The international magazine for the tube & pipe industries

TUBE & PIPE Technology

管道技術

MARCH 2015

VOL 28 NO 2 US$33

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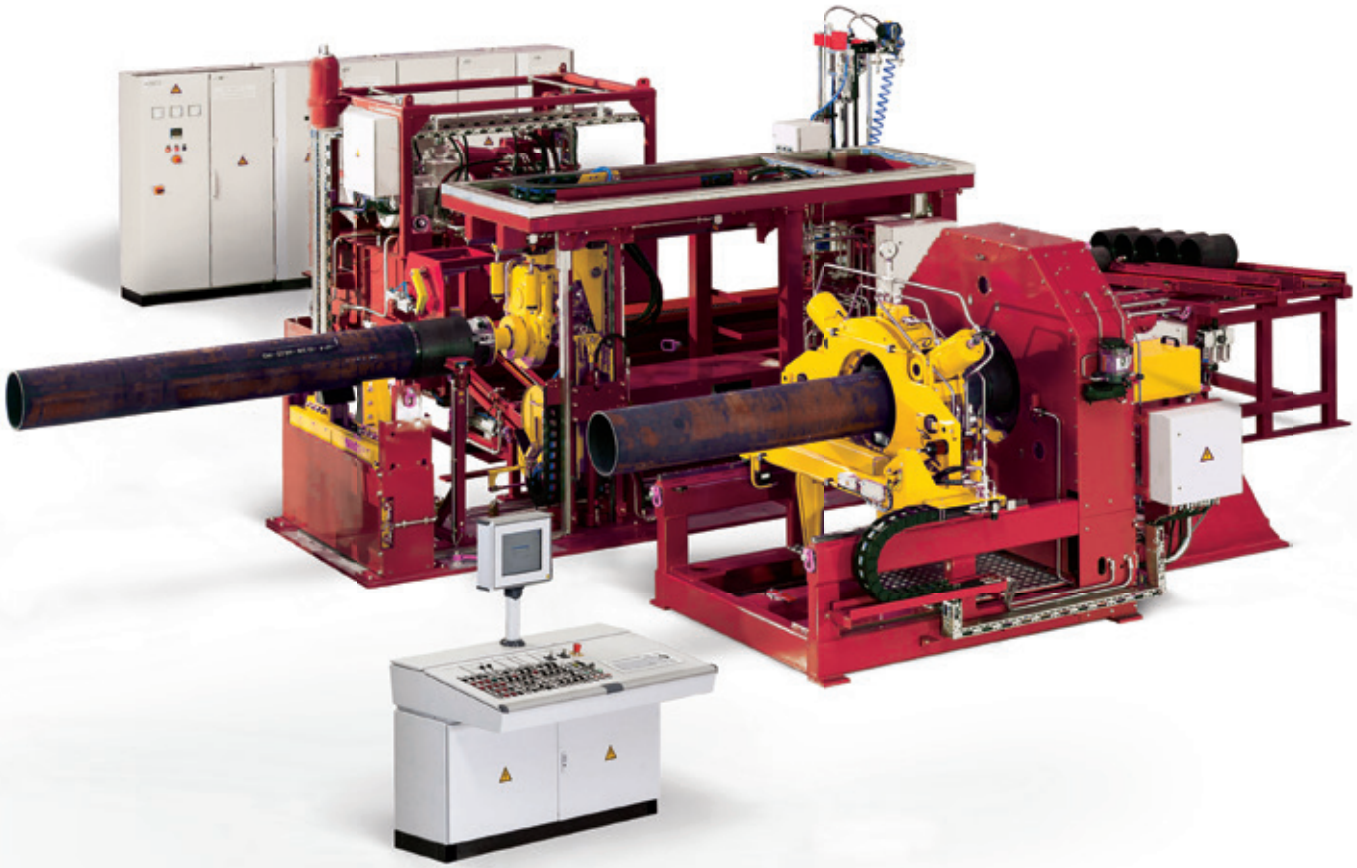

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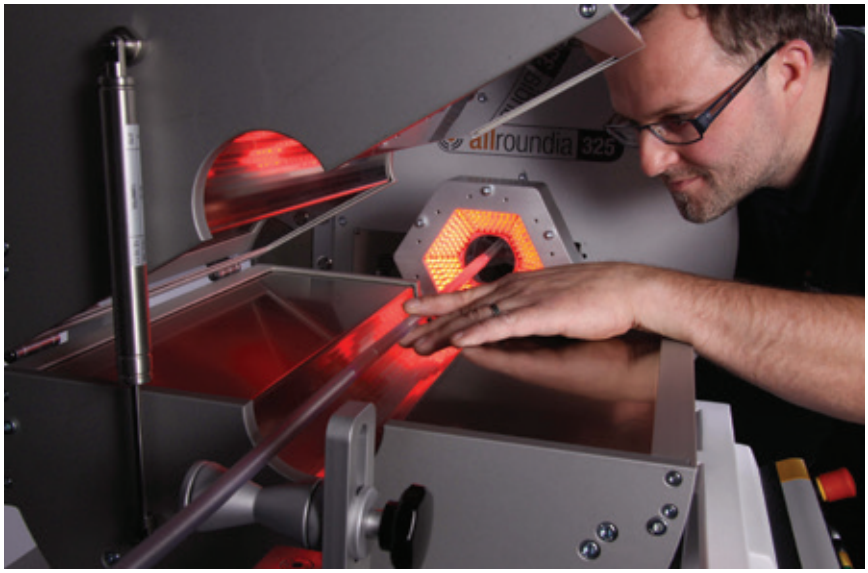

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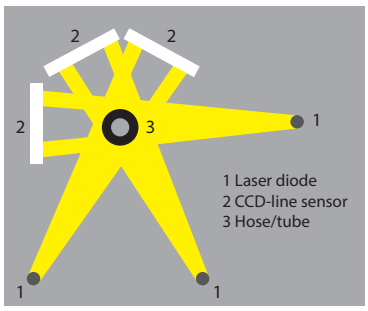


The March Issue

Rory McBride – Editor

Welcome to the latest issue of Tube & Pipe Technology magazine. This month we have a feature on inspection, testing and quality control (page 86). We also take a look at Tube Russia, which takes place in Moscow in June, and Made in Steel, which will be in Milan, in May. Several members of the magazine team will be at both shows so please do come and say hello.

Elsewhere in the issue there is an interesting technical article on online diameter control during hose and tube extrusion written by Harry Prunk and Katja Giersch of Sikora AG in Germany. It has been interesting to read about a number of major orders for tube machinery this issue from, for example, Schuler AG on page 6 and Olimpia 80 Srl of Italy on page 12 as well as a big acquisition for EFD induction (page 18).

In May we have features on handling, bundling, packaging and logistics, tube scarfing systems and tools, plastic and composite tube production, and environmentally friendly tube technology.

The editorial deadline date for our May issue of TPT is 9 March with an advertising deadline of 20 March. The magazine will be distributed at the Guangzhou trade show in China.

I hope you enjoy the magazine.

On the cover . . .

The roots of EFD Induction go back to the launch in 1950 of a universal induction hardening machine by the German company Induktionserwärmung Fritz Düsseldorf GmbH (FDF).

While FDF was expanding in the 1970s, an induction revolution was taking place in Norway, where engineers had figured out how to transistorise frequency converters for induction heating.

In 1981 three of those engineers founded ELVA Induksjon AS. In 1983 they unveiled the Minac range of mobile converters. Workpieces no longer had to be brought at great cost to a stationary induction heater – the heater could now go to the piece.

In 1991 the managing directors of FDF and ELVA met by chance. They talked and speculated. FDF was strong in stationary induction hardening machines. ELVA was the agile innovator with a track record in finding new applications for induction heating. What if the two companies got together? In January 1996 FDF and ELVA merged to create EFD Induction. And the rest is, as they say, history.

Russian producer of API grade pipe selects Thermatool

A THERMATOOL three-stage (1,500kW) seam annealing system has been selected by one of Russia's leading producers of API grade pipe. The latest Thermatool seam annealing technology will be delivered by Inductotherm Group company Inductotherm Heating & Welding Ltd of the UK, with commissioning and service support provided locally by Inductotherm Group Russia engineers.

With hundreds of Thermatool seam annealers used to produce API line pipe and casing products around the world, Russian producers are assured of no untempered martensite in the weld HAZ and optimised weld section Charpy impact results for demanding material applications.

The well proven precision automated carriage positioning system ensures that all three heat stations can be quickly adjusted to position the inductors over the seam of the pipe both laterally and orbitally to ensure maximum yield and minimised scrap created after a mill stop.

Reliably delivered power comes from industry-leading VIP induction power supply technology.

Thermatool Variable Inductance Power (VIP) power supplies provide optimised matching to thin and heavy wall.

API pipe and each power supply can be independently controlled from one single, central console.

Commissioning is scheduled for early in 2015.

Inductotherm Heating & Welding Ltd – UK
Fax: +44 1256 467 224
Email: info@inductothermhw.com
Website: www.inductothermhw.com

Major order for spiral pipe mill

SCHULER has received a major order for delivery of a spiral pipe machine, from a manufacturer of steel pipes in Mexico. Tuberías Procarsa will use the off-line machine to produce large pipes with diameters from 508 to 2,235mm (20" to 88") and lengths from 12 to 24.4m. The pipes will mainly be used for building pipelines in oil and gas extraction.

The input stock for the large pipes is a coil-wound strip up to 25.4mm (1") thick, comprising high-grade steel (up to X100). The spiral pipe machine forms this material into the required pipe diameter and connects the edges by tack welding. Welding of the pipe is then completed on a separate welding stand using the submerged-arc method.

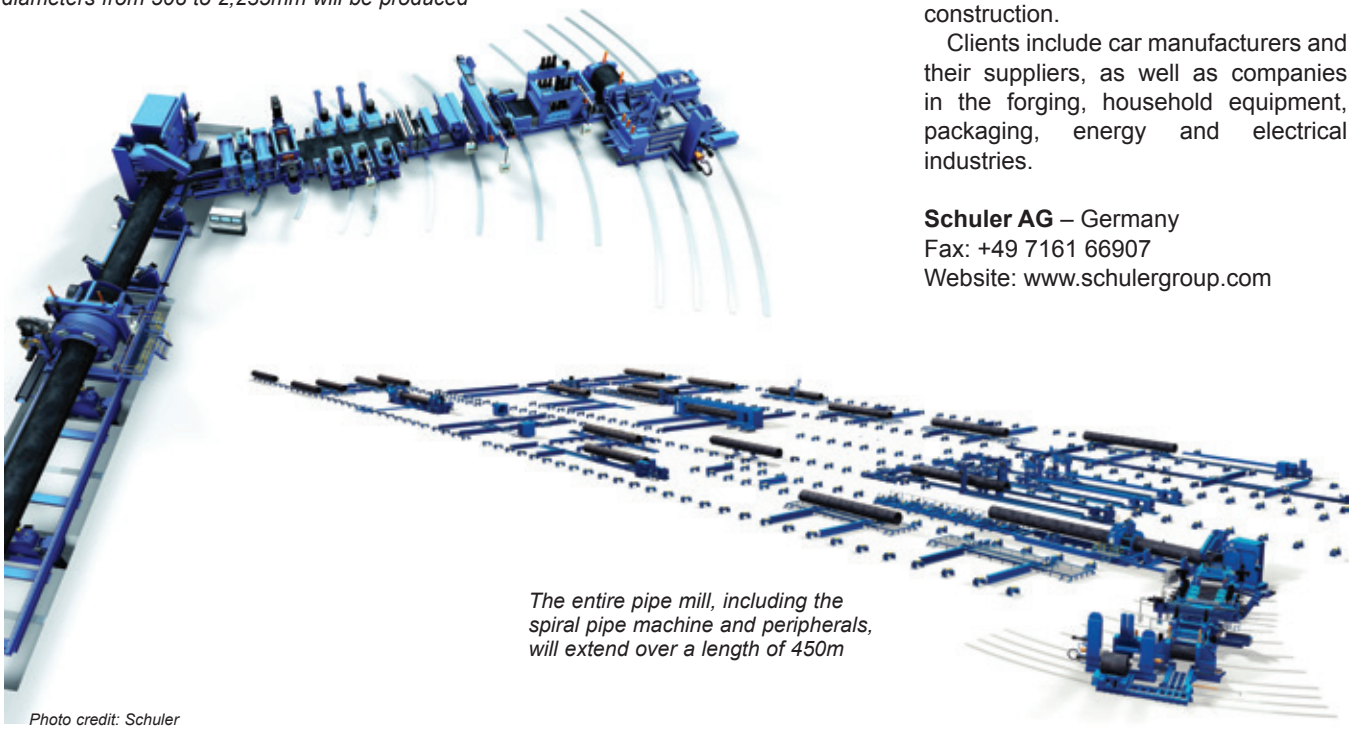
The pipe mill has a length of more than 450m, and includes various facilities for testing the large pipes according to API standards. Ultrasound, X-rays and pressurised water are used for this process. The mill from Schuler will increase Tuberías Procarsa's production capacities by 220,000 tonnes per year.

Schuler offers presses, automation solutions, dies, process technology and service for the entire metalworking industry and lightweight automotive construction.

Clients include car manufacturers and their suppliers, as well as companies in the forging, household equipment, packaging, energy and electrical industries.

Schuler AG – Germany
Fax: +49 7161 66907
Website: www.schulergroup.com

The off-line spiral pipe machine on which pipes with diameters from 508 to 2,235mm will be produced



The entire pipe mill, including the spiral pipe machine and peripherals, will extend over a length of 450m

Photo credit: Schuler

SEAT selects Seco/Warwick retrofit

SECO/Warwick is in the process of completing the modernisation of two pusher furnace lines for automotive components. This staged project began in March 2014, with the work being performed at SEAT Components in El Prat de Llobregat, Barcelona, Spain.

The repair of the second system started in November and is scheduled for completion in March. Due to the positive results from the first system, SEAT Components has placed an order for modernisation and refurbishment of two heat processing lines to improve total system efficiency.

The technical rebuild will cover the replacement of furnace lining, burner system and fan assemblies of both the heat treat and tempering furnaces. Included in the modernisation project is the addition of a washing machine and material handling system. The SEAT Components plant decided to replace the existing control cabinet with a new, updated control system.

Seco/Warwick Group's aftermarket team offers a wide range of services for heat treatment furnaces. It supplies a full range of maintenance services focused on keeping the equipment running efficiently. The company's services cover everything from small furnace repairs to complete equipment modernisation.

The Seco/Warwick Group and its five business segments produce vacuum furnaces, atmosphere furnaces, controlled atmosphere aluminium brazing furnaces, aluminium process furnaces and vacuum metallurgy equipment.

The industrial metal heat treatment furnaces are used in a variety of processes for material finishing and component manufacturing applications. The company supplies furnaces to customers involved with steel and aluminium production, aluminium recycling, forming, automotive, aerospace, commercial heat treating, HVAC/R, electronics, wind energy, medical equipment and nuclear industries.

Seco/Warwick Europe Sp zoo – Poland
Fax: +48 68 38 20 555
Email: info@secowarwick.com.pl
Website: www.secowarwick.com

Diary of Tube Events

2015

26-28 March
Boru *(Istanbul, Turkey)*
International Exhibition
www.borufair.com

20-22 May
Made In Steel *(Milan, Italy)*
International Exhibition
www.madeinsteel.it

8-11 June
Tube Russia *(Moscow, Russia)*
International Exhibition
www.metallurgy-tube-russia.com

16-18 June
Guangzhou Tube & Pipe Industry Exhibition *(China)* International Exhibition
www.chinaexhibition.com

15-17 September
Tube SE Asia *(Bangkok, Thailand)*
International Exhibition
www.tube-southeastasia.com

5-10 October
EMO *(Milan, Italy)*
International Exhibition
www.emo-milano.com

6-8 October
Tubotech *(São Paulo, Brazil)*
International Exhibition
www.tubotech-online.com

9-12 November
Fabtech *(Chicago, USA)*
International Exhibition
www.fabtechexpo.com

17-19 November
Stainless Steel World *(Maastrict, Netherlands)*
International Exhibition
www.stainless-steel-world.net

17-20 November
TOLexpo *(Paris, France)*
International Exhibition
www.tolexpo.com

Rafter ships weld squeeze box

RAFTER Equipment Corp has shipped an RT-2000 HFI weld squeeze box to a North American producer of mechanical tubing.

The box is part of an upgrade to the customer's existing Yoder M-2 tube mill. The purpose was to provide stronger, more reliable design that was better able to survive the customer's relatively harsh environment, and to run higher yield-strength materials.

The weld box is sized for 15.9 to 63.5mm (0.625" to 2.5") OD steel tubing with wall thicknesses from 1.2 to 2.8mm (0.049" to 0.109").

The design includes optional AMPCO® aluminium bronze roll yokes with anti-seize properties.

Features were included to protect the sliding surfaces from mill particulate build-up.

In addition to the weld box, a custom machine base was provided to replace the existing weld area base.

The new base was beneficial because it will expedite the installation process and ensure good alignment of re-used upstream and downstream components.

Rafter Equipment Corp manufactures tube mills, pipe mills, roll forming machines, cut-off machines, and other related tube and pipe mill machinery. Additional services include rebuilding and upgrading mill equipment.

Rafter Equipment Corp – USA
Fax: +1 440 573 3703
Website: www.rafterequipment.com

New vice-president of operations at EFD Induction Group

Artur Pająk of EFD Induction

EFD Induction Group, a maker of induction-based industrial heating solutions, has announced the appointment of Artur Pająk as vice-president of operations.

"I'm of course excited to be joining EFD Induction," said Mr Pająk. "The company has an enviable customer base and a global presence. That, plus the fact that we have excellent applications knowledge and equipment technology, means we are well positioned to become even more successful."

A Polish national, Mr Pająk holds a Master and Engineering Degree from Radom University of Technology, as well as an Executive MBA from Warsaw University of Technology Business School. He joins EFD Induction from Kongsberg Automotive, where he served as director of business line interior. Prior to Kongsberg Automotive, Mr Pająk worked for Star Trucks/Man Nutzfahrzeuge and AIC SA in a number of operations and engineering roles.

"I'd like to welcome Artur Pająk aboard," said CEO Bjørn Eldar Petersen. "He brings significant experience from the global automotive industry to EFD Induction, and he has keen insight and leadership that will prove invaluable to us as we work to safely and reliably deliver induction heating solutions to the world's leading manufacturing companies."

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

Herr-Voss Stamco launches new website

HERR-Voss Stamco has created a new website, with more user-friendly navigation as the focal point of the design.

The homepage welcomes visitors to the two distinct business segments: coil processing solutions and mill service solutions.

It offers customers a direct and informative tool to navigate through the wide range of products and services Herr-Voss Stamco offers to the metals industry.

Additional new features include a .pdf option on the product pages for ease of printing, an installation map showing the thousands of equipment installations Herr-Voss Stamco has worldwide, and a link to the new HVS mobile app. Herr-Voss Stamco supplies coil processing solutions including tension levelling, slitting, cut-to-length, multi-blanking, precision roller levelling, enhanced levelling technology (ELT®) and high strength slitting technology (HS2T™).

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

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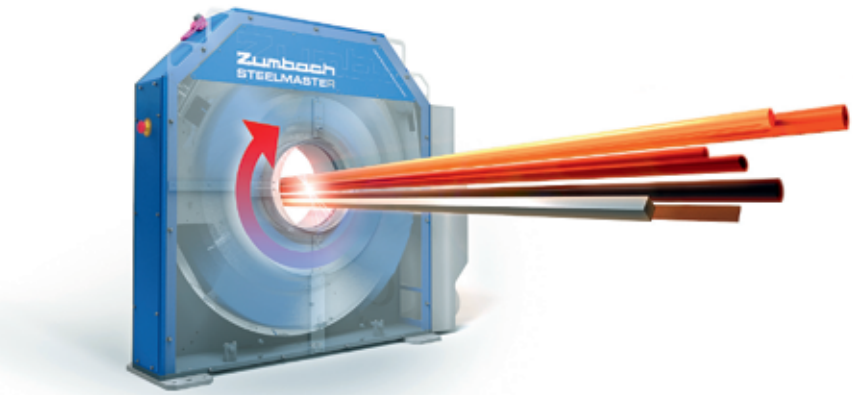

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Direct link to Brochure (0.6 MB)

Video

ZUMBACH Electronics

sales@zumbach.ch I www.zumbach.com

Westermans wins international development award

A UK company which sells welding equipment has reported 125 per cent growth over five years after investing in the business.

Westermans International, based in Groby, Leicestershire, has grown as a result of expanding its product range, increasing its budget for UK and international online marketing by 30 per cent and adding storage facilities to its site.

The family business, which employs 15 people, has seen turnover grow from £1.1mn to £2.5mn since 2009. Customers include Rolls-Royce, JCB, welding specialist Arc Energy Resources and Danest Engineering, in Ghana.

Claire Spillane, financial director at the firm founded by her father Peter, said: "With many years of expertise to call upon and great employees, we are delighted with how the company has expanded during these difficult economic times.

"We have always adapted to the changes in technology, keeping us ahead of our competitors. Taking a decision in 2009 to increase online advertising budget enabled us to reach new global customers. To continue the growth we desperately needed more storage and wanted to improve the working conditions for the staff, and earlier this year we finally moved to a new facility with modern offices and workshops in Groby. With the same commitment and additional staff and storage, we will continue expanding our business in the UK and overseas."

Westermans has developed over the years into a prosperous international business. It was recently announced as the winner of the International Development Award at the first Midlands Family Business Awards in Nottingham.

Ms Spillane said: "I am so pleased for my father to have received recognition for his hard work."

Claire Spillane and her father Peter Westerman collecting the award

For more than 50 years Westermans has supplied welding equipment to the UK, and since the 1990s has ventured into the export market of supplying used and refurbished welding and cutting equipment.

As winner of the international development category the judges identified that over the decades the firm was able to adapt faster and innovate earlier, quickly seizing opportunities, with third generation family values in place creating a positive business culture upon which long-term sustainable growth can be built. Westerman's presentation showed its ability to further professionalise its business and to continually keep pace with technological change enabling it to keep ahead of the competition.

Westermans also knows that its customers around the world are the key to its success. Over the years, many have become firm friends and they value these relationships greatly. Claire Spillane said: "Trust between two companies is paramount especially as the majority of the time we never even meet them face to face."

Founder and managing director Peter Westerman said: "I am so delighted to have received the winner of the International Development Award 2014. This is our first award ever in the history of the company. Our trustworthiness and honesty is communicated to all of our global customers, the evidence is shown in the steady growth of our business over the last decade or so."

Westermans International – UK
Fax: +44 116 2696942
Email: sales@westermans.com
Website: www.westermans.com

Davi receives repeat order

DAVI has received a further order from a customer who had previously purchased a Davi angle roll to bend HEA 200 beams for the mining industry. The customer had gained an important contract for infrastructure construction, and needed to increase capacity to HEA 450.

"We are very pleased with the Davi machine," said the general manager of the company, "as it has shown very good qualities in rolling and always operated satisfactorily. Davi gave us good feedback and excellent response both for technical advice before buying and technical support for start-up, training and service. Therefore, we had no doubt in investing again in a Davi angle roll."

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

Oil industry work brought up to date

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TECHNOLOGYDAYS
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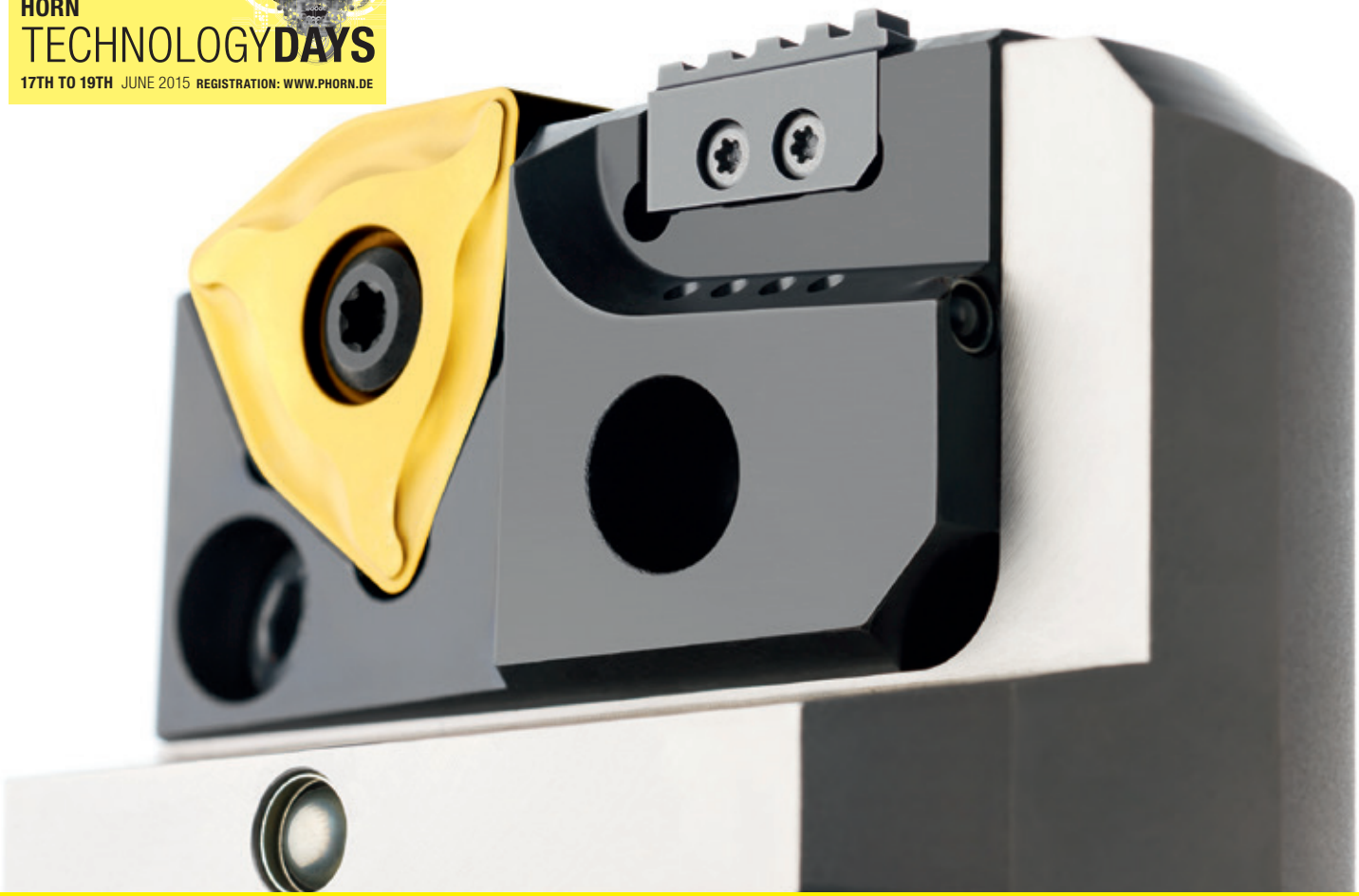

With our **tool systems**, you can machine the **ends of oilfield pipes and oilfield sleeves** up to 25″ diameter inside and outside in one clamping using turning or rotary tooling methods. They provide a high technology solution for external/internal cutting of API and special threads, machining sealing seatings, cutting grooves, parting off and peeling. The patented system consisting of cutting insert and chip breaker ensures rapid change of inserts, optimal heat dissipation, precision and smoothness. **www.phorn.de**

www.phorn.de

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Italian operations expanded

THERMAL processing equipment supplier Inductotherm Group has opened a new group company in Turin, Italy. Italian customers will benefit from timely and direct access to Inductotherm Group product brands, covering the many active market segments in Italy.

