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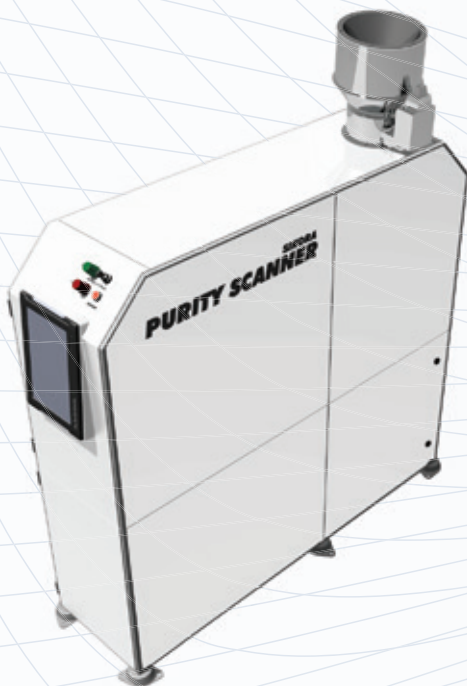


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Executive Board SIKORA AG



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Learn more about our pipe welding and normalizing solutions at Fabtech 2013—visit us at Booth S3642.

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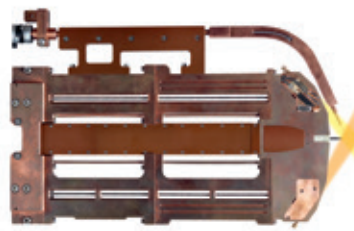
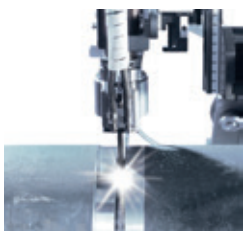
Fabtech 2013
Chicago – 18-21 November

100 Welding technology



119 Narrow Gap TIG welding

By Jean-Pierre Barthoux, Polysoude SAS, France



The November Issue

Welcome to the latest issue of *Tube & Pipe Technology* magazine. This issue we have features on the FABTECH show at McCormick Place, Chicago, and we take an in-depth look at the latest developments in the area of welding technology.

To complement our welding feature we also have a fascinating article from the experts at Polysoude on the specific methods and problems encountered while performing narrow gap welding. As usual we also cover all of the very latest industry news and information about the latest tube and pipe machinery.

Between the time of writing and the January issue I will be flying to São Paulo in Brazil and Chicago, USA. I am looking forward to visiting both TuboTech and FABTECH and I am sure I will see plenty of familiar faces. It is always good to meet readers face to face and get your feedback about the magazine. Make sure you drop by and pick up a copy of the magazine if you are at either of these shows.

Next issue we begin our preparations for Tube Düsseldorf with a preview. Please make sure you contact your usual marketing representative at the magazine (phone number and email addresses are to the right of this column) as soon as possible in order to ensure your inclusion in the issue. Please submit your editorial for this issue and the January features on straightening technology, cutting, sawing and saw blades, coiling and uncoiling technology to rory@intras.co.uk. Enjoy the magazine.



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Front Cover Story

Since 1985 Universal Tube & Rollform has been committed to being the number one supplier of used tube, pipe and rollform machinery in the world. Its presence in this industry has always been strong and honourable, working with companies locally and all over the world, it says.

Its president, Ralph Girkins, has over 35 years of experience in the tube and pipe industry. The company takes pride in its knowledge and ability to mix and match various machinery to fit

customer needs. New, used or reconditioned, it can help put it all together to balance clients' budgets and increase the value of customer spending.

It has one of the largest selections of used tube and pipe mills in the world. Utilising over 125,000 square feet of warehouse space, it also stocks rollformers, cut to length, slitting lines and more. It has the resources and expertise to satisfy companies' machinery needs.

Heavy wall thickness tube mill for India

DANIELI W+K has delivered a new special mill for the production of high tensile strength material precision tubes with ranges from 2½" to 7" and a maximum wall thickness of ½" to a customer in India.

The challenge for Danieli W+K was designing a customised special tube mill for Company Tube Products of India, located in Chennai, since this

line will mainly produce precision tubes for hydraulic cylinders used for earth moving and construction machinery and hollow sections for the steel construction industry.

The complete line consists of fully automatic strip preparation, a forming, welding and sizing section and a newly developed flying saw – the multi-cut. The finishing line also provided

by Danieli W+K consists of a run-out section, sample tube-cutting device and an integrated flush-out station to flush out the inside scarf. A chopper to cut the inside scarf and a blow-out station is incorporated into the flushing station. The system is also equipped with an automatic bundle station and a magnetic portal packaging device for bundling hexagonal and rectangular bundles for round tubes and hollow sections.

The new enhanced multi-cutter consists of two individually driven saw blades on an orbital rotation system which enables it to cut in two modes: with one HSS saw blade for tubes ranging from 2½" to 3½" and with the two-mode system consisting of two tungsten-carbide saw blades to cut tubes up to 7" in round and rectangular sections. The saw blade drives are water-cooled and well protected against particular environmental conditions. Special gearbox design and patented clamping devices guarantee almost vibration-free cutting and long saw blade life span. The development of this design is the result of the extensive experience of DWK experts in cutting machine engineering with much contribution also from saw blade and gearbox suppliers.

With this new line Company Tube Products plans to introduce the sale of tubes into new market segments and in particular thick walled-tubes for special applications.

Production is scheduled to commence in March 2014.

Danieli W+K – Italy
Website: www.danieli.com



Mill for producing high tensile tubes

Heinrich Weiss leaves SMS

HEINRICH Weiss, who has been responsible for the development and leadership of the group of companies for the last 45 years, will be resigning from his post on the managing board and will assume the chairmanship of the supervisory board.

The present chairman, Dr Manfred Bischoff, will retain his commitment to the company as a member of

the supervisory board. Dr Joachim Schönbeck, who is already a member of the managing board, will be appointed to represent the company externally. Jointly with his colleagues, Burkhard Dahmen and Eckhard Schulte, he will continue to constitute the management of SMS GmbH.

Dr Joachim Schönbeck will be primarily responsible for SMS Meer

as before; Burkhard Dahmen will be responsible for SMS Siemag (including the Paul Wurth majority holding); and Eckhard Schulte will be the CFO of the group.

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

Shell and Interpipe in cooperation

IN 2012 Shell and Interpipe signed a Memorandum of Understanding (MOU) that outlined the steps required to bring Interpipe's pipe products in line with Shell's global standards. Since then the companies have progressed through the crucial steps of the Memorandum and, as a result, Shell has approved Interpipe mills and certain product lines.

Robin Naughton, well engineering team lead at Shell, commented, "Shell has approved and is satisfied with certain Interpipe products and continues to work with Interpipe on other aspects so that a significant and relevant product range is approved for Shell both in Ukraine and internationally. Once relevant product lines are approved Interpipe will be able to bid for supply tenders for Shell."

Denis Morozov, Interpipe director of products and resources, said, "The cooperation with Shell gives us a challenge to meet the highest quality standards in the industry, and I'm delighted that Interpipe has successfully passed Shell qualification audit. At the moment we have approved certain product lines with Shell and are working on development of new pipe products with premium connections to meet the company's requirements to operate in tough geological conditions."

Shell has approved the steel manufacturing plant of Interpipe Steel for production of steel billets for use in rolling of casing and tubing. Shell has also audited Interpipe NTRP and Interpipe Nikotube pipe rolling mills and confirmed that plants' technological processes and quality management system comply with international standards. Qualification orders of casing and tubing have been transported to the USA for inspection and verification of meeting Shell standards, and initial results are under review.

Interpipe NMPP mill has been approved by Shell for manufacturing of line pipe for a limited product range. Shell has approved Interpipe to thread API specification connections, and is working with the company on new premium connections for high pressure fracturing of gas wells.

Interpipe – Ukraine
Email: sales.eu@interpipe.biz
Website: www.interpipe.biz

www.read-tpt.com

Diary of Tube Events

2013



12-14 November

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



18-21 November

Fabtech (Chicago, USA)
International Exhibition
www.fabtechexpo.com



19-22 November

TOLexpo (France)
International Exhibition
www.tolexpo.com

2014



11-15 March

Metav (Germany)
International Exhibition
www.metav.com



7-11 April

Tube Düsseldorf (Germany)
International Exhibition
www.tube.de



14-17 May

Lamiera Bologna (Italy)
International Exhibition
www.lamiera.net



3-6 June

Tube Russia (Moscow, Russia)
International Exhibition
www.metallurgy-tube-russia.com



24-27 September

Tube China 2014 (Shanghai, China)
International Exhibition
www.tubechina.net



21-25 October

EuroBlech (Hanover, Germany)
International Exhibition
www.euroblech.com



28-30 October

Tube India 2014 (Mumbai, India)
International Exhibition
www.tubeindia.com

YouTube video campaign for customer support

WACHS has added four new videos to its YouTube channel. The videos highlight products and tools designed to help project managers, welding contractors and field machinists estimate production times, specify products and generally learn more about pipe cutting, bevelling, and weld prep best practices.

Viewers can learn about the Wachs Online Cut Time Calculators via the YouTube website, to calculate estimates when bidding on a pipe maintenance or pipe repair job.

Users can better budget labour time with the Pipe Cutting and Weld Prep Calculator.

The newest Wachs video is 'Oil & Gas, Refining Pipe Repair & Pipe Maintenance'. This video demonstrates machines in the field; where you would find the equipment; benefits of using cold cutting equipment; and simultaneous cutting and bevelling.

The 'Pipeline Maintenance Equipment' video exhibits machining methods, applications, weld preps and benefits of using cold cutting

(machining) versus torch cutting and grinding for weld preps.

The Trav-L-Cutter video illustrates the machine's uses in the field, industries to find the equipment, preliminary specifications and machine operations.

Each of the videos can be viewed on the EH Wachs YouTube channel, at www.youtube.com/user/ehwachs/videos

EH Wachs – USA

Email: info@ehwachs.com

Website: www.ehwachs.com

Quality achievement award

NORMA Group has earned Paccar Inc's quality certification for a second consecutive year. The 50 PPM award is presented to an elite group of suppliers who achieved a defect rate of 50 parts per million (PPM) or less during 2012.

Paccar evaluates its suppliers' services on a rolling six-month performance basis. Its award criteria also include warranty claims, the production parts approval process (PPAP), and on-time delivery. Suppliers

must maintain a quality system in compliance with QS-9000, ISO/TS 16949 or ISO 9001 for 2008, and pass Paccar's supplier readiness review.

"The Paccar 50 PPM award is a great distinction for Norma Group," commented Norma CEO Werner Deggim. "It reflects the dedication of all Norma personnel to deliver the highest quality product solutions, and also our commitment to always meet and exceed customer expectations."

Norma Group has been supplying

standard and quick release NormaConnect V profile clamps to Paccar's DAF trucks since 2006.

Norma Group manufactures a wide range of engineered joining technology solutions in three product categories – clamp, connect and fluid – and offers more than 30,000 products and solutions to approximately 10,000 customers in 100 countries.

Norma Group – Germany

Website: www.normagroup.com

Corinth Pipeworks orders JCOE large-diameter pipe mill

CORINTH Pipeworks from Athens, Greece, has signed a contract with SMS Meer, Germany, for the supply of a JCOE® large-diameter pipe mill for longitudinally welded pipes. With this investment, Corinth Pipeworks is expanding its product range in order to meet the growing worldwide demand for high-strength pipes for oil and gas extraction and transit.

The new mill will be able to produce longitudinal submerged-arc welded (LSAW) pipes with outside diameters

from 18" to 56", wall thicknesses up to 40mm and pipe lengths up to 18.3m in high-strength steel grades up to X100. The annual capacity will be 400,000 tons.

The pipes from Corinth Pipeworks will be used by its customers in future energy supply projects – for example in the Mediterranean region, the Gulf of Mexico, Latin America, West and East Africa and in the North Sea.

Corinth Pipeworks already has an HF welded pipe plant and a spiral pipe mill

from the SMS Meer Business Area in operation. With the new JCOE® large-diameter pipe mill, the company is now completing its range of production techniques for pipe welding.

The new mill is scheduled for commissioning in the first quarter of 2015.

