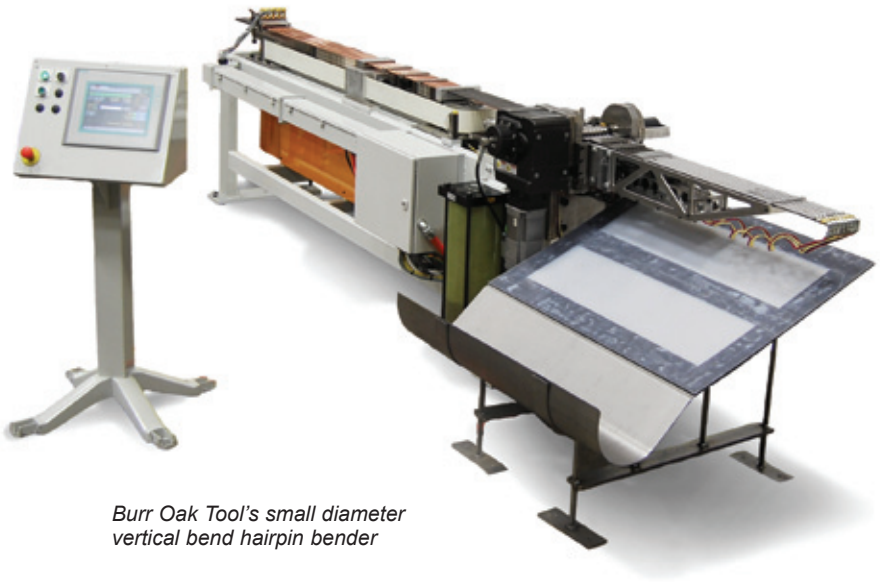
Small diameter hairpin bender

BURR Oak Tool Inc's SD-VBHB small diameter vertical bend hairpin bender features throughput capacities of up to 4,000 hairpins per hour, or 70 per cent higher production due to eight parts per cycle, versus seven, and a faster cycle time. The manufacturer states that the small diameter hairpin bender reduces scrap, perishable tooling costs, labour costs and floor space.

The machine uses less floor space due to a more compact design, with a size reduction of 9.5m² (102ft²). Typical payback is under two years.

The bender handles tubes up to 10mm (3/8") diameter, making it suitable for air conditioning/refrigeration applications. Maintenance time is also reduced, with a servo hitch feed eliminating the belt feed used on previous designs, which required additional care and attention for proper operation. Other features include intuitive operator interface using the touch screen, and independent tube clamping for variations in tube diameter without causing clamp marks on the hairpins.

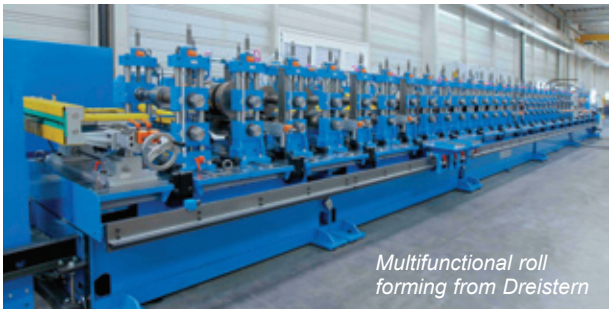
For over 65 years Burr Oak Tool Inc has designed customised production machinery for the heat transfer and tube processing industries. Oak machines are installed and successfully operating in over 70 countries.



Burr Oak Tool's small diameter vertical bend hairpin bender

Burr Oak Tool Inc – USA
Fax: +1 269 651 4324
Website: www.burroak.com

Multifunctional roll forming technology


Multifunctional roll forming from Dreistern

PRODUCT mix flexibility is the ability to produce different products on the same production line and is one of the critical decision factors when investing in new equipment. Shorter innovation cycles and growing product diversity make this issue ever more urgent. In recent years many remarkable developments have advanced the flexibility of roll forming lines. However, this presents an increasing risk to the profile producers. This flexibility does not come for free – it results in much higher equipment costs.

The trend towards larger roll forming machines with more and more forming stations can be seen as an example of that. Recently Dreistern supplied a machine with more than 60 forming stations. What if there are not enough complex section orders to fully utilise the machine's potential? Run simple sections too? Simple sections require fewer forming stations, the 60 pass machine would be far too big and too expensive to run for such jobs.

The situation is similar when punching and embossing operations are integrated into the roll forming process. Take an example from the automotive industry. Roll formed longitudinal reinforcement beams require pre- and post-punching operations, which can easily double the investment cost. The same is true for the foot print of the machine, which can double as well. The next product run on this line will most likely require different, possibly with fewer punching operations. Again the machine would be too big and too expensive to operate.

This was the starting point for Dreistern to develop a new machine concept, offering product mix flexibility never imagined before. A radical break from existing concepts, based on single purpose line components such as roll forming machine, punching press or cutting machine, only capable to fulfil their assigned function, made this possible.

Dreistern's concept of a multifunctional roll forming machine takes an entirely different approach. The key requirement – operations such as roll forming, punching or welding are to be executed at any position on the machine, only by exchanging components – and this within a time period usually required for a simple tool change. The enormous advantage of such a solution is obvious. A multifunctional machine can be configured precisely and rapidly to produce the next part. Compared to conventional technology the foot print of such a machine can be reduced by 30 per cent to 50 per cent. No redundant line components whatsoever will increase the machine's hourly rate. Exactly this was the objective of the Dreistern development: more flexibility with lower cost and less floor space.

The guiding model for this Dreistern development was the quick-change roll-tool cassette, which Dreistern has been supplying for a long time. With the aid of standardised interfaces tools can be exchanged easily and quickly. In the future complete line components, like flying punching units or welding devices, will be exchanged in an equivalent manner. Consequently a 60 station machine could manufacture a highly complex section today, tomorrow it could run a simpler 18-pass section, but also include comprehensive pre- and post-operations.

Dreistern GmbH & Co KG – Germany
Website: www.dreistern.com

Industrial Ethernet in geometric control of cast iron pipes

IN order to check the ovality and the flange geometry of cast iron pipes, MEL has implemented a system solution with M2-iLAN laser scanners. The system is able to achieve an accuracy of 0.1mm. The flexible Ethernet cable, moved by the robotic arm, has a great influence on achieving this precision.

The manufacturing of steel pipes is usually subject to a thermal process. Duktus manufactures pipes complete with flange and connection profile using centrifugal casting. Upon the cooling of a pipe, different material distortion often develops, giving the pipe an oval shape. So that the pipe meets the high quality requirements, it must be measured accurately after cooling and, if necessary, be mechanically reworked. In addition to ovality, the flange and the connection profile are also checked at the pipe ends for errors and chips.

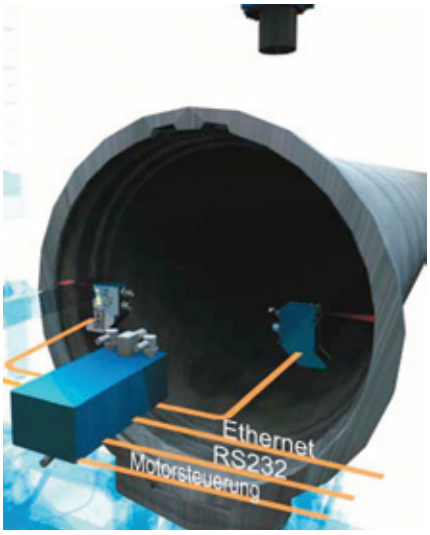
Until now, the measurement has been made with a manually operated contact measuring system at individual points. The subsequent bending process has been manually initiated and controlled. Duktus now uses a system based on two MEL Mikroelektronik GmbH M2-iLAN scanners. The system solution has been integrated into the automated manufacturing process and controls the entire measuring and bending process fully automatically with its own logic. The operator's long-standing experience, along with its empirical findings, is incorporated.

The pipes to be measured are moved by a PLC-controlled transport system into the holding device of the hydraulic bending press, which serves as a measuring station. The measuring device consists of a linear table with precision drive, which adjusts the spacing of the two scanners, depending on the pipe diameter to be measured. The linear table itself is attached to a robotic arm and is guided by the latter into the pipe end to be measured. The pipe diameter is determined prior to the insertion of the measuring device in the pipe with an M10L laser sensor, allowing the pipe inner diameter and the geometric centre of the pipe to be determined.

During the measuring procedure, the linear table is rotated 180°. Both scanners detect, during a measuring period of about two seconds, the ovality of the pipe as well as the geometry of the circumferential connection profile. The data collected by the scanners is sent in real time via Ethernet to the evaluation PC. The MEL software calculates the deviations from the nominal dimension and also the resultant bending parameters.

The software then controls the rotation of the pipe into the correct bending position. The bending machine is addressed with the necessary parameters, and the bending process follows. After bending, a control measurement is made in order to record the success of the bend.

Different pipe diameters as well as differences in the flange and connection profiles require a flexible measuring system to be used. The system solution used is able to detect pipes with diameters ranging from 350 to 1,100mm. Different flange profiles can be stored in the software. The operator can therefore customise the system to changes in the production line. The MEL software arranges and coordinates the individual components involved in the process with one another. Initiated by the material control, which moves the pipe to be measured into the holding device of the bending machine, the MEL software controls the entire measuring and bending process. This is possible since the acquisition of the measured values and their evaluation both take place within the software.



MEL M2-iLAN laser scanners

MEL Mikroelektronik GmbH – Germany
Email: b.rohloff@melsensor.de
Website: www.melsensor.de

ELMAKSAN

Everything About Steel Process Equipment

29 Years
40 Countries
250 Lines All Over The World

- Slitting Lines
- Tube Lines
- Cut to Length Lines
- Multiblanking Lines
- Trapeze Lines

- Pipe Reducing Mill from Ø21 - Ø8mm
- Line Speed 350 m/min

New!!
2012

Force your machinery

ELMAKSAN

Yeni Mahalle G 10 Sok. No:30 Parsel 205 Buyukbakkalkoy
81530 Maltepe / Istanbul / TURKIYE

Tel : (+90) 216 561 33 00 (10 Lines)
Fax : (+90) 216 311 73 41

www.elmaksan.net • info@elmaksan.net

KOSBAS Kocaeli Serbest Bolgesi No: 18/5 Yenikoy
Arpalı Mevkii 40040 Izmit / Kocaeli / TURKIYE

Tel : +90 (262) 341 38 02
Fax : +90 (262) 341 38 51

Automated orbital welding systems streamline in-process inspections

by John Glessman, manager, welding system products, Swagelok Company

PASSING in-process inspections for orbital welding projects is critical, as a failure can lead to costly rework, project delays and system downtime. Today's orbital welding systems employ a variety of automated features that help welders complete more accurate, high-quality welds and increase their likelihood of passing in-process inspections. Even more importantly, automation also provides efficiencies for welders and inspectors when conducting those inspections.

Today's orbital welding power supplies automatically record the majority of required welding data for projects. Automated electronic data collection ensures that searchable quality assurance data is available to welders and inspectors so each party can conduct in-process inspections in an efficient manner.

Welders are typically required to maintain comprehensive data about each weld in a project – a cumbersome process that can account for 30 per cent of total construction labour hours when performed manually. Automated data collection captures all of this data with minimal operator input, allowing welders to focus on the welds. To ensure complete data collection, some orbital welding power supplies highlight required data fields and do not permit welding to start until operators fill in all open fields. In addition, welders can provide documentation data electronically to quality control administrators. Proper data transfer yields a higher probability of passing in-process inspections.

Orbital welding power supplies employ a variety of automated features to help improve the quality of welds

Electronic documentation data made available to third-party inspectors expedites their in-process inspections. In an electronic format this data is sortable and searchable, providing inspectors with valuable efficiency during their reviews. Electronic documentation records also help inspectors locate data faster compared to leafing through hard copy weld logs. This efficiency is especially helpful given the varying documentation and in-process inspection requirements set forth by industries, applications and owner companies.

For example, the biopharmaceutical industry typically requires visual examination of every weld. Welders must visually check the outside diameter of welds and record this information – sometimes along with a video or image file. With welds chosen randomly for examination, inspectors can quickly search electronic records to locate specific welds and their data.

If a weld fails a test, the inspector may search the electronic database to find all welds performed during the same period and review their parameters. Next, the inspector may perform additional testing on those welds and potentially recommend rebuilding that portion of a system.

Some power supplies present detailed live weld progress data to help operators better evaluate welds. Graphics show the progression, performance levels and stop/start for each level of a weld in real-time. If the weld deviates from the selected schedule, the graphic will indicate points where those variations occurred so the operator can evaluate the weld after completion. This feature enables welders to make efficient adjustments to improve weld quality.

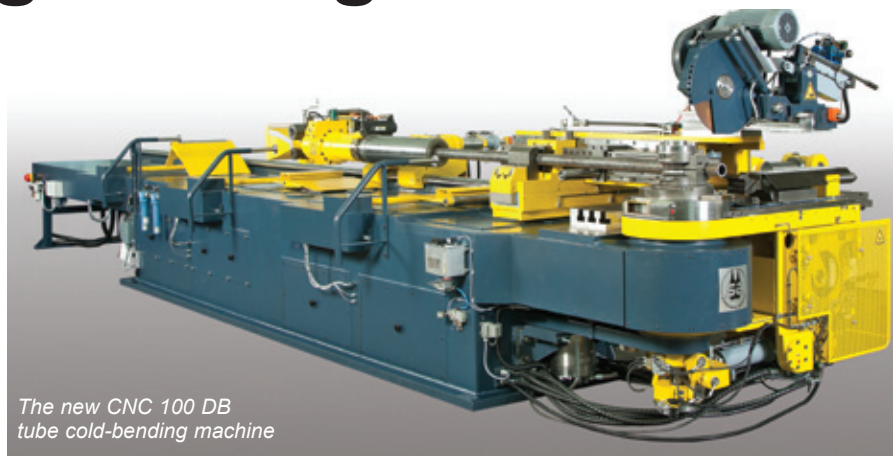
By leveraging automated orbital welding power supply features, welders enhance their ability to create accurate, high-quality welds, while also improving their efficiency in collecting documentation data. Ultimately, these automated features improve the likelihood of passing in-process inspections and creating leak tight final systems.

Swagelok Company – USA
Email: john.glessman@swagelok.com
Website: www.swagelok.com

Bending high strength tubes

AT Tube India International 2012, Schwarze-Robitec GmbH presented the new tube cold-bending machine CNC 100 DB. The innovation was developed specifically for bending boiler tubes and tube coils in demanding materials.