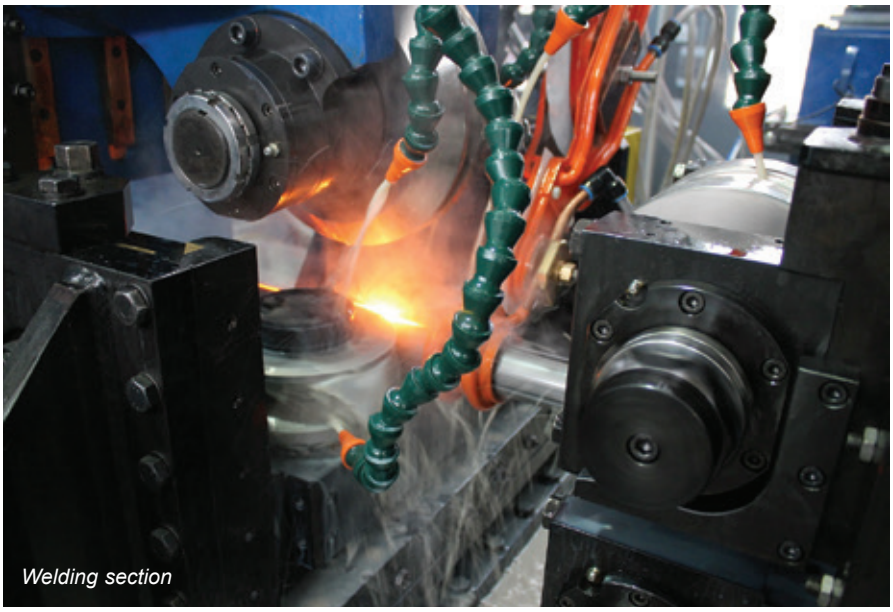
"Inductotherm Group Italy, Srl will further fulfil the Inductotherm Group strategy of being a truly global yet local company," commented Gary Doyon, CEO of Inductotherm Group.

"We will now be able to provide service and parts support for induction heating and welding equipment to Italian manufacturers with fast response," said Mick Nallen, managing director for Inductotherm Group Italy, Srl. "Trained technicians will provide the local service customers have come to depend on."

The new company's sales manager, Vincenzo Tosetto, brings over 25 years of induction heating experience to the local team. Mr Tosetto is responsible for delivering to Italian customers the latest technologies Inductotherm Group offers, including Inductoheat Europe's induction heating process technology, and new equipment such as Inductoheat's latest line of crankshaft hardening machines.

Inductotherm Group – USA
Email: info@inductothermgroup.com
Website: www.inductothermgroup.com

Fully automatic tube mill commissioned



Welding section

Universal driven turk's head – entry side

IN October 2014 Olimpia 80 Tube Mills completed the commissioning of a fully automatic tube mill to produce carbon steel (max TS up to 1,400N/mm²) and ferritic and austenic stainless steel tubes.

The tube mill has a capacity to produce round tube and correlated sections, from OD 30 to 88.9mm in a thickness range from 0.8 to 4mm. The maximum production speed is 130m/min for carbon steel, and ferritic stainless steel and austenitic stainless steel up to 100m/min.

The tube mill is composed of a single decoiler and automatic coil car for strip loading; coil opener with strip flattener; automatic strip end welder; horizontal strip accumulator complete at the exit side of a flying shear for strip cutting; strip edge preparation unit; and the complete Linear Cage forming group for round tubes (patented by Olimpia 80). It also includes a weld box with 350kW solid-state HF welder; outside scarfing and chopper roll, and inside scarfing; cooling section; 'traditional' sizing and straightening unit (for round tubes); universal driven turk's heads; and flying cut-off device by cold disk saw (HSS-TCT).

This tube mill includes special features such as a set of cassettes for quick roll change on rails, for welding, sizing and straightening (traditional) units. This system reduces the waiting time when it is necessary to change the production size.

Olimpia 80 Srl – Italy
Fax: +39 0523 864584
Email: olimpia@olimpia80.com
Website: www.olimpia80.com

BLECH Russia 2015 to open a day later after schedule adjustment

MACK Brooks Exhibitions has announced that the dates for BLECH Russia 2015 have been rescheduled by a day.

The event will continue to take place in the same week as planned, but the opening date is now a day later, meaning the three-day show will now take place from 25 to 27 March 2015.

The venue for the event is the recently completed ExpoForum in St Petersburg, Russia.

BLECH Russia provides companies in the sheet metal working sector with an opportunity to showcase the latest technologies and trends in the industry.

Taking place in the historic city of St Petersburg, which lies at the hub of Russia's fast-growing industrial area, the show offers networking opportunities with industry leaders from the Russian sheet metal working industry, and provides a platform to renew business contacts and discover the latest trends from the sector.

International participants include precision press tool components firm Dayton Progress, and II-VI Deutschland, a specialist in engineering materials and opto-electronic components.

Exhibiting from Turkey will be Ajan Elektronik, and from China, Dongguan Vision Tool & Mould Co, and Shandong Juli Welding Co.

Russian sheet metal firms participating in the show include St Petersburg-based Tochnaya Sila/ Precise Power Group, a manufacturer of punching presses, punching tools and automatic lines for steel fabrications; and Abamet, a supplier of own-brand metal working equipment, as well as products such as lathes and milling equipment.

The exhibition targets a professional audience such as production specialists, buyers, designers and quality controllers. Key industry divisions include mechanical engineering, sheet metal products and components, the automotive industry and its suppliers, iron and steel production, steel and aluminium construction, electrical engineering, electronic appliance, rolling mills and aerospace. The exhibition profile covers all core sectors of the sheet metal working industry: sheet metal, finished and semi-finished products, forming, separation and joining technology, machine elements, handling, surface treatment and tools/ dies.

BLECH Russia 2015 is organised by Restec Brooks, a joint venture between UK-based Mack Brooks Exhibitions and Russia-based Restec Exhibition Company.

Mack Brooks Exhibitions Ltd – UK
Fax: +44 1727 814501
Email: info@blechrussia.com
Website: www.blechrussia.com

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ADDA FER MECCANICA ***TM10***
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Wall Thickness	3,0 - 8,0 mm.
Tube Length	6,0 - 12,0 m.
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WESPA receives ISO 9001 certification

SIMONDS Saw has announced that its European bandsaw blade technology partner, WESPA®, has received ISO 9001 quality certification. WESPA is a manufacturer of sawing tools, providing customised solutions and sawing products, including a range of carbon and bi-metal band saw blades for Simonds' European and North American markets.

"WESPA has been our partner for twenty years and has always followed stringent quality control measures to provide the highest product and service quality," said Jim Holston, vice president of operations for Simonds. "We are extremely pleased that their facility has been recognised with the ISO 9001 quality management system designation."

WESPA's facility

Christof Peter, quality manager and ISO 9001 project champion for WESPA, said, "It was a two-year project to work through the necessary steps to become ISO 9001 certified, and the result was well worth the time invested. Customer confidence in our products is now further increased because the ISO 9001 certification is an industry-recognised standard which is third-party audited."

Simonds also manufactures industrial bandsaw products in North America under a stringent quality system, and has been ISO 9001 certified since 1993.

Mr Holston said, "ISO 9001 is an excellent process to identify non-conformances and implement corrective actions, resulting in improved quality and reliability. Simonds was the first US saw blade manufacturer to attain ISO 9001 certification."

Simonds Saw – USA
Fax: +1 978 424 2212
Website: www.simondsint.com

Indometal 2014 attracts quality visitors

INDOMETAL 2014 brought together 296 prominent companies from 26 countries, including five national pavilions and groups. The event was held over three days from 11 to 13 December at the Jakarta International Expo Kemayoran, Indonesia.

According to Mr Harjanto, director general for manufacturing based industry, Ministry of Industry, indometal 2014 exceeded expectations as an event that "promotes the metal sector and builds business relationships between existing industries and potential investors." He added, "indometal encourages the growth of the metal industry through increased investment promotion and dissemination of domestic metal industry information."

Gernot Ringling, managing director of Messe Düsseldorf Asia, said, "We are proud that this second edition of indometal has garnered strong participation from more international companies looking towards larger and more sustainable investments in Indonesia. As an organiser, we have been focused in providing optimal opportunities for our exhibitors to seek profitable corporate ventures for them to grow further and contribute deeper into the Indonesian market and thus are happy that many have secured numerous partnership deals, sold machines and expanded their client pool at the exhibition."

The event attracted 6,484 trade visitors from around the region, from various industry sectors, and over 250 participants at the two concurrent seminars. Spanning 8,300m² across three halls, exhibiting companies showcased their expertise, covering the full material processing, product manufacturing and tool applications spectrum ranging from foundry, casting, metallurgy and thermo process technology, as well as high-performing precision and tooling solutions.

indometal will return to the Jakarta International Expo in autumn 2016.

Messe Düsseldorf Asia Pte Ltd – Singapore
Fax: +65 6332 9655
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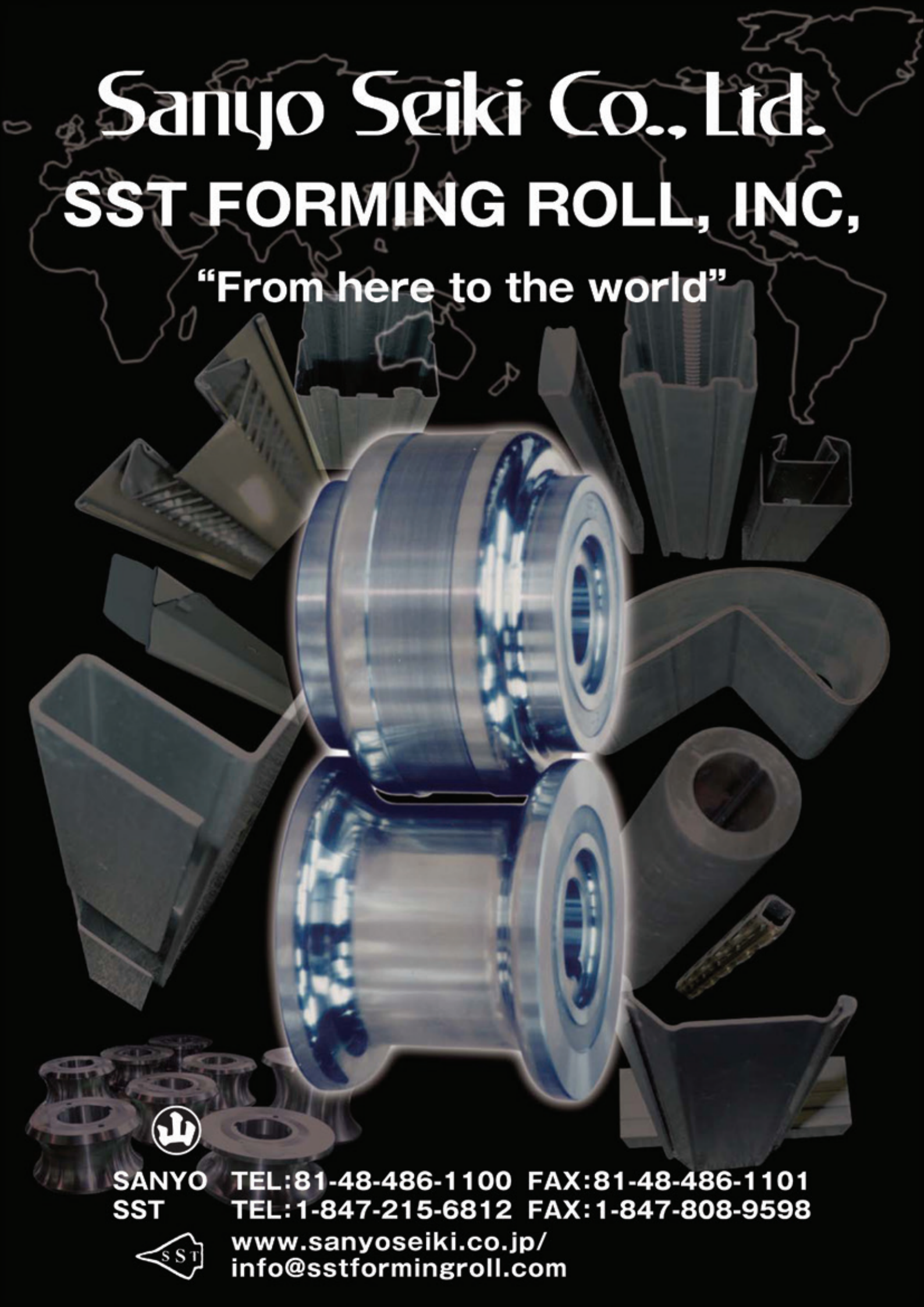

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www.sanyoseiki.co.jp/
info@sstformingroll.com

EFD Induction acquires Superior Technologies Europe

EFD Induction has announced its acquisition of Superior Technologies Europe (STE), a supplier of impeders, coils and related equipment to tube and pipe manufacturers in Europe.

Commenting on the acquisition, EFD Induction CEO Bjørn Eldar Petersen said, "STE is a dynamic enterprise that since its foundation in 2004 has won the confidence of demanding tube manufacturers across Europe. A combination of their welding consumables business with our strength in induction welding systems makes perfect sense."

STE founder Peter Bond will continue as managing director of STE, and in EFD Induction he will also serve as sales and marketing director for tube and pipe consumables in Europe.

"It's a real bonus having Peter on board," said Mr Petersen. "His experience and contacts will no doubt play a crucial role as we grow the business."

EFD has acquired Superior Technologies

The tube and pipe welding industry accounts for a significant part of EFD Induction's global business. The company's Weldac range of solid-state induction welders are sold around the world, and are particularly popular with makers of pipe for the oil and gas industries.

EFD Induction also recently announced the launch of a range of smaller, lower-power Weldac welders to meet growing global demand.

STE is located in Basingstoke in the UK and stocks a comprehensive range of ferrite core impeders, induction coils and OD/ID scarfing inserts. The company also offers Duratrim edge scarfing systems for galvanised and aluminised tubes.

EFD Induction has to date installed thousands of heating solutions for a wide range of industrial applications – bringing the benefits of induction technology to many of the world's leading manufacturing and service companies. EFD Induction has manufacturing plants, workshops and service centres in the Americas, Europe and Asia. Corporate headquarters are in Skien, Norway.

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

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

www.sikora.net/xray6000

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Sales Director SIKORA AG

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Universal squaring turk's head

OLIMPIA 80 Tube Mills has engineered and put into operation a universal squaring turk's head in a tube mill installed in Spain.

The main capacity of the installed machine is from 20x20 (30x10) mm to 70x70 (100x40) mm, in a thickness range from 0.8 to 4mm. The complete tube mill can produce tubes with special steel quality, up to TS 1,400 MPa.

With this system the tube mill will produce the full tube range (square and rectangular shapes) without changing a single roll in the sizing turk's head stands. The complete group is composed of three motorised pre-forming stands; one straightening unit for square and rectangular tubes; and one motorised finishing stand. The straightening unit is not motorised, and is placed between the last two heads.

Olimpia 80 president Vittorio Travini and technical director Livio Travini in front of the installed machine

The software allows the self-centring system to place the heads in position zero depending on the tube's size. The setting for the straightening is made through a control panel placed in front of the head. The project includes the possibility to install complete devices, even in the existing line, or consequently to a traditional turk's head.

The complete range, in different steps, can include tube dimensions from 20x20mm to 300x300mm, and thickness ranging from 0.8 to 12.7mm.

Olimpia 80 Srl – Italy
Fax: +39 0523 864584
Email: olimpia@olimpia80.com
Website: www.olimpia80.com

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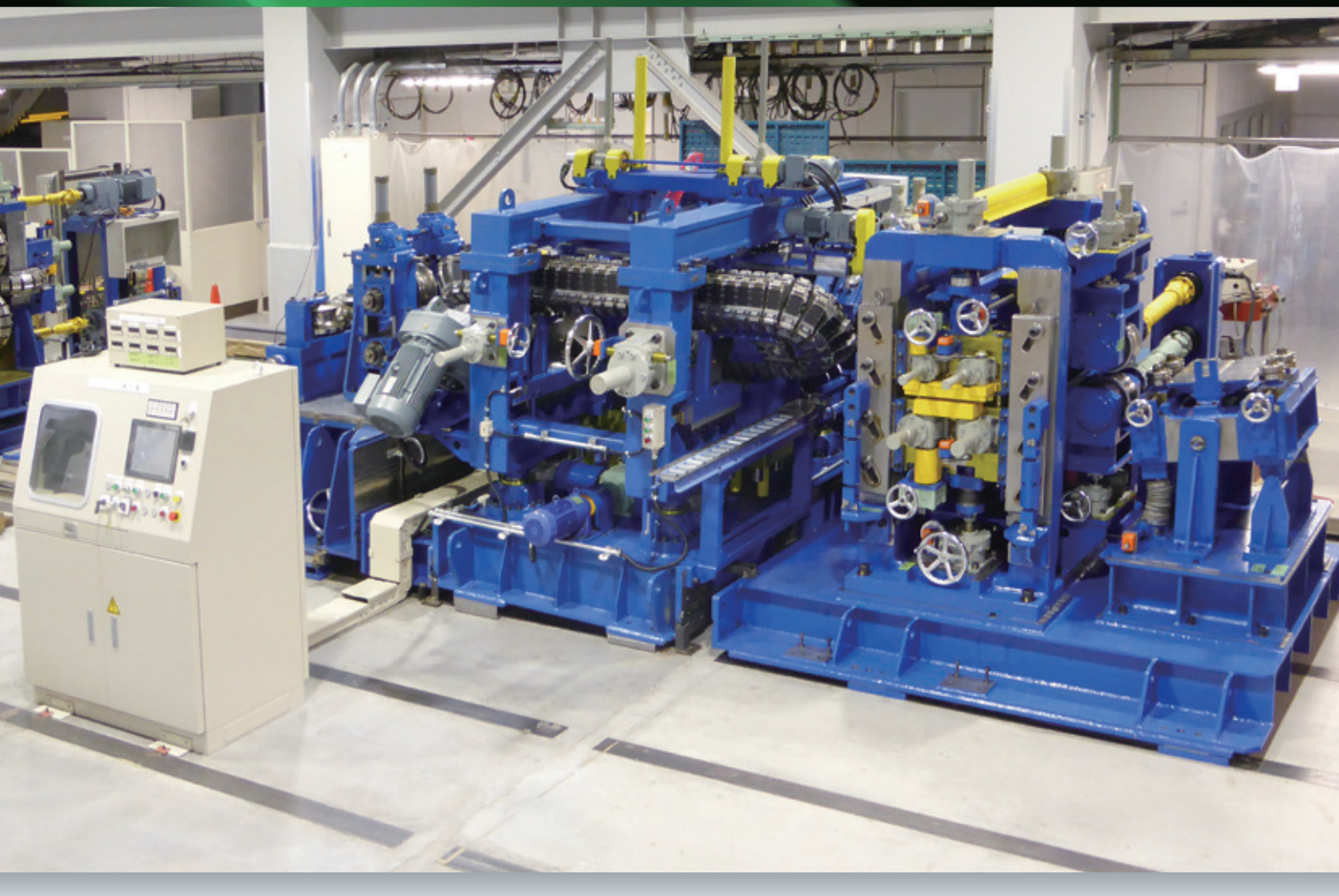

NAKATA MFG. CO., LTD.

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

CAD solutions expansion into Asia with Shanghai and Beijing offices

CAD Partner Technologies has expanded its presence in the Asian market with two new offices, in Shanghai and Beijing. The software company now has a total of four locations in Hong Kong and China.

As part of the expansion, two training centres for the new offices were opened. The training programme consists of training for plant design in 3D with Smap3D Plant Design and working in P&ID and Isometrics.

Kin-Chuen Kan is responsible for the management of the new offices and the implementation of the training. He has worked for CAD Partner for several years, and his leadership of the first two branches in Asia has paved the way for the expansion.

CAD Partner GmbH is an international software manufacturer focusing on simplified connection to CAD systems, including its self-developed Smap3D product family and Smap3D Plant Design solution. Founded in 1989, the company has had a presence in the Asian market with its own branches since 2013.

As the need for support and training increased with each new customer, Maxim Lich, vice president of global sales, gave the green light for the opening of the new branches and two training centres:

"With a local presence, we want to further expand and intensify our customer support. In particular, the new offices and training facilities give us the opportunity to offer an improved and comprehensive service for new customers."

Smap3D Plant Design provides three components in a single software solution for an integrated process chain: Smap3D P&ID, Smap3D Piping and Smap3D Isometrics.

Depending on the individual requirements, the programs specialised for each process step can be flexibly adapted.

Smap3D Plant Design transfers previously generated information and data via automatic connections between the individual programs: separate export or import is not necessary.

At the same time, Smap3D Plant Design enables centralised and unique – as well as company- and project-specific – definition of pipe classes.

With pipe classes, the conformity of components such as valves or fittings is defined to pipe characteristics such as diameter or medium.

CAD Partner GmbH – Germany
Fax: +49 9404 5209
Email: info@cadpartner.de
Website: www.smap3d.com

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NOV Tuboscope

Xiris signs agent for Korea

XIRIS Automaton has signed JSNT Corp as the exclusive distributor of Xiris products for the tube and pipe industry in Korea.

The agreement enables JSNT to distribute and support Xiris products with immediate focus on the WI2000p post weld inspection system, used to detect quality issues related to the tube welding and forming process.

JSNT Corp, a distributor of non-destructive testing and inspection equipment to the tube, pipe and steel industries, has more than 20 years of experience providing testing and inspection solutions for the steel fabrication industry, and brings experience in consulting, service and sales of leading edge technology.

In entering into this relationship with JSNT Corp, Cameron Serles, president of Xiris Automation explained, "We are excited to work with the top distributor of NDT and inspection equipment in Korea, JSNT Corp. They share our values of a high level of commitment to ensuring customer satisfaction and continuous improvement of technical knowledge."

In choosing to work with Xiris, JY Park, president said, "We wanted to work with Xiris because they offer high quality inspection equipment that complements our testing systems as solutions to our common customers in the tube, pipe and steel industries, helping them improve the level of quality of their end products."

Xiris specialises in developing optical equipment used for process and quality control across a number of industries.

With an extensive product line, Xiris provides manufacturers with the ability to detect, recognise and interpret quality defects in their manufactured goods.

Xiris has signed a deal with JSNT from Korea

Xiris Automation Inc – Canada
Fax: +1 905 331 6661
Email: sales@xiris.com
Website: www.xiris.com

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Banyard wins contract in India

INDUCTOTHERM Heating & Welding, working in partnership with Inductotherm Group India, has won a contract to supply an aluminium producer in India with a complete induction heating system, including one of the latest generation of Banyard LFi precision low-frequency induction power supplies.

At the heart of the Banyard system, powered by the latest in IGBT technology, is a high-efficiency, multi-layer induction heating coil that ensures precision control of the billet temperature across multiple temperature zones in order to achieve billet temperature homogeneity and repeatability – two major benefits derived from the use of Banyard technology. The new, upgraded LFi also offers a more compact footprint, and features a touch-screen HMI for display and control of all process variables. Improved access to SPC data is provided by USB and/or Micro SD ports.

The above Banyard LFi system can be designed and custom built for operation on all types of extrusion press. Engineers from Inductotherm Group India worked in close partnership with their UK colleagues to ensure that the Banyard LFi induction power supply, billet loading and discharge pushers plus mechanical billet transfer and handling systems were manufactured to customer requirements.

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

Haven hires Midwest service tech

HAVEN Manufacturing has appointed Scott Jaynes as field service technician, located in Indianapolis, Indiana, USA. The central Indianapolis location will allow for quicker response time and a lower travel expense to the customer. Mr Jaynes's appointment is in response to the growing number of customers that purchase new Haven and Soco equipment.

His primary responsibility will be Haven's new customer accounts in the upper Midwest USA, as well as existing customers, providing quick and reliable service. Haven Manufacturing offers a full line of tube cutting and processing equipment. The company's products include Dual-Blade Shear and Supported Shear technologies.

Haven Manufacturing – USA
Email: bsmith@havencut.com
Fax: +1 912 264 9001
Website: www.havencut.com

Kemppi releases ARC System 3

THE Kemppi ARC System 3 is a new modular software solution for improved welding management. The tailored toolbox enables the customer to choose modules for developing any part of the production process – quality, project management or productivity. Kemppi ARC System 3 is part of Kemppi's new TWXM solution concept. The offering has recently been completed with WeldEye®, welding quality and documentation software by Norwegian Weldindustry AS, acquired by Kemppi in December 2013.

The acquisition is an important step in Kemppi's strategy for the future. Weldindustry is one of the pioneers in the development of welding management software and its WeldEye solution is a leading industry brand. The Norwegian market has a strong focus on the offshore industry, which has provided an excellent platform for developing high-tech solutions for welding quality management.

"We are delighted to announce the launch of the new Kemppi ARC System 3 and the acquisition of WeldindustryAS. Kemppi has been impressed by the accomplishments of the Weldindustry team and the Weldeye solution, being the most advanced of its kind. Kemppi ARC System 3, on the other hand, is the most advanced solution for combining equipment technology and online data for welding management. With these two state-of-the-art solutions, we are looking forward to an exciting future together for the benefit of our customers," said Anssi Rantasalo, CEO of Kemppi.

"It is exciting that my company has found a new home in one of the globally leading groups of the welding industry," said Tore Haukanes, founder of Weldindustry AS.

Kemppi Oy – Finland
Website: www.kemppi.com

Optimised steel making

KANTO Steel Ltd has signed off on performance savings for the supply and purchase of an EFSOP® Holistic Optimization System that was commissioned in the spring 2014. The EFSOP system was installed at the EAF#1 'top charged' 90t furnace at the Kanto steel plant in Tsuchiura, Ibaraki, Japan.

Consumption savings attained during the project lifecycle were electrical 0.5 per cent, oxygen 8 per cent, kerosene 20 per cent, and an increase in yield of 0.5 per cent. Overall consumption savings reached were slightly more than 190JPY/t.

Tenova Goodfellow Inc – Canada
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Appointment of first female field service technician

KONECRANES UK has appointed its first female field service technician. Natasha Cairns joins the ranks of the company's 280-strong team, and is undertaking intensive hands-on product training prior to fulfilling her role in the field as a fully competent service technician.

Mike McGarry, Konecranes service district manager, with Natasha Cairns

Commenting on the appointment, Pat Campbell, the company's director of market area – Europe West, said, "We are obviously delighted to have Natasha on-board in the North East and we are extremely confident that she will prove to be a popular and capable member of the 34-strong team of field service technicians that look after a diverse range of customers in what is a strategically important part of the country.