SMS Meer GmbH – Germany

Fax: +49 2161 350 1862

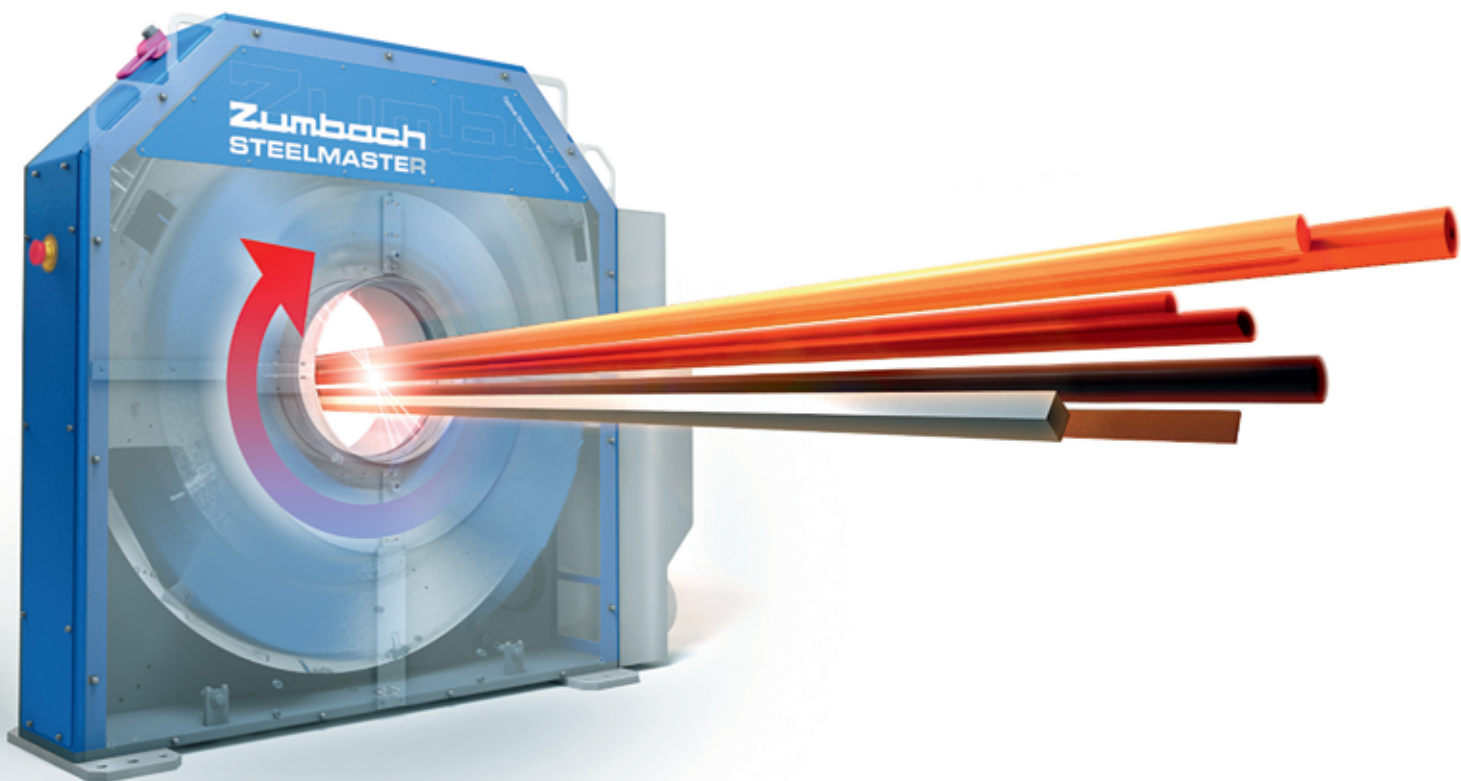
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Video

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Open house event of three Graebener group companies declared a success

AN Open House event at the Graebener Group has been declared a resounding success.

At the locations Quartier Landeskrone and Quartier Elkersberg the companies Graebener Maschinenteknik GmbH & Co KG, Reika GmbH & Co KG and H Kleinknecht GmbH & Co KG opened their doors in order to present their latest developments to the visitors.

In addition to this, Reika introduced the new demonstration and processing centre.

In this workshop, which is located right next to the highway, the customers were able to survey the quality of the Reika machines during operation – an operation that has become even more important since Reika and its customer conducted tool tests and further improvements and developments

with the machines available at the demonstration centre especially with the machines of the RingSaw® series.

Managing director Hans-Jörg Braun said: "I am certain that this is the best way for Reika to learn and determine which tool is most suitable for the customer's material, leading to optimum results."

The customer simply supplies the material and does not need to assign any of his own machines for the testing process, which would impact their production. "On the other hand, this is also an ideal way to convince the customer of the superior qualities of our RingSaw® technology."

This goal was met during the open house event. Even though customers already knew about the RingSaw®, they were still amazed at the features

of the machine series for the cutting of tubes, profiles and bars and for various applications concerning the separation of tubes and bars. The cut is almost free of burrs and the tool costs are significantly reduced in comparison to conventional hard metal saws while at the same time speeding up the performance.

Mr Braun said: "That is the major advantage of our demonstration centre. Here, the customer can experience the features of our machines directly – under various conditions with different materials."

While Reika presented its vast experience with the cutting and processing of precision tubes, Graebener showed its abilities at the Quartier Landeskrone with machines of completely different dimensions. The two 4-roll bending machines currently being assembled there are nearly ready to be shipped to a manufacturer of offshore monopiles.

They are used for bending plates with a wall thickness of up to 150mm to individual pipe sections with a diameter of up to 10m. These two machines with the fully adjustable plate handling system represent the absolute state-of-the-art currently available in the sector of roll bending machines for the preferably automated bending of cones as well as cylindrical sections of any required plate thickness.

The final participant of the Open House event was the company Kleinknecht, having pooled their mechanical competences at the Quartier Landeskrone. Here, Kleinknecht manufactures test stands for (dual clutch) gears, components, electronic as well as hybrid motors and electric discharge texturing (EDT) machines for renowned customers worldwide.

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

Graebener Maschinenteknik GmbH & Co KG – Germany
Website:
www.graebener-maschinenteknik.de

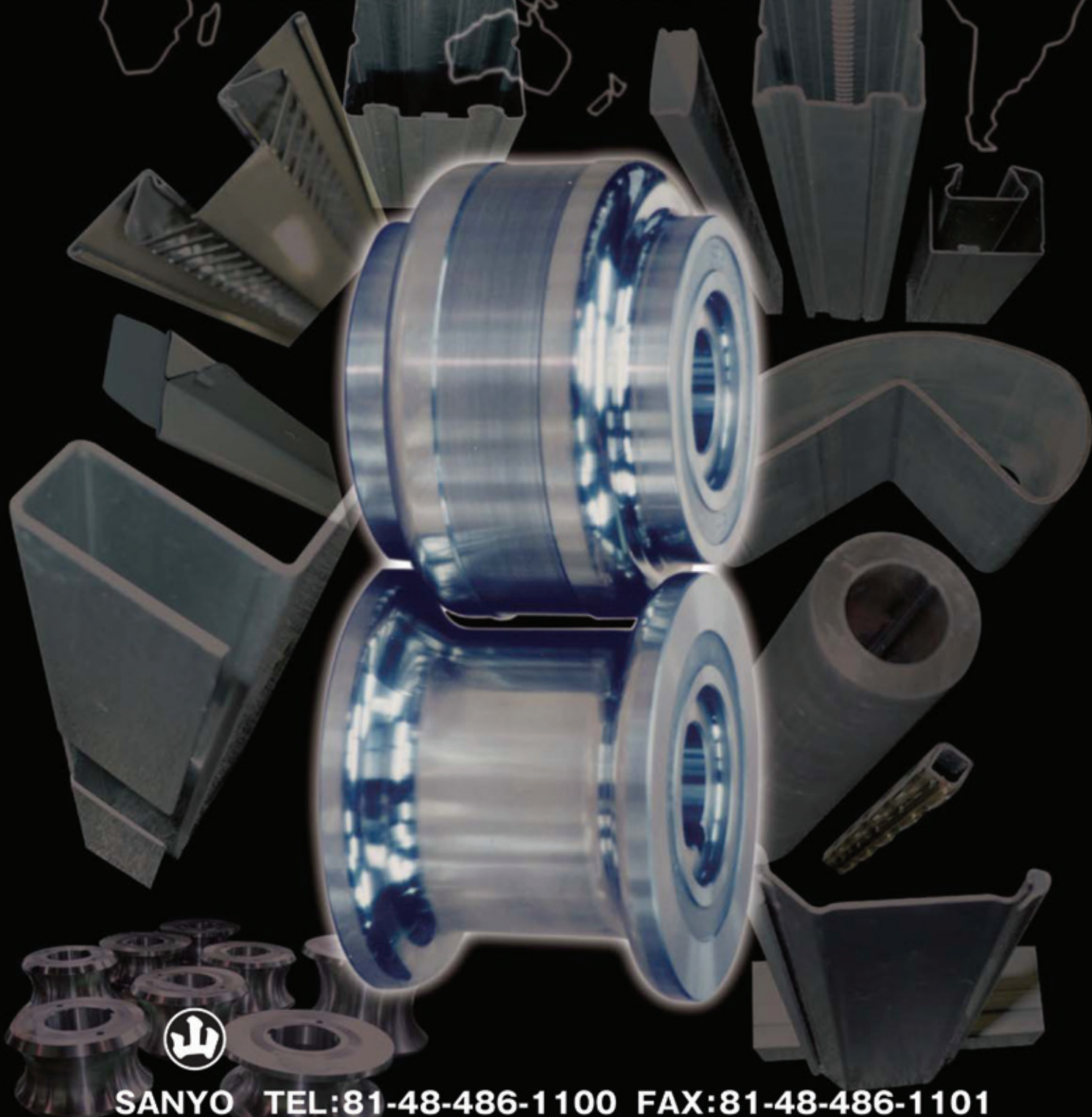


The open house day was a great success

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Certification for high purity tubing awarded to RathGibson

RATHGIBSON, a manufacturer of welded, welded and drawn, and seamless stainless steel, nickel and alloy tubing, has earned the American Society of Mechanical Engineers (ASME) BioProcessing Equipment (BPE) certification.

The certification was awarded in recognition of the company's commitment to excellence in the manufacture of high and ultra high purity tubing.

"After the audit was scheduled, the process moved quickly," explained Michael Aston, manager – quality assurance. "The ASME auditor concluded that the processes that

we already had in place met the requirements of the standard."

RathGibson received ASME BPE certificate #103 on its ASME BPE SF1 and SF4 product lines. The company's ASME BPE SF1 tubing is mechanically polished on the ID to 20µ-in Ra (0.5µm) ID max; ASME BPE SF4 tubing is electro-polished on the ID to 15µ-in Ra (0.4µm) max. Both product lines are available in 12.7 to 152.4mm (½" to 6") OD, in stock 6.1m (20ft) lengths.

Paul Sedivy, director – high purity products, commented, "Earning this certification is our reward for our dedication to quality. We are proud that pharmaceutical and biotechnology

companies turn to us for solutions that add value. Our goal is to continue to exceed the expectations of our customers in order to positively contribute to their bottom lines."

RathGibson, a PCC Energy Group company, is a worldwide manufacturer of precision engineered straight lengths, coil, and U-bend tubing for industries such as power generation, renewable, oil and gas, petrochemical, chemical, food and dairy, beverage, pharmaceutical, and general commercial.

RathGibson – USA
Website: www.rathgibson.com

Integrated finishing line for Saudi Arabian company

MAIR Research SpA, Italy, is installing and commissioning an integrated finishing line for API 5L and ASTM tubing at a leading tube producer in Saudi Arabia.

The Mair Research finishing line

processes 8" tube and is fully integrated with the tube mill. It carries out the key operations required for both ASTM and API products, namely: ID bead flushout, straightening, chamfering, hydrotesting, ultrasonic testing, WMS,

bundling, strapping and storage. Special conveyors are foreseen to allow tube inspection/repair "in loop" with the principal flow allowing distinction between good, bad and hold tubes to be processed according to different requirements.

Moreover the line is designed to run at high output (10 tubes/min), with 6m long ASTM tubes being a main product.

The line was fully manufactured, assembled and pre-shipment tested (in the presence of the customer) before despatch. All these activities take place in the Schio, Italy, plant of Mair Research.

A custom software system keeps track of data connected to the individual operations on each tube, which has its own identification.

With this important reference, Mair Research confirms its leadership in the specialisation of delivering finishing solutions to the tube and pipe industry, whether as single machines or completely integrated lines.

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



Contract for pipelay support vessels

A JOINT venture formed by Technip and DOF has been awarded by Petróleo Brasileiro SA (Petrobras) eight contracts, covering the construction of four new pipelay support vessels (PLSVs) and operation in Brazilian waters to install flexible pipes. The combined value for Technip is approximately €1.35bn.

Two of the PLSVs will have a 300-ton laying tension capacity and will be fabricated in Brazil with a high national content.

The other two vessels will be designed to achieve a 650-ton laying tension capacity, enabling the installation of large diameter flexible pipes in ultra-deepwater environments, such as the Brazilian pre-salt.

Vard Holdings Limited, one of the major global designers and shipbuilders of offshore and specialised vessels, will be in charge of the design and construction of the four PLSVs.

Under the joint venture agreement, Technip will manage flexible pipelay, and DOF will be responsible for marine operations. Delivery of the PLSVs is scheduled for 2016-2017.