"Ultimately, efficiency inside the combustion chamber is dependent on the tubes used providing the greatest possible area for heat transfer with the tightest possible bending radii. This is not new. However, the bending challenge behind it is much greater due to the high-strength materials," explains Schwarze-Robitec managing director Bert Zorn. With the CNC 100 DB tube cold-bending machine, the specialists have constructed the required plant innovation and further developed their special booster bending machine process without mandrel. The primary consideration here was the regulation of the plant. On the one hand, greater bending forces are needed in order to cold shape the harder tubes. On the other hand, the material reacts more sensitively. The process of the CNC 100 DB has consequently been optimised in order to reliably achieve results of a 1D bending radius even with high-strength materials.



The new CNC 100 DB tube cold-bending machine

"As such, with our booster bending solution, we ensure that a minimal reduction in wall thickness occurs in tube bending process. Particularly in the use of high-strength materials, this offers a noticeable cost advantage," adds managing director Hartmut Stöhr. Overall, the CNC 100 DB is a development of the range of systems from Schwarze-Robitec for tube processing in power plant construction. For over 45 years, the specialists have constructed the required bending technology for the production of tube and membrane walls, burner port tubes and supply lines.

Schwarze-Robitec – Germany
Website: www.schwarze-robitec.com

Fast phased array system

FAAST II is a UT phased array system especially designed for high speed testing applications and production lines, and able to replace more than ten conventional phased array systems working in parallel.

The system's patented linear pulsing generator allows multi-beams transmission in one single shot through out 1D linear multi-element probe, but over all through out 2D matrix probes.

As an example, the first industrial application being built by Socomate using this method is an ultrasonic rail testing car providing in-track inspection at a speed of 100km/h with only one 1D multi-element probe.

The most important industrial applications are tube and pipe testing in high speed production lines from which FAAST II is able to detect and process in real time all oriented reflectors in one shot with 2D matrix array probes: pipe longitudinal, transversal and all oblique notches every 5° step over the 360° circumference of tube, internal and external, with lamination and WT at up to 2.5m/s surface speed with 2D active matrix or circular array probes; high precision tube Ø10-60mm longitudinal and transversal notches, internal and external, at 24m/min linear feeding speed with 2D active surrounding array probes.

The FAAST II system is compatible with any type of standard multi-element probes as well as with active probes embedding Socomate International electronics with pulser, preamp and multiplexer, allowing the limitation of connectors when using a huge number of elements as with 2D matrix array probe 128x8 elements and only 64 connectors.

FAAST II systems with 2D active surrounding probes for L&T flaw detection, associated to the E.Rota-12 patented system for full dimensional measurement (OD, WT, ECC, ID and OV) are now available as a unique option to rotary heads on linear feeding high precision tube lines, and with no mechanical rotating movement for easy and quick probe positioning and calibration, and reduced maintenance costs.

Socomate International – France
Email: serge.c@socomate.fr
Website: www.socomate.com

Line polishing for tubes

THE latest evolution of PLS in-line planetary polishing systems is a completely reengineered set of machines providing improved performance and compact design.

The PLS series now consists of three machines with different dimensions and output, which can be installed into any existing or new production line for tubes or bars. It is typical to find these in stainless tubes mills, seamless pipe production lines, bar drawing lines and before NDT test lines to clean products and improve reliability of the control.

The integration of PLS systems into a line avoids additional handling and allows both cosmetic polishing and an important reduction of roughness, on 100 per cent of the production, and with low running costs.

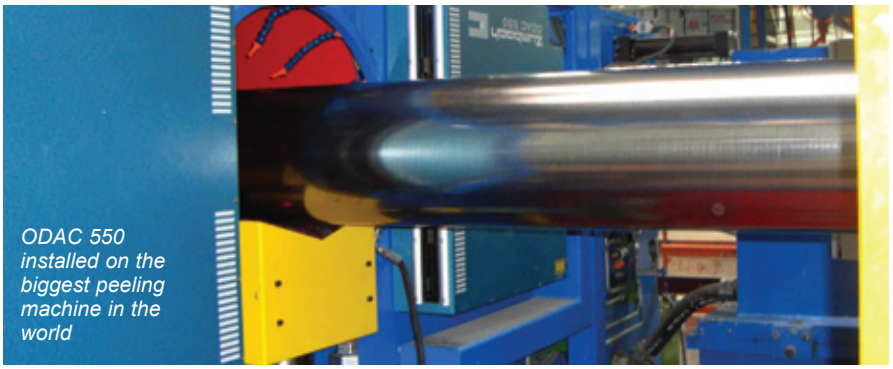
The most popular model is the medium machine, PLS 600, which features compact dimensions and can also work on shorter products. The covered workable range is from 6 to 104mm diameter, or from 20 to 220mm diameter.

Surface Engineering Srl – Italy
Website: www.surfaceengineering.it

Scanners with diameter control

ZUMBACH Electronic, Switzerland, has extended its range of ODAC® laser scanners for non-contact inline diameter measurement for large size solutions. With the ODAC 550 it is now possible to measure large steel bars, tubes and rolls up to 500mm or more at accuracies of a few metric microns and rates of up to 2,000 measurements/s. Other materials, such as titanium, brass, alloys and plastic, work as well.

This was made possible by the development of a revolutionary optical scanning technique with a highly parallel and seamless measuring field (no dead zone). The technology also allows mounting emitter and receiver far apart from each other, depending on the available space conditions. Typical processes where the system offers new solutions are peeling, grinding, polishing and straightening, as well as in quality control lines (NDT).



ODAC 550 installed on the biggest peeling machine in the world

The dimensional data for diameter, ovality, etc, can be fed directly to the user's network or displayed in real-time for the operator by USYS processors, and also for feedback to the machine. Complete accessories like secondary protection enclosures, cooling devices, air purging and air knives are available.

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

InSung

High Frequency Induction Pipe Welding Machine

Specification

- Capacity : 100~3,000KW
- Output Frequency : 100~600KHz
- Oscillation Type : MOS FET / IGBT
- Line Speed : 200M/Min

We can reduce your Electric Bill.

Products

- Heat treatment (Material Annealing)
- Bending Unit
- Melting Furnace
- Casting Purpose
- Pre-heater
- Brazing
- Soldering

Automatic Stainless Pipe Welding Scene

www.insunghf.com

Manufacture & Head Office : #380-26, Samrak Dong, Sasang Gu, Busan, S.Korea
Tel. +82-51-301-8150 / Fax. +82-51-301-8149
China Branch : rm1506, JiaHe Sunshine Bdg. No.76, JiuXin Road, Songjiang Dist., Shanghai, China Tel. 021-37693033 / Fax. 021-37693022
Contact E-mail. insungk@hitel.net

Accurate tube bending

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 ended up in the tolerance envelope.

Almost every technological progress is directed towards productivity, time saving and industrial automation; innovation, however, always comes into play when nobody expects it. New market niches appear at times when no one expects it. Niches spotted by specialists who turned the idea into a new module with the potential to stir up the market.

As for example TeZetCAD, the tube specialised software, state-of-the-art world market leader that gave the art of tube bending a new international definition. It is often the odds and ends of everyday work which make a worker’s life considerably easier. A banal innovation in the software thus becomes a sensation. It is like the Olympics, with the motto “Inspire a generation where hundredths of a second or a millimetre decides a win or loss”. Or like a buffet built up of lots of tiny fancy foods, TeZetCAD is made up of sophisticated modules which are demanded from the continuously developed 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 well cognisable you need perhaps only two measuring points, to stay in the pre-defined tolerance envelope.

Many companies work with the so called “planning process versions”. The operators pre-process the bending data for the different bending machines, work without using measuring machines. But sometimes it would help if they could measure with a measuring machine in order to optimise the process. TeZetCAD’s new function, called “Virtual Measurement”, introduced it to the market and offered once again a worldwide innovation. With the virtual measurement the measuring arm is replaced by the mouse. Instead of the well known measurement-sound to confirm the recorded xyz point, the user hears the mouse click.

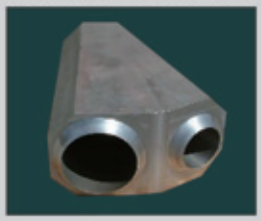
TeZet Technik AG – Switzerland
Email: leistritz@tezet.com
Website: www.tezet.com

HEBEI WENLONG PIPELINE EQUIPMENT CO.,LTD

PRODUCT RANGE:	MATERIALS:	STANDARD:
ELBOWS--LR 45DEGREE,90DEGREE RETURN BENDS--LR SR 180 DEGREE TEES:STRAIGHT AND REDUCING REDUCERS--CON &ECCENTRIC SEAMLESS FITTINGS DIMENSIONS:1/2"--40" SEAM WELDING FITTINGS DIMENSIONS: 26"--96"	A234-WPB,WPC,WP1,WP5,WP9,WP11,WP12,WP22,WP91, A860-WPHY42,WPHY52,WPHY60,WPHY65,WPHY70,WPHY80 A420-WPL3,WPL6,WPL9,WPL8 A403-WP304L,WP304,WP304H,WP316,WP316L,WP316H	ANSI B16.9,ANSI B16.28,MSS-SP-75 DIN2605-1,DIN2616-2,DIN2615-1,DIN2615-2 DIN2616-1,DIN2616-2 EN10253-1,EN10253-2







Hebei Wenlong Pipeline Equipment Co.,Ltd

Address: East of cangyan road,north of yanshan county,cangzhou city,hebei province,
ChinaNo.28 Wuliyao industrial area ,yanshan county,cangzhou city,hebei,China

Tel:+86-317-6216660 6216661 6396456 6396579

Fax:+86-317-6216662 6392682

Mobile phone:+86-15833271188

Mail:wenlong@hbtenghao.com pipefitting@hbtenghao.com

Msn:wenlong@hbtenghao.com

Alibaba account ID: wenlongpe

website:www.tenghaope.cn http://tenghao.en.alibaba.com

SAWH line pipes from India

JCO Gas Pipe Ltd specialises in manufacturing SAWH line pipes covering a range from 406 to 1,626mm (16" to 64") diameter, with wall thickness ranging from 5 to 25mm, conforming to IS 3589: 2001, IS: 5504, AP-5L up to X 70, and ASTM.

The company's state-of-the-art manufacturing plant is strategically located in the heart of India at Boregaon, Dist Chindwara, Madhya Pradesh (60km from Nagpur, Maharashtra), to cater to all clients/projects across India, with an annual manufacturing capacity of 100,000 MT.

The company serves the following industries/applications: water (distribution and transmission lines for irrigation systems, potable water requirements, power plants); structural (well casing, structural columns for high rise buildings, piling and casing pipes); industrial (cooling water lines, drainage pipes, smoke stacks, mining pipes, dredging pipes, air duct piping); and oil and gas (offshore and onshore pipelines, submarine and structural pipes for offshore drill rigs, cross country pipeline projects, terminal piping, conductors).

Products from JCO Gas Pipe Ltd

JCO also supplies pipes with a range of protective coatings. Liquid epoxy coatings provide excellent adhesion on mild steel, and good resistance to water, alcohol, solvents and chemicals, as well as good mechanical strength and abrasion resistance. Cement-mortar lining and Guniting (external cement lining) are compatible with alkaline influences, protecting pipes from corrosion.

Coal tar tape coating provides resistance to heat, water and cathodic disbandment, while epoxy based painting (internal/external) provides adhesion on cleaned steel work and excellent corrosion resistance.

JCO Gas Pipe Ltd – India
Email: contact@jcopipe.com
Website: www.jcopipe.com

ATOMAT

STEEL & TUNGSTEN CARBIDE ROLLS

BEYOND **ROLLS**

Steel & Tungsten Carbide

Atomat S.p.A. | 33047 Remanzacco [Udine] | ITALY | Strada di Oselin 16/17 | Phone +39 0432 648511 - Fax +39 0432 667101 | www.atomat.com info@atomat.com

Aerospace

The potential merger of BAE Systems and EADS would 'change the European defence market beyond recognition'

In mid-September, the two biggest European aerospace and defence companies said they were in discussions about a merger which, if it comes to pass, would create an industry behemoth with a combined market value of nearly $50bn. EADS, the parent of Airbus, and BAE Systems are looking to team up as their respective industries become increasingly competitive.

Writing from Paris in the *International Herald Tribune*, Nicola Clark pointed out that, while government contracts provide steady revenues, large European countries and the US are pulling back on their military spending. This weighs on London-based BAE, one of the world's leading defence contractors. For its part, Airbus (Toulouse, France) is seeing somewhat improved prospects for passenger airlines, its main customers, but only after difficult times. ("BAE Systems and EADS Say They Are in Merger Talks," 12 September)

"These are complementary businesses," Richard Aboulafia, an aerospace analyst at the Teal Group (Fairfax, Virginia), told the *Herald Tribune*. "This is a way of achieving balance from the defence side."

Ms Clark noted that the two big companies seemed to be taking their cues from competitors. With its acquisition of McDonnell Douglas in 1997, Chicago-based Boeing sought a more reliable income stream to offset the boom-and-bust cycles in passenger travel. After the terrorist attacks in 2001, Boeing's rapidly growing military business helped buffer it from a collapse in the demand for passenger jets.

But, wrote Ms Clark, the dynamic has shifted over the last several years: "Boeing's commercial business has soared while its military operations have been hampered by budget cuts in many countries. BAE, which is primarily a military company, is facing the same belt-tightening in its main markets, as Airbus has experienced a surge in orders."

Presumably a merger would help both firms contend with such volatility. Airbus accounts for about 65 per cent of EADS revenue. After the deal, according to a source close to the merger discussions, commercial aerospace would account for 53 per cent of revenue, with 47 per cent coming from military and security.

On the face of it, the merger would create one of the largest aerospace and defence organisations on the planet, Ms Clark was told by Guy Anderson, a senior defence industry analyst with IHS Jane's in London. The combination would, he asserted, "change the European defence market beyond recognition".

As to what it might mean in money terms, Ms Clark noted that the combined company would rival Boeing. Annual sales at the two companies topped $96bn in 2011. Boeing's revenue was nearly $70bn.

Of course, any deal faces regulatory scrutiny by the European Commission and also, perhaps, by the US government. But a merger of BAE and EADS (for European Aeronautic Defense and Space) could have prospects for success beyond the average. Ms Clark recalled the two companies' history of collaboration. They are partners on a number of projects, including the Eurofighter jet. BAE also held a direct interest in the Airbus consortium for many years before selling it back to EADS in 2006.

Steel

Nippon Steel's expansive joint venture with Australia's BlueScope Steel: a 'nice niche fit' for the building sector

"[13 August] marked the quietest day of Tokyo stock trading this year, as the market was becalmed by the start of the traditional Obon summer holiday. But for Nippon Steel, there are no dull days."

"JapanRealTime" blogger Kenneth Maxwell of the *Wall Street Journal* was referring to a fresh foray into overseas markets for the biggest Japanese steelmaker by output – already just seven weeks away from a formal merger with Sumitomo Metal Industries Ltd to form the world's second-biggest steelmaker by output after ArcelorMittal.