"While Natasha's appointment marks a milestone in the history of Konecranes here in the UK, it reaffirms the company's commitment to recruiting only the highest calibre engineers. Indeed as our product and service offering continues to develop, so too must the human resource that is dedicated to support it. Our team of field service technicians is therefore only set to go from strength-to-strength, as we already have plans to bring on-board more new members in 2015.

"As a leading employer in our field, we are keen to promote and support the recruitment of female engineers, whether qualified, or those possibly looking to embark on our established apprenticeship programme." Ms Cairns commented, "From a young age I always had a passion for electronics, so being able to work in this field for such a well known and globally recognised name as Konecranes is like a dream come true. The training that has been extended to me so far has been first class and I intend to work hard to develop my career within what is acknowledged as a very progressive and dynamic organisation."

Konecranes Plc – Finland
Fax: +358 20 427 2099
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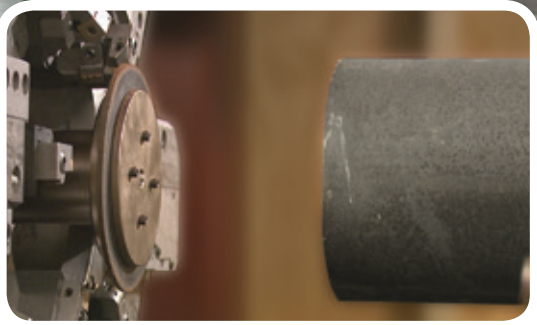

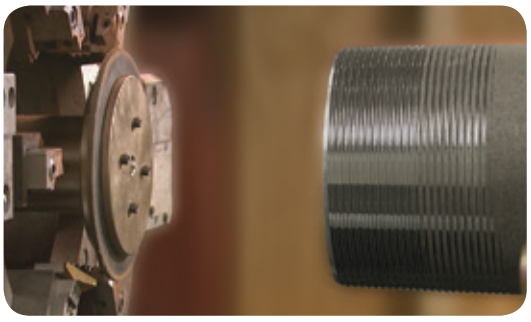

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Automatic punching machine

THE PA-80 automatic punching machine from SMS Engineering, Italy, is suitable for punching steel, stainless steel and aluminium bars with round, square or rectangular section. It can produce round and square holes with or without deformation, and it is suitable for producing components for shelving, radiators, ladders, bed frames and similar products.

Punching can be done to one side, two opposite sides, or alternate opposite sides (pitch is variable). The main features of the machine are pitch precision, straightness of the worked bars and fast change of the tooling. The operator only has to load the piece on the machine at the right position and push the start button.

SMS Engineering's PA-80 automatic punching machine

The machine is composed of a heavy, electro-welded steel frame; a trolley equipped with special clamping gripper; special punching units; controlled axis to manage all tube movements; hydraulic power pack; and an electrical cabinet supplied with control panel and electrical installation.

The maximum tube size is 80mm, with a standard length of 3m (with options for 4, 5 or 6m); punching power is 3, 6 or 10 tons.

SMS Engineering Srl – Italy
Fax: +39 035 58 15 09
Email: commerciale@sms-italy.it
Website: www.sms-italy.it

Rotary pipe scrapers

RITMO'S RTC 160, RTC 315 and RTC 710 are rotary scrapers for preparing plastic pipes and fittings before electrofusion welding.

The pipe scrapers remove the oxidation layer caused by weather and ultraviolet rays. If not removed, this oxidation layer would compromise the quality of the joint.

Among the main construction features is a device that makes it possible to maintain a constant thickness of the continuous chip, even if the pipe is misshapen, and to adjust the length of the surface to scrape according to the depth of the electrical coupler.

The RTC 710 features an extendable arm to scrape the exact length of the electrical coupler, which is an advantage when having to perform maintenance/repair jobs on a building site. The main chuck has four extendable arms that directly clamp the inside diameter of the pipe.

The external working range is Ø 355 to 710mm, and the maximum length is 530mm. RTC 160 has a working range from Ø 50 to 160mm, with maximum length of 114mm; and RTC 315's working range is Ø 75 to 315mm, with maximum length 137mm. The PS line consists of two models: PS 180 and PS 400. These easy-to-use rotary scrapers are also used to prepare plastic pipes and fittings before electrofusion welding. The tools have an adjustable chuck covering the whole working range, and a blade holder orbital arm.

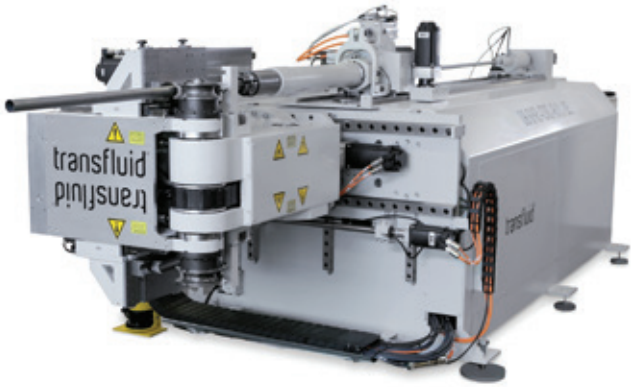
The PS series ensures a constant and regular removal of the shaving. The scraper's blade holder allows the scraping of the entire electrical sleeve's length, most useful when carrying out on-site repairs.

The PS 180 has an external working range from 75 to 200mm, and a maximum length of 129mm; PS 400's working range is 137 to 426mm, with maximum length 150mm.

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

Ritmo's RTC 710 rotary scrapers features an extendable arm to scrape the exact length of the electrical coupler

Dynamic concepts for collision-free pipe bending



The 't bend' DB 642-CNC-RL with rotating head is a dynamic solution for pipe diameters from 30 to 90mm

IN pipe bending, precision is critical. In order to ensure good results, the use of the right bending technology is becoming increasingly important. This is particularly true for challenging requirements such as installation space and system positioning, as they can restrict the conditions needed when forming pipes.

In many cases, neither a right- nor a left-bending machine can produce the required geometry of the pipe bends without colliding with the machine frame. A solution with the maximum number of bending options is required. For this purpose, transfluid Maschinenbau has created technologies in its 't bend' machine category, offering two effective right/left bending concepts for different pipe diameters. In the development of these bending machines, the focus was on the optimum utilisation of the systems.

"For pipes with a diameter of less than 30mm, we offer a 't bend' machine with two individually adjustable heads," said Stefanie Flaeper, managing director at transfluid. The adjustable heads allow both right- and left-hand bending operations; the right bending head is still-standing, and the left bending head is suspended. "This design principle is very effective for small pipe diameters because the operation time is extremely short," said Ms Flaeper. "Changing from one bending direction to another can be completed in 2.5 seconds." Each bending head can be equipped with up to three tool levels.

The right/left pipe bending machines such as the 't bend' DB 630-CNC from transfluid offer bending options up to 30mm

In the second bending concept, transfluid has optimised the machine's effectiveness onto one rotating head. This system is also dynamic for larger pipe diameters from 30 to 90mm. Larger pipe dimensions can be efficiently bent right or left. The concept is the same for pipe diameters of less than 30mm; all shafts are servo-electrically driven and there are two tool levels on each bending head as standard. To free-form large radii, both machine versions can be equipped with a corresponding system.

transfluid Maschinenbau GmbH – Germany
Fax: +49 29 7297 1511
Email: info@transfluid.de
Website: www.transfluid.de

Orbital cutting technology

ROLF Schlicht's orbital cutting technology is a new cutting system for small pipes used for the cutting of semi-rigid, rigid and brittle plastic pipes.

The system improves on conventional cutting systems and techniques like punch cutters, guillotines, saws and also rotating cutters. This new technique is very precise and provides a clean, burr-free cut face.

High flexibility is provided by setting and controlling process parameters as well as high cutting and reaction speeds at rotation speeds up to 3,000rpm and 150 cuts per minute.

It is used for OC-15 (up to 15mm Ø) for fuel pipes, small pipes requiring a clean cut face, medical technique, etc, and OC-40 (up to 40mm Ø) and OC-65 (up to 65mm Ø), and both machines are used for pipes which must not have swarf and where a clean cut area is important.

RS Multicut rotation cutter MC-50 is for dry and wet applications for precise cutting of soft and semi-rigid extrudates up to about 50mm diameter at highest line speed and cutting cycles up to about 400/min in stop/start operation and up to 4,000/min with continuously rotating knife. Diverse feeding and discharging systems are available, being built according to customers' demands.

Rolf Schlicht GmbH – Germany
Email: info@schlicht-gmbh.de
Website: www.schlicht.gmbh.de

Omni-x end forming tools

ALTHOUGH mainly known for the design and production of tube bending tooling, Omni-x has now become a large producer of end forming tools.

The decision was made following significant demand from its customers to not only produce tooling for tube bending machines but to also produce tools for their end forming machines.

It was decided to invest in new machinery and into the design process. "We wanted to ensure that the quality and performance of our end forming tooling was to the same standard as our tube bending tooling," said Omni-x MD Josef Weber.

"The response from our customers has been very encouraging and the growth from this part of the business has been unprecedented. We have the capacity to produce end forming tooling for tubes from OD 20mm to 76.2mm.

"There are three variants of end forming that Omni-x produces – I/O, C-Reducing and C Expanding. This is a two-function segmented shaping tool I/O. It is suitable for reduction and expansion of tube diameters. Complete assembly is composed of external collets, internal fingers, mandrel and barrel in which the individual parts are assembled."

This type of tool is the only one that has fingers and external collets. This means that it is possible to re-enforce the shaped area from the inside or the outside, which gives much greater variability in this type of tool. From the range of segmented shaping tools, the I/O gives the user quality from the point of view of tube shaping.

The single-purpose segmented shaping tool is marked with a "C" or an "R" and is used for reducing the diameter of the tube. The complete set contains an outer collet, a gripping adapter and a cone. This type of tool contains only external collets. This means that it is possible to put pressure on the shaped area from the outside, which allows the user to reduce the diameter of the tube.

The single-purpose segmented shaped tool is marked "C" or "E". It is suitable for expanding the tube diameter. Complete assembly is composed of internal fingers, mandrel and barrel in which the individual parts are assembled. This type of tool contains only expanding fingers. This means that it is possible to put pressure the shaped area from the inside, which allows the user to expand the diameter of the tube.

Omni-x CZ sro – Czech Republic
Fax: +420 548 212 804
Email: sales@omni-x.cz
Website: www.omni-x.cz

From coil to finished tube

FOUR years ago the owner-managed Asmag Group from Austria took over Seuthe in Germany and in that time both companies have enjoyed considerable success both individually and as a one-stop equipment supplier for tube mills.

Asmag, the Austrian machinery and plant manufacturer for the steel tube and non-ferrous metal industry, has achieved premium product quality and manufacturing productivity in drawing, straightening, sawing and cutting, chamfering, stacking and bundling equipment. The company is an experienced global supplier whose innovative products stand out for efficient productivity and high quality manufacturing standards. Asmag's strengths lie in its depth of in-house manufacturing capabilities. It offers effective communication, personal service and support.

For the last 30 years, companies in the tube and profile manufacturing industry have been relying on customised and individual solutions from Asmag GmbH, which is based in Scharnstein, Austria.

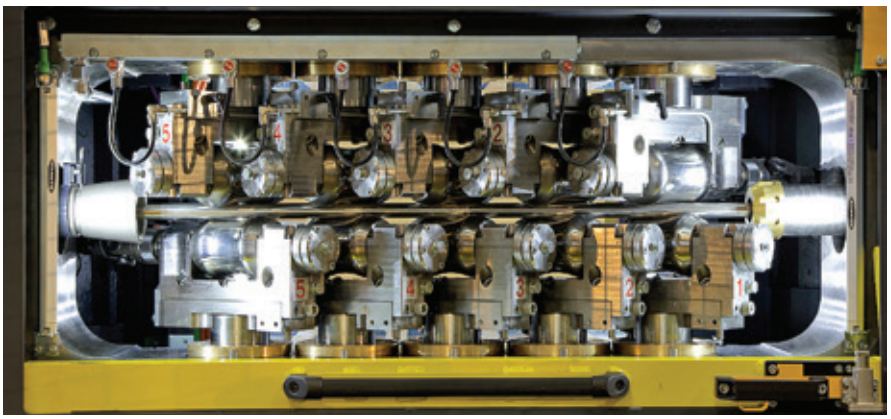
Whether a customer needs equipment for extrusion, pointing, drawing, straightening, cutting and chamfering, finishing, stacking and bundling or material handling – engineers for special purpose machinery and plant equipment will question, scrutinise, investigate, research, develop and design for as long it takes to ensure the smallest detail fits and the best solutions have been found.

Asmag believes a new system should not just provide customers with a flexible, faster and more economical production solution – it should also bring with it specific competitive advantages.

The organisation and structure of Asmag are customer-orientated and adapted to customer needs. A project manager acts as a competent partner for each customer and is responsible for all processes from the beginning of a project to start-up at the customer's site.

A qualified engineering team and an experienced production team assure that exactly the equipment desired is delivered to the customer. It is the goal of Asmag to achieve that.

View inside an ASMAG straightener



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Website: www.asmag.at

Seuthe GmbH – Germany
Fax: +49 2372 506 111
Email: sales@seuthe.com
Website: www.seuthe.com

Heavy-duty pipe bevelling machines unveiled

TAG Pipe Equipment Specialists has announced the global release of its new line of ID locking pipe bevelling (end prep) machines. The Prep series is TAG's latest innovation in bevelling technology, and has been developed from over 30 years' experience in the industry.

TAG Pipe states that, as a company that prides itself in maintaining its market position, it is constantly evaluating its products, modifying and improving based on customer feedback, experience and requirements.

The flagship machine in the new range is the Prep 24. Covering a range of 7" to 24" pipe, it has been designed to suit the arduous conditions and materials faced by pipe fabricators. With a removable centre shaft for rapid and simple set up in the pipe, the revised, lightweight, yet heavy duty six-point locking system, together with new motors (3,200W electric or 3.5Hp pneumatic) and an uprated gearing system enable the Prep 24 machine to bevel pipe of almost any wall thickness, and any material.

For high volume repetitive work where consistent, high quality machine finish bevels are required, the TAG Prep series of bevelling machines are a solution for any job site or workshop application.

TAG Pipe's range of equipment also includes portable pipe bevelling machines; portable pipe cutting and bevelling machines; pipe alignment clamps; pipe stands and pipe handling equipment; pipe purging equipment; plate bevelling machines; tube pulling and expanding equipment; and tube to tubesheet welding machines.

TAG Pipe Equipment Specialists Ltd – UK
Email: sales@tag-pipe.com
Website: www.tag-pipe.com

TAG Pipe's Prep 24 pipe bevelling machine

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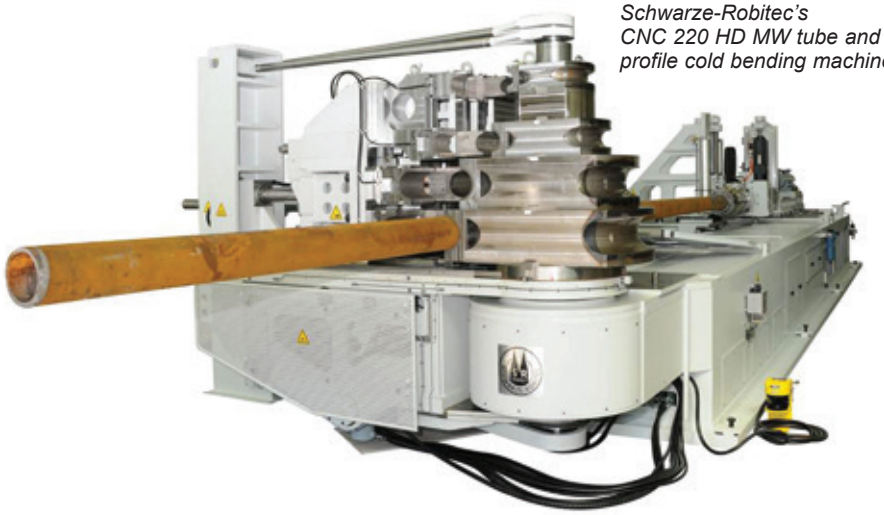
Tube and profile cold bending machine with short set-up times

TUBE production for ships, the chemical industry or power plant construction is associated with large quantities. Central production processes such as bending the many different tube types must be effective.

Tube bending machines in these industries must be flexible and able to process tube bends in different nominal diameters and materials in quick succession. Schwarze-Robitec marketing manager Jürgen Korte commented, "If a user has to convert the machine every time a new tube bend is to be produced, the total production would be much too time-consuming and drawn out. The set-up times therefore need to be kept to a minimum with the aid of multiple bending tools."

The CNC 220 HD MW tube and profile cold bending machine from Schwarze-Robitec has been developed to tackle this task efficiently with one multiple bending tool, with a measuring system to ensure accuracy.

It is able to process tubes with maximum diameter of 219.1 x 12.7mm, at a tube length of up to 6m.



Schwarze-Robitec's CNC 220 HD MW tube and profile cold bending machine

Despite its size, the 32-tonne plant is flexible: the multiple bending tool allows up to 70 per cent of the set-up times of conventional plants to be saved. It is possible to process tubes in different materials, such as steel, copper-nickel-iron alloys and stainless steel, on one tool and with no conversion work. At the same time, thin-walled and thick-walled tubes with different diameters can be bent.

Precision is ensured by the integrated Spring Matic measuring system, which determines the rebound of the tube after initial bending.

It is then immediately 're-bent' so that the bend is executed to accuracy of half a degree.

"This is an exceptionally precise value considering the size of the plant and the tube," said Mr Korte.

In addition to tube bending machines and bending tools, Schwarze-Robitec's product range includes tube perforating machines, measuring stations, and solutions in the area of special machinery construction.

Schwarze-Robitec GmbH – Germany
Fax: +49 221 89008 9920
Email: sales@schwarze-robitec.com
Website: www.schwarze-robitec.com

Tubular inspection services

TUBOSCOPE, a division of National Oilwell Varco, LP, is a supplier of tubular inspection services and equipment to the petroleum and pipe manufacturing industry. Its technologies are used for inspecting new and used tubular goods, to demanding and exacting industry and customer specifications.

Its Amalog® and Sonoscope® electromagnetic inspection (EMI) technologies are recommended for their efficiency and the Truscope®, TruWall®, and TruScan® ultrasonic (UT) inspection systems are capable of performing at high speeds.

Tuboscope also supplies mill inspection equipment, available to manufacturers of tubular goods worldwide, which can be employed to effectively inspect tubulars as they are fabricated. These mill units are capable of operating at high testing speeds and can be custom-designed to production line requirements.

An example of this capability within the Tuboscope product line is the Truscope A/S©, which stands for Truscope-Amalog-Sonoscope. This inspection system combines non-destructive techniques of EMI (electro-magnetic induction) and UT (ultrasonic) principles to detect, evaluate and classify, in a single pass of the pipe through the system, transverse and longitudinal, internal and external flaws as well as wall thickness variations and laminations.

The Truscope A/S system provides full-body inspection across a large range of pipe diameters. These pipes can be seamless or ERW; manufactured of ferrous or non-ferrous alloy materials; and with a variety of end conditions – saw-cut or cropped; plain-end; threaded; coupled; and upset or non-upset.

With its combination of EMI (Amalog and Sonoscope) and UT (Truscope) techniques, the Truscope A/S satisfies the latest editions of API 5CT, 5L and 5D, as well as numerous other international specifications for non-destructive inspection of tubular products for the energy industry.

The inspection system is comprised of two main sections – the inspection platform and the computerised inspection electronics.

Placed within a pipe conveyor line, the pipes are advanced to the inspection platform. Mounted on this platform are pinch rolls, which contain the pipe and provide the driving power to move it at a constant speed though the three individual inspection heads, or positioners. The testing sequence is first the Sonoscope, followed by the Amalog and ending with the Truscope. All three positioners are mounted on track roller systems to allow them to be moved in or out of the conveyor line for pipe size changeover or maintenance.

Pipe to be inspected is first conveyed through the Sonoscope inspection unit, where a high-strength active magnetic field orientated longitudinally is introduced into the pipe. With the entering pipe end, a multi-number of stationary detector assemblies, or “shoes”, are brought into contact with the outside diameter pipe surface. Flaws such as transversely orientated cracks, rolled-in slugs and pits are detected by this inspection method.

The pipe is next conveyed through the Amalog inspection unit. The Amalog inspection unit is equipped with a dual-shoe detection system integrated into a rotating magnetiser assembly. As the pipe enters the Amalog inspection unit, a high-strength active magnetic flux field, circumferentially orientated, is introduced into the pipe. The rotating detector shoes then scan the outside surface area of the pipe circumferentially in a helical path. Flaws such as longitudinally orientated seams, cracks, and overlaps are detected by this inspection method.

The pipe is then conveyed through the Truscope inspection unit, which identifies internal and external flaws and wall thickness variations by utilising ultrasonic sound waves coupled to the pipe surface by water.

As the Amalog, the Truscope is equipped with a multiple-shoe detection system integrated into a rotating assembly. As the pipe enters the rotating assembly, water is applied to the outside pipe surface to provide the acoustic coupling required for ultrasonic inspection.

The detector shoes are then brought into contact with the outside pipe surface to scan it circumferentially in a helical path.

The Truscope can be configured to detect longitudinal, transverse and oblique defect orientations, as well as out of tolerance wall thickness variations and laminations.

Tuboscope – USA
Website: www.nov.com

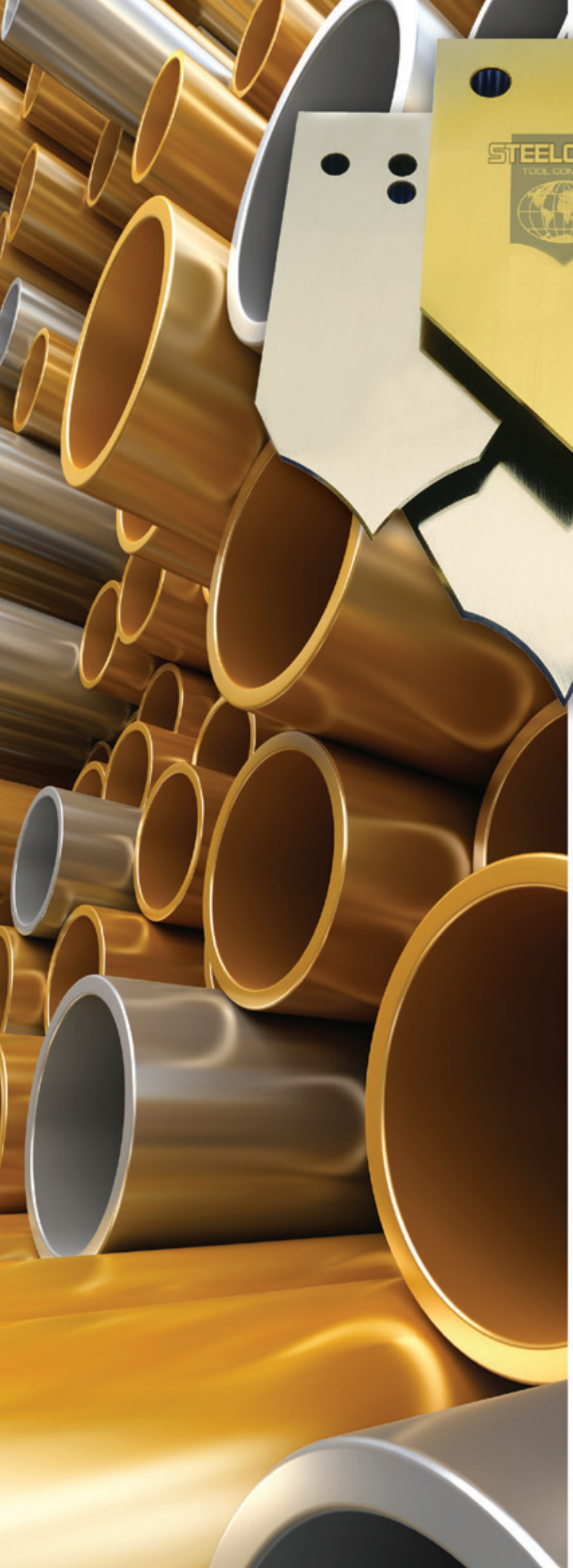
New developments at AWL

AWL-Techniek showcased a number of new developments and notable accomplishments during the EuroBLECH trade exhibition in Hanover, Germany.

The company has developed the Quick Motion Spot Welding Cell that shortens weld-to-weld time and has a smaller footprint. With 124 per cent more output compared to conventional welding cells (depending on the product and weld parameters) and a footprint as much as 15 per cent smaller, the Quick Motion Spot Welding Cell provides flexibility and speed.

AWL has taken a step forward in the field of exhaust systems. The use of laser hybrid welding to join system parts has created a new method for welding exhausts. The first project to incorporate this new technology is currently in production on the AWL shop floor in the Netherlands. AWL is also optimising its laser welding fixtures to ensure the piece of metalwork is clamped with precision. By using localised air nozzles with compressed air, AWL is able to reduce air consumption. In addition, the clamping plate design has been simplified by mounting the clamping points on top.

AWL-Techniek – Netherlands
Email: info@awl.nl
Website: www.awl.nl



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Radtube drives Nukon REX pipe cutters

A NEW pipe cutting attachment for Nukon's REX fibre laser machines is being driven by Radan Software's specialist Radtube module.

The pipe cutting function increases the flexibility of REX machines. Nukon development manager Alper Tarkan said: "The new attachment provides an economical method of providing full pipe cutting functionality, increasing opportunities for manufacturers who incorporate it into their production."

Radan, from Vero Software, already provided a full CAD/CAM solution for standard REX machines, and worked closely with Nukon engineers to create an integrated package which efficiently drives the new pipe cutting function.

Paul Monte, Radan business development manager, said: "Having developed the functionality and post processor to drive this innovative solution on the Nukon machine, it not only provides the CNC code, but also gives full simulation of the processes, to eliminate error on screen, before any metal is cut."

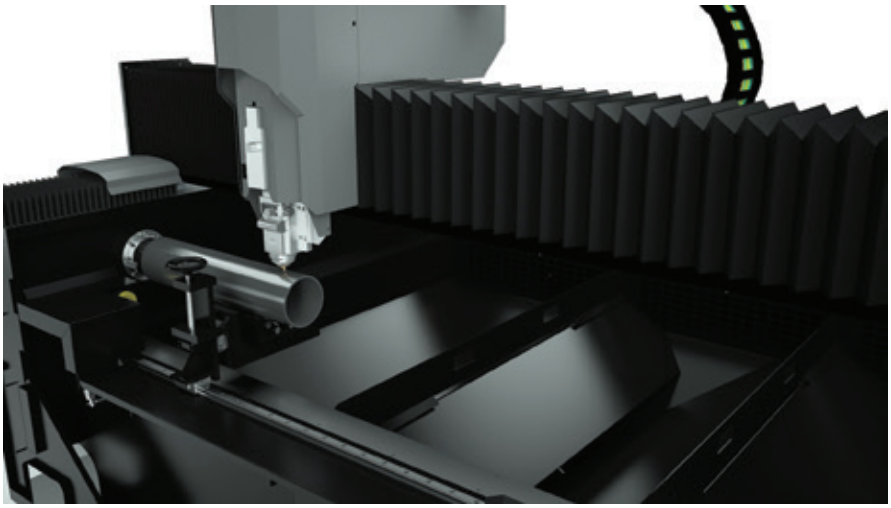
The innovation was unveiled at the Brno exhibition in the Czech Republic, and was also recently demonstrated at Maktek, Istanbul, and Euroblech in Hanover.