Contracts will last eight years from start of operations, and could be renewed for another eight-year period.

Frédéric Delormel, Technip's executive vice president and chief operating officer subsea, commented, "This strategic contract reinforces our subsea leadership in Brazil and our long-term relationship with Petrobras."

"We are confident that these new state-of-the-art PLSVs, including two with the most important flexible pipelay tension capacity in the world – 650 tons – will be key assets for our client to successfully achieve its projects offshore Brazil."

Mons S Aase, DOF's chief executive officer, added, "The contracts confirm that our cooperation with Technip on the Skandi Vitória and Skandi Niterói has been successful, and reinforces our position as a leading provider of offshore vessels to the Brazilian O&G industry."

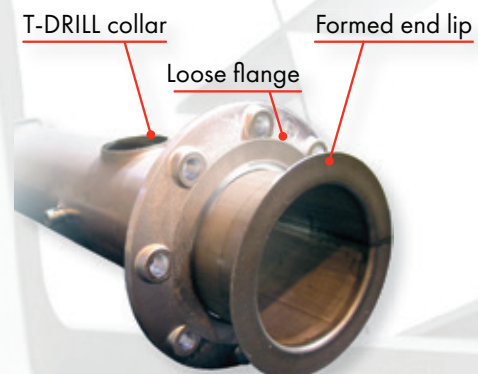
"It comes as a result of our long-term focus on the Brazilian market and is an acknowledgment of the expertise of our people."

Roy Reite, Vard's chief executive officer and executive director, commented, "I look forward to working with Technip and DOF on these milestone projects. Vard yards both in Europe and Brazil being chosen to build these vessels illustrates the value of having a global presence when working with international clients, and bringing leading edge technology to new markets."

Technip – France
Website: www.technip.com

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TMK Seversky Tube Works orders threading machines

TMK's OAO Seversky Tube Works from Polevskoy, Sverdlovsk, Russia, has placed an order with SMS Meer, Germany, for two new threading machines, including transport facilities. With these new machines, Seversky Tube Works is expanding its production capacities for premium joints.

The threading machines of the type CG 38/4 are able to thread pipes in the diameter range from 169 to 340mm with wall thicknesses from 7.3 to 16.5mm and lengths up to 13.5m. Depending on the thread type and diameter, the machines finish between 46 and 87 pipes per hour.

The machines operate according to the "stationary tool – rotating pipe" principle. With this method the machines can cut standardised inside and outside threads as well as all premium threads. The pipe threads comply with the production standards API 5CT and GOST 632-80, as well as all other international pipe standards. The threading machines will go into operation in spring 2014.

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

Olicana welcomes French student to Ilkley site

OLICANA Products, a tube bending specialist based in West Yorkshire, UK, was happy to provide a learning platform for French engineering student Sylvain Royer for three months over the summer. Mr Royer, who is 22 and from the Southern city of Toulouse in France, has had a passion for motorbikes since he was 14 and this is what led him to study mechanical engineering.



Sylvain Royer at Olicana in Yorkshire

After passing a two-year technical degree in mechanical engineering, specialising in aeronautics, he was ranked top ten in France allowing him to join the prestigious INSA of Toulouse, one of the best engineering universities in the country.

Mr Royer's work placement at Olicana focuses on 3D-design work of both plastic injection mould components

and design work on new tooling. He is improving his precision machining skills by machining the tooling that he has designed and will then fit and assemble the tooling to prove off the tooling.

He has already passed the required English exam (TOEIC), which is compulsory to validate the Engineering Diploma, but wants to keep improving his language skills and

to travel as well. Rupert Pearson, Olicana's managing director, has been impressed with Mr Royer's enthusiasm and attitude to get straight down to work on the factory floor. He is proving to be a very positive, hands-on member of the team.

Olicana – UK
Website: www.olicana.com

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Pipe fusion equipment expert celebrates successful programme

MCELROY, a manufacturer of pipe fusion equipment, is celebrating the success of the Certified McElroy Rental Program.

Certified McElroy Rental machines undergo a rigorous checklist and regimen by participating McElroy distributors in order to provide customers with reliable fusion machine rentals.

The two-year-old programme is a partnership between participating McElroy distributors and McElroy. Distributors use a comprehensive checklist created by McElroy to check fusion machines after each rental.

By participating in the programme, distributors pledge to provide greater continuous care of McElroy rental machines, creating a premium rental option. If a repair to a rental machine is needed, participating distributors are committed to using genuine McElroy parts, installed by factory-trained

mechanics. Ninety-six per cent of McElroy's distributors are participating in the programme.

Distributors participating in the programme are noticing a higher level of customer satisfaction.

"I think customers want something that will work in the field, something that is dependable, something that they can trust," said Jake Goodson, sales and rental manager at Rainmaker Sales in Shawnee, Oklahoma. "They know when they get out there to do their job that a Certified McElroy Rental machine will fire up and work."

At an ISCO Industries location in Pryor, Oklahoma, Tom Coats works daily to check Certified McElroy Rental machines with discipline.

"I think of it as if I was going to take something home, I want it to work," said Mr Coats. "When I put the Certified McElroy Rental sticker on it and put my

initials on it, I want it to work because it reflects on me."

"I think the Certified McElroy Rental checklists are a huge benefit to us," said Mr Goodson. "It provides us reminders to not overlook certain parts of the equipment. For us, we know that we're covering the machine from head-to-toe and top-to-bottom. We identify problems that help to save us time in the future, and saves our customers from downtime and a loss in productivity in the field."

Certified McElroy Rental locations stock a majority of available McElroy fusion machines, capable of fusing thermoplastic pipe, such as high-density polyethylene (HDPE) pipe, from ½" CTS to 65" OD (16mm to 1,600mm). Productivity equipment is also available at the majority of locations.

Mr Goodson advises potential rental customers that finding a Certified McElroy Rental machine is easy. He said he finds that a majority of his rentals come from the online Certified McElroy Rental Locator, which can be found online at www.certifiedmcelroy.com

Butt fusion (also known as pipe fusion or plastic pipe joining) is a widely accepted process that joins two pieces of thermoplastic pipe together with heat and pressure.

Commonly associated with high-density polyethylene pipe (HDPE) and polypropylene pipe (PP-R), the butt fusion process starts by "facing" or shaving the pipe ends simultaneously so that they can be joined together with heat to create a continuous, sealed pipeline.

The welding of the pipes is accomplished by using a hot plate in contact with the pipe ends, which heats the plastic to a molten state. Then, after its removal, the ends are pressed together under a controlled force to form a weld that is as strong as or stronger than the pipe itself. Third-party industry research indicates that HDPE pipe and joints can have a lifespan of more than 100 years.

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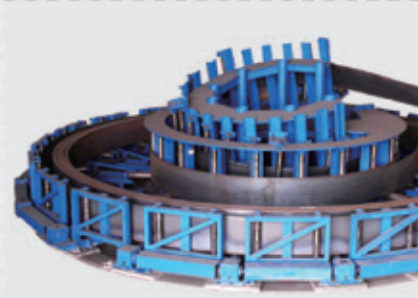
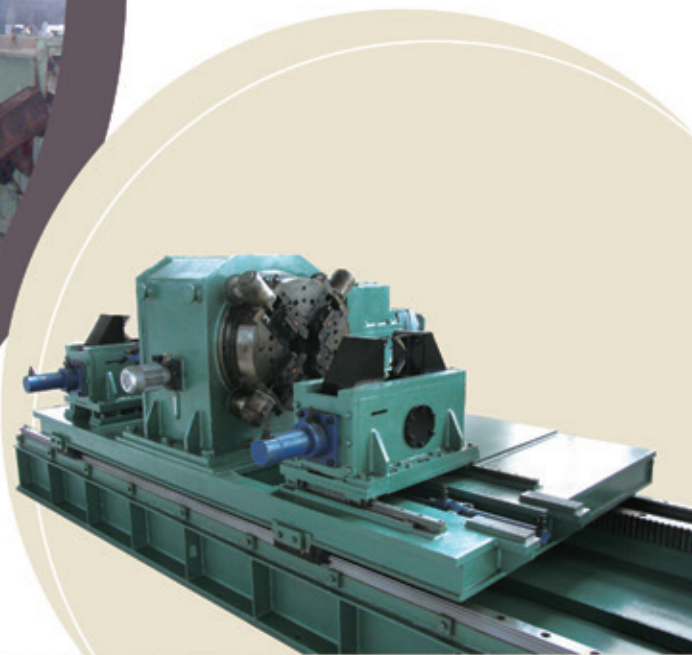
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Annealing line furnace equipment for Zhanjiang project

FIVES Stein, a designer of high technology furnaces and thermal equipment for steel and glass, has been awarded a major contract to design and supply a continuous annealing line vertical furnace for Baosteel's Zhanjiang project.

Through this contract, Fives Stein will supply equipment for the 2030 cold rolling mill, one of the plant's key units, which will mainly produce automotive exposed panels and sheets and other high-end appliance products, with a designed annual production capacity

of 2.2 million tons. With the Zhanjiang project, Baosteel will bring new steel capacities in the Guangdong province (southern China), a region opening to the dynamic Southeast Asian market.

The vertical annealing furnace that will be supplied by Fives Stein for the Zhanjiang plant will be composed of ten different heating and cooling sections, including the patented FlashCooling® technology, and will process the strip thermal cycles over 95 vertical passes with a total strip length inside the furnace of 2.5km.


The equipment integrates advanced combustion and cooling technologies with the design and operation experience of the last eight vertical annealing furnaces ordered by Baosteel from Fives Stein since 2005. This continuous annealing line will have an annual production capacity of 825,000 metric tons.

Thanks to Fives' most advanced technologies, the Zhanjiang facility will have an improved environmental track record. The furnace will also integrate the latest generation of efficient AdvantTek® combustion system, which has a claimed recuperative energy efficiency of 20 per cent better than other combustion systems, combined with low NOx emissions.

Mrs Shan Xiaoyang, CEO of Fives in China, commented on the excellent relationship between the two companies: "We have much more than a simple supplier-client relationship. Our extensive level of cooperation, which encompasses the development of new products and design of new process technologies over the years, greatly contributes to the international development of both Baosteel and Fives in a sustainable and competitive way."

Mr Sheng Genghong, general manager of Zhanjiang Steel Co, stated, "For many years, Baosteel and Fives Stein have carried out extensive and smooth cooperation, and today both parties will cooperate with each other again for Zhanjiang Steel project, which will deepen further our friendship."

Fives – France
Website: www.fivesgroup.com



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WH-350 weld squeeze box destined for Ohio

YODER Manufacturing of Cleveland, Ohio, a member of the Formtek Group, has recently been contracted to refurbish and upgrade an existing WH-350 tube mill to produce structural shapes (HSS).

Formtek has designed a new style weld squeeze box that consists of a five roll and four roll configuration as deemed necessary by the particular product being produced.

Each configuration utilises a top head roll assembly consisting of two top edge rolls that control the edge presentation prior to welding.

The head roll assembly has vertical adjust as a group and individual adjustments to compensate for improper strip edge alignment. The main squeeze pressure is provided by the bottom squeeze unit which will utilise two side rolls only for rounds that range from 1.5" to 3.25" (38.1 to 82.6mm) OD,

or two side rolls and one bottom roll for rounds that range from 3.25" to 5" (82.6 to 127mm) OD. The ability to switch from 4-roll to 5-roll configuration allows the operator the utmost in flexibility to provide the proper material presentation for the welder. The bottom squeeze roll assemblies are unique in that there is fast sides close adjustment as well as a fine tuned (and geared) close adjustment, thus eliminating the need for operators to utilise cheater bar tools, which can cause injury if they slip.

All roll spindles are "dead-shaft" design so the bearings are housed within the rolls to yield the best possible bearing life for the weld box, which is considered the worst-case scenario for environment on the tube mill.

The weld box assembly has one last feature that is the ability to move up and downstream with respect to the tube mill flow.

This allows the operator to fine tune the weld vee angle with respect to the last fin-pass. Therefore, depending on your particular tooling design, the weld vee angle can be changed to gain the best operating parameters for your particular product. The weld squeeze box assembly can handle up to wall thicknesses of 0.25" (6.4mm).

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Future Pipe acquires Protesa

FUTURE Pipe Industries Group (FPIG), as part of its global growth strategy, has acquired 100 per cent of the fibreglass pipe manufacturing business Protecciones Plasticas, SAU, which will continue under the trading name Protesa.

Protesa has headquarters in Barcelona, Spain, with facilities in Zaragoza, Spain; Pune, India; and Jorf Lasfar, Morocco.

The takeover is a major strategic addition to FPIG's composite pipe business, and adds to its ability to service clients particularly in the water, desalination, industrial and infrastructure sectors in Europe, North West Africa and Latin America, as well as providing FPIG with its first manufacturing facility in India.

"This acquisition marks an important step in our strategy to diversify outside of our core market in the GCC [Gulf Cooperation Council]," said Fouad Makhzoumi, chairman and CEO of Future Pipe Industries Group.