Nippon Steel Corp then announced that it will form a $1.4bn joint venture with Australia's BlueScope Steel Ltd to make construction materials and steel sheets for use in home appliances to be sold in Southeast Asia and North America.

Mr Maxwell observed that the benefits were more immediately clear for BlueScope, which gained $540mn in cash from the deal. That pushed up its shares 35 per cent, as the cash injection eases the company's debt burden.

For its part, cash-rich Nippon Steel (stock market value: close to $15bn) will be able to meld its know-how in metallic coatings for everyday products like refrigerators with BlueScope's expertise in the construction sector. ("Nippon Steel's Deal a Niche Fit," 14 August)

Broadly welcomed as a "nice niche fit" by analysts consulted by Mr Maxwell, the deal was also seen as providing yet another example of a Japanese giant going abroad for growth, this time to a part of the world where incomes are rising quickly. The expectation is that BlueScope's existing networks in Southeast Asia should help get business there.

UBS analyst Atsushi Yamaguchi concurs. "Nippon Steel has been trying to expand its reach in the construction business," he told the *Journal*. "With the deal, it bought time to develop its business in countries including Thailand, Vietnam and Malaysia."

An interesting sidebar to the announcement of the new entity – NS BlueScope Coated Products, to be based in Singapore – was the concurrent report that BlueScope Steel chief executive Paul O'Malley had elected to accept a pay freeze and forgo his bonus and long-term incentives. Leonie Lamont of *The Age* (Melbourne) noted that Mr O'Malley's executive decision was only the latest in a series of such efforts to placate shareholder sentiment on the subject of management accountability. It followed similar announcements by BHP Billiton head Marius Kloppers and Rio Tinto's Tom Albanese, both of whom also waived bonuses.

Ms Lamont wrote that the O'Malley example called attention to the "two-strikes policy" whereby, if an Australian company records two consecutive votes against an executive compensation arrangement, the item must be brought up for review by the shareholders.

After a restructuring of operations at Port Kembla and Westernport, BlueScope was believed likely to record a $1bn loss for 2012. In an indication that the two-strikes policy may be resonating in boardrooms, Mr O'Malley said he deemed his pay decision "appropriate" as he did not want the company's performance to be "obscured" by comment about his remuneration. ("Steel Maker a Harbinger of Post-Crisis Reporting," 14 August)

Also in *The Age*, business columnist Adele Ferguson cast the matter in cosmic terms. She wrote (14 August), "The move by BlueScope Steel boss Paul O'Malley to waive part of his salary package, on the same day his company announced more writedowns and sold 50 per cent of the group's Asian and US business, was a calculated move designed to clean the slate and herald a new era."

Statistics from the World Steel Association indicate a small rise in global crude steel production

The 62 countries reporting to the Brussels-based World Steel Association registered a total production of 130 million metric tons (mmt) of crude steel in July. These latest WSA findings, published 21 August, indicate an increase of 2 per cent compared to July 2011.

The crude steel capacity utilisation ratio for the 62 countries declined to 78.7 per cent in July 2012 from 80.4 per cent in June, for a 0.8 percentage point drop in the month.

Crude steel production results for individual countries in July 2012, as compared with July 2011, include the following:

(Asia)
China – 61.7mmt, up by 4.2 per cent;
Japan – 9.3mmt, up by 1.2 per cent;
South Korea – 5.9mmt, up by 4.4 per cent.

(Europe)
Germany – 3.6mmt, for a decrease (-2.1 per cent);
Spain – 1.0mmt, up by 7.0 per cent;
UK – 0.9mmt, up by 6.6 per cent;
Turkey – 3.1mmt, up by 9.7 per cent;
Russia – 5.9mmt, up by 3.6 per cent.

The US produced 7.4mmt of crude steel in July, up by 0.9 per cent on July 2011.

Brazil reported a decrease in crude steel production for July: 3.0mmt, -4.1 per cent from July 2011.

Elsewhere in steel . . .

A new Jindal Steel & Power Ltd plant at Angul, in the Indian state of Orissa, was started up in late August after many delays in obtaining the necessary mining leases and environmental permits, and over protests as to the land clearances imposed by the greenfield project. From initial rated capacity of 2 million metric tons per year (mtpy) year of steel plates, the plant will be gradually scaled up to a total capacity of 6 million mtpy. Production in September was to be 15,000 mt of plates.

Jindal also said a melting facility with a capacity of 1.6 million mtpy will be operational at Angul by April 2013. Taken together, the plate making and steel melting facilities will have cost $887mn, including approximately $590mn in loans from a consortium of Indian banks.

A consortium led by VAI Metals Technologies, a unit of the German industrial conglomerate Siemens AG, has received an order for a new steel plant at Nagarnar in the Indian state of Chhattisgarh. Siemens announced that the $358mn order was placed by the National Mineral Development Corp Ltd (NMDC), owned by the government of India. The plant, to be built as part of an integrated complex with an annual capacity of around three million tons of steel, is scheduled for completion by mid-2015.

Effective with September deliveries, Tokyo Steel Manufacturing Co, Japan's biggest construction steel maker, announced a 4.6 per cent price rise to $860 per metric ton on H-shaped beams, its main product. Prices for hot-rolled products went up by $25.50pmt. The company – which raised prices in July after cutting them by as much as 9 per cent in June – said the latest increases were adopted in expectation of a pickup in demand for building projects in Japan's northeast, which was devastated in the 2011 earthquake and tsunami.

Tokyo Steel's pricing strategy is closely watched by Asian rivals – such as POSCO, Hyundai Steel and Baosteel – seeking to boost their exports to Japan.

And in aluminium . . .

Kobe Steel Ltd on 22 August announced that first-phase construction of an aluminium forging plant at Kobe Aluminum Automotive Products Co (KAAP China) had been completed and commercial production begun at the facility in Suzhou, Jiangsu province. A joint venture of Kobe Steel and the trading companies Mitsui & Co and Toyota Tsusho Corp, the project in China produces aluminium forgings for

automotive suspensions. The same Japanese partners have a US operation: Kobe Aluminum Automotive Products LLC (Bowling Green, Kentucky).

As reported by the Tokyo-based daily *Asahi Shimbun*, first-phase construction at KAAP China required an investment of $31.5mn. The second, $57.5mn, phase is set for completion in March.

According to *forgingmagazine.com* (23 August), KAAP China aims to supply anticipated greater demand for automotive parts in China, including parts for lighter-weight vehicles that meet stricter fuel consumption regulations. Aluminium suspensions are seen as a critical element of this market developing among Japanese, US and European auto makers.

Of related interest . . .

On 31 August, the US blocked a request by China for World Trade Organization judges to probe American anti-subsidy measures targeting 22 products including steel pipes.

The Chinese case, which involves exports worth $7.3bn, follows a 2009 complaint against US duties on imports of circular welded carbon quality steel pipe, light-walled rectangular pipe and tube, and other products.

In that case, the WTO's Appellate Body concluded in March 2011 that the US Commerce Department violated global trade rules with its determination that state-owned suppliers of goods to Chinese producers targeted by the anti-subsidy duties were "public bodies" and therefore provided government financial contributions to manufacturers.

Other issues between China and the US at the WTO include a US complaint against China over access for products including grain-oriented flat-rolled electrical steel and cars.

Together with the European Union and Japan, the US filed a WTO complaint in March challenging Chinese export limits on rare-earth minerals.

Automotive

A US case at the World Trade Organization may signal a growing Western combativeness toward China

In another notable WTO complaint, the US on 17 September filed a broad case against China alleging unfair subsidies for car and auto parts exports. The American action came just 11 days after the European Union agreed to start the world's largest anti-dumping action ever, against imports of solar panels from China. Writing from Beijing in the *New York Times,* Keith Bradsher characterised the US trade case as "the latest sign of a greater willingness by Western governments to confront China".

In its WTO filing on the automotive exports, the US accused China of providing at least $1bn worth of subsidies from 2009 to 2011. Mr Bradsher cited Chinese customs data that put Chinese exports of automobiles and auto parts at a total of $56bn over this period.

He wrote, "Even if China were forced by the WTO to reverse the subsidies, the effect on Chinese exporters' total costs might not be significant."

But the *Times*'s Hong Kong bureau chief also pointed out that, while China exports virtually no fully assembled cars to the US, it has rapidly expanded its exports to developing countries. Those exports compete to some extent with cars exported from the US. ("US Files Trade Case Against China Over Cars," 17 September)

Hours after news of the American trade case began to circulate, but before its actual filing, China's commerce ministry announced on its website that it was filing a WTO case of its own, alleging unfairness in the American method of calculating penalty tariffs in anti-subsidy cases. The timing of the action, apparently coincidental, was even so typical of the tit-for-tat pattern that has come to define China and the US at the WTO.

The US complaint against China came at a critical point in the recent presidential campaign, as auto manufacturing states in the upper Midwest turned into battlegrounds. But its real importance may lie in what it signifies for a global trading system that rests, at least in part, on the assumption that companies will defend operations in their home countries by filing anti-dumping and anti-subsidy cases against importers.

"That logic has eroded in recent years in the case of China," wrote Mr Bradsher, "as practically every Western multinational company – and a growing number of smaller companies as well – has moved factories and other operations to China and become reluctant to risk retaliation by filing trade cases."

He cited the example of labour unions, which have the legal standing to bring many kinds of trade cases in the US, but seldom do so. With the exception of the United Steel Workers, which filed a legal petition in 2010 for the administration to review imports of energy-efficient technology, unions have shown a reluctance to file trade cases because of the six-figure and even seven-figure legal fees involved.

But nations can file WTO complaints; and Michael Wessel, a longtime trade adviser to the United Steel Workers, told the *Times* that American unions were eager for the government to file cases. This, Mr Wessel said – in reference to the case filed 17 September against China – "may be the start of a major shift in the US approach to trade enforcement."

The somewhat more confrontational US stance towards China in trade matters happens to come as Chinese trade surpluses erode and capital flight from China increases. But China's ownership of $1.2tn of US debt is also a factor worthy of consideration, and Mr Bradsher concluded on what sounds like a cautionary note.

"China," he wrote, "remains the largest foreign holder of [US] treasuries."

Oil and gas

An early judgment on the effect of the EU embargo on Iran's oil shipments: a not unqualified success

"The six-month run-up to the implementation of a full European Union embargo on Iranian crude left many market watchers complacent about the impact sanctions would have on consumers in Europe."

Writing in the *Wall Street Journal* about six weeks into the EU embargo, Sarah Kent observed that, by 1 July, most European refiners had already replaced Iranian oil with crude from countries like Saudi Arabia, Russia and Iraq. Oil prices were close to their lowest level since May. And yet, she noted, a significant dent to one Italian refiner's profits in the second quarter suggested that – although European refiners had kept the oil flowing – the cost of sanctions "could still prove problematic." ("Iran Oil Embargo Has Ripple Effect for Europe," 10 August)

Saras, one of Italy's biggest private oil refiners, announced a net loss of $162mn despite a sharp drop in oil prices over the period. While other factors played a part in the disappointing results, it was fairly evident that the loss of Iranian crude was exacerbating an already difficult situation.

According to the Paris-based International Energy Agency (IEA), Mediterranean refineries arguably have been hit hardest by the sanctions. They have access to few immediately available substitutes to Iranian crude; and the price of the default alternative – Russian Urals crude – shot up after the full EU embargo was implemented.

David Wech, head of research at JBC Energy in Vienna, pointed out that soaring prices for crude grades of a similar quality to Iranian oil had diminished the benefit that refineries could reap from the fall in the benchmark price in the first quarter. He told the *Journal*, "Let's say the Iran story has deepened the crude imbalance that is there anyway in a market where there is too much light, sweet stuff and not enough sour barrels."

Indeed, Ms Kent noted, speculation on the effects of the sanctions against Iran – with Iranian oil simply redirected en masse to willing Asian buyers, freeing up other oil grades to flow back to Europe – might have been overly optimistic. But the data are open to interpretation. According to the IEA, exports of Iranian crude plummeted by nearly 750,000 barrels per day (bpd) in July to 1 million bpd. To David Fyfe, head of the IEA oil markets division, if anything the sanctions looked to be being even more successful than the EU and US were planning. Still, wrote Ms Kent, "Many believe that July and August would be the toughest months for Iranian exports, and that they could bounce back slightly in the autumn as Asian buyers find ways to navigate the sanctions."

JBC's Mr Wech inclined to that view. "Without question Iran had big problems to sell its crude in July," he told Ms Kent in mid-August. "But we think that that will improve from now on."

Iran has been under embargo from the US

With Iran's oil inventory growing because of the Western embargoes, the *Tehran Times* on 15 September carried a report from the Mehr News Agency of a large sale of Iranian oil through private companies. Hassan Khosrojerdi, head of the oil products exporters' union, was quoted as saying that a private consortium had signed two agreements to sell about four million barrels of Iranian crude "to be delivered in the [Persian] Gulf to foreign buyers".

Up to that point, the National Iranian Oil Co (NIOC) was solely responsible for exporting the Islamic Republic's crude. The news agency took note of the official's complaint that the Central Bank of Iran, the country's main conduit for oil revenues, had been slow to devise and approve a financial mechanism for the sale of oil by private companies. Without that, Mr Khosrojerdi said, the private sector "cannot take any serious action to export oil".

The Central Bank of Iran is under sanction by the US. Entities that do business with it may be frozen out of US financial markets.

Elsewhere in oil and gas . . .

Saudi Steel Pipe Co (SSP) has received contracts worth $57mn to supply Saudi Arabian Oil Co with steel pipes for lining oil wells and gas pipelines. As reported by *Zawya Dow Jones Newswires* (26 August), the pipe maker told the Saudi bourse website that the Aramco order would be fulfilled by the first quarter of 2013. SSP, which manufactures black and hot-dip galvanised welded steel pipe at its headquarters factory in Dammam, will utilise raw materials supplied by Saudi Basic Industries Corp, or Sabic. In July, SSP reported that higher raw material prices were weighing on its profit margins.

On 2 August, a 2" plastic gas pipe ruptured in the same San Francisco suburb of San Bruno where a pipeline explosion killed eight people in 2010. A spokesman for Pacific Gas & Electric Co told the Associated Press that the line burst when someone dug into the pipe near the site of the previous blast; a fire dispatcher said there were no injuries. The explosion on 9 September, 2010, of a high-pressure transmission line sparked a gas-fueled fire that destroyed 38 homes and laid waste to parts of the same neighbourhood.