"It generated considerable interest at all three exhibitions, and a number of sales have already been made." Paul Monte also says the cooperation extends the current partnership where Radan is supplied with Nukon laser machines as part of its overall sheet metal laser cutting solutions.

The pipe cutting function is suitable for cutting and engraving a variety of metal pipes and tubes, for sectors such as advertising, crafts, decoration, lighting and other metal processing industries.

Radan's Radtube is a laser CAD/CAM system for rotary and multi-axis cutting machines, developed specifically for tube cutting and manipulation. The intuitive programming system allows tubes or sections to be parametrically defined from a library of standard shapes, allowing cutting apertures and profiles to be defined.

Radtube supplies a library of parametric tube shapes that simplify the creation of the tube material to be cut. If a suitable section does not exist, the 'Freeform' option is used to create the special shape section. Freeform shape tubes can even be created from one of the libraries of Radtube parametric shapes. If none of these standard shapes is suitable, the user simply draws the section centre line profile or outside/inside shape using the integrated CAD tools. All modelling in Radtube is done entirely in 3D.

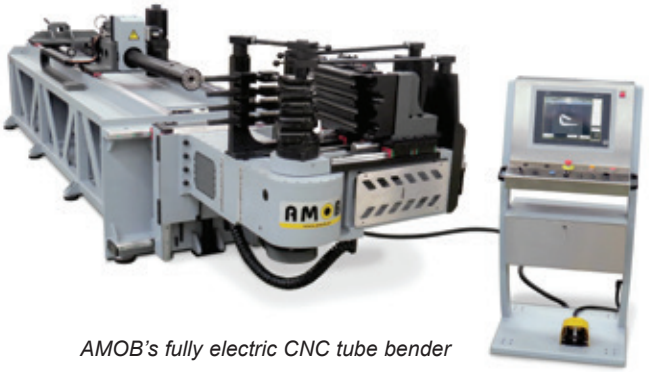


Vero UK
Website: www.verosoftware.com

All-electric tube bending machine

AMOB's CE CNC R is designed to bend complex tube shapes with optimised consumption, accuracy, repeatability and control. The fully electric CNC tube bender is designed to be environmentally friendly, with no oil leakage or floor contamination, energy saving and quiet and clean operation.

The tube pipe bender is available in capacities from 9 to 90mm for mild steel, brass, stainless steel, aluminium and other materials. All axes are servo electric driven and have a position storage. This is an advantage in tool changing, as mechanical adjustments are no longer necessary. The system also allows 'first part right' production in most cases, reducing wasted material.



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Email: comercial@amob.pt
Website: www.amob.pt

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Upgraded high speed pipe purging system

AN upgraded pipe purging system has been introduced for high speed pipe joint welding by Huntingdon Fusion Techniques (HFT)®. Stocks of QuickPurge®III are available for delivery worldwide.

Using Intacal® II combined with the integrated PurgeGate® device makes it possible to safely inflate the dams with argon gas, prior to releasing it for purging the space between the dams where the weld joint is located.

It is almost impossible now for the inflatable dams to burst as a result of undue pressure increase or accidental flow increase of the inflation and purging gas.

Continuing the constant development of products Huntingdon Fusion Techniques (HFT®) has launched this new upgrade of the QuickPurge®II system.

The sleeve between the dams reduces the volume to be purged by two thirds, ensuring a fast purge time down to ten parts per million of oxygen.

HFT® has a jointly owned patent for the design, having originally designed it with the help of Babcock International (now Doosan Babcock) for its contract to lay a stainless steel pipeline along the south coast of England for the transport of liquid natural gas from the Isle of Grain.

Sleeve lengths for each size have been carefully calculated so that the QuickPurge®III pipe purging system can be pulled around 90° elbows for the purging of connecting joints.

QuickPurge®III systems are available for each American Pipe Institute (API) pipe diameter, with an expansion range to cover all internal diameters from Schedule 10 to schedule 160 and the even thicker pipe wall standards.

Return on investment (ROI) charts are available, to show that the payback for each size will normally be between one and two welds, giving companies the opportunity to make very significant savings on larger contracts.

Materials chosen for QuickPurge®III are such that they are resistant to the higher weld heat present now that the dams are slightly closer to the welds and at the same time exhibiting lower outgassing rates to prevent weld contamination. For welds that are pre-heated and post-weld heat treated, HFT® manufactures the special HotPurge™III matching range for the higher and longer temperature exposure requirements.

In some cases, with QuickPurge®II customers have requested longer sleeves for a variety of applications because of the positioning necessary for the second dam. That option is also available for the new QuickPurge®III version.

On large contracts, HFT® will send technicians for installation, to help in the instruction of welders to show how the system works and to explain the methods of use prior to supervising start up.

All HFT® products are covered by the normal 12 month-warranty plus an instant, no quibble replacement guarantee in the event of faults that may occur.

Huntingdon Fusion Techniques Ltd – UK
Website: www.huntingdonfusion.com

Pipe roll grooving machine

COPIER is manufacturing six pipe roll grooving machines, under its GM2 Groove Master brand. Two of these machines will go to the Middle East and the other four will be supplied to European customers. The pipe roll grooving machines press a groove into metal pipe in order to attach a coupling for sprinkler pipe systems.

The machines manufactured by Copier are able to groove up to 24" pipes. Different drive rolls and groove roll sets are needed, depending on the pipe diameter to be grooved. The depth of the groove is easily adjustable via the machine's control panel. An 8" pipe with 8mm wall thickness takes less than a minute to roll groove on one end.

Manufacturing six GM2 Groove Masters at the same time

Claimed advantages compared to hydraulic driven grooving machines include quick and easy set up using a touchscreen, with no mechanical adjustments for the grooving depth; easy to adjust during operation, if required; less flaring, because of high control of the grooving process; no hydraulics, low noise and no leakage; and easy to install and to move in the factory.

The machine can be controlled by setting up the required parameters on the touchscreen. Setting up the program takes two minutes, and CNC programs can be stored for re-use.

The groove- and drive-rollers are easily exchanged in around five minutes.

Once the machine is set up, roll grooving can begin by placing the end of the pipe over the drive-roll and pushing the start button. The groove roll moves down and stops when it touches the pipe. Pressing the start button again starts the grooving. When the machine reaches the correct depth, it grooves a few rounds without feeding the grooving roll; it then stops and the grooving roll moves back up, allowing the dimensions of the groove to be checked. The grooving depth is easily adjusted via the touchscreen.

The requested feeding speed of the groove-roll and the rotating speed of the drive-roll are not influenced by the grooving forces. When flaring occurs, the speeds can be adjusted to find settings that minimise flaring.

Copier Bevelmachines – Netherlands
Fax: +31 183 44 8028
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Website: www.bevelmachines.com

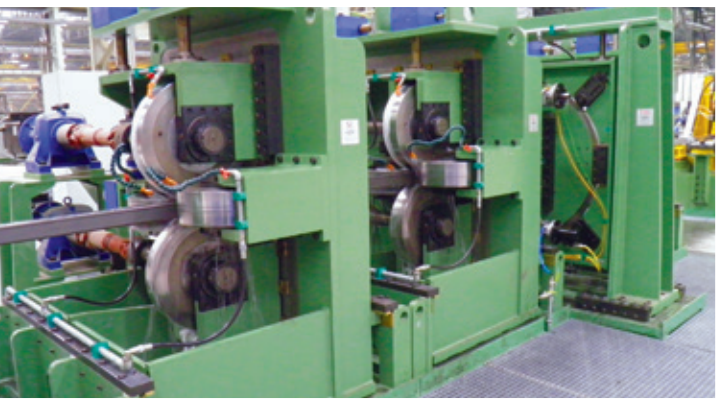
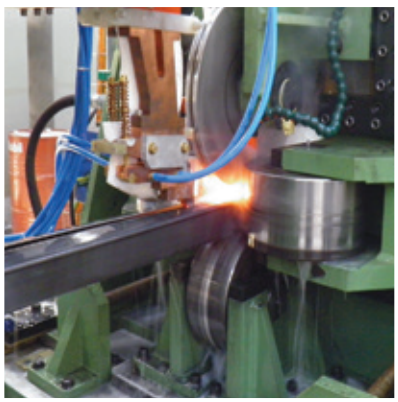
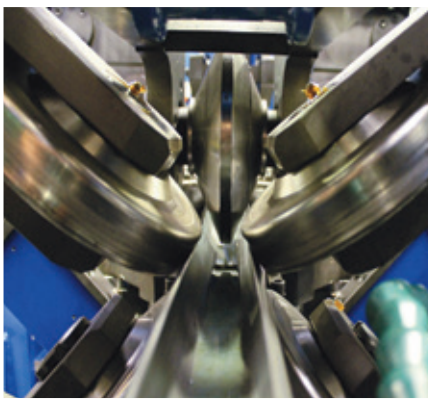


olimpia80

TUBE MILLS



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Clamping technology

THE conditions and requirements in manufacturing technology are becoming increasingly complex, and include factors such as flexibility, shorter set-up and production times, increase of operational safety and efficiency. At the same time, users are looking for simple and cost-effective solutions.

In the field of mechanical and hydro-mechanical clamping elements, Enemac offers flexible and reliable clamping technology with various power clamping systems and hydro-mechanical spring clamping systems.

The range runs from controlled clamping with torque handle ESBS/ESBT with a nominal clamping force of up to 40kN, to power clamping nut ESB with up to 200kN, and type ESD with up to 180kN. For these products, relatively low torques are converted by an internal gear ratio in high axial forces.

Clamping elements from Enemac

In the case of the power clamping screw ESS, the tightening torque is converted by a wedge clamping system in clamping forces up to 250kN. Thread sizes from M 36 to TR 100 are available.

With the 'spring clamping cylinders', a combination of disc spring and hydraulic, clamping forces up to 350KN are available. The hydraulic supply is only required during installation and removal of these products; in operation, the axial force is kept purely mechanically, by a disc spring assembly.

This clamping technology offers an alternative to simple workholding equipment such as clamps and brackets, as well as to semi- and fully automatic clamping elements, with their elaborate power supply and control systems.

Especially in the manufacturing process of steel parts in presses and punches, the clamping elements provide a high degree of safety through low hand forces during tightening of the necessary tools and equipment.

The clamping systems are suitable both for original equipment and as retrofit items.

Enemac GmbH – Germany
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Non-corrodible heating and cooling equipment

E BRAUDE, based in the UK, has been serving industry for over 55 years. It is primarily a process heating specialist manufacturer of non-corrodible heating and cooling equipment for the highly corrosive liquids typically found in pickling and similar processes in the pipe and metal-based industries.

"We are focused on the liquids and conditions other suppliers would avoid," said David Snoxhill, MD. "Our expertise is in aggressive and corrosive solutions that conventional equipment cannot withstand."

Braude has been exporting for many years, and has recently increased its efforts in the Asian markets. The company was approached by a stainless steel mill manufacturer in India who required high output 400,000 kcal/hr heaters for the offline pickling tanks used in its plant design.

Braude designed and built steam heat exchangers specifically to suit the company's tanks, while meeting the challenges of its cost profile. Braude also undertook a contract in Asia to supply heat exchangers for the pre-treatment line for one of the largest galvanising plants in the world.

A Nautilus heat exchanger from Braude that was created specifically for a leading stainless steel manufacturer

All Braude products are manufactured from high integrity chemically inert fluoropolymers (eg Teflon™), and are designed to ensure long life in aggressive solutions.

The product range includes tank and vessel heaters/coolers for use with steam, hot water or thermal fluids; chemical service pumps; external heating systems that are mounted outside the process tank to avoid clutter and to prevent damage by heavy workloads; and electric heaters and controllers.

E Braude (London) Ltd – UK
Fax: +44 1252 875281
Email: sales@braude.co.uk
Website: www.braude.co.uk

Pipe production for nuclear, aerospace and medical applications

DANIELI has commenced production of its state-of-the-art premium threading machine and related equipment with the objective of a 20 per cent increase in productivity alongside a 20 per cent reduction in capital investment.

The threading machine has been designed utilising the most modern techniques of finite elements to verify and ensure maximum structure rigidity, reliability over time and reduced maintenance. The equipment for both pipes and couplings assures a constant output in quality, which is not dependent on operator skills.

Danieli pilger mills employ experience and technology from Russian design in lever, duo and quarto-type mills and combine it with its own Italian quality in the manufacturing process and attention to detail. The equipment promises a higher production rate with the ability to constantly produce top quality pipes.

Danieli SpA – Italy
Website: www.danieli.com

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www.siempelkamp.com

Ultra-compact tube cutting system

ROFIN's new StarCut Tube SL reflects the expertise of two decades of high-precision laser tube cutting.

The newly designed system combines maximum productivity with a small footprint.

No gaps, no joints, completely separate compartments for material processing and machine hardware, optimal water handling for wet cutting – this is only made possible with the cast mineral base. The cast base enables maximum stability and density as well as optimal vibration damping.

With dimensions of only 1,340mm width x 700mm length, including all components and ancillary parts, the StarCut Tube SL sets the new standard for space optimisation. For comparison purposes – a Euro-pallet measures 1,200mm x 800mm. Even the large, user-friendly industrial-grade touchscreen does not impact on the footprint. In addition, the system can be placed directly against the wall or another system, as production and maintenance require access from only three sides.

The diagonally opening door provides ergonomic access to a spacious working chamber, there are no support struts in the way. On request, the StarCut Tube can easily be supplied with an automatic tube loader, customer-tailored automatic part removal or sorting stations.

Several applications require the tube to be flushed with liquid during the cutting process. It is with this process that the machine sets a new standard in its water management. The cast mineral setup with no joints provides a water-tight working chamber with an integrated sink. Circulating pump and filter unit are accommodated within the housing. The flow rate is computer-controlled and monitored and can be logged for process validation.

The StarCut Tube SL can be equipped with Rofin's new Human Machine Interface (HMI) Pro, which allows for a customised configuration. The new HMI integrates all user interfaces required during normal operation on a single screen. All information regarding system status and production progress is clearly visible, regardless of the component being processed. User input and parameter modification is limited to predefined fields. Separate user interface screens to control the laser, CNC and accessories are all integrated.

The HMI Pro is based on a smart administration concept which allows easy creation of production recipes. With the built-in user administration, unique access rights can be set for individual end users.

Mechanical engineering, laser source production, cutting optics, user interface – all critical components are designed and produced by Rofin itself. Unlike other tube cutting systems, this solution truly comes from a single source. In this way it offers benefits regarding system fine-tuning and fast maintenance.

Rofin-Baasel Lasertech GmbH – Germany
Website: www.rofin.com

Deburr for cut and bent tubes

KENT Corporation has developed a new Burrmaster deburring machine to automatically deburr the ends of mitre cut and bent tubes. The machine, which can be used in many industries, was recently purchased by a major US manufacturer of exhaust systems. This is the company's second system and it is considering the purchase of a third.

The new Burrmaster machine allows the operator to control the machine completely from the push button station. The process begins when the tube is loaded into the custom clamp fixture by the machine operator. The tube is then clamped and transferred across a spinning wide-faced brush. The head of the spinning brush also rotates simultaneously and this dual action movement gives a high quality and consistent finish around the complete periphery of the tube.

The machine is available with manual feed, automatic feed or can be fed by a robot. It is capable of running round, square, shapes, tubes, bars and aluminium extrusions.

Kent Corporation – USA
Fax: +1 440 237 5368
Email: sales@kenttesgo.com
Website: www.kenttesgo.com

Cleaning line

THE Kombi 24/4M A ultrasonic cleaning line was designed and built for the cleaning of several parts in different areas of application, including automotive, watchmaking, aeronautics, medical, general and precision mechanics.

The machine is an automatic multi-tank with loading and unloading inside the covering. MEG designed and built the plant for the cleaning and drying of metal parts. The machine is composed of an ultrasonic cleaning tank, a tap water rinsing tank, a demineralised water rinsing tank with ultrasonic, and a drying station. The parts are positioned into specific baskets and immersed into the tanks through an automatic handling system with two axes, managed by an easy-to-program PLC with a touchscreen.

The Kombi 24/4M A is protected by a partial covering with horizontal sliding doors that allow the operator to monitor the cleaning cycle and to easily access to the machine, eg for maintenance. The tanks are constructed in AISI 304 stainless steel, and the ultrasonic tanks are insulated with an anti-vibration system. Other features include loading and unloading water collector; tank discharge valves on the platform inside the machine for ease of activation; tank cleaning gun for cleaning/rinsing the tanks; and a level control system and electrovalve for the refilling/replacement of the cleaning and rinsing tanks.

MEG Srl – Italy
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Website: www.meg.it

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35th ANNIVERSARY

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e-mail : international.sale@usm.it - www.usm.it

Weigh-measure-stencil systems for the OCTG industry

INFOSIGHT Corporation designs and manufactures automatic identification solutions for pipe and tube mills, as well as other industries worldwide. The company's headquarters, located in Ohio, USA, houses offices for design and support staff, and also factory facilities for the manufacture of all of its products. Engineering staff include mechanical, electrical and software designers with over 35 years of experience for the design of custom identification machinery for the pipe and tube industry.

For the OCTG industry, the company provides a large selection of identification solutions to automate production, reduce costs and improve product identification and traceability.

The Weigh-Measure-Stencil (WMS) system integrates several technologies into one custom-designed drop-in solution for pipe mills. Each WMS system is designed for the specific pipe mill product flow geometry, product size range and product throughput requirements. Available WMS system geometries include linear pipe movement 'in-the-conveyor' designs; lateral pipe movement 'walking beam' designs; and lateral pipe movement 'roll-by' designs. Other custom geometries are also possible.

Technologies and features available for incorporation into various configurations of WMS systems include weight measurement, length measurement, colour-banding, stencil marking, stamp marking, API weight/length tolerance checking, length range tolerance checking, weight and length adjustment factor for couplings and end protectors, and automatic joint numbering. Multiple programmable pre-stored message formats are available.

Pipe production reports can be printed to show time, length, weight and message data for each pipe, while printed tally reports totalise length and weight for both good and reject pipes. The systems allow archiving of data for reports, as well as uploading of report data.

As each end-user application and mill geometry is different, InfoSight WMS systems are designed specifically for each unique industrial pipe mill geometry and application.

InfoSight provides other standalone identification systems for the OCTG industry, including stencil systems for moving or stationary pipes; stamping systems; weight- or length-measuring systems; colour-band systems; ID and OD marking systems for API 5L large OD pipes; barcode marking systems for in-plant individual pipe tracking; and barcode reading systems.

InfoSight Corporation – USA
Fax: +1 740 642 5001
Email: sales@infosight.com
Website: www.infosight.com

FD Machinery Co.,Ltd

www.fdmachinery.com

FD's HLQ tube and pipe mills concentrate three major characteristics of modern mills:

High speed, Less labor and Quick change

High speed:

FD's world-leading, landmark patented product provides 200m/min mill speed without reducing saw blade life or cutting quality

Less Labor:

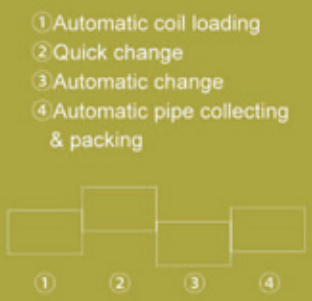
FD's patented series of automatic equipment will take you into an era of one-person-controlled machinery, with automatic coil loading, quick change, automatic change, and automatic pipe collecting and packing

Quick size change:

DNSA digital tube and pipe mill on size change within one hour

AUTO-DNSA automatic-change tube and pipe mill on size change within 30 minutes

AUTO-CFS automatic square and rectangular tube and pipe mill on size change within 10 minutes



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Email: fd@fdmachinery.com Web: www.fdmachinery.com

Tube industry solutions

THE year 2014 was positive for Adda Fer Meccanica, which increased its global presence and confirmed itself as a solid and reliable partner, not only for the study and the realisation of individual plants, but also as a partner able to provide turnkey solutions, complete and integrated, for the production of high quality steel pipes.

The group reached a turnover of more than €20m and the year 2015 started with renewed confidence and optimism about the challenges which are waiting for the company thanks to the a number of exciting projects: No. 7 Cutting Line DB10 double blade shear for one of the largest tube manufacturers in the world, that will be installed in Texas, USA, in the first months of the year; packaging machine for tubes up to 5" in the USA; TM4 tube mill for the production of tubes up to 4" in Europe; TM3 tube mill for the production of tubes up to 3" with packaging system in Africa; and a tube finishing line and an automatic packaging system for pipes up to 8" in Vietnam.

Adda Fer had a successful 2014

Recently Adda Fer Meccanica supplied a complete line for the production of electro-welded pipes up to 219.1mm (8") diameter to an important Vietnamese pipe manufacturer.

The new tube mill is able to produce round tubes from 76mm to 219.1mm diameter, square tubes from 70mm x 70mm to 175mm x 175mm and rectangular tubes from 100 x 40mm to 200 x 150mm.

Range thickness is from 3mm to 8mm while the length range is from 6m to 12m. The maximum working speed is about 60 mt/min.

Meccanica Adda Fer Srl – Italy
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Increase in pipe-cutting reliability with new split-frame technology

ENERGY sector portable machine tool specialist Mirage Machines, an Acteon Company, has achieved a step-change in the operational efficiency and reliability of cutting technologies for pipeline and plant fabrication manufacturers and contractors in the international energy sector.

Rising fabrication and maintenance project activity, including works on wellhead, riser and caisson assemblies, has significantly increased demand from construction yards, operators and dutyholders for new pipecutting technologies across the Americas, EMEA and Asia-Pacific. UK-based manufacturer and supplier Mirage Machines has evolved split-frame machine technology with the development of its MSF (Mirage Split-Frame) machine, which significantly improves the efficiency of pipecutting operations on infrastructure composed of heat-resistant, stainless and super-duplex metals.

The MSF technology from Mirage Machines

Mirage has developed innovative new self-squaring capability for the fully-portable MSF, reducing the risk of installation error during operations and significantly shortening the setup process, maximising the operational run-time of its equipment.

Richard Silk, managing director of Mirage Machines, says the MSF technology has applications in every energy-producing region, and is already being shipped worldwide to meet rising demand generated by capex and opex projects in new and existing oil and gas infrastructure.

"The pipecutting marketplace is a significant slice of the portable machine tool supply chain, yet until now the technology has not moved forward. The majority of machines in use have been based on an operational design which hasn't evolved in 30 years," he said.

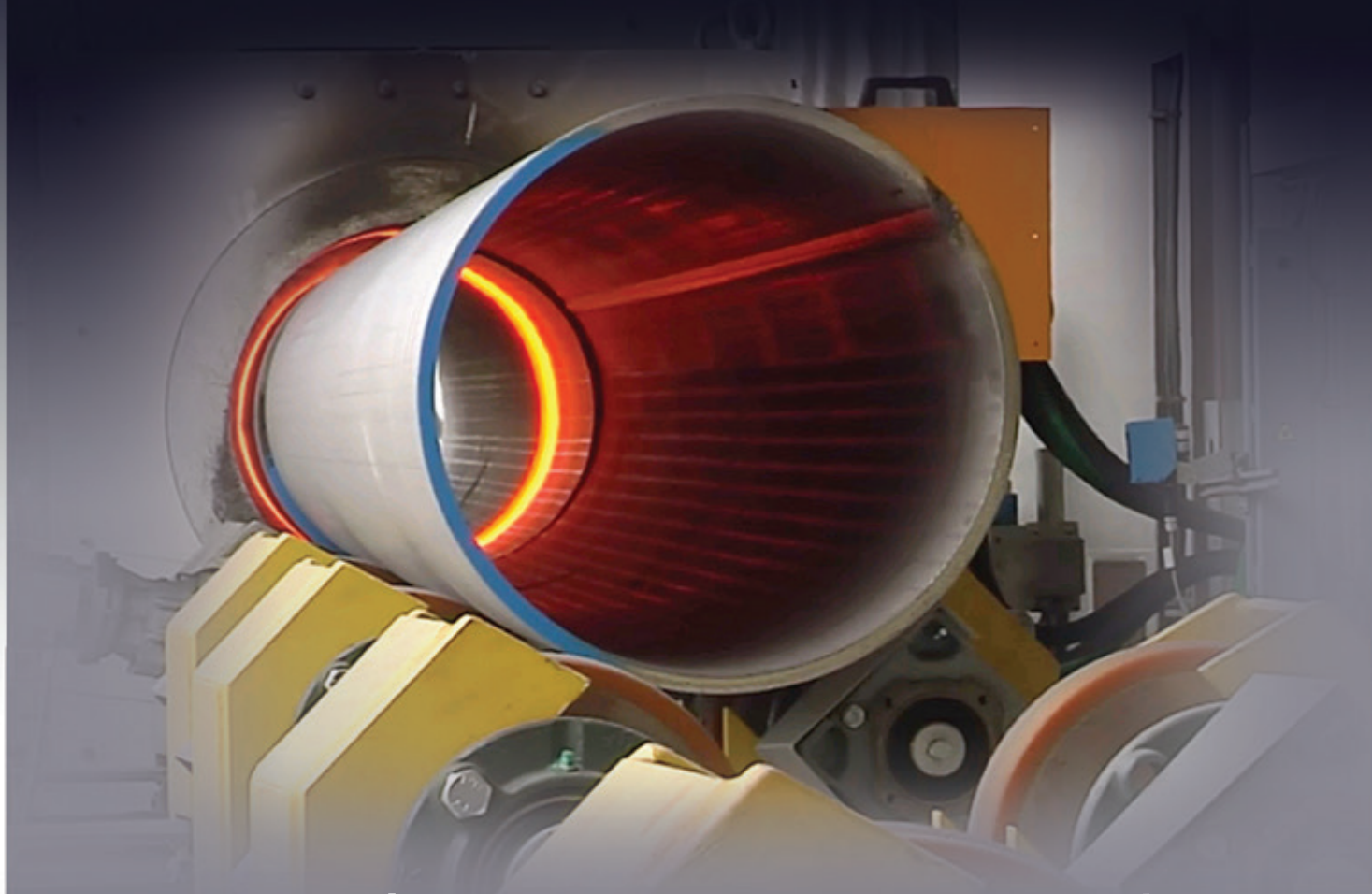
"We designed the MSF to bring about the step change the industry needs – reducing the weight of the machine while improving its technical capability, giving operators and service companies a more reliable, durable pipecutting tool which delivers excellent accuracy, without interruption, at any scale.

"Due to the level of global demand, we have already increased our manufacturing capability at our headquarters in the UK to deliver work-ready MSF machines across the regions, and have focussed on being able to supply from stock in the US and Australian markets to ensure that Mirage customers can respond quickly to the industry's needs."

Mirage Machines designs and manufactures technologies for applications including drilling and tapping, flange facing, hot tapping and line stopping, line boring, milling and gantry milling, orbital milling; and pipe and casing cutting.

Mirage Machines – UK
Website: www.miragemachines.com

INDUCTION HAS GOT MANY ADVANTAGES...