"Protesa has been manufacturing GRP (glass fibre reinforced polyester) composite pipe systems for over 50 years and is one of the leaders in its field, with a strong network of clients across Europe, North Africa and globally."

"We are therefore very pleased to have been able to conclude this acquisition and are excited about the potential it brings to our growing group of companies, particularly as it significantly increases our ability to service our clients from a dedicated GRP facility in Europe."

Future Pipe Industries Group, established in 1984, offers a complete product range and solutions to complex engineering projects for a wide variety of applications in the oil and gas, marine, industrial, and infrastructure sectors.

The group operates nine factories around the world, and serves more than 300 major customers in over 50 countries.

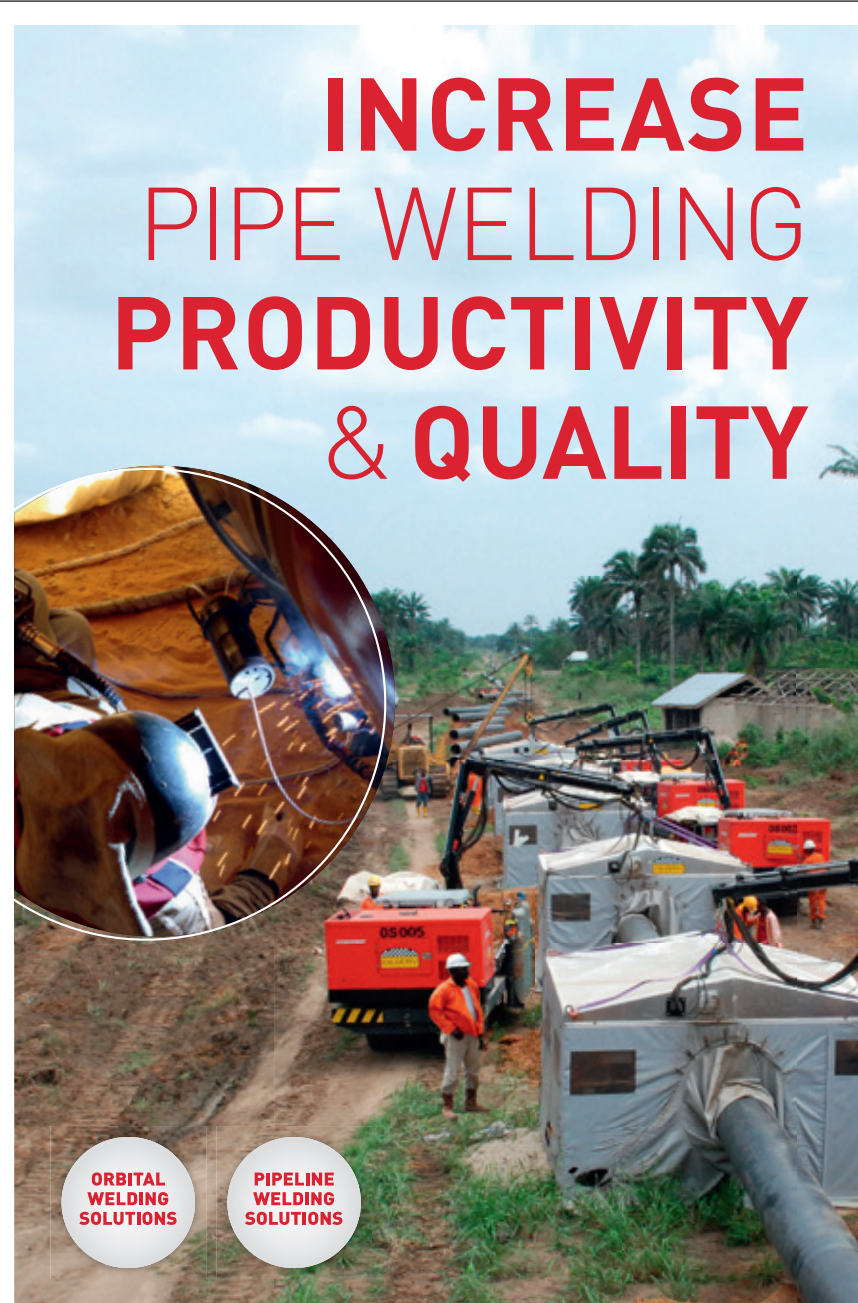
Protesa was founded in 1959 with the aim of researching, designing, producing, marketing and installing GRP pipes and fittings.

The company is active in sectors that require advanced technological solutions, such as those involving sewage networks, wastewater treat-

ment plants, water supply networks, transmission lines, irrigation networks, purification plants, power plants, desalination plants and fire protection systems.

Future Pipe Industries Group – UAE
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German steel tubing industry suffers minor production losses

THE steel tubing industry continues its worldwide growth trajectory. After a sharp drop in 2009, overall industry output grew significantly for the third year in a row in 2012. The record for total production was broken once again in 2012, with output climbing by 6 per cent to 150 million tons, according to the German Steel Tube Association in Düsseldorf (www.wv-stahlrohre.de). However, this growth was limited to areas outside the EU. For example, production in China far outstripped the average and increased by 11 per cent to 74 million tons. As a result, China now accounts for nearly half of total global steel tube production.

A production increase of just 2.3 per cent to nearly 76 million tons remains for steel tube producers outside China. However, European steel tube manufacturers were not able to partake at all in this growth due to a depressed economic climate and weak demand, especially in Southern Europe. Production in the EU actually decreased from 14.1 to 13.8 million tons. The German steel tubing industry was also affected by this negative trend. Its 2012 output, according to the association, came in at 3.14 million tons, a decline of 3 per cent compared to the prior year.

A year ago, the world seemed to be a much brighter place for the German steel tubing industry; after all, it had been able to post good results overall for 2011. Despite an increase in economic uncertainty over the course of the year, German steel tube manufacturers were able to augment production numbers of both seamless and welded tubes and pipes. According to the trade association, order intake figures even broke records occasionally during the

first half of the year. Therefore, capacity utilisation was actually satisfactory in the industry as a whole, even though German manufacturers had to deal with once again decreasing order volumes in the second half of the year.

The energy sector has long provided critical momentum for both the international and the German steel tubing industry, and this area continues to be the largest market for steel tubes and pipes: just over half of all tubes and pipes produced are destined for the transport of oil or gas. While seamless and welded steel tubes are used for the extraction and processing of oil and gas, the transport of liquids and gases relies mostly on welded pipes.

The economic upswing, especially during the first half of 2011, led to an increase in the demand for oil and thus to record numbers of oil and gas drilling projects. The demand for OCTG is a positive trend.

Other important key market sectors include automotive manufacturing, mechanical engineering, power plant construction, as well as the chemical, petrochemical and construction sectors. Accordingly, essential growth impulses for the German steel tubing industry in 2011 came from mechanical engineering, the automotive and chemical industry and the construction sector.

The association reports that the wind energy sector is gaining in importance, specifically due to the demand for steel tubes used in the offshore foundations of wind power stations. In the area of energy tubes for power plant construction, stable demand abroad stood in contrast to weaker domestic business.

Even though there had been a number of production losses in the seamless and large-diameter tube segments, German steel tube production increased by 1.4 per cent to 3.2 million tons in 2011.

Germany lost the title as the largest steel tube producer in the EU to Italy because Italy was able to increase its output by 8 per cent to 3.3 million tons in the same period. Nearly the entire German

production – 3 million tons, 2.1 per cent more than the year before – had been exported. Exports to countries outside the EU compensated at least partially for weakening demand, particularly from the southern European countries.

Imports to Germany increased by a significant 11.8 per cent, to 2.2 million tons. Italy, which was able to increase its exports to Germany – as were France and Spain – was by far the largest supplier of steel tubes and pipes. Japan – supplier of large-diameter tubes for the Nord Stream project – and Switzerland, the Ukraine and Turkey also delivered more steel tubes to Germany than they had done in the year prior. By contrast, deliveries from the Czech Republic declined.

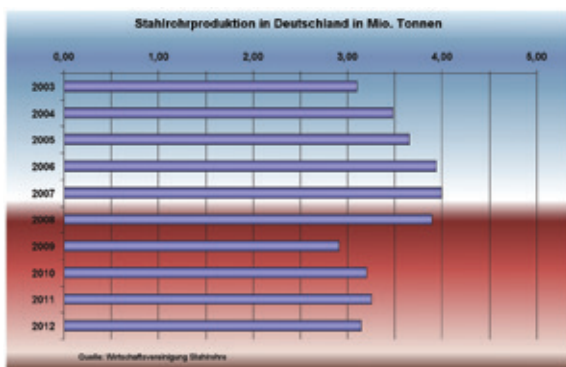
The Steel Tube Association anticipates that global demand for oil and natural gas will continue to increase in coming years, which should lead to a corresponding rise in the demand for steel tubes and pipes. The extraction of so-called unconventional oil and gas reserves – meaning the highly controversial fracking procedure – is seen as particularly stimulating for steel tube demand. Infrastructure improvements in emerging countries, particularly in China, should also lead to further increases in steel tube demand.

According to the association, European manufacturers approach 2013 cautiously due to continued economic uncertainty. There is hope that government intervention will mitigate the burdens imposed by the financial and sovereign debt crisis in Europe and the US in the medium term. Beyond that, inventory-cycle effects along with an increase in market confidence could favour an increase in steel tube demand in Europe as the year progresses.

Every other year Düsseldorf becomes the focus of attention as it hosts the world's leading trade fair covering all aspects of tubing. The next International Trade Fair for Tubes will take place from 7 to 11 April 2014.

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

German Steel Tube Association
Website: www.wv-stahlrohre.de



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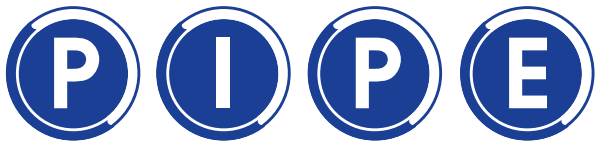


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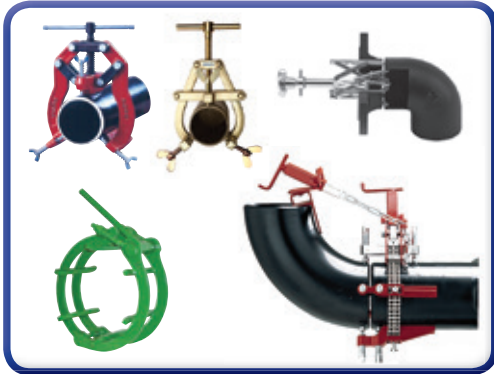
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Victaulic expands European HQ

VICTAULIC, a manufacturer of mechanical pipe-joining and fire protection systems, has expanded and refurbished its European headquarters as part of a major investment programme. The facility supports customers within Europe, the Middle East, Africa and India.

Improvements to the premises, located near Ghent, Belgium, include a 600m² extension that provides customer demonstrations and installer training.

Offices at the site, which Victaulic has occupied since 1998, have also been upgraded to better accommodate the company's expanding workforce and offer additional meeting facilities.

A new ground-floor visitor centre displays the company's range of pipe-joining products and models to demonstrate the benefits of grooved piping systems over flanging and welding. Demonstration areas for Victaulic fire protection devices have been completely refurbished, along with the prefabrication shop where customers can see the application of grooved pipe-joining systems.

Mark Gilbert, Victaulic vice president and general manager for Europe, Middle East, Africa and India, commented, "The changes we have made here in Belgium give us not only a much-improved European headquarters to benefit our global status but also a first-class branch facility to help us better serve our customers, as the demand for our products continues to grow in the region."

This latest global investment follows the opening of a new Victaulic branch in Pune, India, at the end of 2012, along with new locations in Dalian, China; Queretaro, Mexico; and Chihuahua, Mexico. Providing sustainable solutions, Victaulic is a member of BREEAM and the UK Green Building Council, and is also involved with other international initiatives.

Headquartered in Pennsylvania, USA, Victaulic has manufacturing and distribution facilities worldwide and employs more than 3,500 people. The company develops products for a full range of industrial, commercial and institutional piping system applications.

Victaulic – Belgium
Email: info@victaulic.be
Website: www.victaulic.com



Victaulic has refurbished customer demonstration areas at its European headquarters

Norma Group earns Go Further Award for Business Excellence after Ford Motor challenge

NORMA Group, an international market and technology leader for engineered joining technology, has been recognised with the Go Further award for excellence in the face of unforeseen business challenges.

Ford Motor Co hosted its 15th annual World Excellence Awards (WEA) ceremony on 23 May 2013 to celebrate 47 of its top-performing global suppliers of 2012. During the event, Norma Group was recognised with the Go Further award for its contributions to the Evonik fire recovery and emergency resourcing actions. According to Ford, the tireless work and assistance of the suppliers recognised with this award helped minimise production disruptions at Ford during a time of hardship.