Dorothy Fabian, Features Editor (USA)

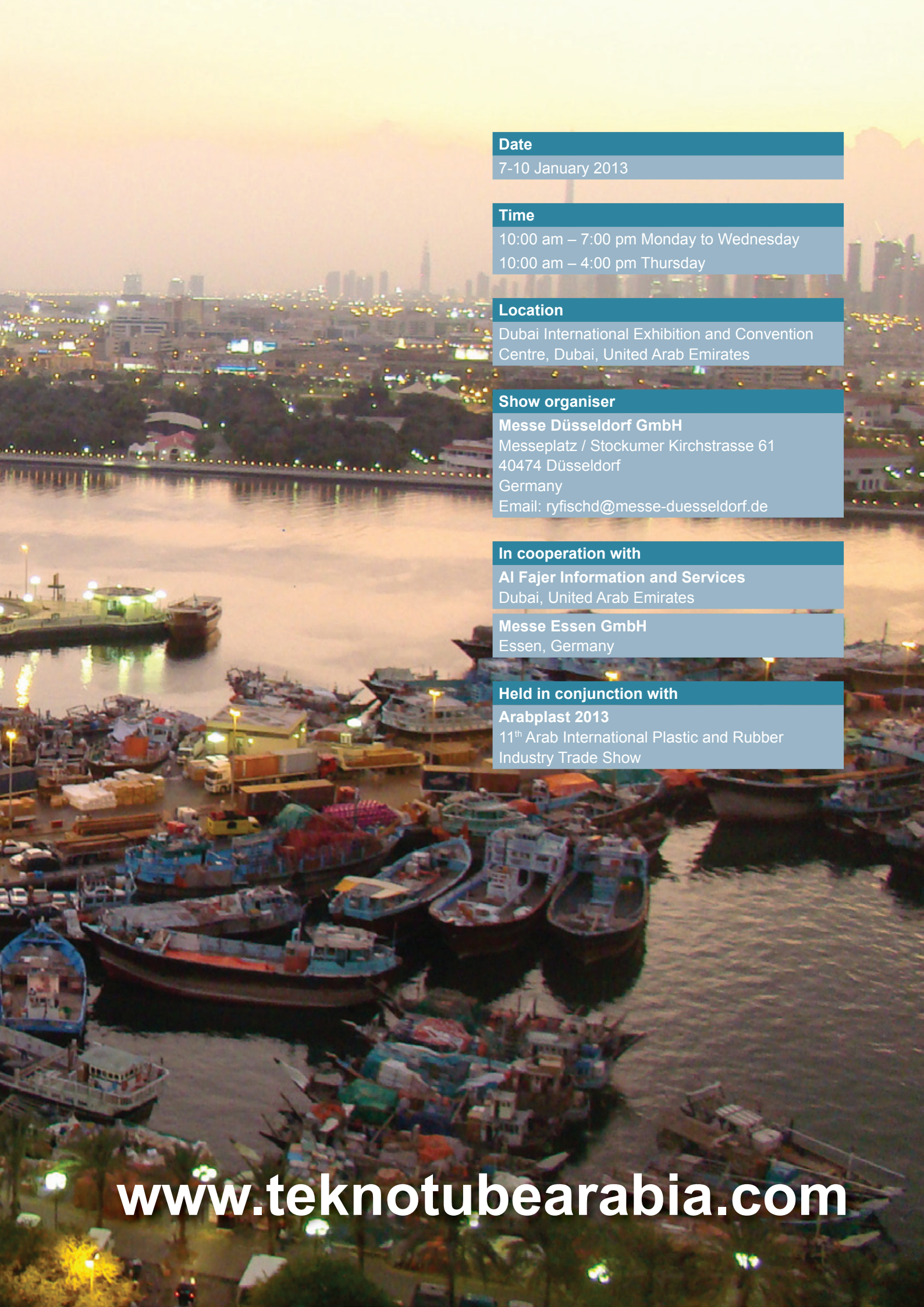
7-10 January 2013

Tekno/Tube Arabia is returning to the Dubai International Convention & Exhibition Centre in the United Arab Emirates in January. The event will be jointly organised by Al Fajer Information & Services and Messe Düsseldorf (renowned as the organiser of Tube and Metec – the leading international tube and metallurgy trade fairs held in Düsseldorf, Germany).

As the only specialised and established trade fair for these industries in the Middle East, Tekno/Tube Arabia offers an ideal platform for companies to gain access to this thriving market. The construction and manufacturing sectors are strong and important components of the Middle East economy and are especially benefiting from the latest discoveries of oil fields on Dubai's shores – resulting in increased demand for related machinery and equipment. Dubai's modern infrastructure and strategic position at the crossroads of the entire Arabian region makes it an important centre for base metals. From aluminium and steel to precious metals, Dubai provides the entire GCC and Middle East region with base metal products and equipment.

In addition, the robust oil and gas industry drives the tube and pipe sector to new heights. Due to new infrastructure projects, investments in the Gulf's pipe, tube and steel industries are expected to exceed $20bn until 2020. The GCC plans to add more than 21,000km (13,000 miles) to the current pipe network, resulting in demand for 5.3mn tons of steel pipes during the next five years. Exhibitors at Tekno/Tube Arabia 2103 will present the latest in metallurgical plants and rolling mills, foundry machinery, aluminium and non-ferrous metals, sheet metal technology and products, wire manufacturing and finishing machinery, fastener and spring making technology, welding equipment, thermo-process technology, surface treatment and used machinery as well as raw material, tubes and accessories, tube and pipe machinery and pipeline and OCTG technology.

The trade fair's last staging in 2011 attracted 18,860 visitors from 107 nations (includes attendees at the concurrently held ArabPlast trade show). The majority of the buyers came from the GCC and African countries as well as from India.



Date

7-10 January 2013

Time

10:00 am – 7:00 pm Monday to Wednesday
10:00 am – 4:00 pm Thursday

Location

Dubai International Exhibition and Convention Centre, Dubai, United Arab Emirates

Show organiser

Messe Düsseldorf GmbH
Messeplatz / Stockumer Kirchstrasse 61
40474 Düsseldorf
Germany
Email: ryfischd@messe-duesseldorf.de

In cooperation with

Al Fajer Information and Services
Dubai, United Arab Emirates

Messe Essen GmbH
Essen, Germany

Held in conjunction with

Arabplast 2013
11th Arab International Plastic and Rubber Industry Trade Show

www.teknotubearabia.com

Tube and pipe mills

Photo: Olimpia 80 Srl

This section of Tube & Pipe Technology reviews the basic apparatus of tube and pipe production: machinery which, over generations of hands-on practice, continues to evolve with advances in computer numerical control (CNC) and related developments. How to gauge "progress" year-to-year in a technology whose default setting is already state-of-the art?

A useful exercise is to note how very little attrition there is in a modern tube and pipe plant. A builder of welded seam tube mills offers – in addition to the classic industry standard still in wide use today – a universal shaft-driven style and a heavy-duty model. With the company's single-point adjustment (SPA) feature, the new owner of one of its used units takes possession of a mill that is essentially re-engineered for a new day.

Proven methodologies are not supplanted but enhanced. The companies represented in these pages know that the way forward lies in cautious and painstaking modification of the time-tested machinery and equipment of tube making.

Tube mills for carbon and steel

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

The company can propose the innovative and patented technology named Linear Cage Forming, in two different solutions: for round tubes and for square and rectangular tubes.

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

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

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

The main advantages of the system are adjustment flexibility; automatic change of tube OD and gauge; significant change over time savings; tool cost reduction for round tubes; labour cost reduction; and easier and faster maintenance.

The Linear Cage Forming for square and rectangular tubes, developed and patented by Olimpia 80, can carry out the forming change operation in a very short time and without any replacement of rolls.

The system is applied to any part of the production line: forming, welding, sizing or straightening. The line set up is, as a result, totally automatic.

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

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

Olimpia 80 Srl – Italy
Email: olimpia@olimpia80.com
Website: www.olimpia80.com

Advantages of zero impact

FOR decades tube and pipe mills have been plagued by damages to pipes and threads, high level noise exposure, safety and health hazards associated with traditional processes and hydraulic-based material handling equipment.

“Hydraulics has historically been the choice for power source for pipe movement,” said president Manfred Gollent. “Manual intervention by operators is very high, which raises the likelihood of injuries and other safety issues. Throughput on finishing lines is not optimal due to manual intervention.”

Over the past four years, Automation Engineering Corp has been designing equipment to provide low-impact or no-impact solutions to improve finishing floor operations. The company has developed an all-electric, automated solution that requires little to no operator intervention, is environmentally friendly, and safely handles tube and pipe up to 7,000 lb (3,200kg) and 20" (508mm) in diameter.

AEC is currently installing a low-impact system for a customer in the USA. The new plant for small diameter OCTG tubes for horizontal drilling will open in 2013.

“Threaded connections, especially premium connections, must be carefully protected,” Mr Gollent said. “Pipes are most vulnerable during finishing floor operations prior to the insertion of thread protectors. Collisions with equipment and other pipes must be avoided.”

To do this, AEC uses specially designed chain conveyors with roller dogs to maintain separation between pipes. Rotating lift arms and walking beam mechanisms raise or lower pipe sequentially in a controlled manner. Electric gear motors allow for programmed acceleration and deceleration at pickup and drop-off points as well as other required movements.

Pac-man escapements allow one pipe to be separated from a pipe queue with minimum impact. Flat or gently angled rails are preferable to traditional angled gravity skids in accumulation areas. The use of lift (shaker) bars provides a more controlled means of transferring pipes than gravity.

“Forces generated from pipe impact can easily exceed ten times the normal static and dynamic forces of handling pipe. If shock and impact loading is not properly controlled by design, the equipment must handle these loads,” Mr Gollent said. “This requires heavier structural frames, larger diameter drive and rotating shafts, linkages, bearings, and couplings in addition to unnecessary impact loads on the floor system.”


Olimpia 80 Srl

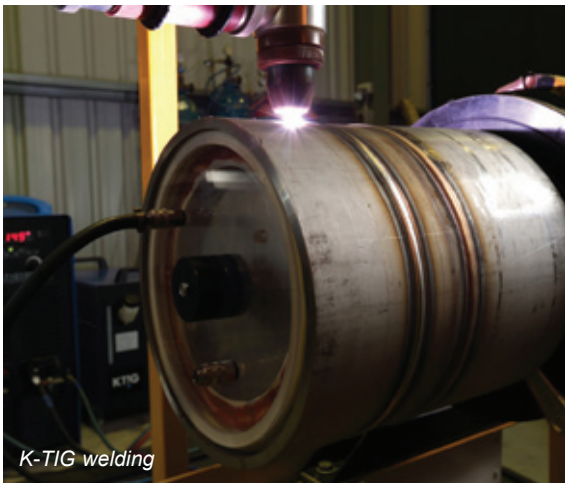
Automation Engineering Corp – USA
Website: www.teamaec.com

New technology redefines tube and pipe welding

AUSTRALIAN welding innovator K-TIG has gone into full production of its keyhole welding solution, and has taken the decision to focus predominantly on the tube and pipe welding market for the next 12 months.

The Adelaide-based company, whose K-TIG welding system performs welds in 10x to 100x the speed of traditional TIG welding, has completed extensive product trials in seven countries and is now shipping its first production units to customers in Australia and worldwide.

K-TIG has also received the attention of government, with federal minister for small business Brendan O'Connor visiting the company and performing a weld on a stainless steel pipe which would have taken a skilled welder six hours – and completed it in under three minutes. K-TIG's first export sales are to the Middle East and the UK, where the company's recently appointed distributors, Dubai-based PCT and WB Alloys in England, will focus on the tube and pipe, oil and gas and other markets.


K-TIG welding

The new welding technology, originally developed by the CSIRO before being acquired by K-TIG, enables thick gauge materials, including traditionally difficult metals such as stainless steel and titanium, to be welded in less than one-tenth of the time possible with standard welding processes.

K-TIG general manager, international development, Neil Le Quesne, said, "K-TIG's technology is transformational, and likely to be highly disruptive within the welding equipment market. The lightning speed of the welding process and, in many cases, a 95 per cent reduction in power and gas consumption dramatically reduces both the cost and carbon footprint of industrial welding."

"Due to the single-pass, full-penetration nature of the process, the weld quality tends to excite the head of engineering, the enormous cost savings get the attention of the CFOs while the massive reduction in energy consumption tends to get interest from CEOs," said Mr Le Quesne. "The opportunities within the tube and pipe sector are enormous. There are 150 million kilometres of new pipeline currently in the planning or construction phase around the world."

The system is cloud-enabled and records comprehensive weld data for audit and control purposes. The recording and auditing capabilities of the system are considered vital to the tube and pipe sector, where traceability is now becoming a critical issue.

K-TIG founder and R&D manager Dr Laurie Jarvis led the 20-person CSIRO team that developed the underlying technology. "Creating and stabilising a keyhole in molten metal using TIG welding was previously not thought possible," said Dr Jarvis. Fully understanding the physics involved and developing techniques to fully control the process took Dr Jarvis and his team more than eight years. "The K-TIG process excels with materials that are traditionally very challenging to weld. Stainless steels, titanium, zirconium, nickel alloys, cobalt alloys and others are welded to nuclear industry standards in a fraction of the time taken by traditional TIG welding."

K-TIG – Australia
Email: sales@k-tig.com
Website: www.k-tig.com

Tube rollform machinery

UNIVERSAL Tube & Rollform offers customers a complete turnkey system from the initial design to start-up. Located under one roof with Universal Controls Group, a rapidly growing controls supplier, its unique relationship enables it to offer a wide array of cost efficient services: extensive inventory available of quality used and reconditioned machinery; line upgrades and repower kits; custom engineering services; full import and export services; cash for your surplus machinery; new drive systems, new components and new accessories; installation and start-up services; home of the U-TRAK length control systems for flying cut-offs; and home of the HavenTrak flying shear tube cut-off.

Its 125,000ft^2 warehouse is fully stocked and ready for a hands-on inspection of the equipment a customer needs. It can offer many different types of tube mills or rollformers to fit any specific requirements.

Fax or email a drawing of the shape required to fabricate, and an experienced team will get to work assembling a complete line quotation to produce the part required. Universal can help increase accuracy and productivity while keeping investment low.

Visit the Universal website at www.utubeonline.com to browse photos and specifications of its current inventory and see the links on the homepage. Click on 'universal controls group' to see the very latest in mill controls, die accelerators and length control systems.

Universal Tube & Rollform is a one-stop resource for tube and pipe and rollform machinery.

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

BORU

The meeting platform for

Buyers, traders and manufacturers of

TUBE, PROFILE, FITTING and FLAT PRODUCTS

You are invited to visit the BORU Fair, the unique international exhibition of the industry in Turkey.

BORU 2013

Date: 28 – 30 March 2013

Venue: Istanbul Expo Center, Turkey

For further information: www.borufair.com

Note: **"Visitor Programme"** will be available for the visitors from Middle East and North Africa as of November 2012. For detailed information: www.borufair.com/visitor-program

www.borufair.com

THIS FAIR IS ORGANIZED WITH THE PERMISSION OF THE UNION OF CHAMBERS AND COMMODITY EXCHANGES OF TURKEY IN ACCORDANCE WITH THE LAW NUMBER 5174.