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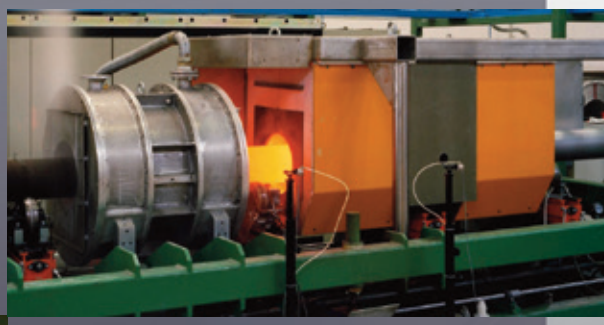

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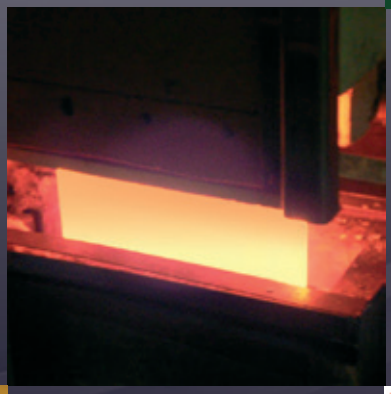

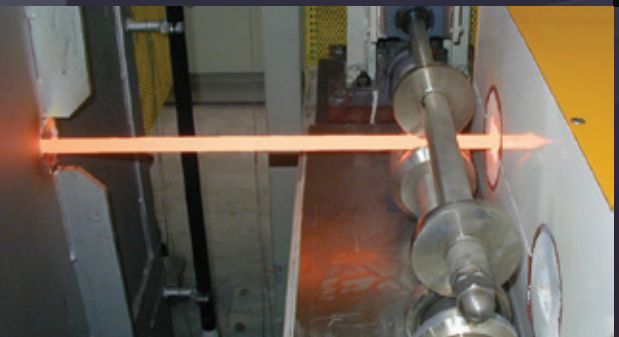

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APPLICAZIONI TERMOELETTRONICHE

Zaniolo CdA-31.15

Hydraulically adjustable stand for medium-diameter pipe

MCELROY has brought hydraulic capability to its Pipe Stand line for 200 to 500mm pipe, to help align thermoplastic pipe more efficiently on butt fusion jobsites.

McElroy's hydraulically adjustable Pipe Stand

The hydraulically adjustable Pipe Stand features hand-pumped hydraulic lifting, which gives the operator the ability to adjust the height of the stand while the pipe is still supported on the stand.

The hydraulic adjusting feature eliminates the need to remove the pipe from the stand so that the chain and height can be adjusted by hand.

As with McElroy's other line of pipe handling tools, this further reduces the demand for extra equipment needed to manoeuvre and hold pipe in place, which saves time and boosts productivity. "Designing products to better serve the needs of our customers has always been the driving force behind McElroy," said president and chief executive officer Chip McElroy.

"We're excited to offer this new innovation which will help streamline fusion operations involving long lines of pipe."

The Pipe Stands are tough and durable, with the ability to support 2,750lb of pipe. They feature soft rollers to protect the pipe and reduce scratching.

McElroy Pipe Stands for 200 to 500mm pipe can be upgraded so that they are hydraulically adjustable, by purchasing a cylinder kit and a hand-pump kit.

Each hand pump can operate on up to five pipe stands by hooking and unhooking to the pipe stand cylinder. They are compact, lightweight and easily portable.

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Email: fusion@mcelroy.com
Website: www.mcelroy.com

Fully customised large diameter pipe mills from Austria

PRODUCERS of large diameter pipe always require customised solutions whether for pipe cutting, longitudinal seam preparation or for pipe-end chamfering, and this also needs to be undertaken with high precision and at the lowest possible running cost.

Mill providers often find Linsinger's tailor-made design appealing. Currently a plate milling machine PFM 90/600LL and a pipe end bevelling machine RFM 56/12000 are being completed for Haeusler, a company that frequently uses Linsinger's expertise.

In addition to the Linsinger KSS sawing machines for steel billets and the Linsinger KSA saws for seamless tubes, the Linsinger BFMK strip edge millers and the Linsinger MC multi-cut parting saws have also been well proven in many longitudinally welded pipe mills around the world for a number of decades.

The specialised portfolio for large diameter pipe mills is complemented by the Linsinger PFM plate edge milling machines and the Linsinger RFM pipe end bevelling machines.

The Linsinger PFM plate edge milling machine is used for preparation of welding edge profiles. The machine works with height copy milling units and is capable of maximum cutting efficiency combined with minimum consumable tooling costs.

Simultaneous milling of both longitudinal sides saves time and money. The profile milling tools made by Linsinger enable virtually any geometry to be milled with high precision and speed.

The Linsinger RFM pipe end bevelling machine enables simultaneous chamfering of both pipe ends by a single operator.

The chamfered pipe surpasses API specifications and the long tool life ensures lowest possible running cost. The movable milling units chamfer a range of pipe lengths and the internal copy tools guarantee consistent chamfer geometries.

The RFM pipe end bevelling machine chamfers diameters between 16" and 90" with practically no burr. The backlash-free Linsinger patented DPD double power drive transmission system uses twin motors, small flanges and high torque for absolute precision.

All Linsinger machines are pre-assembled, tested and inspected by buyers in the factory in Austria prior to delivery to the relevant factory.

Linsinger Maschinenbau GmbH – Austria
Fax: +43 7613 8840 951
Email: maschinenbau@linsinger.com
Website: www.linsinger.com

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Instrumentation valves and tube fittings from India

AVLOK is an established Indian brand providing instrumentation valves, tube fittings and associated products. The company's products are ISO 9001:2008 certified and are claimed to be comparable in quality to major US/European products. The company is a regular exporter to most countries in Asia, North and South America, and Europe. All products are laser marked for easy identification during use and storage, saving user time and assisting in quicker assemblies.

The Avlok range includes single and double ferrule tube fittings; pipe fittings; hose assemblies and fittings; ball, check, needle and bleed valves; two-, three- and five-way manifolds; pressure gauges; quick-connect couplings; and tube clamps.

Products are available in materials such as aluminium, brass, carbon steel, Duplex, Hastelloy, Inconel, Monel, stainless steel and titanium.

AVI International – India
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Website: www.avlok.com

Automated welding

PEMA WeldControl in tubular welding

PEMA welding automation solutions are designed for heavy metal welding where technology and advanced IT solutions are utilised.

The PEMA WeldControl system frees the operator from the complexity of different controllers by providing simple, one-panel control. The system has three levels of operation and provides the right controls for every user – operator, welding engineer and service.

WeldControl is an efficient user interface for integrated machine and welding process control. All power systems can be integrated to a single system. All basic functions can be ready programmed at start-up, which limits the risk of human error. It facilitates integration of production systems and is easy to learn, and provides extended performance with all technologies. Regardless of the present level of automation, integration is possible with different products. PEMA WeldControl 100 and 500 provide a true management tool. Production monitoring for engineering departments and data collection provide valuable information for production management with regard to efficiency and development. Weld work tracking is also a good tool for quality control.

PEMA control devices and graphical user interfaces are used in all PEMA welding applications. The touch-screen control panels help operators to make use of automatic welding features such as column and booms, and boost the efficiency of both the welding process and the handling of workpieces.

The manufacturer states that costs can be reduced by adding more automation, which reduces the processing period of workpieces and improves quality, cutting down on post-processing time. PEMA automation is claimed to be simple to use, quickly adopted and easily transformed into new workpieces, and can improve work ergonomics.

Pemamek Oy Ltd – Finland
Fax: +358 2 762 8660
Email: info@pemamek.com
Website: www.pemamek.com

Extreme wall thicknesses

STAROFIT is a supplier of steel, alloy steel and stainless steel buttwelding fittings, providing rapid delivery to customers around the world.

The company has a permanent fittings stock of 6,500 tons, which enables it to provide prompt response to customer requests. The holdings range from a large stock of ASME and EN/DIN standardised products, to highly specialised elbows and fittings with extreme wall thicknesses and exceptional dimensions, in carbon steel, alloy steel and stainless steel.

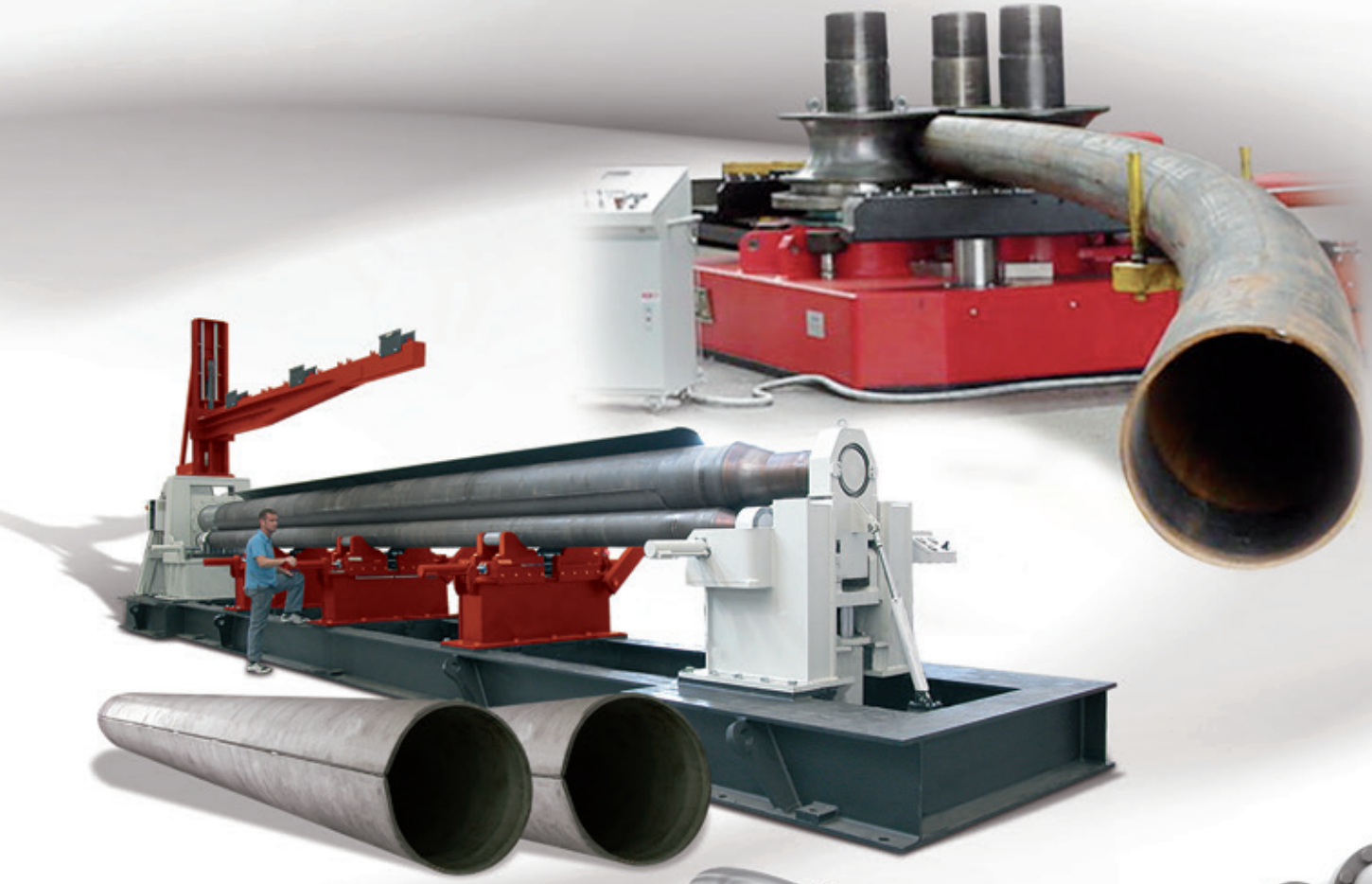
Starofit's stock programme features more than 50,000 different dimensions and 100 material grades, and the company recently invested in its holdings of low alloy material grades, in order to offer a comprehensive stock of elbows and fittings.

Starofit Klose GmbH & Co KG – Germany
Website: www.starofit.de

DAVI®

EXCELLENCE IN FORMING

THE WORLD LARGEST MANUFACTURER OF PLATE AND ANGLE ROLLS



Our rolls are...
TUBING the WORLD

DAVI - Italy

www.davi.com

New MIG consumables platform

TWECO, an ESAB brand, has introduced the patent-pending Velocity MIG welding consumables platform. The contact tips feature shielding gas ports that keep the tip 30 per cent cooler. By running cooler consumable parts, life is claimed to improve up to five times or more in some applications.

The company will integrate Velocity consumables on its Spray Master MIG guns, along with retrofit kits for existing Spray Master guns, and for the Classic Number Series.

"Tweco Velocity establishes the next generation range of MIG welding consumables, and defines a new standard of performance and life that will drive increased productivity while reducing costs for end user customers," said David Wilton, vice president, welding products.

Gas porting in the contact tip, coupled with an all-copper conductive path with fewer connections, is claimed to improve electrical and thermal conductivity. Tweco states that its engineers have demonstrated that the solution improves conductivity and manages thermal effects to achieve improved arc stability by 15 per cent.

"Velocity is a result of our engineers pursuing better arc characteristics and contact tip life," commented Ross Fleischmann, senior brand manager. "However, additional benefits were achieved because we listened to welders, and took the pain out of maintaining MIG consumables."

Because the contact tip runs cooler, it reduces the ability for spatter to stick, so the tip needs less cleaning. Fewer threads and a careful consideration of the thread design also deliver more convenience and reliability. Extra threads were eliminated by implementing a thread-less, drop-in style contact tip. Contact tips can be exchanged without the use of tools.

Conventional designs employ soft on soft thread designs made of copper or brass, which can result in cross-threading, seizing and premature

wear. Velocity employs a heat-treated stainless threaded sleeve, which helps alleviate these problems.

ESAB – USA
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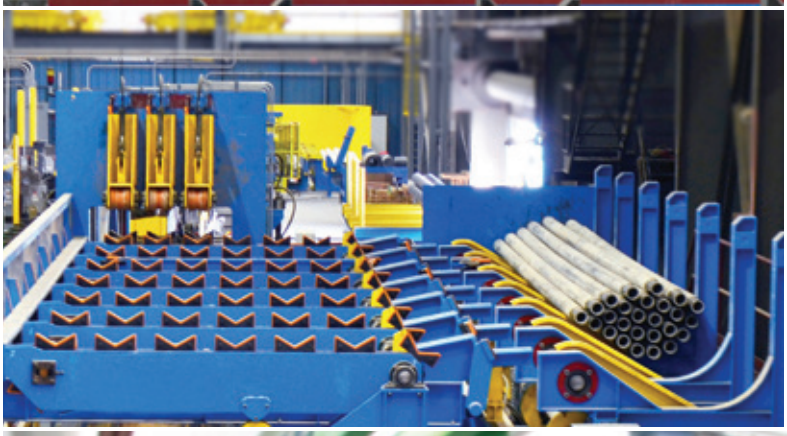
Website: www.esabna.com



Our history is based on forty years of experience serving the world's leading manufacturers of welded and seamless tubing.
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Tube Russia
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All Made in Italy

Shot blasting machines

AFTER a need for blasting machines was indicated for smaller factories in the steel industry, AGTOS reacted by developing a machine that fulfils this gap in the market. The goal was to develop a roller conveyor shot blasting system for operators that have halls with low ceilings. The Ocean-Blaster fulfils this and other additional requirements. The machine will be presented by the company during this year's Surface Technology show in Hanover, Germany, from 13 to 17 April.

The Ocean-Blaster is a very compact roller conveyor shot blasting machine for smaller factories for which a turbine wheel shot-blasting machine was not profitable due to the capacity. From now on, these users can profit from the advantages of the AGTOS blasting technology. An in-house blasting system allows for more flexible, independent operation and transport channels and costs are not incurred. The work pieces to be processed can be up to 1,000mm high and 500mm wide.

The AGTOS engineers have designed the Ocean-Blaster to be much more compact than other commercial machines. It was thus possible to generate space advantages. Even the height of the system is extremely low at 4.1m. Thus, the machines can also be used in smaller production halls without a foundation. In addition, the machine is designed to be operator-friendly. A maintenance platform allows quick access to the wind sifter; and appropriately dimensioned maintenance openings ensure easy access to wear and tear parts in case of maintenance.

Prior to starting the blasting process, using the rotating potentiometer, the operator sets the feed speed, which corresponds to the degree of impurity, respective to the desired degree of cleaning for the work pieces. For processing surfaces that are to have a purity grade of BSa 2.5 after the blasting process, the flow-through speed is generally approximately 1m per minute when using round-grain abrasives.

An additional aspect of the design was energy efficiency. The powerful AGTOS high-performance turbines with increased abrasive throughput thanks to the one-disc technology and the cartridge filtration system with differential pressure-independent cleaning of the filter cartridges offer concrete advantages. As a result, the Ocean-Blaster consumes a comparatively low amount of energy and abrasives in comparison to other commercial systems, so, the operating costs are kept low.

To keep the height of the blasting machine low, the bucket elevator was separated into two parts. The first part cleans the abrasive. The second part is responsible for supplying the abrasive to the high-powered turbines.

The wear and tear costs are kept low, and a work piece tracking system on the intake of the blasting machine ensures that abrasives are only introduced to the turbines if a work piece is in the blasting area. When the fully cleaned part has passed the blasting area and no more work pieces have been fed into the blasting chamber, this is detected and the abrasive supply is closed and the second part of the abrasive circuit is shut off with the turbines.

AGTOS – Germany
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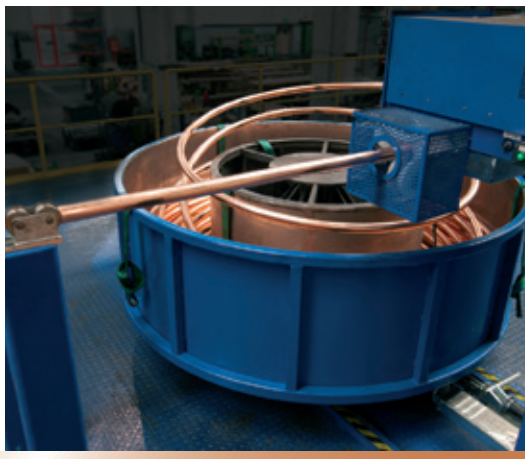
Website: www.agtos.de



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www.upcast.com

Drawing machines for metal profiles

VIOLI Srl has developed a range of reliable drawing machines for the processing of metal profiles, including equipment for tubes, bars or wires made of ferrous or non-ferrous metals.

The TRI series is a full range of hydraulic equipment for the drawing of tubes or rods with circular cross section or complex profile. Technologically advanced, with prime selected components and innovative design solutions, the TRI draw benches are fully PLC-controlled for both working phases and safety protection.

The truck carried pliers are perfectly aligned with the hole of the drawn material in order to eliminate formation of bending effects on the metal structure. The speed of the traction is adjustable, and the bench is simply operated by use of a joystick placed on the control panel, which allows the operator to manage all the steps of the process.

Violi also offers the TR series of chain draw benches, designed for the processing of bars and tubes with a maximum diameter of 12mm.

The anchor pliers, with adjustable jaws, are provided with a locking system manually managed by the operator; the return of the draw lift is electrically controlled. The working speed can be fixed to one or two levels, or adjusted by inverter.

The range of products is completed by subsidiary equipment such as APT series tapering machines for pipes and bars, or the AP series for wires; manual or automatic spindle unlocking systems; and the KTF10 for hydraulic drawing – a compact device for the production of half-processed pipes or rods ready to be finished.

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Website: www.violimacchine.it

Clamshell pipe cold cutter

DWT has enlarged the product range of its pipe cold cutter up to 72". The clamshell pipe cold cutter has been developed for high metal removal rate, a large adjustment range and an easy setup in-situ. The portable clamshell pipe cold cutter machine for pipe cutting and bevelling avoids heat-affected zone in the pipe cutting process. Designed for heavy wall pipes in heavy-duty applications, the high working speed and quick set up provide fast operation on-site.

DWT GmbH – Germany
Website: www.dwt-gmbh.de

RELIABILITY

OTO AND ABBEY MILLS, DELIVER FIRST-IN-CLASS PRODUCTION FOR THE TUBE AND PIPE INDUSTRY

Fives leads the industry with the largest product range on the market for the production of tubes from 4.75mm to 686mm (27"). OTO and Abbey mill systems provide the ultimate technological solutions for structural and API/OCTG productions. Fives supplies pioneering solutions that better anticipate the customer's needs from the handling of the raw material up to the final manufacturing and handling of the end product. Our ambition is to create the strongest and most reliable products serving the Tube and Pipe industry in terms of performance, quality, safety and respect for the environment. State-of-the-art technology, service, and reliability ; Trust Fives.

fivesoto@fivesgroup.com

fives ultimate machines ultimate factory

Manual plasma cutting and gouging

VICTOR Thermal Dynamics has launched an improved PAK 200i manual plasma cutting and gouging system. The system delivers 100 per cent duty cycle at 200 amps. It is capable of hand cutting up to 70mm (2¾") on mild steel, as well as 254mm/min (10ipm) on 51mm (2") carbon steel, and will remove up to 11.3kg (25lb) of carbon steel per hour.

"The PAK 200i is one of the most powerful manual cutting and gouging systems on the market today," commented Michelle Chamberlain, brand manager. "It provides exceptional cost-performance benefits along with the same great reliability, simplicity, productivity and versatility of the PAK 200."

The PAK 200i shares the same case and common platform with the company's other 200-amp products. Exclusive to the PAK 200i, and particularly useful for gouging applications, is the Tip Saver Plus feature. With accidental tip-to-workpiece contact, the current will fold back to 35 amps to ensure that the tip is not damaged.

The PAK 200i manual plasma cutting system

Other features of the PAK 200i include dual gas capability for cut quality and control on stainless steel and aluminium. The system, with a standard two-year parts and labour warranty, can be configured to operate at 380-415V, 480V or 400V CE (European and Asian operation). The PAK 200i system comes as standard with the PCH 200 handheld torch, featuring a 70° or 90° torch head angle. The company also offers a 180° torch for mechanised applications such as pipe bevelling.

Applications for the PAK 200i include general fabrication, over the road transport trailers, railroad maintenance, vessel manufacturing, pipe bevelling and fabrication, petroleum refineries, foundries, chemical plants, mining operations and shipbuilding.

Plasma arc gouging is a fast, economical and environmentally friendly method of removing most metals, including carbon steel, stainless steel, cast iron, aluminium, brass and bronze. The manufacturer claims that, compared to conventional air carbon arc gouging, plasma arc gouging with the PAK 200i offers superior removal rates and clear visibility of the gouging area.

Victor Thermal Dynamics – USA
Website: www.victortechnologies.com

Our coil joining equipment will help you ~~tie~~ weld up all the loose ends.

Guild International can design and build the welding machinery you need to keep your lines up and running smoothly and profitably. We are the world leader in supplying coil joining equipment for the tube manufacturing and steel processing industries. Contact us today to keep your lines always working.

Guild International offers complete entry systems for your tube and pipe production lines and can be customized to accommodate your particular needs. Our entry systems may include an uncoiler, coil retainer, speed funnel, shearwelder, and/or accumulator. Call for more information today.

GUILD INTERNATIONAL

www.guildint.com

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Order for push/pull pickling line

NELSON Steel and Vigano Srl have been selected to build a push/pull pickling line for ATS in Poland. Nelson Steel will be responsible for the process section, and Vigano is responsible for the entry and exit equipment on the line.

Nelson Steel states that its position as operator/designer and manufacturer of pickling lines makes it an ideal choice as a supplier of steel pickling equipment, with expertise in all aspects of operations.

The ATS pickling line is specified for operating at a maximum target of 200,000 tonnes per year, and at a maximum line speed of 40mpm. Coil size is up to 30,000kg at 6 x 1,600mm maximum width. The process section equipment consists of three pickling tanks, each 10m in length; 'Turbo Tunnel' design to effectively reduce consumable cost of acid and gas consumption; acid recirculation system; a three-stage rinse spray system; single air blow off system; fume exhaust system; and ferrous chloride and raw acid storage tank farm.

While this is a relatively small capacity pickling line, Nelson Steel describes it as a good opportunity to create greater awareness of its brand in Europe.

Nelson Steel owns and operates pickling lines, and has provided steel pickling services to the steel industry for over 35 years. During this time, the Nelson Steel Technology Group has designed and built more than 75 complete process sections, including many revamps. Nelson Steel is a division of Samuel, Son & Co, Ltd, and is based in Stoney Creek, Ontario, Canada.

Nelson Steel – Canada
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Samuel, Son & Co Ltd – Canada
Fax: +1 905 279 9658
Email: sales@samuel.com
Website: www.samuel.com

Tube cleaning

THE Compri Tube Clean System cleans tubes by shooting a special projectile with a jet of compressed air. The system can be applied to tubes with an internal diameter from 2mm up to a few hundred, and lengths of 10, 100 or even 1,000m (depending on the air capacity). It can also be applied in the presence of 90° curves, T or Y couplings or ball valves.

The system can clean tubes of all types, from those used in hydraulic systems, to air conditioners, from the food industry to pharmaceuticals. It can quickly and efficiently degrease, lubricate and disinfect using, when necessary, minimum quantities of chemical products.

Alka Srl – Italy
Email: info@alka-srl.com
Website: www.alka-srl.com

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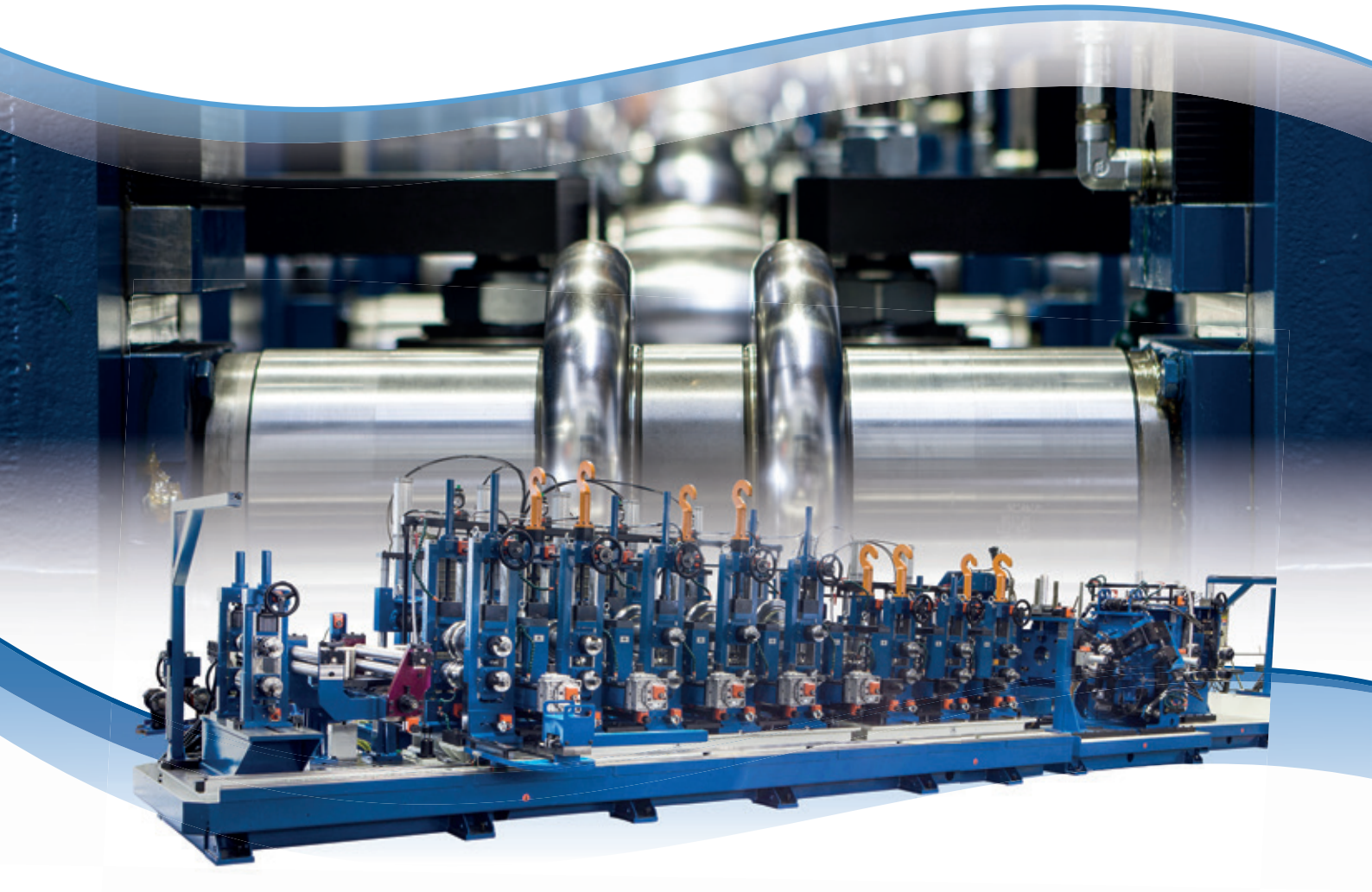

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Metalworking lubricants

BBLUBRICANTS produces and manufactures polymer-based lubricants to meet demands in environmental and clean production. Products are designed for a wide range of metalworking operations, including tube bending, deep drawing, stamping and punching.