"Our global team demonstrated

great commitment, customer focus and creativity during this challenging event," said Werner Deggim, CEO of Norma Group. "We are very proud to receive this award on behalf of the Norma Group employees who helped to mitigate the crisis with great dedication."

Following the incident that occurred in March 2012, Norma Group instantly formed a global team of sales, engineering, purchasing, quality, logistics and operations experts to identify and implement solutions in cooperation with customers and suppliers in order to avoid interruptions in vehicle production. The team managed to quickly detect alternative materials, obtain the required approvals and introduce these options onto market. Consequently, Norma Group continued to meet its customers'

requirements at all times following the event.

"We want to recognise those suppliers who have demonstrated excellence despite the unforeseen challenges that have happened over the past year," said Mark Fields, chief operating officer of Ford. "Thanks to your unwavering commitment, we are closer than ever to reaching our goal of delivering profitable growth for all."

The WEA honours production and non-production suppliers. The award-winning suppliers represent thousands of employees across the globe who bring diverse cultures, values and ideas to Ford.

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Progress is Life

Drake hires product development engineer

DRAKE Manufacturing Services, an Ohio, USA-based precision machine tool builder, has hired Olguta Marinescu as product development engineer.

Ms Marinescu has a BS in electrical engineering from University Dunarea de Jos, Galati, Romania, and an MSc in mechanical engineering from the University of Michigan, and was the recipient of a Socrates-Erasmus Scholarship at the University of Coimbra in Portugal. Her academic focus was in the area of vibration and acoustics, and she authored six papers relevant to these subjects, the most significant relating to the development of a novel methodology to collect accurate and precise vibration measurements at high frequencies where the wavelength of the component mode shapes is small.

In addition, Ms Marinescu has organised and presented at technical conferences worldwide on topics related to vibration and acoustics.

Drake Manufacturing Services designs, builds and services precision CNC manufacturing systems for parts with form, index, and helix such as threads, worms and gear teeth, and racks. Founded in 1972, the company helps maximise productivity, improve quality and reduce production costs for a wide variety of demanding applications in the steering systems, power transmission, speed reducer, cutting tool, ball screw, linear motion and aerospace industries.

Drake Manufacturing Services Co – USA



Olguta
Marinescu

Fax: +1 330 847 6323

Email: info@drakemfg.com

Website: www.drakemfg.com

New managing director in Germany for EFD

EFD Induction, a European manufacturer of industrial induction heating equipment, has appointed Henk de Lange as managing director of the company's German operation.

"I'm delighted to welcome Henk to the team," said EFD Induction CEO Bjørn Eldar Petersen. "EFD Induction Germany has tremendous potential, both in terms of the company's technical expertise and its customer base."

"Henk has the background in change management needed to take EFD Induction Germany forward, and to develop it into a centre of excellence and product innovation for the global induction heating industry."

A Dutch national, Mr de Lange holds an MSc from Delft University in the Netherlands, as well as an Executive MBA from the Rotterdam School of Management.

He began his career as a project engineer for Stork Boilers in the Netherlands, before moving to Italy to work on renewable energy projects for ENEL, the country's largest power company.



Henk de Lange, the new managing director of EFD Induction Germany

"Of course I'm excited to be joining EFD Induction," commented Mr de Lange. "The company has strong relationships with many of Germany's auto-makers and manufacturers of quality industrial components. That, plus the fact that we have exceptional in-house expertise and resources, means we are well positioned to become even more successful."

Mr de Lange took over the position from outgoing managing director Helmut Schulte on 1 September. "All of us at EFD Induction owe Helmut a big thank you for all his hard work during the past years," said Mr Petersen. "And I'm glad to report that he will be staying at the company, concentrating on sales and business development."

EFD Induction is one of Europe's largest suppliers of induction solutions for the industry, aiming to help its customers boost their productivity.

EFD as – Norway

Fax: +47 35 50 60 10

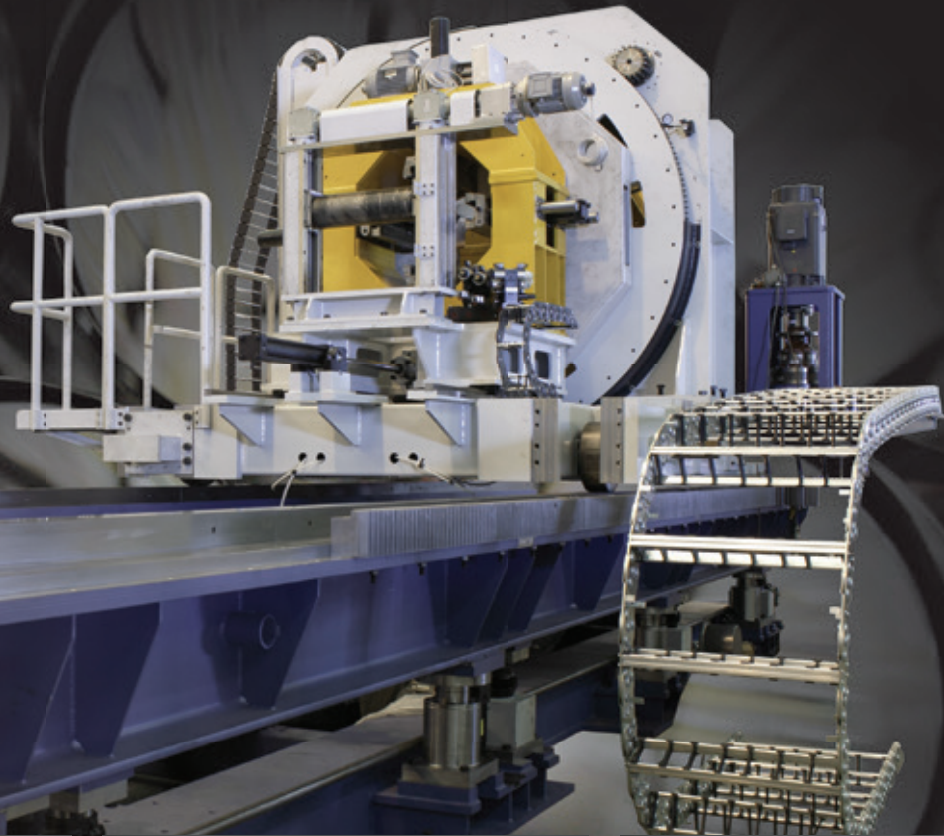
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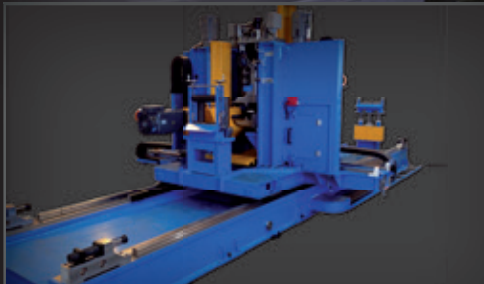


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Pressure vessel machinery to be featured at Fabtech 2013

HGG, a specialist in 3D profiling, recently introduced its line of pressure vessel cutting machinery to manufacturers and fabricators in North and South America. With a unique 3D steel profile cutting capability that combines plasma and oxyfuel processes, HGG pressure vessel machinery dramatically reduces grinding, fitting and welding time to multiply productivity while virtually eliminating layout time. Customers can count on increased capacity and a reduction in labour and manufacturing cycles. You can find out about the machinery at Fabtech booth S1889.

HGG's new line of pressure vessel machinery is especially suited to manufacturers and fabricators of pressure vessels, spools and nozzles. The HGG pressure vessel line includes the chuck-type stationary pipe cutter (SPC 2500) with a patented biaxial cutting head. It is available for both

oxyfuel and plasma processes. Chuck-type stationary pipe cutting machines eliminate the hassle of laying out lines on shells as well as grinding holes for accurate fit-up. Holes are now easily located, positioned and cut with unparalleled accuracy and at maximum speeds for all ranges of wall thicknesses. Vessels that used to take as much as ten hours to prepare and cut now take about an hour.

At Fabtech 2013 the company will also be featuring its multi-profile cutting machine (MPC 350), providing a cost-effective and flexible solution for construction companies with production volumes that do not justify dedicated machines for profiling pipe alone. The MPC 350 can be configured to cut a variety of profile shapes, including pipes, box sections, angle bars and flat sheet metal strips. All HGG Profiling Equipment solutions are designed to

profile complex bevelled edges and 3D profiles made from steel. Combining robotics, the company's patented cutting head, and proprietary software, HGG profiling equipment machinery enables users to cut angles from plus 70° to minus 70°. This capability assures optimal weld preparation for precision part alignment, which in turn reduces welding and fitting costs by over 30 per cent.

HGG, headquartered in Middenmeer, Netherlands, is a supplier of pipe cutting machines, robotic profile cutting lines and associated cutting equipment solutions around the world. The company maintains subsidiaries in the Philippines, Singapore, China, India, and most recently in the USA.

HGG Profiling Equipment – USA
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The advertisement features a central image of various stainless steel components like pipes, elbows, and fittings, set against a background of a blue ship on the left and a goldfish in a tank on the right. The text is arranged in a structured layout with contact information and a logo at the bottom.

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The Quaker logo features a stylized blue 'Q' icon followed by the word 'Quaker' in a bold, blue, sans-serif font. Below the name, the tagline 'It's what's inside that counts.™' is written in a smaller, lighter blue font. The entire logo is set against a light gray background with a subtle circular pattern.

Call for applications for the Berthold Leibinger Laser Innovation Prize

DEVELOPERS and researchers who work in the field of laser technology are again called to apply for the Berthold Leibinger Innovationspreis. Deadline for both applications and nominations is 31 December 2013. This international prize of the non-profit foundation Berthold Leibinger Stiftung is granted since 2000 every other year for innovations pertaining to the application of lasers as well as to laser devices.

At the award ceremony on 26 September 2014 in Ditzingen, Germany, €30,000 for the first, €20,000 for the second and €10,000 for the third prize

will be awarded for the Innovationspreis. The prestigious Berthold Leibinger Zukunftspreis, a prize for laser research, which is determined by the jury on the basis of secret nominations, will also be awarded with €30,000.

Eight finalists will also be honoured as winners of the first evaluation process. They are invited to the jury session in April 2014 to present their innovations personally and to be presented with their awards.

Eligible to apply or be proposed are individuals and project groups worldwide whose main development efforts and

market potential lies in the application of laser light or the development of laser devices.

Further information regarding the 2014 Berthold Leibinger Innovationspreis is available at www.leibinger-stiftung.de

With the innovation and the research prize the Berthold Leibinger Stiftung promotes laser technology research and development and showcases the results to the public. Other fields of activities are culture, church and charity.

Berthold Leibinger – Germany
Website: www.leibinger-stiftung.de

Production continues to increase at Elcometer

SIX years after doubling its UK manufacturing facility, Elcometer confirmed that in September 2013 work commenced to expand production capability in Manchester, UK.

Elcometer's additional 17,200ft² (1,600m²) of manufacturing space will allow it to meet increasing demand for its coating inspection and ultrasonic

NDT range of test equipment. "In recent years Elcometer has launched a number of new products which have significantly increased the demands on our existing production facilities around the world," commented managing director Michael Sellars. "This expansion allows Elcometer to meet the growing demand for our test equipment and widen our product portfolio, enabling us to enter

new markets ahead of our strategic plan."

Over the past three years alone Elcometer has introduced a number of industry leading test instruments, including the new Elcometer 456 coating thickness gauge with scan probe – allowing users to inspect more than twice as fast as before; the lightweight and versatile Elcometer 280 pulsed DC holiday detector with internal jeep tester; and the Elcometer 130 salt contamination meter which allows users to measure soluble salts up to five times faster than other Bresle equivalent methods (see page 64).

This expansion to Elcometer's Manchester facility is in addition to its existing production facilities in Liege, Belgium, (manufacturing a wide range of test equipment for testing the physical properties of coating's formulations) and in California, USA, where Elcometer's range of Ultrasonic thickness gauges and flaw detectors are designed and manufactured.

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



Fives introduces steel offer at Galvatech

FIVES has attended the 9th Galvatech Trade Show in Beijing. Both a world-class trade show and conference cycle, it attracts the biggest names in the steel industry.

This year's edition coincided with the second 2013 APGalva, an event focused on galvanising in the Asia-Pacific region.

Galvatech brings to light all the latest technologies and advances in the sheet steel sector, including both production and applications. Galvatech conferences feature presentations by experts and appearances by industry leaders, making it a genuine forum for trading information on galvanising techniques.

At this year's event, Fives, through a KEODS representative, presented an article on the techniques, methods and tools used to efficiently and reliably produce steel parts for exposed

sections and guarantee high-quality steel.

KEODS, which joined Fives in late 2012, is a company that specialises in advanced steel industry consulting to improve the quality of flat carbon steel products. The skill set KEODS provides has enhanced Fives' steel offer and supplied unique recognised expertise in the steel industry, specifically in carbon flat products for the automotive sector.