ORGANIZER İhlas Fuarcılık

SPONSOR ITA International Tube Association

Advances in equipment design: universal forming and cassette stands

KUSAKABE Electric & Machinery Co Ltd of Japan, a leading pipe and tube mill manufacturer, is continually developing, innovating and improving the design and manufacture of pipe and tube mills for the international market. From API, oil, gas and structural to automotive and general engineering applications, Kusakabe can supply the whole mill or individual pieces of equipment to meet your production requirements. All of the equipment is designed and built in Japan to exacting Japanese standards and workmanship.

The forming section of the OG&S mills is made up of an entry guide, the universal forming section followed by the patented cassette style fin pass section. The universal forming section includes the breakdown passes and all the forming up to the fin pass stands. Size changes are fully automatic and controlled by the motorised roll positioning equipment in conjunction with an HMI (human machine interface) screen with its menus and recipes. The positioning of the rolls is driven to the predetermined optimum position for each product.

The forming section using universal tooling requires no rolls to be changed; the position of the rolls are adjusted to suit all the diameters to be made. The Kusakabe universal forming is designed so that the strip is easily visible as it progresses through the forming process. This makes it easy for operators and engineers to see what is happening in the forming process. The forming flower used to shape the pipe minimises the work hardening while providing for the ideal edge presentation for HF welding.

The fin passes are cassette stands and typically consist of three-, four-roll stands where two of the rolls are driven in each stand. This design allows for a very strong stand plus the added strength of the cassette results in considerably lower distortion under load than the conventional stand configuration. The position of the four rolls can be individually adjusted and the position of the cassette can also be adjusted, which allows for easy adjustment of the pass line height. As the four rolls are contained within a cassette, when it comes time for a size change all of the cassettes are changed at the same time.

The cassette changeover is conducted automatically and typically takes 10 to 15 minutes with no operator involvement. When the changeover is complete the motorised roll positioning equipment, in conjunction with the HMI screen and the menus and recipes, positions the rolls at the predetermined optimum position for each product.

Kusakabe Electric & Machinery Co Ltd – Japan
Email: sales@kusakabe.com
Website: www.kusakabe.com

THE ITALIAN TECHNOLOGY

全自动的钢管 或灯柱 成型机

www.somoproduzione.com

Tube and pipe mill specialist

RAFTER Equipment Corporation manufactures tube mills and pipe mills, roll forming machines, cutoff machines, and other related mill machinery. The company is able to provide equipment for tube sizes from 0.188" (4.76mm) to 16" (400mm) OD. It has supplied mills using high-frequency induction (HFI), high-frequency contact (HFC), TIG/plasma, and laser welding. Its equipment has been used for the production of the following tubular products: mechanical, structural, HSS, energy, API, refrigeration, automotive, appliance, and other tubular products.

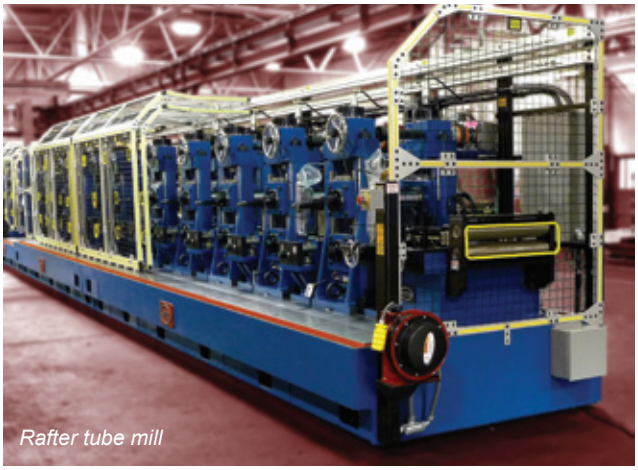
Rafter has remained busy during the recent economic downturn. A duplicate of the RT-4000 speciality mill sold last year is currently under construction. The mill is capable of producing energy tubing up to 76.2mm OD x 6.4mm wall (3" x 0.25") with material yield strengths up to 1,000 MPa (150,000 PSI). Deliveries of a RT-3000 mechanical mill and a 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, levellers, coil end joiners, strip accumulators, flying saw cutoffs, and tube bundling and packaging equipment. Although the mechanical portions are manufacturing 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.hks-prozesstechnik.de) to become the exclusive United States 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.

Rafter Equipment Corporation – USA
Website: www.rafterequipment.com


Rafter tube mill

KUSAKABE

Let's do Japan Quality

Feast on our comprehensive Tube Mill Menu.

MENU

Tube Mill Full Course Service

Basic Engineering
Detail Engineering
In-house Manufacturing
In-house Assembly
In-house Shop Test
Transportation
Supervision for Installation by our own engineers
Supervision for Start Up by our own engineers

After Sales Service

Online Support
Remote PLC Diagnosis

MENU

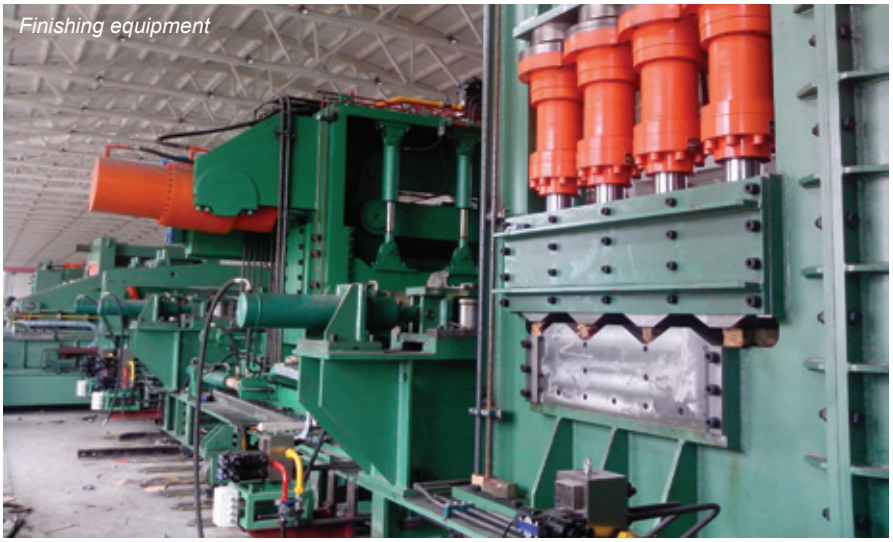
Products Line Up

Uncoiler, Leveler, Shear & Welder
Horizontal looper, Vertical looper
Forming mill with various kinds of quick-change systems
SQ stand, OB and IB cutter
Sizing mill, Modular Sizing mill
Milling cutoff, Double press cutoff, Rotary Disc cutoff
Piling machine, Bunding machine, Facing machine

KUSAKABE ELECTRIC & MACHINERY CO.,LTD Kobe, Japan
Information : http://www.kusakabe.com Contact : sales@kusakabe.com

Finishing equipment and tube mills

QUINGDAO Haokun Machinery Manufacture Co Ltd specialises in the production of ERW pipe mill (diameter 219-660mm) and SSAW pipe mill (spiral welded pipe mill – diameter 219mm-3,500mm) and its related finishing equipment and auxiliary equipment, such as hydrostatic testers: Ø89mm-Ø2,540mm, end bevelling machine (Ø60mm-Ø3,100mm), slitting line (1,500×10mm, 1,750×14mm and 2,200×16mm), edge milling machines (1,750×16mm and 2,000×25.4mm).


Finishing equipment

Now a spiral welded pipe mill with diameter 610-2,540mm has been produced by Qingdao Haokun Machinery Manufacture for Kianpersia company (Iran) and will be delivered shortly. Haokun company also sold a set of 2800T/D2540 hydrostatic testers and a set of end bevelling machines with diameter 610-2,540mm to Kianpersia company in 2010.

Kianpersia company is very satisfied with the equipment's quality, so it continues to order a set of spiral welded pipe mill with diameter 610-2,540mm in 2011.

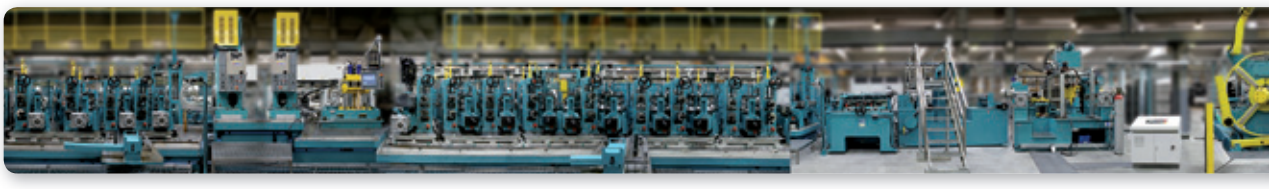
Quingdao Haokun Machinery – China
Website: www.chinaerw.com

MTM
TUBE MILLS

Technology: the ERS

The Energy Recovery System (ERS) stores the kinetic energy developed by decelerating the cutoff carriage into an energy accumulator, allowing this same energy to be used to accelerate the carriage during the next cutting cycle. Thanks to this innovative MTM solution, MTM equipment saves up to 70% of the energy used for cutting. MTM ERS technology helps you save costs while taking care of the environment.

MTM: the right tools to enhance your success.



Officine MTM SpA
via Palladio, 36 | 30038 Spinea Venezia | Italy
tel +39 041 5089611 | fax +39 041 999611
www.mtmtubemills.com
sales@mtmtubemills.com

Blasting, coating, jacketing and galvanising technology

Photo: Industrial Nanotech

Is blasting an outlier among these technologies? Not unless a perfectly clean and blemish-free surface is no longer a requirement for a successful coating, jacketing or galvanizing operation – and that will be all over when reality is all over.

In the meantime, the specialists whose products and services are reviewed in these pages of Tube & Pipe Technology function in the real world, where the slightest defect in method or practice can quickly grow into a catastrophic failure.

It is a world of unremitting and progressive demands and ever-higher standards, in which they are very much at home.

The advantages of galvanising

THE tube and pipe industries are, like many sectors worldwide, constantly looking for more efficient, effective and commercially viable ways of operating. As a process, galvanising is incredibly flexible, long-lasting and environmentally friendly, and one which can be incorporated into a variety of projects, both large and small-scale. So, how does the process work, what is the technology behind it and what sorts of projects within the industry is the process being used on?

Hot dip galvanising is essentially the process of coating clean steel with a layer of molten zinc to protect the item from corrosion and provide a long-lasting, durable covering. Because it forms a series of zinc alloy layers with the iron in the steel it is more robust than other coatings that only bond chemically or mechanically; it also has the added advantage of fully coating the steel, inside and out.

The galvanising process starts with cleaning the steel to prepare it for galvanising. Cleaning involves the complete removal of light grease, scale and dirt using a variety of techniques. Commonly, the steel product is dipped into an alkaline or acidic degreaser and then rinsed before being dipped in a hydrochloric acid rinse at room temperature. After cleaning the product is rinsed and then usually dipped in a flux solution, which is typically made up from zinc ammonium chloride held in a temperature range between 65°C and 80°C. This final stage removes the last traces of oxide from the surface and coats the product with a thin film of flux. After the steel has dried, it is dipped into the molten zinc which is around 450°C. Finally the work may be immersed in water to cool it, or allowed to cool in air.

When the steel is dipped into the molten zinc, a series of zinc-iron alloy layers are formed. The main thickness of the coating is created at this time, after which the metallurgical reaction slows down so even if the steel remains in the galvanising bath for a considerable time, it will not form an overly thick protective layer. Typically items will be dipped for four to five minutes, and when they are removed a layer of pure molten zinc will be taken out on top of the alloy. It is this that cools to show the bright, shiny appearance generally associated with newly galvanising products.

Zinc is an essential mineral, which is needed to sustain life and is found in many places including rocks and soil, as well as plants, animals and the air that we breathe. It's widely abundant and can be indefinitely recycled. It reacts with air to create a surface film that is insoluble to rainwater and acts as a barrier to completely prevent moisture and oxygen reaching the steel itself.

Not only does Zinc lengthen the lifespan of steel, but it is energy-efficient throughout its production and whole lifecycle. The galvanising process uses resources considerately to ensure a relatively low environmental burden, and galvanised steel can easily be recycled with steel scrap or it can be removed, re-galvanised and then reused.

The past twelve months alone has seen Wedge Group Galvanizing undertake a number of national and international projects of all shapes and sizes.

One such project involved the galvanising of steel used to create a number of pipe flanges connecting pipelines carrying oil as part of

The cattle market

petrochemical giant BP's (Floating Production Storage and Offloading) FPSO PSVM scheme in waters off the west coast of Africa. The galvanised pipes were installed as part of a system used by the offshore industry to receive and process hydrocarbons, which then store oil until it can be offloaded onto a tanker or transported via pipelines. The FPSO PSVM project is aiming to tap into four oil fields off Angola with waters ranging from 1,500 to 2,500m deep. Galvanising the steel was essential in helping reduce the risk of rust and corrosion.

A project closer to home has seen the Wedge Group galvanise 120 tons of steel tubes, spanning almost 19 miles, as part of the production of more than 300 animal pens at the North West Auctions cattle market in Cumbria, which officially opened in August. A series of 48mm-wide tubes were manufactured to put together all the fences and gates needed to produce 2.7m² pens, which were then galvanised to ensure long-term protection against the highly corrosive environment.

Wedge Group Galvanizing – UK
Website: www.wedge-galv.co.uk

HF welding application

DYNAMIC-CERAMIC is a leading producer of advanced ceramics in the UK and its unique Technide® S10 range has consistently outperformed any other hard material in its class, it claims.

Tube producers are familiar with the common problems associated with the HF welding application. However, the company's high quality precision ceramic weld rolls can remove many of these troublesome problems, resulting in longer tool life, reduced downtime, higher quality product from the mill and reduced costs.

Dynamic-Ceramic's precision weld rolls eliminate material pick up problems that are commonplace with high frequency welded tubes.

This is particularly prevalent with non-ferrous materials where surface condition is critical. Stainless, brass and aluminium tube manufacturers can achieve substantially improved surface finishes with no risk of rolling weld splatter or particles into the tube surface.

Some producers have even changed to ceramic rolls through the complete forming section of the mill. Dynamic-Ceramic's weld rolls typically achieve 10 to 12 times more life than H13 or D2 tool steel rolls; in some instances this has been as high as 20 times.

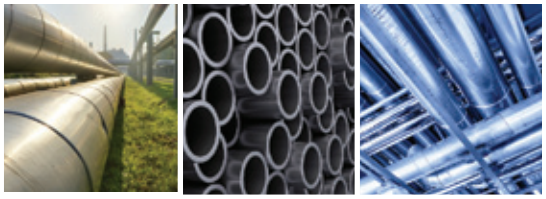
Practical tests have shown that ceramic weld rolls can reduce HF weld power by as much as 30 per cent. This actually also reduces unwanted 'field' heating of local components such as shafts, stands and lubrication points. Ceramic rolls also offer huge benefits for small diameter tubing manufacturers where upgrading to ceramic weld rolls can reduce weld vee length. This ensures more efficient positioning of induction coil and impedor, which can reduce the 'heat affected zone' and produce a more aesthetically pleasing product.