Performance and cost are factors in the decision between synthetic lubricant and mineral oil. BBLubricants states that a synthetic base can provide performance benefits such as improved energy efficiency, wider operating temperature range, reduced maintenance costs, better reliability and safer operations.

A key element when developing synthetic BBLubricants is easy clean-up. Water-based lubricants are easily washable using only warm water. They can also be diluted with water to increase volume.

The chemical structure of synthetic fluid is designed to maintain its lubricating stability over a range of temperatures.

Compared to petroleum, synthetics survive higher temperatures, last longer, and are not likely to form carbon deposits that create drag and wear.

Synthetics are non-hazardous and can be used in welding operations without needing clean-up. Safer working conditions for workers and the environment are achieved with water as a base.

BBLubricants claims that benefits of its products include totally biodegradability; they protect tooling and materials from corrosion, are mineral oil-free, and ready for welding and assembly after cleaning.

BBLubricants sro – Czech Republic
Email: info@bblubricants.cz
Website: www.bblubricants.cz

Pipe clamps

HAMMERSCHMID specialises in the industrial production of pipe clamps in small and large series, including further processing, coating, pre-assembly and packing. Its products are used in domestic plumbing applications, industrial building, wastewater treatment plants, chemical industry, paper and steel industry, waste incineration plants and power plant construction.

Products on offer from the company include pipe clamps, round and flat steel clips, pipe carriages with accessories, pipe suspensions, special constructions and secondary supports.

These products are manufactured according to customer specifications, drawings or samples, while taking into account various working standards. The company regularly includes new product groups in its delivery programme, in order to offer a broad range of goods.

Rohrbefestigungen Hammerschmid GmbH – Austria
Email: office@hammerschmid.at
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IT'S ALL WE THINK ABOUT

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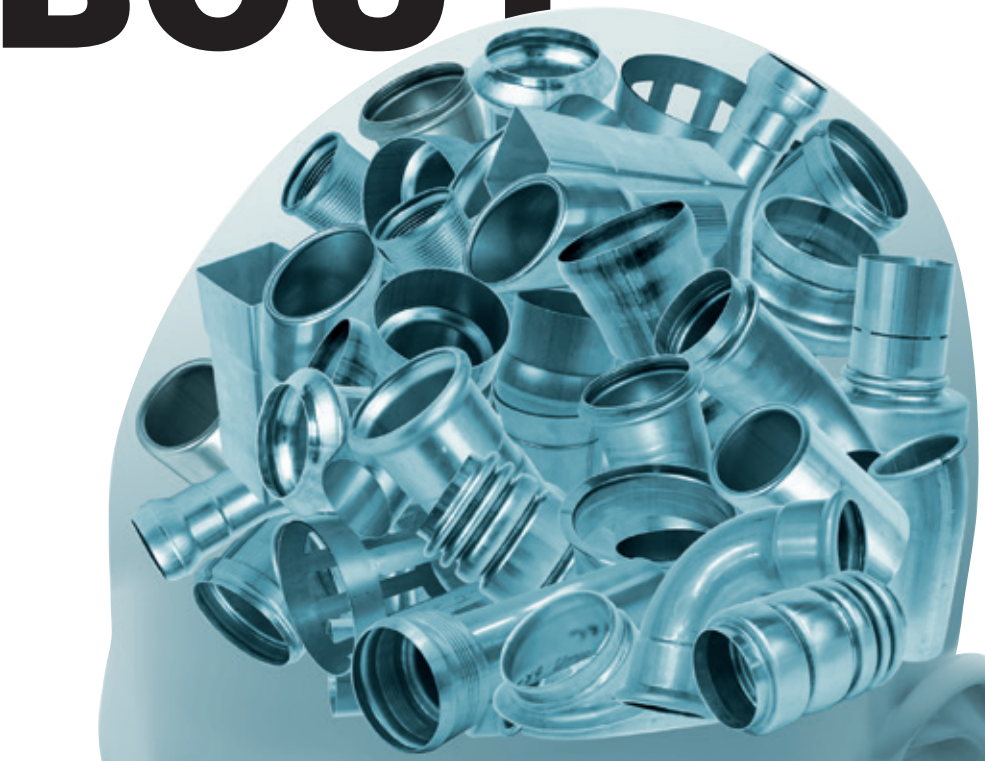

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Pipe forming with revolutionary VSP technology

Use of the VSP drives in all pipe forming presses. Here: successful test run of the crimping press with VSP at the SMS Meer workshops in Monchengladbach, Germany

By Dr Thomas Hohnen, technical sales tube and pipe plants, SMS Meer

MAXIMUM machine availability, maintenance-friendly systems, energy saving, reduced emissions and lower costs are important purchasing arguments for operators of steel and NF metals plants. Optimisation potentials can be found here in the hydraulic system. SMS Meer has further developed a technical solution for this and, together with the MAE Maschinen- und Anlagenbau Götzen GmbH, adapted it for pipe forming. The variable-speed pump control, or VSP for short, allows hydraulic systems to be operated efficiently with pressures of more than 450 bar.

The general principle of the VSP drive: the oil pressure is generated only when it is demanded by the system – in other words, only when it is really required. Commercially available axial piston pumps are employed, controlled via the speed of the servo motors. The control system's intelligence now lies in the electrics and no longer in the hydraulics. The pressure is built up without the use of proportional valve technology; the throttling of the hydraulic power with the associated heating of the oil typical of conventional systems is eliminated completely. This enables an extremely energy-saving and low-loss hydraulic system to be built – not only for "small" systems, but also for high press forces and for systems with several hydraulic axes.

"Sturdy" differential pump system installed in the crimping press

The gap closing press requires 50 per cent less energy than the older machine generations thanks to the variable speed pump control (VSP)

The system generates only the oil pressure that is actually required. The motors run only during the main function of the machine, eg during the forming process, and are otherwise at standstill. This means less power consumption and less noise. The design even permits energy to be fed back into the mains, for example from the compression energy of the oil. Since its introduction in the large-diameter pipe sector, the principle of the VSP drive has proved its effectiveness in two GCP® gap closing presses. The customers Izhorsky Trubny Zavod (ITZ) from Kolpino near St Petersburg and JSC Vyksa, Vyksa, both Russia, employ their new 25 MN GCP® gap closing presses from SMS Meer for the cost-effective production of pipes with small diameters and large wall thicknesses. The VSP drives have proven themselves on both gap closing presses in the production of offshore pipes for pipelines. During the forming process, gap closing presses are used after heavy plates have been quickly and precisely formed on a JCO® pipe forming press. The gap closing press reduces the remaining gap between the plate edges to a minimum – one of the preconditions for a reliable tack welding process. The use of the variable-speed pump control allowed the energy consumption to be reduced by 50 per cent compared with the conventional hydraulics. These gap closing presses satisfy the preconditions for the "ecoplants" label – the hallmark for sustainable technologies from SMS.

Following the successful use of the VSP drives in the gap closing presses, SMS Meer is now using this technology in all presses for large-diameter pipe forming. For the customer Corinth Pipeworks, Corinth, Greece, not only a gap closing press but also a crimping press is currently being equipped with the VSP drive. In order to guarantee an assured and tested quality of the innovative hydraulic concept for Corinth Pipe, the crimping press was assembled and tested in SMS Meer's own workshops.

The energy consumption of the crimping press is reduced by approximately 60 per cent compared with earlier product generations. This saving is essentially made possible by the feedback of the electrical energy into the grid, the switching off of the pumps at no-load and by the fact that no cooling system is required.

Thanks to the experience gained with the gap closing press, commissioning of the VSP drives on the crimping press went very smoothly. The complete control software comes from SMS Meer.

That enabled the necessary adaptations to the software to be planned and carried out quickly. As expected, the VSP drives ran within normal parameters, allowing the whole system to be tested under full load in a minimum of time. The advantages of a VSP drive compared with conventional hydraulic drives also come to bear when used in crimping presses: a smaller number of wear parts and less wear of the system increase the press availability compared with conventional hydraulic systems. A longer service life of the oil contributes to lower maintenance costs. The maintenance friendliness is improved by the easily replaced modular components.

The integrated monitoring of the pump parameters also enables preventive maintenance, allowing parts to be replaced in good time, when necessary. The use of standard hardware and the SMS software enables software adaptations or future modernisation steps to be carried out quickly, if required.

The hydraulic systems with VSP require no central hydraulic station with large oil tank. The costs for housings or hydraulic cellar and long pipework are thus eliminated. All hydraulic components are installed directly on the machine where they are easy to service and maintain.

It is also possible to retrofit the VSP technology in existing machines and plants. Modernisations in the form of increases in press force and/or shortening of cycle times can be easily carried out in a minimum of time.

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Tube-bending tooling

BEND Tooling Inc has supplied companies around the world with tube-bending tooling since 1986. It produces die sets, mandrels, and wipers for rotary-draw tube-bending machines, for most makes and models.

The company precision-machines every feature of its tooling, to eliminate hand-working and improve quality, and to shorten lead times.

In the area of modern inserted mandrels and wipers, Bend Tooling states that its inserted designs are favoured by production tube-bending operations in the automotive, sports vehicle, HVAC and hydroforming industries. They are also used by speciality tube-bending companies because of their consistency in specification, which facilitates frequent changes in set-up. Bend Tooling also manufactures solid-body mandrels and wipers for those tube-bending jobs that require them. This primarily includes bending under extreme high pressures and bending non-round tube.

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Website: www.bendtooling.com

The international tube and pipe trade fair in Russia

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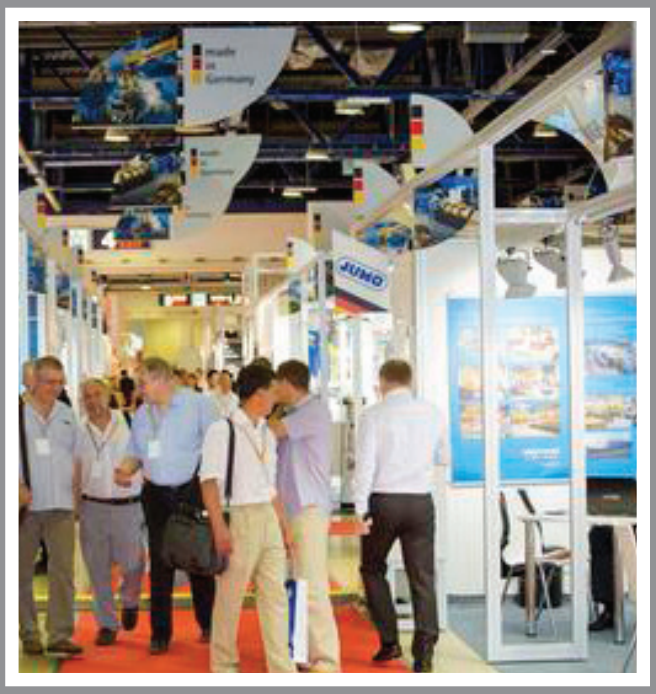

Photos: Messe Düsseldorf GmbH

Despite a difficult economic environment over the past few years, the tube industry is now looking to the future with optimism thanks to the constantly improving investment climate in Russia. Investment activities are up, the construction sector is picking up speed again, and consumption remains a strong pillar of this upswing. The trade fair is one of the most important trading and contact platforms in Russia and for the neighbouring states. The organisers are aware of the optimism prevailing in the industry and can now already see a positive trend in exhibitor registrations.

Messe Düsseldorf GmbH, Messe Düsseldorf Moscow OOO and its Russian partner Metal-Expo have secured official participations from Germany, Italy, Austria and China. The trade fair is supported by the leading international industry associations AMAFOND – Italian Association for Foundry Machines and Products, ITA, VDMA – German Engineering Association, EUnited Metallurgy – The European Metallurgical Equipment Association, CEMAFON – The European Foundry Equipment Suppliers Association, and CECOF – The European Committee of Industrial Furnace and Heating Equipment Associations, as well as by the important partner MC-CCPIT – Metallurgical Council of China Council for the Promotion of International Trade.

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OPENING TIMES

8 June to 10 June: 10.00am to 6.00pm
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Oil and gas

The US leads the world in oil as well as shale gas production – so long as Saudi Arabia practises restraint

"We're now the No 1 producer of oil in the world. We've surpassed Saudi Arabia."

Senator Amy Klobuchar, of Minnesota, said this in the course of a 4 January discussion of the projected Keystone XL pipeline on NBC's "Meet the Press". The highly contentious plan for a pipeline from Canada to Nebraska, where it would connect with an existing pipeline going to the coast of Texas, was conceived in 2008 – when energy insufficiency was of major concern in the US.

If Senator Klobuchar, a member of President Barack Obama's Democratic party, is right, Keystone XL would seem to have been overtaken by events and the debate over whether to proceed with it become largely symbolic. Lauren Carroll, a reporter on the national staff of the *Tampa Bay Times* (St Petersburg, Florida), considered the question of supremacy in oil production for the paper's PolitiFact feature. "We rate [Sen Klobuchar's] statement True," wrote Ms Carroll, citing data from the US Energy Information Administration. According to the EIA, which tracks global energy production and consumption statistics, the US has been producing more oil than Saudi Arabia since the fourth quarter of 2012. American oil production overtook Russia's in 2011.

The most recent available EIA report – for the third quarter of 2014 – shows that the US produced 14.2 million barrels of oil per day (bpd); Saudi Arabia, 11.7 million bpd; and Russia, 10.5 million bpd. These totals, representing about 40 per cent of global output, include crude oil, natural gas liquids, and other liquid energy products. Despite current lower prices for crude oil, the EIA expects the American contribution to grow in 2015.

Leonardo Maugeri, an associate at Harvard University's Geopolitics of Energy project, supplied Ms Carroll with a "piece of context". Saudi Arabia has a higher capacity than the US to produce oil, but stays below full utilisation so as not to inundate the global oil market. In other words, said Mr Maugeri, a former manager of the Italian oil company Eni, "If Saudi Arabia produced at full capacity its production would be higher than [that of] the US."

With partners and customers lined up for its South Pars natural gas venture, the next step for Iran is to shed the UN sanctions

Iran's oil minister, Bijan Namdar Zanganeh, said 2 January that the National Iranian Gas Co (NIGC) has been developing new "phases", or development areas, in its South Pars field, the largest known gas field in the world. The goal was to increase production to 100 million cubic metres of gas per day at South Pars by 20 March, the end of the country's calendar year.

The field, in the Persian Gulf, contains an estimated 495 trillion cubic feet of natural gas and 18 billion barrels of condensates. It now has 28 phases. To Andy Tully of the energy news site Oilprice.com, the heightened activity at the 1,428-square-mile section in Iranian territorial waters indicates that Iran is shifting its attention from oil to gas. ("Iran Hoping Natural Gas Can Save It from Low Oil Prices," 5 January)

Expectations for the field appear to be running high. Mehdi Youssefi, the managing director of the Pars Special Economic Energy Zone, said that in the first nine months of Iran's calendar year ended 22 December, "The products [of South Pars] have been exported to 29 countries around the world."

According to Asghar Soheilipour, the director of the NIGC Investment Committee energy, companies from Britain, France, Germany, Italy and Russia are negotiating with the NIGC on cooperation in building gas pipelines and processing plants. Others reportedly involved in the talks are China, Japan and South Korea. The focus of the talks, Mr Soheilipour told Oilprice.com, includes "issues of modernisation of [Iranian] gas pipelines, as well as projects for the construction of gas pipelines from Iran to Iraq, Turkey, Pakistan, and other countries."

Another country that has expressed great interest in importing Iranian gas is neighbouring Pakistan. In Islamabad, Shahid Khaqan Abbasi, the minister for petroleum and natural resources, said his country needs the fuel badly.

Iran has now to address another aspect of its ambitions for South Pars. European companies including Britain's BP, Eni of Italy, and Rosneft of Russia are said to be ready to invest in Iranian energy projects as soon as Western sanctions on the Islamic Republic are lifted. Germany and the five permanent members of the UN Security Council – Britain, China, France, Russia and the US – imposed the sanctions until Iran can satisfy them that its nuclear programme is not designed to produce weapons.

As reported by Mr Tully, Iranian President Hassan Rouhani said on 15 December that he is prepared to take steps to bring an end to the sanctions.

Wall Street may agonise over the impact of falling oil prices, but the 'energy shock in reverse' cheers the average American

To defend its market share, the oil producer club OPEC – which includes Saudi Arabia and Iran – decided late last year to maintain its output despite slowing economies among the 12 members.

Taken together with the US shale boom, this refusal to slash production to balance out the market works to the advantage

of American motorists, who according to the American Automobile Association saved about $14 billion on gasoline in 2014. The AAA predicts even more substantial savings of $50 to $75 billion in 2015. Energy experts concur that the cost of gasoline will remain low in the US for at least the first half of the year. And the rebound, when it comes, is expected to be gradual, with prices drifting higher in response to lower levels of production and greater demand.

In the meantime (ie, the present, which is the period of keenest interest to working-class Americans who have largely missed out on the fruits of the five-and-a-half-year economic recovery), the steep decline in oil prices is delivering benefits beyond the fuel pump.

As usual with windfalls, the distribution pattern is uneven. Or, as *New York Times* reporters Diane Cardwell and Nelson D Schwartz put it, "What might be called an energy shock in reverse is creating losers as well as winners."

Residents of states like Texas and North Dakota, which boomed as oil prices mostly stayed above $90 a barrel from 2011 to mid-2014, are now suffering from the contraction in that industry. So are those in companies that supply pipe and other material to energy drillers and frackers, including steel makers. Conversely, people who depend on home heating oil and propane, as millions do in the Northeast and Midwest, enjoyed savings of about $750 per household over the winter. This is over and above the $750 federal Energy Information Administration estimate of the typical American household's share of the windfall, whatever its postal code. ("Lower Oil Prices Provide Benefits to US Workers," 17 January)

Despite the drag on some industries and regions, economists consulted by Ms Cardwell and Mr Schwartz said they expect the benefits of lower energy prices to be felt broadly. Because household consumer spending accounts for some 65 per cent of the gross domestic product (GDP) of the US, compared with about 1 per cent for the oil and gas industry, anything that keeps money in the pockets of consumers benefits the national economy.

Freer spending is also associated with fuller employment. Michael Gapen, the chief United States economist at Barclays Bank, told the *Times* reporters that consumers typically spend their savings on fuel in sectors – dining, travel, retail – that are more "employment-heavy" than the energy industry. He noted that stores employ about 13 per cent of the American workforce, compared with the less than 1 per cent in oil and gas extraction and related fields.

Technology

A compound of cheap asphalt in powder form promises 'green' carbon capture and enhanced natural gas production at sea

In *FierceEnergy*, a news source for energy industry executives, Barbara Vergetis Lundin reported on a breakthrough that she believes could mean a tremendous advance in carbon capture. The "amazing discovery", by scientists at Rice University (Houston, Texas), is this: that the best material to keep carbon dioxide from natural gas wells from fouling the atmosphere may be a derivative of a black, petroleum-based substance used primarily in road-building. ("Carbon Capture Breakthrough: Asphalt," 8 January)

As described by Rice media relations specialist Mike Williams, the basic compound known as asphalt-porous carbon (A-PC) captures carbon dioxide as it leaves a wellhead under pressure supplied by the rising gas (about 30 atmospheres, or 30 times atmospheric pressure at sea level). When the pressure is relieved, A-PC spontaneously releases the carbon dioxide, which can be piped off to storage, pumped back downhole, or repurposed for such uses as enhanced oil recovery.

The A-PC from the lab of chemist Josiah Tour was made by mixing asphalt with potassium hydroxide at high temperature, producing a porous carbon with a considerable surface area: 2,780m^2 per gram. That material captured 93 per cent of its weight in carbon dioxide.

Further experiments showed processing A-PC with ammonia and then hydrogen increased its capacity. The best version of several A-PC powders made at Rice was reported to hold 114 per cent of its weight in carbon dioxide. The new porous carbon material captures carbon dioxide molecules at room temperature while letting the methane natural gas flow through for collection.

According to Dr Tour, who is also a professor of materials science and nano-engineering and of computer science, this provides an ultra-inexpensive route to a high-value material for the capture of carbon dioxide from natural gas streams. He said his team had experimented with many grades of asphalt, some costing as little as 30 cents per pound.

Mr Williams said that Dr Tour's goal is to simplify the process of capturing carbon from wellheads at sea, where bulky equipment is not readily accommodated. The ability of A-PC to capture and release carbon over many cycles without itself degrading would appear to commend it for this purpose.

Steel

China on 1 January ended an export-tax rebate on steel alloys that contain boron, setting the stage for a decline in exports that will worsen oversupply in the domestic market. Chief analyst Hu Yanping of Custeel, the integrated metallurgical website led by the China Iron and Steel Association (CISA), said the move would cut the nation's overseas steel sales by 20 to 30 per cent in first-quarter 2015 from the previous three months.

Mysteel.net, the English-language site for Chinese steel industry news, said on 5 January that the rebate cancellation could cut exports by a third in the first quarter, but that this could be offset by new rules aimed at encouraging higher-end exports. Even without the rebate, Chinese steel prices remained far lower than prices overseas, Mysteel said.

Chinese steel exporters had been adding boron to some of their steel products to qualify for the now-expired rebate, which ran as high as 13 per cent on product for sale overseas. But, as reported by *Bloomberg News* (5 January), Ms Hu said producers may continue to receive the rebate by incorporating chromium instead of boron into their steel.

CBC News (Ottawa) reported 15 January that US Steel Canada (USSC) planned to restart the coke ovens at its Hamilton (Ontario) operations and re-employ some 77 employees laid off last autumn when the company declared bankruptcy and "hot idled" the plant. Work was to resume in March when a steady supply of American coal could be transported through the Welland Canal, navigable again after the winter.

The Canadian government has signed an order blocking the state of Alaska from updating a ferry terminal on Canadian soil in British Columbia in a dispute over the steel to be used in the project. The site, at a port that is part of the Alaska Marine Highway System, is leased by the state. The major contribution to the construction budget is expected to come from the US Federal Highway Administration, which has "Buy America" requirements for steel, iron, and manufactured products used in projects it funds. The remainder would come from the state of Alaska.

Canadian officials maintain that Canadian metal suppliers should not be excluded from bidding on the work; but the governor of Alaska, Bill Walker, has declined to seek a waiver of the "Buy America" provision. The state, which faces multi-billion-dollar budget deficits deriving from the plunge in oil prices, is not well positioned to fund the project on its own.

In a statement on 19 January, Canada's minister of international trade, Ed Fast, called the application of "Buy America" provisions on Canadian soil an "affront to Canadian sovereignty." And there the matter stands.

The prospective purchase by Esmark Inc (Sewickley, Pennsylvania) of a former US Steel Corp plant in Serbia advanced a step with the announcement by the Serbian government that the flat-rolled steel processor and distributor submitted the only valid bid for the money-losing Zelezara Smederevo steelworks. Serbia is trying to offload Zelezara Smederevo as it seeks to rein in its budget deficit and public debt under a new loan deal with the International Monetary Fund.

As reported by John D Oravecz in the *Pittsburgh Tribune-Review* (10 January), Esmark CEO James P Bouchard met with Serbian government leaders in London in October and committed to bidding for the operations, about 30 miles southeast of Belgrade, under a newly formed subsidiary, Esmark Europe.

Mr Bouchard had previously told Tanjug, the Serbian state news agency, that Esmark is prepared to invest $400 million in the plant over the next few years and that it would not lay off any of the 5,000-strong workforce.

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Serbian officials said the buyer must maintain full production at the plant's main blast furnace and start production at a second blast furnace, reaching at least 50 per cent capacity by the end of 2016.

Airbus and Boeing

The two arch-rivals may work together to circumvent rules that curtail the sale of technology sourced in the United States

Apparently nothing unites two fierce competitors, even the big plane makers Airbus and Boeing, like the mutual perception of an opportunity to steal a march on a third.

Aviation industry officials say the arch-rivals are jointly attempting to supersede defence contractor Lockheed Martin – like Boeing a US company – in South Korea's KF-X fighter jet programme.

The US limits the technology that its companies can transfer abroad. Bradley Perrett, who is Asia-Pacific bureau chief for *Aviation Week & Space Technology,* observed that Airbus, based in Toulouse, France, is probably involved in the bid "as a supplier of stealth know-how" that Chicago-based Boeing is not authorised to provide.

The South Korean defence ministry's procurement office on 23 December issued a request for proposals for KF-X development. With Korean Airlines as the local partner, Mr Perrett wrote, Airbus and Boeing would likely be proposing the Boeing F/A-18E/F Super Hornet as the basic design for the KF-X. ("Boeing, Airbus, Korean Air Join to Bid For KF-X," 29 December)

In Mr Perrett's view the Boeing-Airbus KF-X should be an economical alternative to a fighter design from the defence ministry's Agency for Defense Development that Korea Aerospace Industries (KAL) had been expected to build with technical assistance from defence contractor Lockheed Martin (Bethesda, Maryland).

The Korean parliament cannot authorise the spending of the $7.92 billion budgeted and approved for the project, or the launch of full-scale development, before it votes on the government's 2016 budget in December. In the meantime, KAL looks likely to submit the cheaper alternative, based on the Super Hornet, in response to the request for proposals.