KEODS' expertise lies essentially in its extensive knowledge of the steelmaking process, which forms the basis of its consultancy services on the upstream side of the production process (in the line start-up phase) and the downstream side (through operation support). It also uses proprietary steelmaking process management and steel coil production management software.

At its booth, Fives also presented its complete steel offer – machinery, full lines and expertise – that stretches from the reheating furnace to the finishing equipment for all types of steel.

More than 1,000 Fives employees around the world are employed in order to meet the demands of steel giants and provide them with innovative, performance-enhancing solutions and equipment. Alongside the event, Fives will be hosting a technical seminar for its customers in order to help showcase its know-how and latest innovations, specifically on line integration, combustion systems, cooling technologies and automotive certification for steel.

Fives – USA

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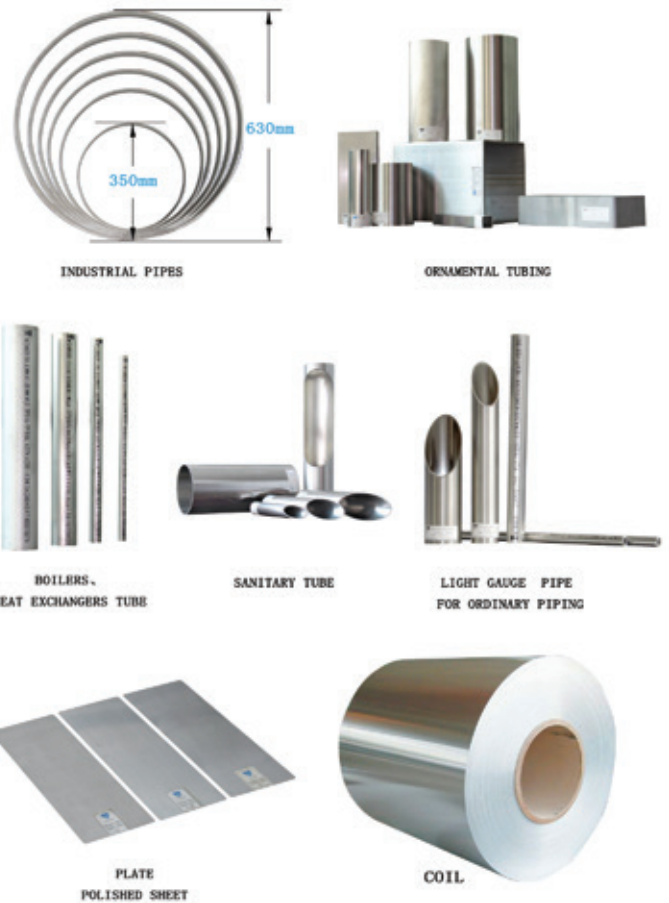


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Tube bending companies merge ownership

TWO tube bending and endforming technology specialists, AddisonMckee and Eaton Leonard, have merged under the common ownership of AddisonMckee Holding LLC (ADMC). As part of this transaction, Jaubert Investment LLC has acquired an interest in ADMC.

“AddisonMckee and Eaton Leonard have a common history dating back to 1975,” stated Alastair Tedford, ADMC chairman. “While the two companies have developed their respective businesses and position in the market place differently over the past nearly 40 years, this merger presents an extraordinary opportunity to strengthen each other through complementary products and expertise.” Mr Tedford continued, “Both companies share a core of creativity and a fundamental commitment to excellence to provide engineering solutions for our customers’ tube forming challenges. Together, our

combined engineering and production capabilities will provide an even broader range of innovative solutions to our collective customer base in all tube manipulation markets.”

Eaton Leonard, chairman, Philippe Jaubert, added, “Together, our combined companies provide an exciting opportunity to offer our partners the best of both companies – a complete range of products and expert services adapted to their specific needs, a worldwide presence and a team focused on innovative solutions. I am delighted to reconnect with one of our original partners!”

“AddisonMckee and Eaton Leonard both have a global presence with operations and service capabilities in complementary locations. Through our combined engineering experience, product mix, business synergies, geographic presence, service proficiencies and financial strength, we will have an

enhanced ability to service and support our customers around the world.” Mr Tedford confirmed, “This merger is good news for our employees, customers, agents and suppliers.”

AddisonMckee and Eaton Leonard provide application solutions to the automotive, aerospace, furniture and general tube manipulation markets around the world via regional offices and production facilities in Canada, China, France, Mexico, the United Kingdom and the United States (Ohio and California). Collectively their extensive portfolio of products and services includes tube bending, endforming, measuring, and muffler making machines as well as tooling, fixtures and global after-sales service and support.

AddisonMckee – UK
 Website: www.addisonmckee.com
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Cutting, finishing and handling plant installed in Saudi Arabia

ADDA Fer Meccanica has installed an important plant for the cutting, finishing and handling of pipes for a prestigious tube manufacturer located in Saudi Arabia.

The project, which took place at the end of last year, will be used to complete what is already present at the factory, and AddaFer has helped to design, construct and install a flying cut-off double blade for pipes up to 219mm (8"), an end facing, a hydro test and a handling machine.

Twenty years of experience, and know-how accumulated over many years, have allowed AddaFer technicians to design solutions to precise customer specifications.

With this implementation, the Asian manufacturer will be able to increase its productivity and, at the same time, the pipe quality.

The mill cut-off machine has been optimised in order to make a near-perfect in-line cut that is absolutely clean and free of distortion or burr.

All functions of the unit are managed by a microprocessor, which makes it possible to control the machine with a very high level of reliability, ensuring very precise cutting lengths without influencing the effective production speed on the basis of which the cut-off

performance parameters are optimised. The guaranteed bar length tolerance is $\pm 1.5\text{mm}$ at the maximum operating speed, although significantly higher precision is also possible.

These cut-offs are fully automatic: once programmed they can operate without requiring the constant presence of the operator at the control desk; these units are pre-tested at the factory prior to shipment.

The base is composed of a heavy structure in normalised welded sheet, in which linear sliding guides are seated in the superior side, for the support of the cut carriage, there is a side lodging for the rack that allows the motion of the same carriage.

Shock absorbers and carriage block systems are mounted at the end of the base, for emergency, in order to avoid damages to the rack and pinion system.

The carriage is composed of a normalised welded steel structure on which all tables have been worked for the support and the lodging of units for the sliding of the cut heads, the vices and the control group dimensioned for the tracking.

The cut heads work in opposite ways both on longitudinal and transversal axes from the centre of the tube.

They are composed of a reduction gear properly dimensioned with "0" play gears which allow the rotation of the mandrel on which the blade is seated.

The vices are lodged in two portals of large dimensions positioned close to blades in order to give the maximum stiffness to the system. They are powered by one hydraulic cylinder.

The tracking group is manufactured with a rack and pinion control, with vertical axes.

Motorisation: The unit is equipped with seven brushless motors controlled by digital inverter of latest generation.

Functioning: In the above scheme is shown the movement of the blades; The profile of the tube is followed thanks to a dedicated software (round-square-rectangular). In this way, the reduction of cutting time and the grades of superficial finishing of the same tube are evidenced.

A double vice group both at inlet and outlet side arrange the blocking of the tube during the phase of cut in order to avoid dangerous vibrations.

Adda Fer Meccanica Srl – Italy

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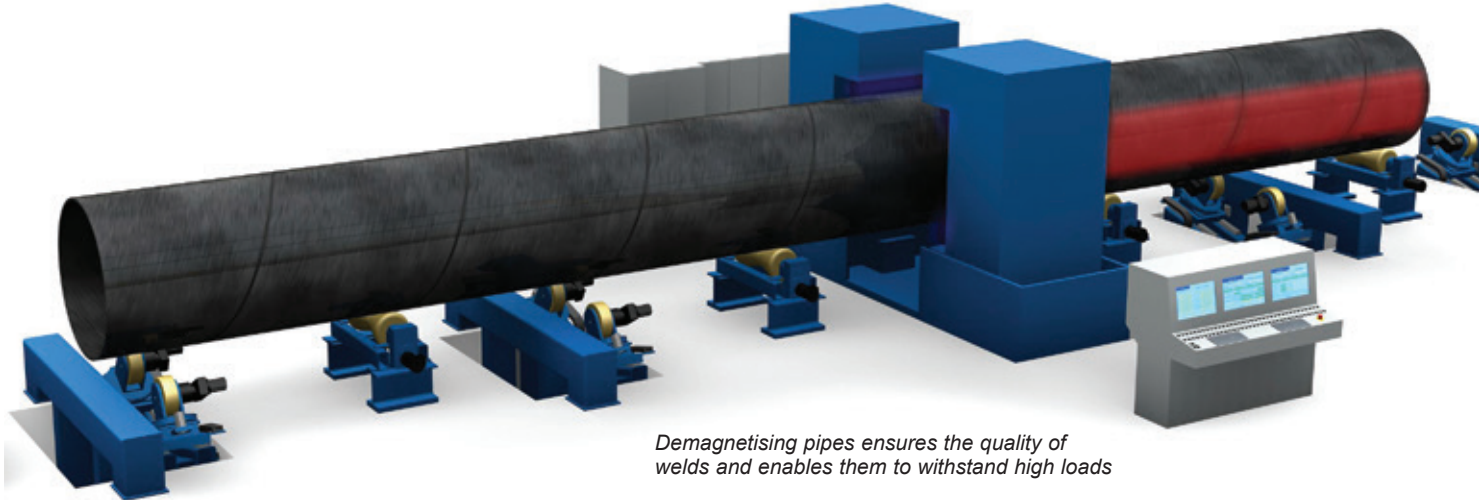
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Milling cut-off machine with chip conveyor

Demagnetising large pipes during production



Demagnetising pipes ensures the quality of welds and enables them to withstand high loads

LARGE pipes, such as those used to construct pipelines, are either welded together with a spiral seam or with a longitudinal seam.

In cooperation with the Swiss company Maurer Magnetic, the plant and machinery manufacturer Schuler has now developed a process which can demagnetise large pipes during their production. This prevents deflection of the arc during welding and ensures the quality of the welds, thus enabling them to withstand the guaranteed loads.

“Magnetisation can result on the one hand from the rolling, machining, forming and plasma cutting of steel sheets and on the other hand from the submerged welding of pipes with spiral or longitudinal seams,” explained Dietmar Rieser, managing director of Schuler ATIS.

“When pipe ends are then welded together on site, the arc can be deflected if there is too much residual magnetism – thus reducing the quality of the weld. This is not the case with demagnetised large pipes.”

Moreover, it avoids disruptive influences during the quality control process – eg when X-raying. Recent research results also indicate an increased incidence of corrosion on pipes which have not been demagnetised.

“Pipelines are exposed to extreme loads, as they often have to span hundreds of kilometres of inhospitable territory with extreme temperatures,” adds Schuler managing director Jochen

Früh. At the same time, the transport pressure of media such as oil, gas or drinking water inside the pipes is constantly being raised in order to extend the range and bridge the growing distances between individual extraction areas.

In the process developed by Maurer Magnetic and Schuler, pipes with spiral or longitudinal seams are transported through an electromagnetic coil and demagnetized. “There is no delay at all in production,” assures Marek Rohner, head of technology at Maurer Magnetic. “We have therefore patented this innovative process.”

Intensive tests at Schuler’s site in Weingarten, Germany, have shown that the method is suitable for spirally welded pipes with a wall thickness of up to 25.4mm and a diameter of 20 to 120”. Pipes with longitudinal welds can have diameters of 16 to 64” and a wall thickness of up to 80mm.

Maurer Magnetic’s experts also use their patented “Maurer Degaussing Technology” for the process. The large pipes are completely demagnetised by an alternating magnetic field, which can reach a field strength of up to 80kA/m in the high-performance coils.

As a technological and global market leader in metalforming, Schuler supplies machines, production lines, dies, process know-how and services for the entire metal-working industry. Its clients include car manufacturers and their suppliers, as well as companies in the forging, household equipment,

packaging, energy and electrical industries.

Schuler is also a market leader in coin minting technology, and supplies systems solutions for the aerospace and railway industries.

The company employs around 5,500 people and is represented by its own facilities and sales offices in 40 nations around the world.

In fiscal year 2011/12 (ending 30 September), Schuler posted sales of €1,226.1mn with an EBITDA margin of 9.6 per cent.

Founded in 1923 and based in Grüningen, Switzerland, Maurer Magnetic is a Swiss market leader in magnetic technology. Its products and services are highly regarded by customers in Switzerland and abroad, with an export share of over 50 per cent.

Since the year 2000, the company has entered new markets around the world with its own, newly developed and patented technologies in the field of magnetising and demagnetising applications.

The company’s share capital is held exclusively by the Maurer family with Albert R Maurer as the general partner. Continuous re-investment of profits over the years has helped generate constant growth, financed entirely by the company’s own funds.