Working in close partnership with you, and utilising its advanced design capabilities, Dynamic Ceramics will be happy to design and custom-make ceramic solutions that meet all required performance and quality requirements.

Dynamic Ceramic – UK
Website: www.dynacer.com

Advanced ceramics

MetalBulletin Events



3rd Middle East Steel Tube & Pipe Conference

9-10 January 2013
Radisson Royal Hotel, Dubai

Topics on the agenda include:

- The outlook for oil and gas projects in the region and forecasted volumes of tube these will require
- How much potential does Iraq hold? How can this market be tapped into?
- Chinese dumping and how this affects the region
- Forecasted demand for the construction sector
- The shape of markets in the wake of political unrest
- Developments in seamless, SAW, ERW and all other major pipe technologies

15% off for TPI readers

Call
+44 (0) 20 7779 7222
or email
marketing@metalbulletin.com

Media partners:

Tube Products INTERNATIONAL
The trade magazine for tube and pipe products

TUBE & PIPE Technology
The international trade magazine for the Tube & Pipe Industries

For more information and to register please visit
www.metalbulletin.com/events/mestp

Corrosion prevention

NANSULATE® Diamond fast cure insulation and corrosion prevention coating by Industrial Nanotech, Inc was created for insulation of pipes, tanks, and equipment to reduce energy costs and insulate components with a liquid thermal barrier. It can be sprayed onto valves, cookers, chilled water pipes, and other previously difficult to insulate surfaces.

Easily applied with a paint sprayer, brush or roller while equipment is either in service or down for maintenance, this opaque, pebbled finish coating is water-based, non-toxic, and low voc. Insulate surfaces from -40°F to 400°F, including steam pipes, boilers, chilled pipes, heat exchangers, ovens, and more. Direct to metal with superior corrosion prevention abilities. Durable finish stands up well to humid environments.

The short cure time of 2-10 days allows for a fast return to service for low or high temperature equipment, and almost immediate insulating results.

Industrial Nanotech – USA
Email: contact@nansulate.com
Website: www.nansulate.com/store/diamond

Pipe end preparation

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

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

Since the cutting process is a cold cutting one, heat affected zones are completely eliminated. The machines can be used in all positions, also over head, 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 them to cut and bevel in one simultaneous operation.

Protem SAS – France
Website: www.protem.fr

Duratrim solves welding problems

A COMMON problem in the HF welding process for coated materials is the inclusion of oxides in the weld zone: this can cause premature weld failure and quality control rejects. This can lead to huge costs in scrap and ultimately loss of reputation with the end customer. Duratrim is a new edge conditioning system specifically designed to solve the problem with aluminised and galvanised tubular products.

It works by removing a very small amount of material from the top, bottom and sides of the strip prior to entry into the forming mill. The unique design differs from other edge preparation systems as Duratrim allows the strip to 'float' through the unit rather than 'forcing' it through scarfing inserts (like other systems). This is made possible by four pairs of carbide scarfing inserts mounted in specially designed tool holders. The tool holders operate with continuous positive pressure on the strip moving in both vertical and horizontal directions, thus ensuring small variations

Reducing problems with welding

in strip profile, width and thickness are taken care of automatically.

The system requires only compressed air to operate and has individual pressure adjustment of all eight scarfing inserts making it possible to individually adjust the amount of material removed. Insert and tool holder design give an edge profile at the welding point which can reduce the inside and outside welding bead. Less 'squeeze' out is required leading to significant benefits including: reduction of strip width offering material savings; increased production 'uptime'; higher weld integrity; increased life from ID/OD scarfing tools; and increased life from impedors.

The unit is positioned at the entry end of the mill between the accumulator exit and mill forming bed. The strip is then simply fed through the Duratrim and the insert tool holders adjusted prior to starting. After starting no further adjustment is normally required and standard cross welds will comfortably pass through without disruption to production. Duratrim can also be used offline for edge treatment in a 'coil to coil' process; typically this would be for TIG mills where one unit is utilised for multiple process lines.

While Duratrim is particularly effective for aluminised and galvanised strip it can also be used for regular steel as well as non-ferrous materials such as stainless, brass and aluminium.

Superior Technologies Europe – UK
Website: www.st-europe.co.uk

TUBE & PIPE
管道技術 Technology

6 ISSUES A YEAR
CHINESE AND ENGLISH LANGUAGES
LATEST INDUSTRY & TECHNOLOGY NEWS
TECHNICAL ARTICLES

The international magazine for the Tube & Pipe Industries

Now it's time to book your advertising for the 2013 issues !

www.tubeandpipetechnology.com

46 Holly Walk, Leamington Spa, Warwickshire CV32 4HY, UK

CONTACT INTERNATIONAL SALES: Tel: +44 (0)1926 334137 - tpt@intras.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。

冷轧机翻新

EZTM JSC已经开发了许多第三种型号管道冷轧机翻新解决方案，包括改进的机座DUO，有垂直轧辊配置，以及拥有单边驱动的环模。

因机座设计，工作辊之间的中心距和安装的小齿轮的结合与最佳矫直直径一致。

这减少了影响成品管子质量的轧制轴向力，使轧制过程稳定，减少小齿轮和机架磨损，并提供因重磨造成的破旧模具多次使用的可能性。

环模的使用能减小机座的整体尺寸，减少质量(1.5 倍)以及减少驱动机械装置负荷。换辊由组合轧辊完成，耗时不超过一个小时。

建议设计中执行的技术解决方案增加了轧制管子的精确度；减少了轧机机械装置的负荷增加了耐用性；增加了模具寿命；减低轧辊更换时间；当驱动负荷一样时增加了机座行程数(因减少了质量)，从而增加了能力；改善了工作环境。

EZTM JSC已经获得了使用连续旋转到一个中断(脉冲)的行星曲柄制转换装置机构的经验。这种尺寸连接中最大力比其他类型机动进给装置小3-4倍。通过新装置的精确进给以及管子的转动是由输出连接(与转动装置和导螺杆传动相连)脉冲转动稳固的运动连接提供，通过转换装置连续旋转驱动。

提供轧机行星转换装置可执行轧制方案以及在工作站两端位置进行进给和旋转(双进给和旋转)，使其能够区分进给和增加总进给，以便提高轧机产能。

进给和转动机械装置的使用可提高精确度和成品管子的结构；因使用进给到每个机座端部位置的轧制方案，增加了双机座行程总进给量；从而增加了产能。

EZTM JSC – 俄罗斯
传真: +7 496 577 73 04
网址: www.eztm.ru

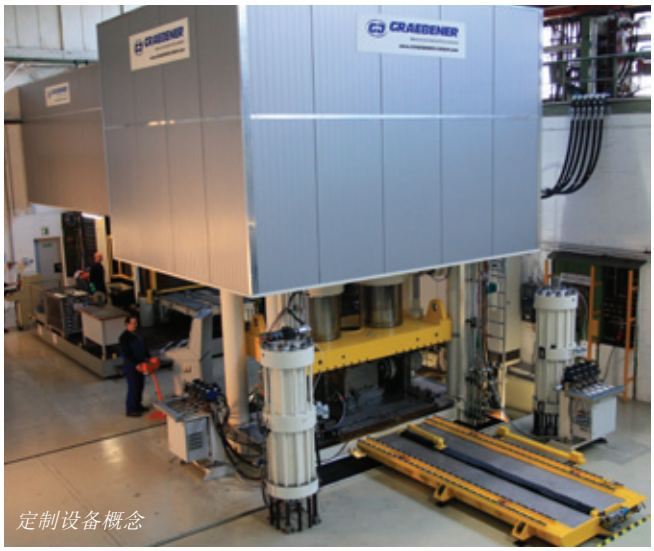
Gräbener Maschinentechnik提供整个价值链

传统的液压成型目前正在经历一场复兴。越来越多的公司依靠液压成型技术，然而只有少数机械制造商仍留在这个行业。与其他机械制造商相比，Gräbener Maschinentechnik GmbH & Co KG (GMT)提供整个液压成形价值链：从客户的一般概念、模拟、由此产生的建造以及小批量生产各自的原型设计到定制机床。

从一开始，GMT一直在根据客户单个组件或客户单个组件定制来设计液压成型机床。如2002年的RoboClamp®是世上最强大的液压成型机床，闭合力为13,000吨，它是为制造组件——汽车纵梁——完整定制的。这种设计方法一直是并且仍然是Gräbener Maschinentechnik的理念。

专利的Powerboxx®，闭合力为6,500吨，是GMT内部开发的用于生产燃料箱隔板的另一个机床。Powerboxx®的闭合力可集中在300 x 200毫米的小面积上。

除此之外，GMT还进行可行性研究和成型模拟。对于液压成型机床设计和建造以及相应的工具，GMT使用最现代化的软件如CATIA V5、Inventor以及机械桌面系统。FEM Tool Ansys程序用于有限元分析，这是建造不可缺少的部分。



定制设备概念

当购买位于Wilnsdorf的前身(“Schuler Hydroforming”)时，Graebener Group集团也接手了三台液压成型机床。现在总共有五台机床，GMT可以使用他们自己的机器在短时间内为‘原型设计/小批量生产领域进行创新试验以及内部开发。在现有的1,500和6,500吨闭合力机床又增加了400、2500和10000吨闭合力的机床。因此，Gräbener应该拥有全球最多的原型设计机床。

1500吨和6500吨机床已预订满了。1,500 吨机床继续被客户用于原型设计和中小批量部件生产。为了满足燃料箱生产用金属隔板日益增加的需求，6,500吨机床整年都在使用。

2500吨液压成型机床也用于进一步增强开源，从而高度灵活的控制Gräbener开发的PressPro®程序。

10000吨机床，是世界上台面(6000 x 2200毫米)最大的液压成型机，目前正在检修，为有多个工具的原型设计做好准备。

这些特殊的机器能力使Gräbener Maschinentechnik为客户提供定制机器概念：从四柱机床、框式机床、C型架机床如RoboClamp®，到PowerBoxx®或PowerTower®，用于液压成型板生产。

Gräbener Maschinentechnik GmbH – 德国
网址:
www.graebener-maschinentechnik.de

Thermatool和WEMPCO 达成协议将来供应高频感应焊机

杜塞尔多夫国际管材展对Thermatool和与Salzgitter International联合的尼日利亚Western Metal Products Company Limited (WEMPCO)两家公司来说标志着一个重要的日子，因为双方签署了一份将来供应22台Thermatool高频感应焊机的协议。

WEMPCO的总经理Lewis Tung先生、Inductotherm Heating & Welding (Thermatool的欧洲总部)的总裁Walt Albert先生及Salzgitter非洲业务经理Theobald Albrecht先生在杜塞尔多夫Inductotherm集团展台上签署了此协议。

Tung先生考虑到2011年安装的Thermatool Alpha Shear系统和焊机的操作和服务已经打算将来利用European建造的Thermatool管道和型材生产设备。这个大的投资将跨越一个五年计划，Thermatool已承诺在Ikeja 和 Ibafo工厂为WEMPCO人员提供完整的支持、服务、备件和持续的培训。第一台焊机计划于于今年晚些时候交付。

Thermatool – 英国
电子邮件: info@inductothermhw.co.uk
网址: www.inductothermhw.com

十辊矫直机

CARTACCI Ltd有限公司最近在主要市场包括美国、巴西和印度以及不能忽视的意大利市场获得了重要合同。

对于美国市场，已经建造了经过测试的RDT10V3UP型十辊矫直机，该机器是全自动化设置，安装在铸造管子生产线内，将用来加工直径2"到7"的API管。该产品，Cartacci在过去几年已积累了大量经验。该系统，用于快速、自动设置（机器设置系统），基于机械和电子之间的完美同步，确保生产变化的高度优化，对高产率轧机尤其重要，如这条生产线。对于巴西市场，Cartacci正在建造一条大的管道拉拔生产线，主要用于直径2"到9"的各种管子的生产。该设备由一台150吨的拉床和一台十辊模型的自动矫直机组成。RDT10V3/4直接与多个切割线连接。整条线属于目前在巴西管道拉拔生产中使用的最先进的生产线。

Cartacci也出现在印度市场，在这安装了第三号拉床和第二号矫直机(都来自Cartacci品牌)，在所有机器更新后一名印度客户不再使用他们之后却在一个重要的印度管道生产公司的设备上发现了新的用途，这说明Cartacci机器即使在初次安装后使用了30多年仍让很可靠。

剩下的在意大利市场，Cartacci最近开始了一条新的完整的生产线，用于直径1.5" 到 5"管道的拉拔。该生产线由一台矫直机组组成。RDT10V2有十个轧辊而且是全自动化设置，一条切割线有5个机头和一台包装设备组可进行多重切割(用于切割设置最大的功能性)。IMPC130有整套自动设置：潜入想要的捆扎形式特性，几秒钟机器就可以完成所需装配，无需操作者设置长时间的手动操作。再一次，技术发展和质量连续提高的事实，Cartacci被置于一个高技术质量水平上，即使是包装机器的设计。

Cartacci Srl – 意大利
传真: +39 035 290514
电子邮件: info@cartacci.com
网址: www.cartacci.com

移动发射光谱仪

Spectrotest的名字与现场金属分析联系在一起30多年了。来自Spectro Analytical Instruments的最新一代仪器的技术进步为最苛刻的分析带来很多绩效，且非常易于使用。具有挑战性的任务如低合金钢的鉴别是常见的，在这种情况下，使用电弧激发——在空气中——以及Spectrotest的CO_2洗涤系统测量钢材中低到500ppm的低含碳量。当需要更高的碳敏感度时，如对L级不锈钢的鉴别，或当元素，如磷、硫、硼或锡需要鉴别时，可快速轻松地装配插式UV探头。Spectrotest甚至能通过使用该探头测量含氮量来鉴别双相钢。


操作中的Spectrotest

对于铝合金，Spectrotest能测量低含量镁以及锂和铍。新型轻质运输小车易于来回移动，并提供一个符合人体工程学的工作平台和无疲劳操作。分析结果通常几秒就可以得到，并显示在一个明亮的15" TFT 液晶显示屏上。Spectro软件特点像ICAL，用一个样品自动标准化仪器，或者APF-Plus，根据基底金属鉴别选择校准方法，大大简化了操作。对于材料鉴别，可以访问Spectro Metal Database数据库，或可使用Metal Database 软件的一部分Grade Library Builder来创建用户自己的数据库。