An industry official consulted by *Aviation Week* pointed out that this would not be the first time that Boeing offers non-US technology to South Korea. When proposing an advanced version of the F-15 called the Silent Eagle for the separate F-X Phase 3 fighter programme, Boeing suggested technology transfer from Israel Aerospace Industries.

"Lockheed Martin won F-X Phase 3 with the F-35," wrote Mr Perrett. "And in return [it] is supposed to back KF-X development."

With its new A321neo 97t, Airbus is poised to exploit the 'long, thin routes' abandoned (perhaps temporarily) by Boeing

"In a classic bit of the trash-talk these two rivals sling at one another, Boeing's vice-president of marketing called Airbus's market-size estimate for a 757 replacement 'a little bit laughable'. Airbus could be laughing all the way to the bank."

This comment, in the financial news and opinion newsletter *24/7 Wall St,* strongly suggests that the harmony described in the previous item could be a short-lived aberration. At a 13 January investor meeting Airbus provided facts and figures on its deliveries and orders in 2014. The company also officially introduced a new version of its A321neo single-aisle jet – the A321neo 97t (for "97 tons") – and the rivalry with Boeing was back on, intensive as ever.

"The new Airbus plane is seeking to replace the out-of-production 757 from Boeing Co, a category of aircraft that Chicago-based Boeing essentially claims no longer exists," wrote Paul Ausick of *24/7 Wall St*. A 757-200W flies what the airlines industry calls long, thin routes; that is, great distances with relatively few passengers. ("Airbus to Steal Sales from Boeing?", 14 January)

Mr Ausick supplied context. The longest route now flown by a 757 is United's service from New York to Berlin, which *Aviation Week* puts at slightly more than 4,000 nautical miles and can only be flown by a 757 with a less-than-maximum payload. The A321neo 97t has a calculated range of 4,000 nautical miles, but Airbus claims that it consumes up to 30 per cent less fuel than a 757. This margin should enable the plane to reach, from Miami, key destinations in Brazil.

Believing that the replacement market for the older Boeing plane is 469 aircraft, Airbus also anticipates a market for an additional 500 new planes of that class. The French company expects to make first deliveries of the A321neo 97t in 2019 to customer Air Lease Corp (Los Angeles), with which it has a memorandum of understanding to buy 30 of the new planes.

Mr Ausick wrote that Boeing's answer, "if it can be called that," to the A321neo 97t is an all-new carbon-composite replacement for the 737 MAX 9, on the production schedule for 2030 – 15 years away. In the meantime, he noted, Airbus could sell up to a thousand of its new plane, wrestling yet another piece of the airplane market from Boeing. And, presumably, "laughing all the way to the bank."

Automotive

Toyota forces the discussion of whether the time has come for an enormous investment in infrastructure for hydrogen-powered cars

"Unlike most new cars, whose computer-rendered carapaces conceal retrograde combustion technology, the Mirai's swoopy bodywork cloaks a truly sophisticated power plant: a hydrogen fuel cell whose only emission is water vapour." In his report for the "Joyride" feature of *BBC America* on his recent test drive of the Toyota Mirai, the San Francisco-based journalist Nick Czap described "a fully realised and perfectly personable car." Taking its name from the Japanese word for "future", the Mirai even so delivered a ride that "borders on the unremarkable." ("Toyota Mirai: Miracle Machine or Vaporware?," 23 December)

It is the Mirai's fuel and powertrain that are exotic. Toyota claims a range of up to 300 miles on 5kg of gaseous hydrogen, stored in two high-pressure tanks made from carbon fibre. The carmaker notes that a kilogram of hydrogen has the same energy content as a gallon of gasoline. In broad strokes, wrote Mr Czap, the Mirai's fuel economy is thus equivalent to 60 miles per gallon (mpg), which would best the Prius's 50mpg rating by 20 per cent. He needn't have noted, but did, that Toyota has a good record of predicting – and dictating – consumer tastes. Its ultra-reliable Camry has been the best-selling car in the US for the last 12 years. And in 2012 and 2013, in California, its Prius hybrids were not merely the best-selling cars of their kind but the best-selling over all.

Will history repeat itself with Toyota's newest vision, more ambitious by far than any other in the company's history? Challenges abound, beginning at the fuel pump. California, the global launch market for the Mirai, currently has just ten hydrogen filling stations. In comparison, there are in the state some 10,000 stations dispensing conventional gasoline and more than 1,800 electric-vehicle charging stations. On the increasingly important environmental front, hydrogen presents a mixed pedigree. It can be extracted from water with the use of electricity generated from solar, wind, and hydropower. But most hydrogen produced in the US derives from natural gas, the extraction of which can pollute the environment.

"Futuristic appeal and drinkable emissions aside," Mr Czap wrote, "whether the world's first mass-produced fuel-cell car succeeds is a matter of timing and infrastructure." That is to say, if the newest Toyota brainchild is to succeed in the manner of its siblings, an enormous investment in hydrogen infrastructure will be necessary. The Mirai – a "perfectly personable" car that delivers a borderline-unremarkable ride – is about to jump-start the discussion.

Dorothy Fabian, Features Editor (USA)

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Made in Steel addresses the whole steel industry, and involves the main industries of users, including building, transportation and power and utilities, stimulating their requests and drawing from them to innovate and receive valuable contributions.

Made in Steel takes place from 20 to 22 May at Fieramilano, Milan, Italy. It will be the 6th edition of the conference and exhibition dedicated to the international steel supply chain. Made in Steel has evolved over the years into a major event in the sector in Southern Europe.

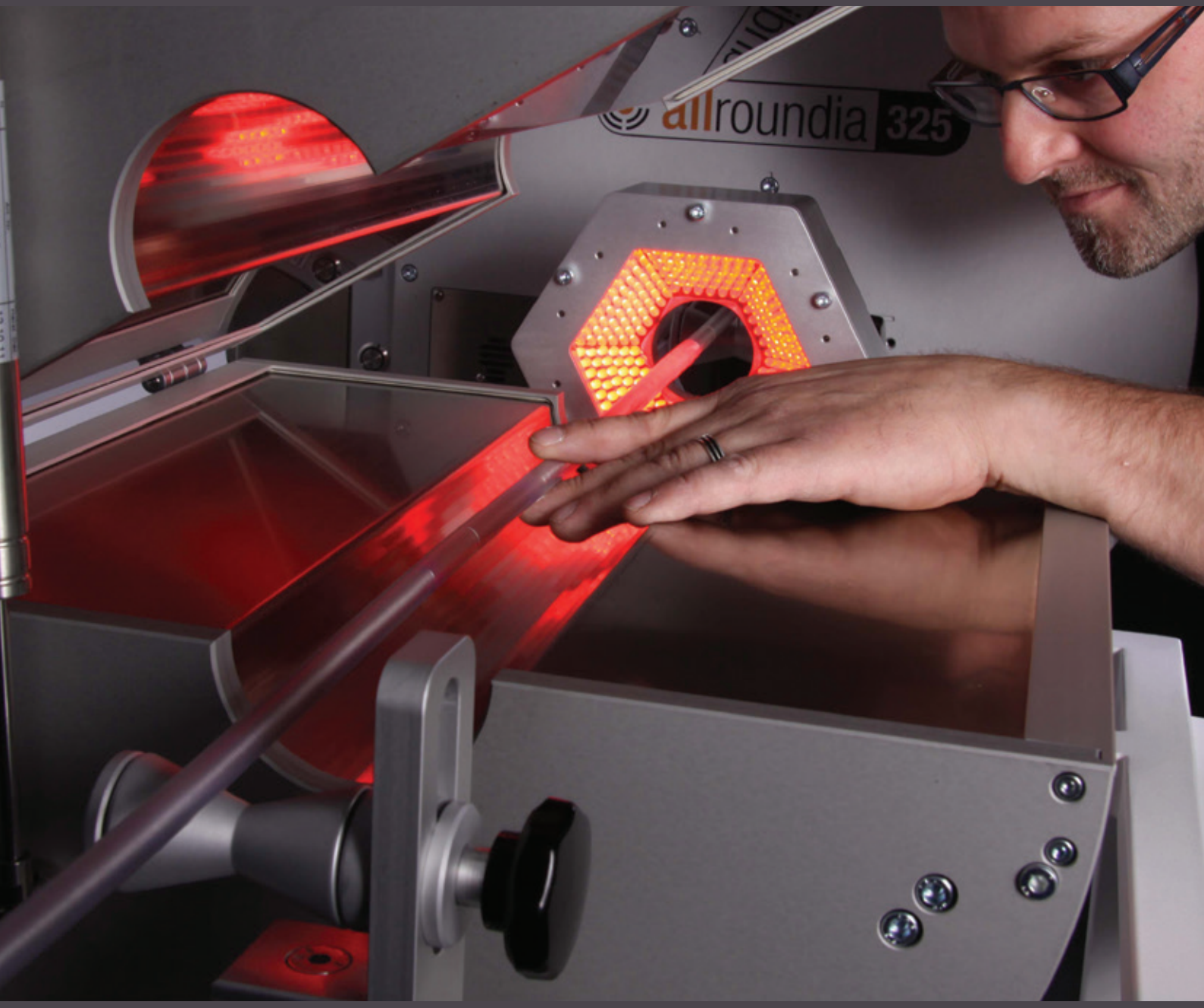
The universal EXPO 2015 will take place at the same time, beginning on 1 May. The EXPO is to be built next to the centre where Made in Steel will be held. The two events will be connected by a specially made walkway/ gallery called “Passerella Expo – Fiera”. This will allow the visitors of Made in Steel to have the best of both worlds.

The 2015 edition will involve an agreement between Made in Steel and Eurometal. This sponsorship has also been agreed upon by the four branches that make up the European continental unit: Dismet – the association of European steel distributors, tubes and metal, Eassc – coordinates the European service centres, Nat Fed – which brings all the national iron and steel distributors together and lastly, STSG – which represents the European traders.

On the second day of the event, Made in Steel will host “International Steel Trade Day” which will be organised by STSG. A conference will be held inside the three-day event.

www.madeinsteel.it

Inspection, testing and quality control



Only the forming process itself comes in for more attention from the tubemaker than inspection, testing and quality control. These procedures that guarantee the integrity of the product make up a tight-knit peer group. A workpiece that does not meet the objective determinants of any one of them fails them all.

The three specialities were put in place early. Possibly consideration should be given to updating the term quality control to quality enhancement. Control has been baked into the science of tubemaking for a long time.

Ultrasonic tester for up to 500mm diameter tube

THE expanding supply of natural gas and oil has spurred a need for larger diameter tube and pipe. In response, Magnetic Analysis Corp (MAC) has supplied its largest ever model Ultrasonic Rotary tester to a major Russian pipe producer.

Part of MAC's line of Echomac® non-destructive ultrasonic testers, the model can inspect tube and pipe up to 500mm (19.6") diameter. The Rotary test technique spins large numbers of transducers around the pipe as it passes through an enclosed rotary test chamber continuously supplied with pressurised water couplant. This design offers claimed advantages of higher throughput speeds, quicker reconfiguration of transducers for different diameter material, repeatable test results and 100 per cent coverage.

The new 500mm UT tester can detect longitudinal and transverse crack type defects on OD and ID pipe surfaces, and throughout the product's cross section, meeting standards that require finding artificial notches at a five or ten per cent level of the wall in pipe with any wall thickness.

Many pipe grades require that the producer monitor the wall thickness for variations in dimensions, and some quality levels also require checking for lamination conditions. Grade PSL3 is the highest quality level and PSL2 and PSL3 both require being able to find a 6.3mm diameter flat bottom drilled hole (FBDH) when testing for lamination.

Test coverage is another standard, with Level PSL2 requiring test coverage of greater than 25 per cent of the pipe volume, and PSL3 requiring 100 per cent coverage. Enough transducers must be used so the helical pattern, as they scan the circumference, covers the required percentage of the pipe volume. Generally, wall thickness measurement could be conducted at the 25 per cent level, while lamination detection would need the 100 per cent coverage level. These high-level quality grades are most likely to be required for pipe destined for higher risk offshore or environmentally sensitive applications. The Echomac UT test system, which also features MAC's wireless transmission of test signals, can handle these tasks and ensure compliance with industry standards at throughput speeds up to 1m/s.

The large multi-test system supplied to the Russian pipe mill combined the new 500mm UT Rotary with 500mm transverse and longitudinal Rotoflux® flux leakage testers to meet the specific needs for testing pipe up to 426mm diameter. Together, the dual technologies provide a more comprehensive test. The Ultrasonic technology provides critical full inspection capability, including shear wave inspection of longitudinal and transverse defects at any quality level and wall thickness measurement and lamination detection. The addition of the UT rotary to the magnetic flux leakage testers provides complete all-direction test capability and gives the user full flexibility to optimise the pipe inspection process.

The two flux leakage units can test to ten per cent OD and ID notch levels up to approximately 14mm wall thickness, and five per cent OD and ID levels for thickness up to 12mm. The result of the combined test technologies is a system that is compliant with API 5CT and 5L, ASTM E570 and other standards, including those that require ultrasonic testing as the first method and a second method at the discretion of the pipe producer.

The multi-test system was mounted on a custom constant centre triple drive roll bench, which can be automatically adjusted using Conductor controls to align the rotaries with the level of the incoming test material. The triple pinches guarantee a controlled entrance and exit from the test stations, and need no manual settings when dimensions are changed. The system incorporates a number of other features and accessories, including a demagnetiser to eliminate residual magnetism from the transverse Rotoflux unit; an add-on crane to move pole pieces when adjusting for major changes in tube dimension; a complete water circulation and chiller system; and paint markers.

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MAC's multi-test system for a Russian pipe mill. The Echomac 500mm Ultrasonic Rotary is shown on the far right, where it has been temporarily moved out for access during maintenance operations. The two black testers in the centre are the Rotoflux 500mm transverse and longitudinal units

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Fast phased array system

THE FAAST_II system from Socomate is a UT phased array technology fitting with high-speed testing applications and high in-line productivity, able to replace more than ten conventional phased array systems working in parallel.

The FAAST_II linear pulsing generator allows the transmission of a large quantity of ultrasonic beams at different allocated angles in one single spray, throughout 1D Linear array multi-element probe with all orientated beams in a plan, and throughout 2D Matrix array probes with all orientated beams in space.

Tube ends and full body inspections on line comply with the most severe API standards for OCTG: longitudinal, transversal and all oblique notches (½" long and five per cent depth) orientated every 5° step of the 360°, ie 72 oblique, ID and OD, with 2D Matrix array probe; and lamination (square ½" at ten per cent and 90 per cent, FBH 3.2mm diameter) and WT with 1D Linear array probes.

The calibration process is quick and easy, with no mechanical positioning of phased array probes according to tube diameter and thickness range. The operator simply loads the required UT setting file.

FAAST for OCTG tubes

Line productivity can be maintained by using the correct number of phased array probes.

One 2D Matrix plus one 1D Linear per tube end for 300mm inspection equates to 80 tubes per hour; six 2D Matrix plus three 1D Linear for full body inspection of tube 14m long accommodates 30 tubes per hour.

Socomate International – France
Fax: +33 1 6463 6021
Website: www.socomate.com

FAAST for high precision tube

Four-axis diameter and ovality gauge for products up to 12mm

NDC Technologies, a provider of precision measurement and control solutions, has launched the Beta LaserMike AccuScan 6012 four-axis diameter and ovality gauge.

The AccuScan 6012 is claimed to be the industry's first four-axis gauge for measuring products up to 12mm. This advancement enables manufacturers to measure product diameter and ovality with higher accuracy than two- and three-axis gauges, for added quality assurance.

Manufacturers of medical tubing, high-performance cable, and other important extruded products have relied on two- and three-axis diameter and ovality gauges for on-line and off-line measurement applications. However, increasing production line speeds and uncontrollable rotation and vibration of products still pose measurement challenges.

The need to precisely measure the diameter and ovality of cylindrical round products to ensure they meet tight design and quality specifications is of paramount importance to manufacturers. Producing any medical tubing product with an 'out-of-tolerance' diameter or roundness, often down to ten-thousandths of an inch, affects the performance of life-critical devices such as catheters, drug delivery and surgical tubing, and other medical devices.

The new Beta LaserMike AccuScan 6012 four-axis gauge solves this problem by providing a more comprehensive measurement coverage than two- and three-axis gauges, with an ultra-fast scan rate. This combination makes it possible to achieve a more accurate average outer diameter and ovality measurement at higher line speeds and for off-line applications.

The AccuScan 6012 performs measurements at 2,400 scans per second per axis, totalling 9,600 measurements per second, and provides high single-scan accuracy, with single-scan repeatability to 1 micron.

The gauge offers a claimed 42 per cent improvement in detecting true ovality over three-axis gauges, and delivers 100 per cent ovality accuracy when the product is aligned with the measurement axes.

The ultra-fast scan rate and higher accuracy coupled with the High-Speed Tolerance Checking option permits the early, accurate and dependable detection of product flaws such as lumps and neckdowns. This enables manufacturers to better control product quality and reduce scrap.

Using the Beta LaserMike PC-based AccuNet display system, the AccuScan 6012 can be quickly and easily set up as an off-line part measurement system to check samples, and to track, manage and analyse critical product data. This eliminates the need to set up two dual-axis gauges to perform four-axis measurements.

The AccuScan 6012 gauge also measures a range of other small diameter products, such as plastic automotive tubing, plastic heat-shrink tubing, plastic cord and line, wire and cable, and other extruded or drawn cylindrical, flat or unique shaped products.

Its flexible communications capabilities allow easy connection to PCs, PLCs, or processes with leading protocols.

The gauge can also be equipped with an optional ultra-bright display and human interface to easily configure and view measurement data.

NDC Technologies is a global supplier of productivity enhancing instrumentation and solutions for on-line process measurement and control. It is renowned for its extensive application experience and after-sales support, with over 45,000 installations in more than 50 countries. Its customer base consists of some of the world's most successful manufacturers.

NDCT offers a diverse range of technologies to ensure the optimum solution is provided for each application, with products ranging from fixed-point gauges to scanning systems. The solutions deliver results through accurate measurements and automatic control of processes that improve customers' product quality and productivity. NDCT also provides a range of customer care products and services that are designed to reduce the cost of ownership by helping customers achieve best practices and optimum process performance and reliability.

The Beta LaserMike AccuScan 6012

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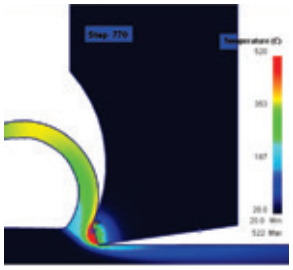

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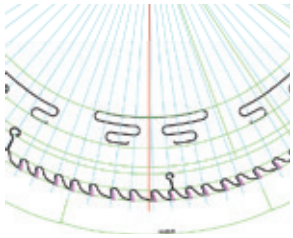

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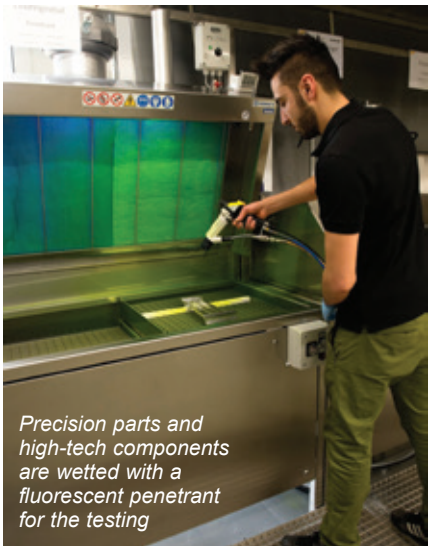
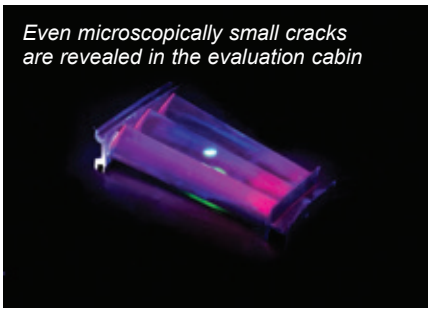
Fluorescent crack detection system

IN AEROSPACE applications, as well as other sectors such as the automotive industry, the highest quality is of decisive importance. Even the smallest defects can have serious consequences. Toolcraft states that its components are produced with the highest precision.

The quality of products can be quickly and reliably verified by the new system for non-destructive surface testing. The precision parts and high-tech components are wetted with a fluorescent penetrant for this purpose, making even the smallest cracks visible under UVA light.



Precision parts and high-tech components are wetted with a fluorescent penetrant for the testing



Even microscopically small cracks are revealed in the evaluation cabin

On an area of 105m², Toolcraft can now offer the opportunity to check components using a non-destructive method for cracks, overlaps, folds, pores and binding errors in the surface. The process is predominantly used on metallic materials, although it can also be applied to materials such as ceramics, assuming the surface is suitable for testing with penetrants. The system itself occupies an area of 75m².

When building the crack detection system, emphasis was placed on cleanliness. The system and all equipment are made from stainless steel – a material suited to crack testing because substances with elevated pH values are used. Harmful, flammable and volatile substances are employed, as a result of which the entire area is strictly monitored; only specialist personnel are allowed to enter during the test procedure.

Each testing process starts with preliminary cleaning of the components in an alkaline bath. Following this, the alkali is washed off again in a three-stage bath cascade using demineralised water.

Once the fluorescent penetrant has been applied by an electrostatic method, the component undergoes intermediate cleaning. It is then immersed in an emulsifier bath in order to partially dissolve the penetrant. Immersion in the water stop bath is used for finishing the process.

The testers apply a dry developer before assessing the component. This picks up the penetrant remaining in the defects and shows it up under UVA light. Even microscopically small cracks are revealed in the evaluation cabin; these are cracks that can have a decisive effect in aerospace applications.

In addition to a re-emulsifiable material on quality level three (high) being used, priority is given to regular monitoring of the test instruments.

Before the start of each test procedure a sample plate is put through the entire process. Existing defects are documented according to the highest quality standards, by qualified specialist personnel.

Toolcraft is a partner of research and development departments in many industrial sectors. As an associate of engineers and designers of semiconductors, optical industry and opto-electronics, special machinery manufacturing, motorsports and automotive, medical technology, aerospace, defence and security, toy and consumer goods industry, and the printing industry, Toolcraft manufactures precision parts, assemblies, moulds and injection moulded parts.

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New flaw detector ranges

SONATEST has launched the latest range of the Sitescan and Masterscan series of flaw detectors. Retaining the best features of the established series, the new range has evolved in response to the requirements of users and their applications, combining simplicity of use with improved capability and field-proven reliability.

The user now has the freedom and flexibility to customise their instrument to fulfil their preferences and meet their application demands. All units are field upgradeable. New and standard software options can be customised to meet the needs of the project, as can the hardware of the instrument – either the traditional table-top style case or the more recent hand-held portable case with rotary wheel menu driver.

The flaw detectors offer new features to boost the productivity of the inspector. Customisable and intuitive menus create a smooth workflow for the operator and, together with improved 4GB of data storage, simplified PC interfacing and new UT-lity reporting software, the

post-inspection report writing and result processing is enhanced.

The new range consists of four models: the Sitescan 500S and D-50 offer entry level broadband UT performance, and the Masterscan 700S and D-70 provide high specifications, including eight filter settings from 100kHz to 22MHz, with 100-450V square wave transmitter and 20m range.

DAC functionality, available on all models, now enables up to three custom DAC curves on-screen, meeting all known worldwide standards. Adjustable DAC curves increase the available dynamic range, and using the same reference indications DAC curves can now be converted to TCG and back again with ease. The unique Split DAC option gives up to three zones of additional gain to permit single-pass scanning of lossy materials and thicker sections.

Angle measurement mode is a new standard feature that simplifies beam plotting. Using the built-in peak detection mode, the beam profile for any transducer can be confirmed in moments. The introduction of a corrosion software option improves reliability over spot-thickness measurements and includes a B-scan display function that shows a cross-section of the material being tested based on its wall thickness.

A-scan data can be stored with the thickness readings and transferred to a PC using the new UT-lity Pro data management software.

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Email: sales@sonatest.com
Website: www.sonatest.com

Next-generation laser measurement system

Etalon's LaserTracer-NG

ETALON'S LaserTracer was developed for the sub-micron-accurate geometric analysis, monitoring and accuracy improvement of machine tools and measuring machines. It is a self-tracking laser interferometer that automatically tracks a reflector, and allows for the identification of geometrical deviations with high precision. The compensation data determined by the system can be directly imported into the control software of the machine tool or CMM.

The follow-up model, LaserTracer-NG, is an entirely redesigned system that consolidates Etalon's experiences gained during the last ten years of machine calibration. The LaserTracer-NG is smaller, weighs less and offers a larger angular range, to facilitate measurement in limited machine space. It can deal with highly dynamic machine movements: the accelerations of the machine permitted during measurement have nearly doubled. Shop floor suitability was also a major aspect when redesigning the measurement system. Originally, the LaserTracer had mainly been used under laboratory conditions. With its more recent use in production, it faces much harsher conditions. To prepare the new LaserTracer-NG for these challenging environments, it is equipped with a closed housing, with only two connectors, and a more flexible cable.

In contrast to conventional measurement devices, the LaserTracer-NG features, like the previous model, an accuracy of the centre of rotation thanks to a patented measurement technique. A sphere with a form deviation of just 50 nanometers is used as an optical reference for the interferometer. As a consequence, mechanical errors of the rotation and swivel axes are fully compensated.

For measurement execution, the LaserTracer-NG is placed stationary at several different positions inside the working volume of the machine. The reflector is mounted to the tool or probe. In the following automated measuring process, the system tracks the actual path of the machine in its entire working volume. Meanwhile, the system acquires highly precise measurement values that are processed and analysed by Etalon's Trac-Cal software package.

Etalon offers system solutions for the accurate and comprehensive geometric analysis, monitoring and accuracy improvement of machine tools, measuring machines and robots. Customers include companies from mechanical engineering, industrial instrumentation, automotive and aerospace technology, and the research sector. Etalon is active worldwide in the high technology markets, and works with competent local partners to optimally support customers. In the area of machine compensation, Etalon is an official Zeiss Business Partner as well as a Siemens Solution Partner.

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Testing steel tubes

MAGNETIC Analysis Corp (MAC) Echomac® ultrasonic inspection systems are being used by a number of tube manufacturers who supply steel tube for heat exchanger applications. A recent installation at Ratnamani Metals & Tubes Ltd, a steel tube producer in India, is testing welded stainless steel heat exchanger tube to meet industry standards.

The system incorporates an Echomac ultrasonic instrument with an ultrasonic rotary containing eight transducers – two for detecting longitudinal defects, two for transverse, three for wall thickness and OD/ID measurement, and one for water temperature compensation to enable dimensional measurement. This is the second system of this type that MAC has supplied to the company. Both are operating very satisfactorily, according to the company.

MAC has also supplied several ultrasonic test systems to Schoeller Werk in Germany, to inspect heat exchanger tubing made of stainless steel and titanium alloys. In addition to detecting defects, the company uses these systems to provide quick feedback on changes taking place in the welding process. One system incorporates seven ultrasonic channels, while the other includes 14 channels. MAC also supplied a complete inlet table and outlet conveyor.