Schuler – Germany
Email: simon.scherrenbacher@schulergroup.com
Website: www.schulergroup.com

Five decades of experience

STAROFIT is a major supplier for steel, alloy steel and stainless steel butt-welding fittings in Europe.

International orientation has always been one of Starofit's focuses. The company has been actively strengthening its international presence and customer base. In order to better support the growing volume and to meet rising international demands, Starofit has reorganised its export departments, and formed a new team of

fittings specialists who are dedicated to serve international customers. With the additional flexibility contributed by this team, the company is able to provide rapid deliveries to customers abroad.

Starofit recently exhibited at the Tubotech International Trade Fair in São Paulo for a second time, and is busy with preparations for the upcoming Stainless Steel World Conference & Exhibition 2013 in Maastricht, and Tube 2014 in Düsseldorf.

which enables it to provide prompt responses to customers' requests. Its holdings range from a large stock of ASME and EN/DIN standardised products to highly specialised elbows and fittings with extreme wall thicknesses and dimensions. With a rigorous supplier selection process in place, only products from ISO, PED and TÜV approved manufacturers are accepted.

The company also specialises in demand-based tailor-made elbows and fittings to cater to complex requirements, and provides products that are sustainable under extreme conditions (eg temperature, pressure and mediums).

Starofit Klose GmbH & Co KG – Germany
Fax: +49 4222 9440 44
Email: sales@starofit.de
Website: www.starofit.de

Starofit has a permanent fittings stock of 6,500 tons



The company now holds in stock seamless elbows and fittings in material WP 304H, dimensions ½" to 8", and has also improved its ability to fulfil demands for duplex stainless steels. It stocks fittings and elbows in material 1.4462 that are 3.2 TÜV certified in accordance with VdTÜV 418.

Starofit has a permanent fittings stock of 6,500 tons,

Plastic deformation of metal tube

IRON'S Technology, a company located in Cesena, Italy, attended Tube Metallurgy Russia 2013, held in Moscow last June. The company, founded in 2011 by Rudi Bragagni, Marco Senni and Andrea Ancarani, was there with the purpose of submitting their invention: a machine that allows plastic deformation of any metal tube.

These three young entrepreneurs started to study plastic deformation of small diameter tubes for heat exchange application. At the moment there is no technology able to realise any given shape, but it is only possible to create small deformations by rolling.

Studies and simulations demonstrate that increasing exchange surface and creating turbulence inside the tube improves heat exchange with a high energy saving.

This necessity has given rise to the idea of creating a machine able to work off line tubes after production and realising the optimal desired shape. After four years of studies Iron's Technology's engineers have settled the prototype

machine, have developed the software and the complete new technology has been patented.

As soon as they realised the project the machine was thought for, they improved the newly discovered technology in order to obtain further and more distorted shapes.

MAS1 (the name of the machine) is now able to perform cold and hot plastic deformation on tubes with diameters ranging between 10-12 and 500mm and thickness ranging between 2 and 8-10mm.

MAS1's working principle is inspired by the lathe, but unlike the lathe, it doesn't work by cutting but by deformation. The machine has two tools working in opposition on a carriage that has a translation movement along the axle of the tube itself.

The combination of pipe rotation and tools translation allows deformations able to realise a virtually infinite number of shapes on the tube.

The technology of MAS1 makes it possible by using tools of different kinds

and materials together with several combination of pitch, tilt angle and depth.

Iron's Technology provides three size of MAS1, depending on the size of the tube and deformation requested: the small, the medium and the large one, named S, EL and HT series.

Today the company is undertaking the second step of studying by several cooperations with other partners in order to find specific shapes for different applications of tubes: internal and external design, design and producing of moulds, heat exchange, food, medical, eco-innovation and motorcycle applications.

Iron's Technology is a start-up company that aims to be both a machine and tube producer, with the purpose of developing technologies already existing with this important innovation in continuous improvement.

Iron's Technology Srl – Italy
Email: sales.tec@ironstechnology.it
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Shown workpiece on picture

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wall thickness	95 mm

General machine data

max WT rounding	
capacity	250 mm
machine weight	600 t
installed forces >	8 000 t

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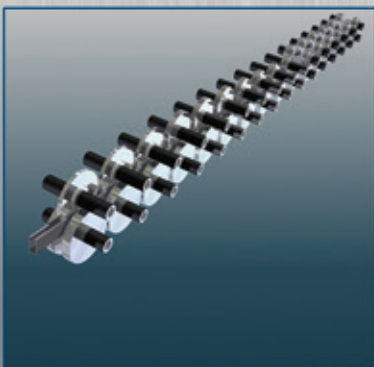
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Redrawn precision tubes

TECNOFAR SpA was founded in 1974 in Delebio, Italy, as family-run company specialising in manufacturing stainless steel and nickel alloy tubes.

Experimentation and research, together with the development of new technologies, has made Tecnofar an advanced company in this field.

The company has two production units, located in Delebio and Gordona, covering a total surface area of around 10,000m².

Tecnofar produces redrawn precision tubes, both in bar and coil form, using the TIG welding process. The company offers a modern, well-equipped department for tube cutting, and is able to produce completely burr-free cut pieces measuring just a few millimetres in length.

The company can supply stainless steel tubes ranging from 0.3 to 20mm OD, and from 0.1 to 2mm wall thickness, for precision tubes, while for welded tubes the maximum diameter available is 76mm, with wall thickness up to 3.5mm.

Tecnofar uses stainless steels provided and guaranteed by leading steel mills, and offers products in line with the strictest production controls. The company's quality system achieved international standard ISO 9001:2008, accredited by Italcert, and is structured in such a way as to ensure continuous improvement of products and customer service.

The company has also been certified PED (97/23) EC all.1 par. 4.3, for the welding and heat treatment processes of product ranges OD 5-77mm and WT 0.35-2.6mm for austenitic series; and OD 5-77mm and WT 0.56-1.95mm for ferritic series.

Tecnofar SpA – Italy

Fax: +39 0342 684500

Email: info@tecnofar.it

Website: www.tecnofar.it



Tecnofar can supply high precision tubing just a few millimetres in length

Pump systems for the oil and gas industry

SELECTING the right material, high-quality processing of the raw material, complying with demanding tolerances of form and position – all of these are criteria used by Butting to ensure the functional security and long life of its stainless steel components in pump units for the offshore area.

For more than 15 years, Butting has been producing riser pipes, well-heads and special ready-to-install components for pump units that have a high degree of operational safety and corrosion resistance.

Huge quantities of salt water are required every day, all over the world, to ensure that oil and natural gas can be brought to the surface, stored and loaded. For the offshore industry, Butting produces components for pump systems used on FPSO tankers or oil platforms.

In the offshore area, the pump units are used for cooling purposes in the field of service, industrial and process water. In addition, they are used for fire extinguisher systems in order to have sufficient water to put out any fires. Pumps suck in salt water, and riser pipes and the connected well-head bring it up to the platform.

Filter screens produced by Butting often protect the pump system and prevent impurities in the water from being sucked into the pump, making an important contribution to ensure the systems can function in the long term.

Butting's experience and competence in the welding, forming and materials technology field allow the company to produce all of the components for the pump units, except for the pump itself.

In order to ensure corrosion resistance in aggressive, salty seawater, Duplex (1.4462) and Super Duplex materials (1.4501) are frequently used in the pump systems. Butting has been processing these materials since they were developed, for the offshore industry, among other areas.

Butting supplies complete customised solutions through the use and combination of specific procedural applications along the process chain, such as the laser, welding, metal cutting and forming technologies.

A high degree of automation and reproducibility ensures processing quality. Production is done to fit particular sizes, eg H7/f6. A quality assurance system, which supports production, guarantees compliance with the selected tolerances, eg through measuring the pipe components with 3D measuring devices.

Butting can produce components from 1" in size according to international standards, and can perform comprehensive tests on them, for example in accordance with NORSOK specification or with the customer's own specification.

Ready-to-fit parts only have to be assembled, equipped with an engine and a pump, and installed on the oil platform.

H Butting GmbH & Co KG – Germany

Fax: +49 5834 50 445

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Expanded applications of induction heating

ADVANCES by Ajax Tocco Magnethermic have expanded the capabilities of induction heating equipment, and the physical size and cooling requirements of the equipment have been reduced.

Higher temperature and current capable semiconductors, fast response digital signal processors (DSP), power switching and controls technology allow process engineers to develop welding processes that were previously

considered impractical. The portable induction heating power supply systems require little or no water cooling. Ajax Tocco 1.5kW to 35kW systems perform along side 100kW, 500kW and MW rated systems.

Coated pipe manufacturers can install fusion bonded epoxy patch repairs over abrasions and pinholes with as little as 1.5kW.

Areas as small as one square inch can be heated to 400°F in less than one minute with the 100 per cent air-cooled Autotron.

Friction stir welding (FSW): Compact, low power induction heating improves steel tooling life and feed rates.

Induction is practical for economically joining steel in critical process applications.

The 10kW TOCCOtron AC traverses just ahead of FSW spinner. Steel along the joint line is preheated to approximately 2,000°F.

The FSW spinner 'twists' the malleable steel together, creating a weld of 100 per cent base metal.

Submerged arc welding (SAW): Like FSW, induction heating is applied in line with the welding equipment. Power as low as 5kW preheats pipe and vessels. Weld rates of 24" per minute on ½" steel plate can be achieved.

Post-weld treatment: Annealing of ERW, induction welds and continuous coil steel tubing bias welds typically requires over 500kW. The 35kW TOCCOtron AC air-cooled induction system utilises little floor space and is reliable in harsh metal finishing environments.

Induction heating increases the cure rate of fibreglass reinforced polyester. A steel mandrel acts as a succceptor to an induction heating coil on the OD of the composite pipe.

The electromagnetic field is invisible to the composite, while the mandrel heats to approximately 300°F. A strong, lightweight pipe with a smooth bore is created.

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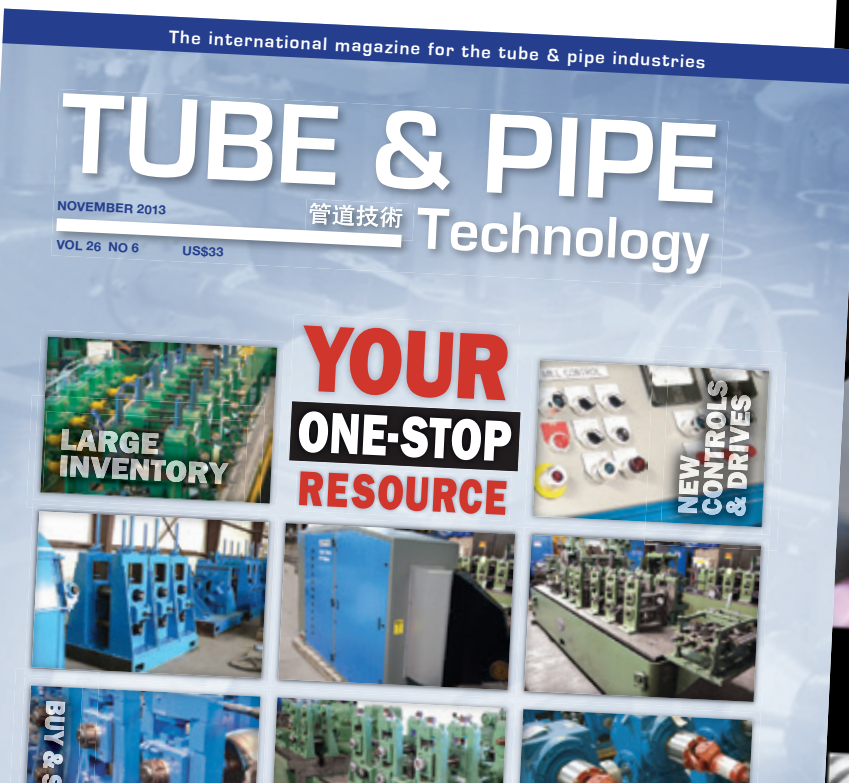
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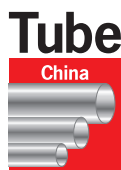
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Weld seam detection on precision steel tubes with low error rate

THE position of a weld seam has a crucial influence on the quality of the final product when bending or hydraulic forming a tube. An unfavourable seam position causes deviations in geometry, has influence on the firmness and in the life span of the produced component or precipitates by cracking during the manufacturing process.

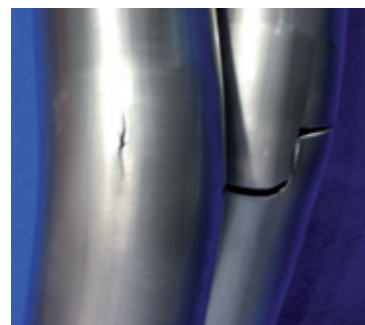
In order to prevent such disadvantages, different solutions for the localisation of the weld seam were established. Common optical procedures, such as colour marking of the longitudinal welds in order to detect their position, are widespread. Camera-based systems, which detect the visible welding seam are also in use.