该仪器的等离子体发生器使用户从Spectrotest的增效中受益。等离子体发生器耗能少，更换一次电池可进行成百上千的测量。电池操作过程中，使电弧激发模式中样品数量增加一倍，火花激发模式中样品数量增加到四倍。

Spectro Analytical UK Ltd – 英国
电子邮件: spectro-uk.sales@ametek.com
网址: www.spectro.com/test

API管道精整设备

FIVES Bronx提供Bronx/Taylor-Wilson管道试验和矫直机，其卓越的质量和耐用性享誉全球。有力的证明是Fives Bronx在过去十年已经提供了100多套矫直装置和50多套管道试验设备。一些领先的管道生产商使用了广泛的研究使Fives Bronx这个名称成为管道精整的技术选择。

公司目前正在为TMK集团设计和制造两台管道液压试验机。第一个安装是在俄罗斯TMK的Sinara分部安装了一台管道水压试验机，要求 API标准Q125的压力，产品直径范围为60.3 到168.3毫米，用于150 Mpa以内的压力。该试验机设计荷载为2.962kN，基于Q125等级，168.3毫米直径。

第二个安装是在美国Koppel分部安装的一台管道水压试验机，这台机器将集成到热处理石油管材生产线中。产品直径范围为60.3 到192毫米，用于20,000 psi以内的压力。

TMK从Fives Bronx采购设备的决定是根据先前在美国、俄罗斯、沙特阿拉伯和中国安装的装置得到的市场专业知识来做出的。

去年，Fives Bronx在中国宝鸡安装和成功试运行了三台用于API 5CT的177.8毫米的液压试验机。

两台六辊6CR9系列重型管道矫直机也增加到里面。有了这些装置，Fives Bronx集团在中国市场成功建造了超过25套新型管道精整装置。

目前，Fives Bronx正处于为世界领先的生产商在沙特阿拉伯修建API OCTG钢管厂的安装和调试阶段。

该生产线将包括两台355.6毫米管道液压试验机，端负荷设计为1,000,000磅。

热处理液压试验机将处理超过20,000psi的直径，第二台机器处理线管。第二台机器讲用于线管，并只做最大7,250 psi的压力试验。该工厂还将包括一台177.8毫米热处理液压试验机。

这个特殊的装置最大端负荷将为592,596磅，并将以30,250 psi压力处理OCTG API管。作为整条管道精整线的一部分，Fives Bronx安装了第三套API重型管道矫直机。两台为Bronx 6CR11重型设计机器，将处理114.3到355.6毫米的管子。第三套机器也是Bronx 6CR9系列重型设计矫直装置，处理的管道范围为60.3 到177.8毫米。完成整套生产线还需要两台355.6毫米铣头机和坡口机。

沙特阿拉伯钢管厂还包括一套完整的实验室测试设备，用于离线抗破坏强度试样测试。

Fives Bronx安装了一台抗破坏强度试验机，用于114.3 到 339.7毫米的管子。该装置解决了API要求的10:1直径对长度

Bronx/Taylor-Wilson 6CR10系列管道矫直机

试验范围，用于较长的试样在30,000 psi以内较高压力下试验。

目前这些项目巩固了Fives Bronx作为轧制和精加工技术全球领导者的地位。Fives Group集团有着200多年的行业经验，在全球安装了成千上万的装置，引领管道产业进入效率、速度和竞争力的新时代。

Fives Bronx – 美国
传真: +1 330 244 1961
电子邮件:
fivesbronx-sales@fivesgroup.com
网址: www.fivesgroup.com

Cooper and Turner Ltd公司选择RALC-Conni

COOPER and Turner Ltd公司是来自英国谢菲尔德的工业紧固件制造商，其制造根源可追溯到十九世纪，公司已经提供了很多产品，从历史品牌如'T'福特汽车到现代品牌如迪拜哈利法塔。

公司已发展成为全球制造产业，在世界各地都有生产设施。它着重于满足其客户群对质量，性能和服务的要求，涉及各种项目，如桥梁、隧道、铁路、摩天大楼和风力涡轮机，包括海上和陆上的。

这些新的高规格的设计的螺栓需要Cooper and Turner重新思考现有的生产方法，得出的结论就是对进一步开发这些新产品所需的最新技术进行新的投资。

在谢菲尔德工厂生产螺栓已跨越百年，几乎没有什么关于锯切固体材料是Cooper and Turner没经历过的。如今，公司使用几种现代化硬质合金技术锯切机。

Cooper and Turner Ltd公司工厂经理Paul Marston表示：“在审核用于该应用各种可能的解决方案后，我们很快得出结论，我们需要能跳出标准规范框架以外的机器供应商。

在众多有潜力的供应商中，我们联系的是我们已相知多年的Sawcraft UK Ltd公司。

Sawcraft UK Ltd听了我们的要求并推荐著名的意大利制造商RALC-Conni作为满足我们需求的理想供应商。在研究了他们最初的提案并了解到他们拥有在全自动生产线内并入其他工艺如产品标识的技术后，我们意识到我们找到供应商了。”

最终审定规格的RALC-Conni Gemini 802 HM硬质合金机现已安装，它证明了灵活性，而且包括客户许多具体的改造，用来优化Cooper and Turner新产品的加工。这些改造包括：前载8米长，5吨重量的自动捆料装载机，捆料储存能力增加到能够保持满满两捆料；电子轴小车进给冲程扩展1米，增加较长产品产率；独特的“移动”切割钳，使材料利用率达到最大，而废料最少；客户定制的动力卸料系统，能处理4米长的切割长度；可编程在线产品鉴别，包括标志和部件编号识别；以及库容量和操作者控制产品放行。

整条线由RALC-Conni设计和建造，因此，全部集成到锯切机PLC和操作者控制面板中，提供连续监控、一体化的无故障加工。

Sawcraft UK Ltd – 英国
传真: +44 121 561 5691
电子邮件: sales@sawcraft.co.uk
网址: www.sawcraft.co.uk

扩大锯切和去毛刺范围

Häberle AL35精确的横切锯

RSA cutting systems GmbH 公司扩大了其产品范围，自2012年4月起，去毛刺系统、工业电刷、高性能圆盘锯以及锯片制造商成为Häberle®品牌新主人。

客户现在也可以发现手动的管道和实心棒材横切锯和去毛刺系统。他们特别适用于车间使用，是RSA产品组合的完美补充。公司也将开发用于复杂铝制型材挤压的去毛刺系统，将这些灵活的机器作为独立的或互连的解决方案。

RSA也提供多种具有成本效益和可靠的管道、型材和金属板材去毛刺机。结合高性能电刷，有很多标准的配置或作为定制解决方案，客户将找到适应工件特性的精确的工具。

在今年杜塞尔多夫2012管材贸易展览会上，RSA推出了两条新的产品线。Rasacut SH是一台高性能圆盘锯，用于一些主要工作。第一次该锯机可高速切割直径300毫米以内的管材和实心棒材。它还可以通过周边设备扩展，确保平稳的物质流和缩短切割时间。

和Rasacut CC一起，推出了新型双切、单切割圆盘锯用于直径90毫米（单切）到40毫米（双切）的切割。很多模块化锯机周边设备——去毛刺、倒角、测量、清理和堆垛——可确保无缝对接到生产线中。

自2012年4月以来，RSA cutting systems GmbH 公司坐落在在德国Schwerte新建的总部。

RSA cutting systems GmbH – 德国
传真: +49 2304 9111 100
电子邮件: rsa.d@rsa.de
网址: www.rsa.de

焊接操作高分辨率视频监控

焊接自动化变得越来越普遍，使用越来越多的特殊的焊接工艺以提高生产率和确保结果的重复性和一致性。

在此基础上，操作者在监督焊接操作中发挥着重要的作用。根据部件的复杂性和任务的重要性问题，焊接过程中的跟踪能自动或手动进行，这当然意味着需要连续视觉监控。对于操作者所需的帮助范围，如今，三套装置中有一套配有视频监控系统。主要目标常常是追求舒适的工作环境，以此避免疲劳和保持操作者的注意力。因此，视频监控系统经常是唯一使我们能够面对难以接近处或接近焊接点环境这一困难的解决方案。

对于最经常反复发生的情况，比如预热的存在、遇到窄坡口时的通道受限，内部焊缝配置以及接近高能焊接电弧或核工业中人体遇到的辐射等。

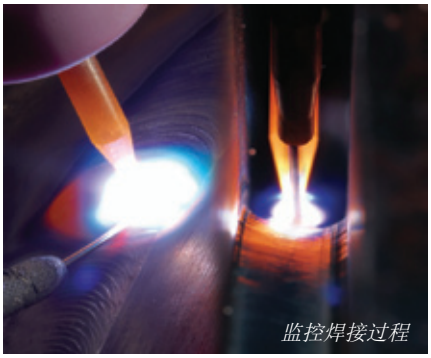
所有这些变体的共同点是控制面板本身，为优化图像调整所有有用的命令组合到一起。该控制面板符合人体工学，非常适用于焊接操作。

是每个相机构成了许多的可能性来适应环境问题。

一般Polysoude推荐使用两个外部摄像机（一个用于前视，一个用于后视）。这些模块配备电机驱动焦距以及可靠液晶滤波器。此功能是专门开发的技术带来的结果，使操作者可干预焊接过程并根据具体需要进行调整图像。外部摄像机每个模块都有一个集成冷却系统，保护它免受电弧辐射。

对于径向间隙缩小的情况，Polysoude建议一组焊接炬配备一台或两台微型摄像机（一个典型的窄隙焊炬，一个窄隙焊炬，带振动焊条和内部焊接枪）。所有功能都是完美集成并受到保护的，与焊接环境兼容。为了能够抵御外部高达350°C的温度，他们需要冷却。光纤照明和可伸缩的滤波器可以在焊前确认定位或在电弧下降后检查结果。滤波器的定位和焊接开始是同步的。焦距手动调节功能集成到焊炬炬体，而且可通过外部接近以便调节。这些解决方案代表最好的折中方法，为了不干扰气流，而且为了有一个更好的视角监控焊丝影响点，焊条完整性和侧壁的熔合。定制光学器件的创造能够优化放大率和视域。

Polysoude SAS – 法国
传真: +33 240 68 11 88
电子邮件: info@polysoude.com
网址: www.polysoude.com



监控焊接过程

Axxair新子公司在德克萨斯州成立

管道工业管子切割和坡口加工设备领先的制造商Axxair公司在靠近休斯顿的德克萨斯州的艾文建立了新工厂，作为公司在高潜力地区通过子公司来接近客户的战略的一部分。

该工厂为一幢300平米的建筑，将有一个仓库，里面有机器，有维修和培训功能。Ray Brown将是美国子公司经理。

公司表示美国市场要求更密切的关注以及更多的本地技术输入。Axxair的目标是建立经销商网络，他们将得到关于生产线培训的以及完全有能力提供技术建议，并提供设备展示。

Axxair的机器在很多市场如半导体、医药、食品和饮料、化工和石油化工等得到推广。公司向40个国家销售产品。

美国Axxair将参与11月在拉斯维加斯举办的Fabtech展。

Axxair – 法国
传真: +33 4 7557 5080
电子邮件: commerce@axxair.com
网址: www.axxair.com

Axxair – 美国
网址: www.axxairusa.com

Polygonised controlled rolling of slabs for making oil country tubes

by: VI Bolshakov, DV Laukhin, GD Sukhomlin, AV Beketov, Trans-Dnieper State Academy of Building and Architecture, Dnipropetrovsk, Ukraine and M Drutskaya, Interpipe Middle East JSC, Dnipropetrovsk, Ukraine

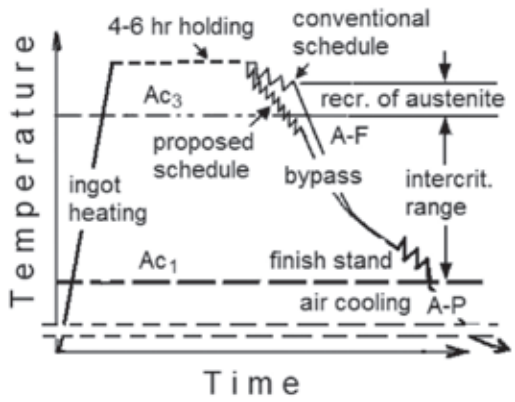
At present, hot rolling is the most common process used in working slabs of low-carbon steels smelted with no carbide-forming additions. Although this process ensures relatively moderate strength characteristics in plates, such steels possess good weldability and plasticity at relatively low costs [1–6].

Any strengthening is connected with saturation of metals with numerous faults, which in its turn results in a necessity of application of complicated processes and high production costs. For the most part, rolled product strengthening by various methods of thermomechanical treatment is economically more feasible than expensive alloying [1–6]. Specifically, an example of such leading-edge processes is controlled rolling used in making plates for the production of large-diameter pipes used in the construction of Arctic oil and gas pipelines.

This R&D work objective was improvement of mechanical properties of the steel plates produced by controlled rolling. The main problems consisted in retention of polygonised structure of hot-deformed austenite and creation of conditions for its inheritance with proeutectoid ferrite precipitated before the finish rolling step.

Temperature and deformation conditions of the controlled rolling are usually realised as follows: heating slabs in a continuous furnace to temperatures between 1,100°C and 1,200°C, homogenising holding during 4 to 6 hours, rough rolling completed at 980-1,100°C, cooling down to 720-820°C, finish rolling to a required thickness and slow cooling to room temperature (see Figure 1, conventional schedule). This process has its advantages but it has certain disadvantages as well.

Figure 1: Conventional and proposed controlled rolling schedules



Firstly, it is the necessity of an additional alloying to suppress austenite grain growth through the formation of particles of high-temperature carbonitrides (otherwise, the plate impact toughness can degrade) [1–6].

Secondly, this process has only proved itself well in the production of plates not thicker than 20mm as the thicker is the rolled product the worse are tensile strength and impact toughness because of smaller total reductions.

Thirdly, it is necessary that temperature-deformation parameters of the controlled rolling process were optimised for each rolling mill and individual plate rolling schedules were corrected depending on the planned service conditions of the rolled product.

This R&D work has resulted in a new schedule for the process of polygonising controlled rolling featuring a higher deformation fractioning in the rough stand with the final rolling temperature being 10-30°C lower than Ac_3 temperature and a shorter holding of the intermediate product at the bypass table to prevent recrystallisation and maintain the rolling rate. When the temperature of start of working in the finish stand is achieved, rolling is carried out by the design schedule and the rolled product is cooled in a way ensuring retaining of subgrain boundaries in ferrite and escaping formation of special boundaries in the middle layers (see Figure 1, the proposed schedule).

The larger number of unit cycles at a constant total deformation ratio favours formation of a more developed polygonal austenite structure and the longer deformation time at a lower temperature at the end of rough rolling makes austenite subgrains fixed. The resulting deformed austenite structure saturated with subgrain boundaries is favourable for achievement of homogeneity of the finite ferrite structure [7].