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B-scan inspection system

SCRAP reduction is of particular importance to the welded tube industry; relatively small reductions in percentage scrap can yield large savings. For tube manufacturers, monitoring the weld flash removal process on line well before problems are revealed at cut-off is an attractive scrap reduction tool, particularly when post-weld heat treatment imposes long cooling runs before cut-off.

The InspecTech B-scan Inspection System (IBIS) was first sold to the welded tube industry more than 20 years ago. The unit was conceived and engineered around the 'need to know' the condition of the inside flash removal process, and the resulting scrap reduction potential.

As computing power has increased, the performance and utility of IBIS have improved. Displays, once delayed, have moved to real-time, and the OD profile of the tube has been included on the screen in addition to the thickness scale.

InspecTech has announced new software and firmware enhancements that have made the IBIS more user-friendly and flexible. In addition, the HMI (human-machine interface) has been updated and improved.

The test head of the IBIS flash monitor scans across the weld zone and adjoining parent metal covering a band around 50mm wide. The ultrasonic system makes thousands of readings during each sweep, measuring both the material thickness and the outer surface profile.

Rather than a curved profile, IBIS displays a set of Cartesian plots that are calibrated directly in engineering units (inches or millimetres), and which may be used to define alarm limits and display allowable tolerances. The company states that this would not be practicable in polar views.

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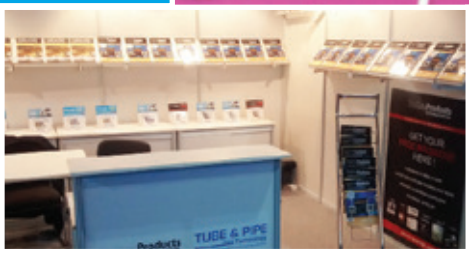

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这一栏目专为我们的中文读者介绍国际管道行业的最新技术和行业新闻的综合信息。

哈壳式管道冷切机

DWT公司将哈壳式管道冷切机加工范围扩展到72英寸。这种哈壳式切割机金属切割效率高、可调整范围大而且易于设置。这种便携式哈壳切管机用于管道切割和开坡口，避免了管道切割中的热影响区。

专用于重型应用中重型厚壁管道的切割，快的切割速度以及快速设置使其可在现场快速操作。

和使用准备带来经济型生产。DLW-HD哈壳式切割机能够在很多应用中进行安全、精确地切割。稳固的框架结构结合高质量小钢齿轮和轴承为具有挑战性的工作提供了坚固的结合。

特性包括冷切机带分离框架技术，用于环状管道切割。紧凑的尺寸可用于受限空间作业；管道焊接时快速、安全地夹紧和调整；以及用于管道焊接坚固的管道冷切机。

DLW-HD用于外径48到72英寸、壁厚100毫米内管道的冷切割。这种分体式构造的切管机可安装到管道组装延伸上。特殊的应用，如远程控制可用于受限空间管道焊接。

DWT GmbH – 德国
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网址: www.dwt-gmbh.de

迎接钢铁钝化工艺的挑战

QUAKER Chemical Corporation公司将在美国密西西比州杰克逊举行的 106届镀锌厂家协会会议和博览会上重点展出Primecoat™钝化产品系列。

在钢铁制造过程中，钝化步骤将保护钢铁表面不受环境因素导致的腐蚀影响。根据所选的化学过程和规则，钝化可通过不同的方式实现。Primecoat系列提供的产品范围包括六价铬(Cr6+)、三价铬(Cr3+)和无铬技术选项以满足过程需求。

Primecoat产品系列的关键优势包括透明的外表，防腐蚀，即使是更重涂层的防腐，并且增加了润滑性以及与后续漆膜的兼容性。Quaker Primecoat钝化产品系列补充了Quaker提供的工艺流体、涂层以及化学管理服务。

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网址: www.quakerchem.com

测量装置的自校准增加了准确性

根据Zumbach Electronic AG公司的说法，测量技术的精确校准意味着首先在测量装置上确立了测量偏差。校准过程中没有对测量仪器进行技术干预，只有在测量仪器设置或调整到保持尽可能少的测量误差、或者确保测量误差不超过限值时才进行调整。测量装置的官方校准应根据权威检测机构的规章制度进行，而且装置还应标有相应的印章。由权威检测机构确立相应的测量装置是否满足各自的先决条件。

校准时间的有效性是遵循实际需求的，如制造信息，质量标准要求或公司内部以及客户的具体规程，而不是在使用有效期内固定时间进行官方校准的。

为了能够比较测量结果，必须能够通过一系列与国家或国际标准装置的比较测量值来反馈信息。因此，使用中的测量装置的显示或材料代表必须与标准装置进行一步或多步比较。每一步都用标准装置进行校准，标准装置 之前由更高水平的标准装置校准过。根据标准装置的排列等级——消耗或工厂标准，从参考标准装置到国家标准——按校准层次结构进行点。可以延伸到从内部校准实验室，到公认校准实验室，最后到国家度量衡机构。不同的标准、规程和准则对执行专业校准有效。可校准的装置是必须满足基本要求的。为了进行校准并便于观察，必须知道所要求的物理状态。当公司决定遵守特定的标准或准则，或者其生产的产品的生产是遵守当地法规的，则仪器校准规则非常重要。

标准和规程如 ISO 9000 系列对所有工业国家的质量保证来说越来越重要。可能就会明确要求对产品质量有直接或间接影响的所有检测设备进行校准。这包括比如生产过程中作为参考的检测设备。

Zumbach Electronic AG公司坚持不同的质量保证标准和准则。比如FDA（美国食品和药物管理局）条例就是国际贸易关系全球重要的条例。CFR（美国联邦法典）要求“设备、仪器、测量仪器和记录设备必须按适当的时间间隔进行校准，并遵照书面的方案进行，包括特定的准则、时间表、限制值、精确度以及在精度和/或限制值不满足要求时的补救措施等。”欧洲的立法也有类似的要求。

Zumbach ODAC 18XY

公司的测量装置采用参考标准进行校准，这些标准是由计量认证联邦办公室(www.metas.ch)或公认的实验室日认可的。每个装置都有详细的校准协议。

测量误差以及相应协议的定期检查应根据客户要求进行。校准频率根据客户要求而定(内部规定)。Zumbach推荐每12到24个月检查一次精确度。

ODAC®系列所有测量头都有自我校准功能(专利号DE3111356)，这样就无须后续的定期的校准，更换组件除外。

与精度相关的所有参数通过测量系统不断监测并在需要时自动补偿。这对扫描电机可能的老化效应或测量电子元件可能的长期漂移来说非常重要。

校准协议应表明校准结果，并用文件记录国家标准装置的可追溯性，用来代表满足国际单位制(SI)的实物装置。

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全电动伺服精度管道珩磨机

SUNNEN的新型HTR全电动作业车间管道珩磨机将伺服精度和循环自动化特点与恒定的主轴功率以及0.1毫米(0.004英寸)的冲程可重复性，可有效地珩磨盲孔或纠正有难度的孔，无需操作员干预。

珩磨机设计和配备在工作车间遇到的各种部件，能处理内径达900毫米(35.41英寸)的孔。其模块化设计可以配备2.5到14米(8到46.2英尺)的冲程长度。对于作业车间的多功能性和生产力，HTR 的12千瓦(16马力)主轴电机，结合四阶变速箱，可在10到 470rpm的整个转速范围内生产恒定的功率带，以便快速切削金属。标准伺服旋转工具进给也可作为推进系统，带可选的驱动轴，将旋转转换为直线运动，使机器能够处理全套的Sunnen重型和两级工具。工具过载监控确保最佳切削速度，同时保护工具和工件。还有伺服齿条-小齿轮冲程系统确保精密冲程位置和可重复性。主轴小车使用10.2千瓦(13.6马力)的伺服电动机以0.1到48米/分钟(4英寸到157英尺/分钟)速度驱动，以淬硬磨光的方式，使机器有动力应对快速材料去除的超级磨料。

HTR的设计去掉了液压装置，以减少维护、噪音、泄漏和热量，以及因液压油变热造成的系统滞后。机器配有305毫米(12英寸)的Windows触摸屏电脑控制器管理机器的所有功能，包括冲程速度/位置、工具进给、主轴速度、石质磨损补偿和切割压力。标准的控制功能包括尺寸锁定、自动孔形尺寸校正、推荐的设置、工具过载保护、断火、主轴点动和短行程。控制程序可储存900个不同的部件加工程序，并配置13种语言。

HTR可选的易于设置的紧固件有两种尺寸范围，40到600毫米(1.6到31.8英寸)配件，或到810 毫米配件(2到31.8英寸)；配件重量分别为6,000千克(13,230磅)和8,000千克(17,640磅)。这些紧固件安装在线性轴承系统上，易于定位。

还可根据过程要求定制配置多重冷却系统。其他可选项包括进程内测量、锥孔能力、部件旋转装置、2米和4米机型的移动稳固架、两级珩磨、空调电器柜和符合CE认证的安全系统。

Sunnen的HTR管道珩磨机

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铜管金属夹杂物和缺陷检测

对于铜管制造商来说常见的问题是外来金属夹杂物的存在，这可能会导致故障，尤其是在液力传动应用中。Magnetic Analysis Corp的涡流Multimac®检测仪包含额外的磁力夹杂物（MID）探测器绝对通道，可提供方便、可靠的解决方案，能检测小到3毫克的夹杂物。

在大多数情况下，夹杂物来自材料本身，可能包含连铸过程中产生的残留杂质。在其他情况下，如翅片管，会在制造过程中产生夹杂物，微小金属颗粒，如钨可能会从制造工具中崩解出来嵌入到管道外径或甚至是管壁上。

MID使用的是磁漏技术原理。使用的双线圈磁检测传感器包含一个一次绕组，与二次绕组连接起来以差分方式布置，以及一个用于检测金属夹杂物的绝对绕组。产生的稳定的直流磁场，在它的存在中，非金属产品上或内部的磁性粒子通过检测线圈并将干扰磁场。这一干扰产生的信号由Multimac电子元件检测出、并分析显示在监视器上。Multimac能检测到的其他条件包括外径和内径上的表面缺陷、裂口、裂缝、小孔以及其他不合规处，如破损的阀瓣也能显示。设置和检测数据能够储存、记忆并传输到客户网络。报告包含客户、产品信息、缺陷位置、时间、振幅和相位可以存储在本地或网络服务器上，以便快速跟踪和质量保证。

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推出重型管道坡口机

TAG Pipe24管道坡口机

TAG Pipe Equipment Specialists公司宣布全球发布新型内径锁定管道坡口机(管端制备)。Prep系列是TAG公司最新发明的开坡口技术，这是公司30多年的行业经验发展而来的。TAG Pipe公司表示公司以保持市场地位而自豪，公司不断评估产品并根据客户反馈、体验和要求进行改进和提高。

旗舰产品是新的Prep 24系列。覆盖范围为7到24英寸管道，能满足管道制造商遇到的各种艰难条件和材料。可在管道内快速简单地装配的可移动中心轴、改进的轻量级重载六点锁紧系统以及新型电机(3,200瓦电动或3.5马力气动)和大功率的齿轮传动装置使 Prep 24 坡口机能加工几乎所有壁厚和任何材质的管道。

对于需要一致性高质量机械加工坡口的大量重复性工作，TAG Prep系列坡口机是适用于所有现场或车间加工的解决方案。TAG Pipe的设备还包括便携式管道坡口机、便携式管道切割和坡口机、管道对准夹、管架和管道搬运设备、管道冲洗设备、棒材倒角机、管道拉拔和扩管设备 以及管子对管板的焊接机。

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安装自动钎焊机

卡车和拖车运输温度控制系统专家THERMO King安装了一台来自EFD Induction的自动钎焊机。该机器将用于钎焊减震器以及用于空调和制冷系统吸入管线的组成件。

在对为什么在众多替代产品中选择EFD Induction时，Thermo King Ireland公司项目经理Michael Corcoran表示：“在选择EFD Induction的解决方案前我们查看了各种建议。在为这一重要的设备选择供应商时有很多原因。首先，其解决方案具有技术和经济效益。其次，公司在钎焊领域拥有深厚的专业技术——尤其是定制工程解决方案，如这台设备。第三：事实上，EFD Induction在整个欧洲都有分布，这意味着在我们家门口就有足够的售后支持。”

Thermo King机器具有“可分离”的线圈设计。EFD Induction的Bjørn Røsvik表示：“可分离线圈是获得Thermo King订单的决定性因素。事实上，这对整个自动化过程来说是必不可少的，这样可以由手工钎焊转为全自动化、连续生产过程。”

Thermo King钎焊机由EFD Induction Sinac18/25发电机驱动。Sinac是“双”版本，有两个独立的功率输出，每一个都有分离式变压器功能，使其能够安装可拆分的线圈。交付给Thermo King的全套系统包括自动搬运解决方案、一个电源和冷却装置。

EFD Induction公司目前为止为各种工业应用安装了成千上万的加热解决方案。公司在美洲、欧洲和亚洲有制造厂、车间和服务中心，总部在挪威。

EFD Induction开发定制钎焊解决方案

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硬质合金镶齿圆锯片

NEW-Form Tools为金属切割生产线增添了硬质合金镶齿(TCT)圆锯片。生产出的每个锯片都能减少停机时间并提高操作速度，而TCT圆锯片专门设计用来满足管道行业规范。

这种先进的锯片可用于各种金属切割，能实现整个钢材无毛刺切割。硬质合金镶齿锯片涂有涂层，使使用寿命更长，而且据说在某些情况下，比普通高速圆锯片寿命长4到10倍。

“用户在操作中很快就可以了解到增加的锯切性能。” New-Form Tools销售总监 Tyler Jantzi 说道，“先进的涂层使锯片能以较少的更换完成最清洁、可靠的切割，提高整体生产率。”

TCT圆锯片也可以用于各种切割应用，而且可用 New-Form Tools 重新磨锐。

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汽车管道行业轧管机

RAFTER Equipment Corporation公司专业生产轧管机、辊轧成形机、切断机以及其他相关轧制机械。尤其是针对汽车管道行业，公司生产了几种轧管机。

常用的汽车管道应用是排气管生产。这包括采用高频感应（HFI）和激光焊接技术焊接的更轻管壁的409不锈钢管。另一个应用是燃油管线，这些管道通常是加工和焊接成13毫米的大直径管道，然后再通过冷拉伸加工成外径小到4.76毫米的管道。另一个应用是汽车驱动轴油管。

还有一个不断增长的细分市场是生产用于汽车车身结构的直焊型材。这些应用通常包括增加了预打孔，这样就不需要二次操作。高频感应和激光焊接都可以焊接这些型材。

Rafter仍仅在美国生产设备，使公司能够控制生产过程，确保交付更快速更准时。公司表示在很多情况下都可以在承诺的交货日期之前运出。

公司1917年成立之初是一家辊轧成型机制造厂，1988年被收购、迁址、并转为轧管机制造厂。Rafter Equipment自此已提供了近100台轧管机和400多套轧机配件升级。公司的重心是提供易于操作和维护的坚固机器。

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Rafter的RT-3000驱动轴油管轧管机

管端成型设备

MANCHESTER Tool & Die推出伺服辊轧成型机，用于生产外径¾英寸的管道。这种伺服辊轧成型机可用于辊轧或切割，拥有伺服驱动的滚珠丝杆辊轧成型单元，而且机器设置快速、便捷。

这台辊轧成型机提供与公司的24008-HS开槽机一样的工业包。

Manchester Tool & Die为各种行业提供管端成型、开槽和卷边机以及工具，能加工外径3/16到3英寸的管道。可以生产标准型和定制机器和部件来满足客户应用需求。公司有各种制造设施满足客户加工需求，如数控和手动车削、数控和手动镗孔、数控铣削、磨削和线切割放电加工。公司还提供钢铁制作服务。

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Manchester Tool & Die
新型伺服辊轧成型机

汽车和换热器管道等离子退火和清洗

汽车和换热器管道由各种材料和尺寸制成。铜、镀锌钢、不锈钢、镍合金、铝以及复合材料都用于汽车和换热器领域。尺寸也为外径1英寸以及以上。对于如此宽泛的产品范围，必须采用各种不同的退火和表面清洗技术。

上面的大部分产品都可以进行等离子热处理和脱脂。汽车和换热器行业管道制造商对等离子退火越来越感兴趣。等离子退火炉可用于以上所有材质和尺寸管道的生产。与传统炉相比，使用等离子的优势是输入功率效率高，这意味着过程速度加快。等离子体退火可以与管道焊接或拉拔一起在线进行，替代了传统的多线管式炉。它还可以用于双壁管道生产中的钎焊。汽车制动系统和供油管道是等离子有效利用的典型应用。

等离子体退火或表面处理在保护气氛下进行，这样成品管道的表面质量非常高。材料表面离子溅射产生干燥的表面清洗和表面氧化物去除，这已被证明对表面有严格要求的应用具有好处。一些惰性气体或其混合物可用于清洁等离子机。常用的气体是氢、氮和合成气体，而氦和氩气用于特定应用。气体选择很重要，因为它会影响加工材料的表面光洁度。对表面质量要求的很多应用是在换热器、航空航天、汽车和医疗领域。等离子体处理还可以用于表面活化。经过等离子退火的管道表面仍然成火性，容易施加涂层，同时还在保护气氛下。因此等离子退火炉或等离子清洗器可直接在涂层或电镀生产线前面使用，避免再使用化学品进行表面处理。

汽车行业管道制造商对等离子退火越来越有兴趣

等离子体退火炉设计紧凑、能量转换效率高、耗气量低，而且使操作人员能以极高的精确度保证机械性能。快速加热以及再结晶时间的减少能获得晶体结构均匀的细小晶粒。反过来能提高材料成形性，使其更容易弯曲和进一步的拉拔。

等离子体退火炉在几分钟内冷启动生产，并且可以紧急停止。这就避免了长时间的升温和冷却，而且节约了能源成本，这些都是传统炉的症结。

Plasmait在奥地利工厂提供客户试用。等离子退火炉和清洗器能处理用于很多领域的各种不同类型的材料，如：精密管材、医疗管、液压管、毛细管、加热元件管、换热器管、薄壁管和各种用于汽车、航空航天、仪器仪表领域的管道。

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新型4000巴直接传动泵

操作压力为4,000巴，且能耗低的新型Woma EcoJet 70M 4000/4是一款节约成本、超高压力的直接驱动型泵，适用于喷水切割系统操作。其紧凑型尺寸意味着该装置与柱塞泵可以一起安装在新的或现有的系统内。EcoJet 70M 4000/4的柱塞泵用油量很少，而且运行非常安静，噪音等级只有80 dBA。直接驱动能耗少了30%。这大大改善了增压装置的性能。EcoJet适用于磨料和纯水切割，也可以改装成射流切割系统，用于金属、石头和塑料切割。

喷水切割使用超细的喷射以及压力、水量和喷嘴的最佳组合。喷出的水能以非常高的速度切割，可产生无边截面和少量切屑。还可以好不困难地切割多层材料，而且过程中不会被压碎。此外，EcoJet使用的水几乎没有加热，因此该过程也适用于使用热敏材料，他们在切割时将被熔化或改变形状。

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Online diameter control during hose and tube extrusion

By Harry Prunk (CEO, Sikora AG) and Katja Giersch, Sikora AG, Germany

In the past, hose and tube manufacturers have invested heavily in measuring and control techniques as well as line control systems aiming for online quality control, higher productivity and cost reduction.

Today, online measuring devices with controlling function have therefore become a standard in extrusion lines. The used measuring devices include, among others, gauge heads, which measure the outer diameter of the hose and tube during the extrusion process.

Sikora is a pioneer in the production of diameter measuring systems and has developed two product series based on laser technology for continuous online quality control. Operators can choose between classic and high-end orientated technologies.

Methods for diameter measurement

For the measurement of a product diameter there are two established techniques that are commonly used. The first method was invented 40 years ago and is known as “Scanning System”. By using a rotating mirror, a laser beam is scanned across the measuring field onto a light sensor. In between the rotating mirror and the light sensor there are two lenses. The first lens directs the laser beam in parallel across the measuring field to the second lens. The second lens directs the laser beam onto the light sensor. The product is guided in between the two lenses and interrupts the laser beam while the laser beam is scanned across the measuring field. Thus, the diameter of the product is calculated from the time the laser beam needs to pass across the total measuring field, compared to the time the laser beam needs to run across the product. Time is in this case equivalent to diameter. The measuring rate depends on the rotating speed of the mirror.

The technology that was presented 20 years later uses a laser beam, which is directed onto a high resolution CCD line sensor, with no rotating mirror and lenses in between *(picture 1)*. The product causes a shadow on the CCD line sensor. In this case the number of dark pixels on the line sensor is equivalent to the diameter. In reality the shadow evaluation is done by signal processing of the diffraction signal, resulting in the most accurate readings. The measuring rate is in this case extremely high and only limited by the selected CCD line sensor.

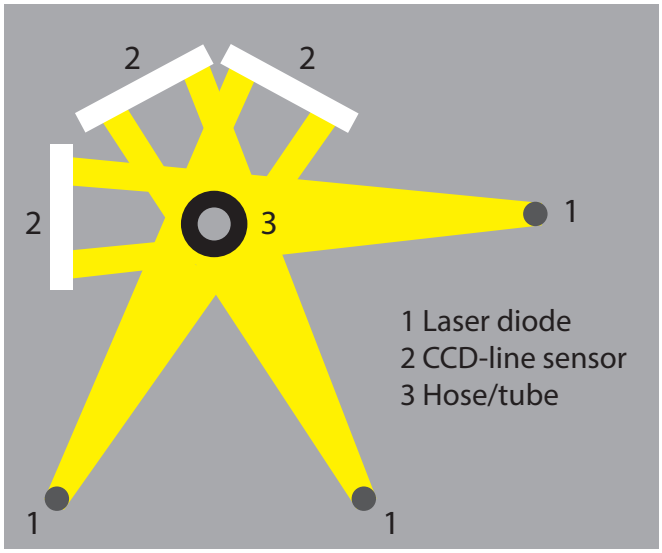
The main differences between the two techniques are therefore that the secondly described technology is completely digital, and requires no moving components and no lenses. As a consequence, accuracy, repeatability and measuring rate are higher and calibration is not necessary.

The technological base of Sikora diameter gauges described below is the second principle, using CCD-line sensor technology combined with laser diodes as light sources and powerful analysis software. There are two types of measuring heads available that meet classic respectively high-end requirements demanded for quality control on hose and tube extrusion lines.

Classic diameter control

Originally designed for the measurement of dimensions in the wire and cable industry, Sikora laser systems have also been used for quality control in the hose and tube market for more than ten years. There are diameter gauges with classic functions available such as the gauge heads of the Laser Series 2000 that meet the standard requirements, which are imposed on a diameter measuring system. The gauges measure the diameter in two or three planes with a measuring rate of 500 measurements per second. They are equipped with standard interfaces such as RS 485, optional Profibus-DP and other industrial field buses for the data transfer to a

Picture 1: Measuring principle CCD-line sensor technology combined with laser diodes



line PC or a display and control device. With an additional control module, which is integrated into Sikora's display and control devices, the diameter is continuously controlled to the nominal value. Customers can select from 18 types of devices covering a diameter range from 0.05mm to 500mm. These devices are standard in extrusion lines today *(picture 2)*.

Also interesting is the market development of the measuring and control devices concerning advanced technologies, which offer enhanced functionality, easy operation, higher measuring rates, highest accuracy and flexible data transfer. Today, users are aiming for a permanent quality control of their production as well as maximum productivity and cost reduction, for instance, by using advanced innovative measuring devices.

High-end diameter control

Due to this demand, Sikora developed three diameter gauge head models of the Laser Series 6000, which meet the current high-end requirements in the hose and tube sector *(picture 3)*. Besides the classic features, which are also covered by the Laser Series 2000, the gauge heads of the 6000 Series combine a variety of technological innovations to improve the productivity of extrusion lines sustainably. Up to 5,000 measurements per second, each of them with highest single value precision, allow for an optimum line control and provide reliable statistical data. The high measuring rate also allows the detection of lumps and neckdowns. Therefore, the user is receiving a two-in-one system with which investment costs are reduced and more space is achieved in the line, as the installation of only one gauge head is required. Untransparent and coloured products can be measured with the Laser Series 6000 as well as transparent hose and tubes. Additionally, the gauge heads have an integrated LCD display with control panel. This gives the operator the diameter value at a glance by looking directly at the measuring device. Whereas the devices of the 2000 Series require an additional display and control device, with the models of the 6000 Series the nominal diameter value can be entered directly at the gauge head and the control module can be activated directly at its control panel. Via line speed or extruder rpm the module controls the diameter automatically to the specified value.

For applications where statistic data will be processed and stored and/or where reports will be printed, external processing systems of the Ecocontrol Series are available. Directly integrated in the gauge heads is a universal interface module for all connections such as RS 485, RS 232, Profibus-DP, Profinet or alternative industrial field buses. Additionally, the Laser Series 6000 has an optional Wi-Fi interface, which allows for a direct connection to a smartphone or laptop. The Wi-Fi interface is used for diagnosis and quality control and transfers measuring values, trend and statistic data, as well as video signals. The Wi-Fi interface, the interface module as well as all plug connections are completely integrated into the gauge head and, in this position, protected against water, dirt or mechanical influences during production. Furthermore, the Laser Series 6000 can be used for mobile quality control:

Picture 2: Laser 2000

Picture 3: Laser 6040

Picture 4:
The Sikora App

an app not only allows the operator to display all production data at smartphones *(picture 4)*; it also offers gauge head calibration in accordance with ISO 9001. The values of the test probes are fed via QR code and the measuring values are saved in a log file. For the quality management system, a test certificate is created, sent and archived.

An important feature for the integration in the production line is the swivelling gauge head design. The gauge heads can, for example for a product change, easily be moved up and out of the extrusion line.

All measuring heads are open at the bottom side to prevent dirt and water from falling into the measuring area. The feeding of the cable connection to the interface module is also safely protected in the gauge head stand. Sikora offers the three diameter measuring devices for a product diameter from 0.2 up to 78mm.

Conclusion

The decision on which measuring and control device for quality control should be used in the production line depends on the requirements that an operator imposes on a testing device. Diameter measuring devices have to control the quality continuously during production. They provide actual information about the product and therewith the basis for automatic control. Ultimately, only the combination of the gauge head and the control device contribute to cost reduction during production. The diameter is automatically controlled to the minimum value based on the measuring results and the comparison with the nominal value. Hence, there is only as much material used as currently required. In this way, costs can be reduced, scrap avoided, and productivity is increased significantly.

The Laser Series 2000, in combination with a line PC or control device, offers classic technology features, which enable the operator to react quickly to tolerance deviations and to produce optimum quality.

The Laser Series 6000 is additionally equipped with various advanced features, with which the users can run their production lines more efficiently. The high measuring rate, measuring accuracy and repeatability are setting new standards in the precise controlling of the production line and, therewith, for the production of hoses and tubes of high quality. It is necessary to comply with product dimensions in order to further process the produced hoses and tubes in the production chain. Last but not least, costs are reduced by using the provided material efficiently.

[1] The two-axis gauge heads suitable for a measuring range from 30mm, as well as all three-axis gauge heads of the Laser Series 2000 are open at the bottom side. The smaller gauge heads are equipped with a multi-slot-protection. Additionally, the larger devices provide a swivelling gauge head.

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