Temperature and deformation conditions of the proposed schedule imply the temperature at the end of rolling in the rough stand to be within a range where there is no recrystallisation which is a prerequisite for the formation of fine ferrite grains during cooling in the intercritical temperature range. But if 22mm and thicker plates are rolled, a possibility of formation of both recrystallised and non-recrystallised regions in the plate body exists.

To prevent recrystallisation processes in austenite, the temperature at the end of rough rolling was shifted somewhat below the critical point Ac_3 which along with the reduced time of staying at the bypass table creates conditions in which the deformed austenite is not recrystallised or recrystallised to a minute degree.

The polygonised austenite structure preserved in this way contains a large number of additional sites of heterogeneous nucleation of ferrite (polygonal boundaries, their interfaces and nodes), cf. Figures 2*a* and 2*b*. Reduction of the temperature at the end of rough rolling to the values below Ac_3 results in a formation of fine ferrite nuclei fixing the polygonised substructure and preventing recrystallisation and austenite grain growth (Figures 2*d-f*).

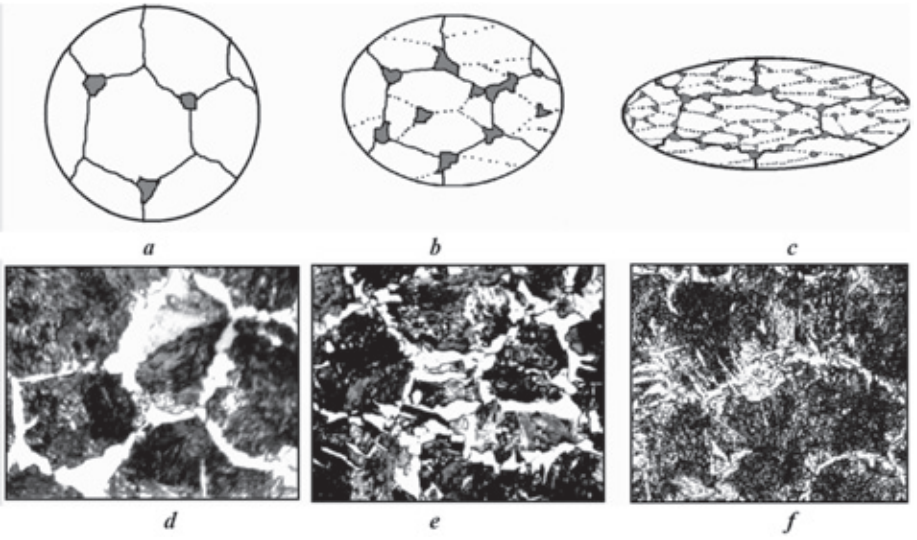


Figure 2: Sequential stages of a-crystal nucleation at polygon boundaries at temperatures reduced down to the values below point Ac_3; d – f: precipitation of hypoeutectoid ferrite in steels which underwent austenite decomposition after cooling in air, ´800: d: from a single heating by 1,050°C; e: after 16% hot reduction at 1,000°C; f: after 36% hot reduction at 1,000°C

Structure investigations of quenched samples have shown that cooling down to the temperatures below point Ac_3 gives rise to nucleation of new crystals of hypoeutectoid ferrite not only at large-angle boundaries but at polygonal ones as well (see Figures 2*c, f*).

In particular, Figure 2*f* shows that the internal volumes of the former austenite grains (their boundaries are seen due to the continuous ferrite fringes) are covered with ferrite nuclei of an average size 0.5-1.5μm.

In case of very small or zero temperature drops after rough rolling, parameters of the polygonal substructure develop in a reverse order: polygon sizes get smaller and the mean angle of orientation disorder decreases. Furthermore, the ability of polygonal boundaries to serve as the sites of ferrite crystal nucleation decreases.

Additionally, low-angle polygonal boundaries are formed in fine ferrite grains during finish rolling which results in refining of the final structure and a simultaneous upgrade of strength and plasticity of the finished plates.

Delivery batch tests of 40mm thick plates rolled by the proposed schedule have demonstrated simultaneous improvement of tensile strength and stabilisation of viscosity as compared to the plates rolled by the conventional technology: tensile strength in Z direction being 1.5-2 times higher (230 to 480 MPa).

It is important that specification of properties in *Z* direction (direction of the rolled product thickness) has to be an integral part of engineering requirements to steels as the steel plasticity can fall abruptly because of an effect of tangential tensile forces, especially forces normal to the plate plane.

Percent narrowing (y_z) is the parameter most sensitive to the variation of all mechanical characteristics of thick plates in Z direction.

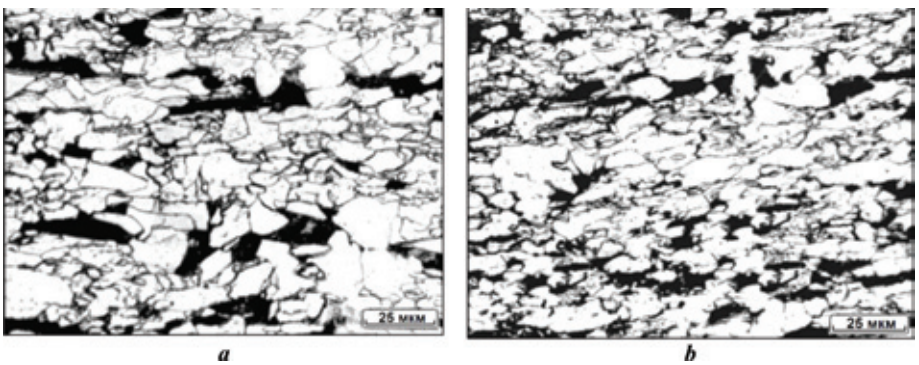
Actual percent narrowing in Z direction in the plates produced by the proposed schedule is 20-25 per cent higher than that in the plates produced by the conventional technology and almost two times higher than it is required by the standards for *Z 35* quality rating.

Microstructure of 22mm thick plates of microalloyed low-carbon steel 10G2FB rolled by the conventional technology and using the proposed schedule is shown in Figures 3*a, b*.

Visual estimate shows that the structure in the plates rolled by the proposed schedule is more dispersed than that in the plates rolled by the conventional technology. Pearlite striation is less pronounced than in case of an ordinary hot-worked metal.

Photographs of shadow-cast replica show that the large-angle and subgrain boundaries interact with their energies and the subgrains can be 0.5μm in diameter and somewhat elongated in the rolling direction (Figure 4*a*).

Figure 3: Structure of 22mm thick plates of low-carbon steel 10G2FB rolled by conventional technology (a) and with the use of the proposed schedule (b)



Images of thin foils prepared from the metal rolled by the experimental schedule reveal dislocation arrangement of subgrain boundaries (Figure 4*b*) and networks formed by several dislocation families. They contain mostly hexagonal cells and sometimes rectangular ones. Individual dislocations are discernable if the distance between them is 3 to 5nm, otherwise they merge into a strip with a contrast typical for the large-angle boundaries although their mean off-orientation angle does not exceed 3-6 degrees.

Pearlite colonies demonstrate the results of high-temperature effect, viz. cementite plates and bands suffer partial coagulation changes and a part of the plates divide into a number of smaller plates having fissures and holes. Cementite bands part into short sections with evidently rounded edges. Some of them take a disk or an ellipsoid shape (Figure 4*c*). Such changes in the pearlite component promote growth of plasticity and decrease in strength of the finished plates.

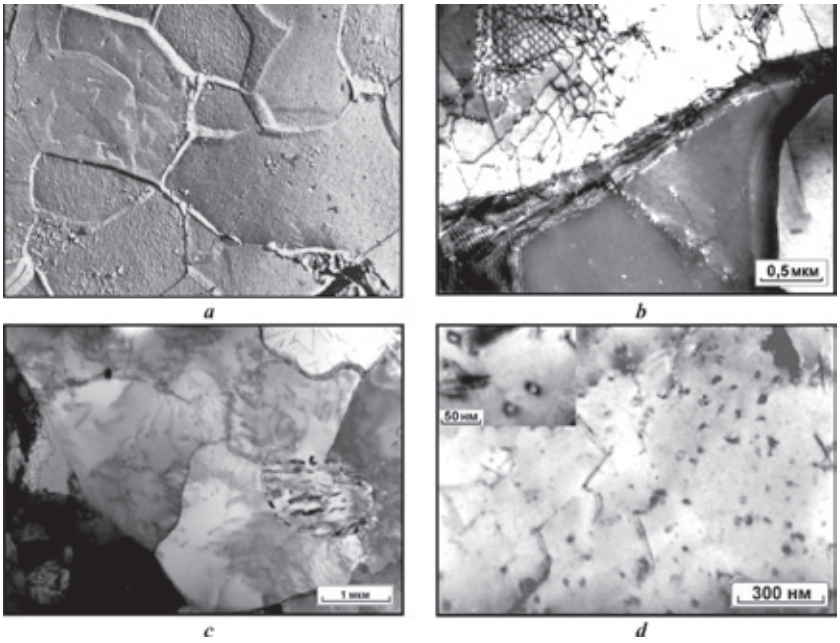


Figure 4: Thin structure in 22mm thick plates of low-carbon steel 10G2FB rolled by the experimental schedule: a, b, c: electron microscope image of subgrain (polygonal) boundaries; d: dispersed carbides of (Nb, V)C type in ferrite

However, a different process is simultaneously taking place. Contrary to the first one, it increases strength and decreases plasticity: precipitation of excess phases. In the ferrite component, a relatively high density of disperse particles is observed. These particles have contrast typical for carbides of (*Nb, V*)*C* type [8, 9]. Figure 4*d* shows their uniform distribution in the entire internal volume of the ferrite grains. Some dislocations are conjugated with carbonitride particles restraining their displacement at critical loads, increasing start stresses and strengthening the metal in this way.

The high-magnification image patch in the upper left corner of Figure 4*d* shows a characteristic 20mm diameter ring-shaped contrast formed by diffracting electrons. Such contrast reveals itself due to the elastic stresses arising around the carbonitride particles [5]. These particles themselves have smaller sizes, not larger than 3-7nm. Their diameter is smaller than the light spots in the centre of the ring-shaped images.

Based on the foregoing, the following conclusions can be drawn:

- the proposed hot plate rolling schedule is based on a creation of a polygonised austenite structure being formed during hot working and forcibly kept stable up to the temperatures of the upper part of the intercritical range. The further multiple nucleation of proeutectoid ferrite at both large-angle and polygonal boundaries improves dispersity of ferrite grains in the metal entering the finish rolling stand, therefore a more dispersed final ferrite structure is formed in the finished plates and accordingly better mechanical properties are achieved;
- the proposed plate rolling schedule can be implemented with no capital investments at the existing equipment of Ukrainian metallurgical works;
- the proposed plate rolling schedule promotes gain in and stabilisation of plasticity and viscosity at sub-zero temperatures and reduction of plate rejections over unsatisfactory mechanical properties;
- the results of comprehensive studies allow to recommend plates of steel grades 10G2FB and S355J2 for their use as a material for the production of large-diameter oil and gas line pipes and construction of frames for high-rise buildings and large-span floors.

References:

[1] Effect of austenitizing and working time upon structure and properties of low-carbon steels 09G2S and 10G2FB / V.I. Bolshakov, G.D. Sukhomlin, D.V. Laukhin, L.N. Laukhina // Theoretical Foundation of Civil Engineering: Polish-Ukraïnian Transactions. – Warsaw, 2005. – V. 13. – pp. 83 – 88.

[2] Bernshtein M.L. Structure of Deformed Metals / M.L. Bernshtein – Moscow.: Metallugiya, 1977, – p432.

[3] Gridnyov V.I. Strength and Plasticity of Cold Worked Steel / V.I. Gridnyov, V.G. Gavrilyuk, Yu.Ya. Meshkov - Kyiv: Naukova Dumka Publishers, 1974. – p231.

[4] Yokota T., Garica–Mateo C., Bhadeshia, H.K.D.H. Formation of nanostructured steel by phase transformation, Scripta Materialia 2004 – Vol. 51, pp. 767-770.

[5] Bolshakov V.I. Thermomechanical treatment of construction steels. 3rd edition: Basilian Press. – Canada. – 1998. – p316.

[6] Langford G., Cohen M. Subgrain strengthening of materials. Trans. ASM – 1969, Vol. 62 – pp. 823-835.

[7] Bolshakov V.I. Polygonization of austenite during controlled rolling. / V.I. Bolshakov, D.V. Laukhin. – Dnipropetrovsk : PGASA, 2011. – p353.

[8] Utevsky L.M. Diffraction electron microscopy in physical metallurgy / Utevsky L.M. – Moscow. Metallurgiya Publishers, 1973. – p584.

[9] Electron microscopy of thin crystals / [Hirsh P., Hovi A., Nickolson R. et al.]; [English-Russian translation by L.M. Utevsky]. – Moscow. : Mir Publishers, 1968. – p574.

Trans-Dnieper State Academy of Building and Architecture
Email: ldv@mail.pgasa.dp.ua
Website: www.pgasa.dp.ua

Advertisers Index

Bellissimo

saetemmedi

- High Frequency Solid State, Vacuum Tube & Contact Welders
- In-line Seam Annealing Equipment
- In-line and Off-line Full Body Black Annealing Equipment
- In-line Bright Annealing Equipment for Stainless Steel & Titanium
- In-line Annealing of Refrigeration Tubes
- Heating Equipment for PET Coating
- Drill Pipe end Hardening and Tempering
- Pre Heating for Oil & Gas Pipe Swaging, Press end reducing
- Pre Heating for Galvanic Treatments
- Combined Frequency Annealing for Double Brazed Pipe

saetgroup

Italy | China | Usa | India

Headquarters
via Torino 213, Leini (TO) 10040 ITALY
info@saetgroup.com | saetgroup.com

THERMATOOL
An Inductotherm Group Company

Thermatool's new generation of High Power HF tube and pipe welding systems incorporates HAZControl™ Technology - designed to deliver precise heat input control with independent control of weld power and frequency on each and every mill run. High Power HF Welders from 800kW to 1,800kW now feature HAZControl™ Technology, the key to precise weld heat input control.

The combination of selecting the precise power and frequency offers tube and pipe manufacturers the flexibility to successfully produce the best weld on and tube or pipe mill with virtually any material type.

Thermatool Corp. - U.S.A.
Tel: +1 (203) 468-4100
info@thermatool.com
www.thermatool.com

Inductotherm Heating & Welding Ltd - U.K.
Tel: +44 (0) 1256 335533
info@inductothermhw.co.uk
www.inductotherm-hw.com

For the most reliable return on your investment, turn to Thermatool.

INDUCTOTHERM GROUP
Leading Manufacturers of Melting, Thermal Processing and Production Systems for the Metals and Materials Industry Worldwide.