What to do, if colour marking is not possible or the welding seam is not visible? This problem arises when an application requires a treatment of the tube after welding, for example in the production of precision steel tubes. The cold drawing of the tubes changes the original surface and impedes the usage of colour. If the tube is additionally annealed, the welding seam may become invisible in its external appearance.

At this point Roland Electronic offers alternative techniques, well known from the non-destructive testing of materials with eddy current, magnetic induction as well as the magnetic

leakage flux method. All these techniques have the advantage of dry functioning and without significant radiation exposure.

This technique is based on the crystalline modifications of the structure within the weld seam. In the process of welding ferromagnetic



steel, martensitic crystals are formed within the range of the heat effect zone.

Since martensitic crystals hardly occur in the unwelded structure, the welding seam is detected by the crystal structure modification. The weld seam detector SND40 supports these alternative techniques and offers high process reliability in practical usage.

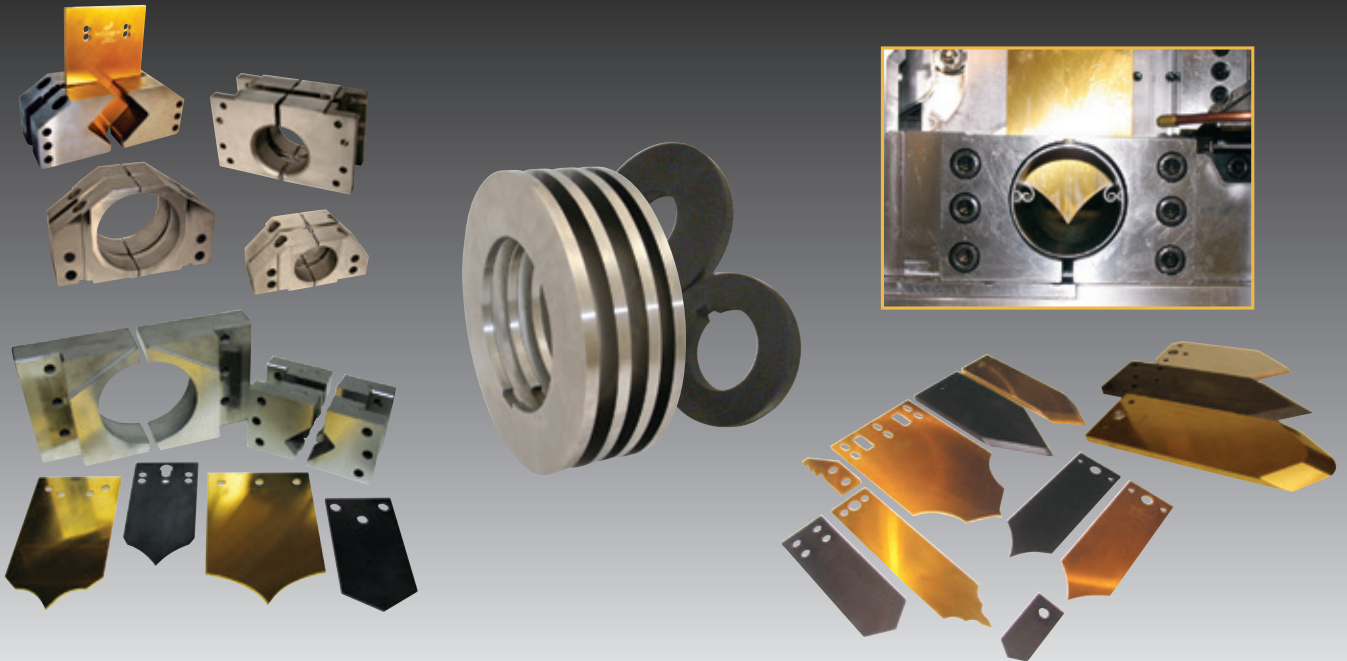
Tubes with scraped weld seam and calibrated diameter will reach in the first detection run ratios of 99.9 per cent.

The error rates in detection with an SND40 system are between 0 and 100ppm.

Roland Electronic GmbH – Germany
Website: www.roland-electronic.com



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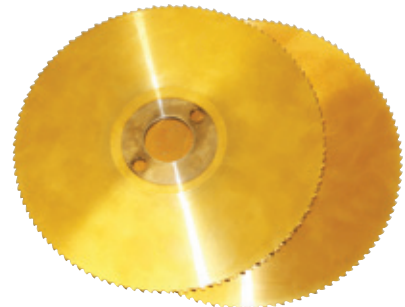


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For more information, please contact:
Tyler Jantzi, tjantzi@newformtools.com



OEM product development

PSW Consultants has been involved with OEM projects for almost two decades. Alongside its own range of Pipeswizard fit up tools for the oil and gas pipeline industry, PSW has been responsible for the design, enhancement, certification and manufacture of products for other large companies in the industry.

PSW has been the manufacturing force behind many well-known products in the industry, including a large portion of the Mathey Dearman product range. It has also manufactured parts for

large German automotive companies, national military projects, and national petroleum companies.

With 100 per cent of its manufacturing facilities based inside the European Union, PSW maintains a strict quality control system, bound by the laws and regulations associated with manufacturing in the EU. As such, the risk of quality issues is greatly reduced.

PSW is also pre-qualified with numerous large EPC contractors and national petroleum companies as a

result of its products originating within the EU.

With a CNC plant, investment casting foundry, assembly plant, machine shop and powder coating shop all operating under PSW, costs are kept low as almost nothing has to be outsourced.

PSW Consultants (engineering) Ltd – UK

Fax: +44 2476 373403

Email: sales@pipeswizard.co.uk

Website: www.pipeswizard.co.uk

Easy measuring of 3D tubes

PRODIM International is the manufacturer of 2D and 3D portable measurement solutions. The Proliner® systems are a fast and easy way of getting accurate dimensions in the factory and also on-site. The latest development, called Prodim Tube Check, makes it possible to easily digitise tubes. The Tube Check is based on the Proliner® principle, measuring with a hand held probe and storage of the precise positioning in 3D XYZ data. The Proliner® is a portable CMM and the Tube Check software is able to calculate the precise centreline of the tube. The tube definition is available as DXF but also as XYZ and LRA format.

Digitising an existing part and to generate tubular data is done very quickly. The operator is guided during the complete process. The range of the Proliner® reaches up to 10 metres, which means the total measuring length is 20 metres. In case that might not be enough, or some parts of the tube cannot be reached from one measuring position, the operator can create a leap where the separately measured parts are automatically combined into one file. What makes the Prodim Tube Check solution unique is the combination of a measuring device and software into one machine: it is not necessary to carry an extra computer around the factory or

measuring location. Communication with the office is easily done by transferring the data by USB or LAN connection.

When the bend radius is not familiar or multiple bends with different radii exist, it is possible to measure the radius in the same sequence. The bend radius is presented on screen where the operator has the option to use the determined radius for all bends. Besides measuring and inspecting tubes, all other product or project related data is stored digitally in the Proliner®; all data is now digitally available.

In production where tubes need to be checked it is possible to import the tube master data. By defining the tolerances of the tangent and intersection points it is immediately clear if the product passes or fails the specifications. The tolerances may be specified and added to the XYZ and LRA data, which gives the user the flexibility needed for digitising and inspecting tubes.

There are different methods of aligning the measured and master data. Differences between the inspected tube and the master data is presented on screen and exported in a measurement report. This data is used to change or modify the tube bender.

The Prodim technology is used in the engineering, design, production, installation and quality control departments.

Prodim International BV – Netherlands

Tel: +31 492 579 050

Website: www.prodim-systems.com

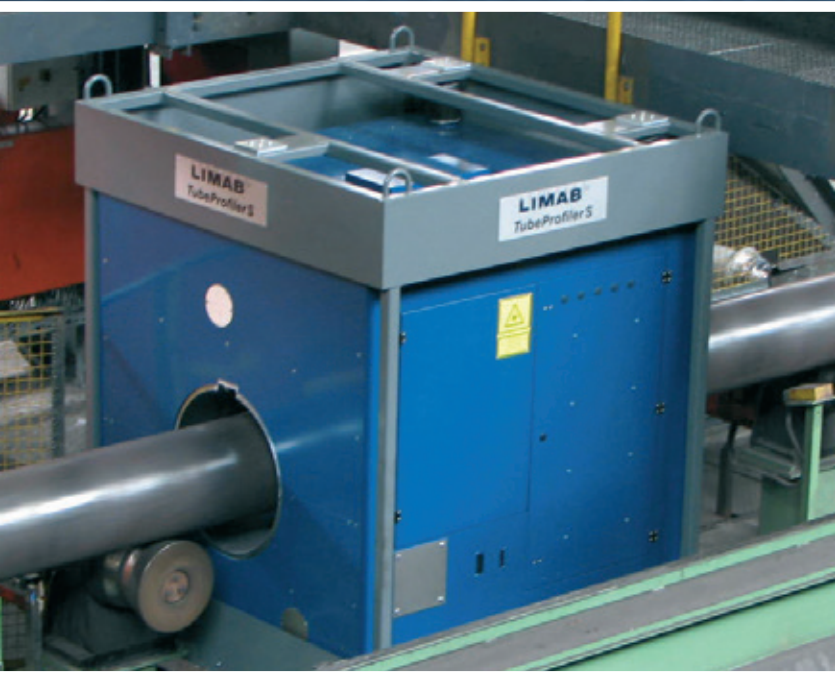


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TubeMaster and ScarfMaster saw blades for efficient in-line cutting

KINKELDER has developed a smooth cutting TubeMaster® saw blade for orbital cut-off applications. Its special tooth geometry cuts a large range of thin to thick wall tubes.

“Key features of this TubeMaster® saw blade are a special carbide grade and a high-tech PVD-coating,” said Kinkelder application engineer Leo Molenaar. “This, combined with a special cutting geometry, does not require much force for chip removal, assuring a milled-like finish of the cut surface. This special geometry also reduces vibration when cutting thin wall (<4mm) tubing, thereby achieving an excellent blade life.”

This saw blade concept allows use of one set of blades with medium tooth pitch to cut tubes with wall thickness from 3 to 9mm and on some machines even up to 12mm. For wall thickness 9 to 30mm a coarse pitch is defined.

TubeMaster® saw blades are available in diameters from Ø300 to Ø420mm for all types of orbital cutting machines, such as MTM, Otomills, Elmaksan, Kusakabe, Linsinger and SMS.

Tubes for oil and gas as well as structural pipes and hollow sections form a primary market for TubeMaster® saw blades. Even high hardness materials such as X80 can be cut efficiently thanks to the type of carbide used. The

PVD coating protects the tips effectively against the high temperatures being developed during the cutting process.

In case of ID-scarfing in the tube making process, the internal weld bead, often about 6mm thick solid steel, remains inside the tube. During cut-off this inside wire is caught by the saw, causing a huge peak load usually on one saw tooth. This can easily lead to tooth breakage of the saw blade. Kinkelder started developing a new saw in 2010, which resulted in the conception of ScarfMaster®.

ScarfMaster® is a carbide-tipped saw blade featuring a very specific tooth geometry while tips themselves are made of a highly shock resistant type of carbide. The teeth are supported by a saw body with extra strong shoulders, which give the combination tooth/body very high stability and fracture resistance.

“Not only is the blade life of the new ScarfMaster® considerably longer, it can also cut 50 per cent faster,” emphasises Mr Molenaar.

“Due to this, line speed can be significantly increased. Also, the line does not have to be shut down as often to change the saw blades, which means better uptime. In all regards, the new ScarfMaster® saws improve productivity

of the tube line and this automatically reduces cost of production per tube length. There is already a rapidly growing number of enthusiastic tube manufacturers all over the world who successfully use ScarfMaster® saw blades for their tube lines.” ScarfMaster® saw blades are available in diameters of 400, 450, 500, 560 and 600mm destined for the production of tubes in the diameter range of 2.5" to 7" (63.5 to 168mm).

Kinkelder was founded in the Netherlands in 1945 and grew into one of the most important producers of circular saws worldwide with the production and sales of saws.

Less than 10 per cent of the production remains in the Netherlands. The rest is designated for export to approximately 70 countries. Outside the Netherlands, Kinkelder now has its own sales and service branches in Germany, the USA, France, Belgium, Czech Republic, UK and China.

Kinkelder's own subsidiaries as well as their experienced worldwide network of engineering distributors have their specialised application engineers available on call.

Kinkelder BV – The Netherlands
Website: www.kinkelder.com

Tube measurement and testing

TUBE Testing Europe BV has extensive experience in the field of performing NDT measurements with its Acoustic Pulse Reflectometry (APR) technology. It recently took over these activities from HPFM BV and so continues many years of experience in this field.

HPFM BV was the first company in which this method was applied internationally in 2008 on straight- and U-tube heat exchangers, blade spiral wounded air fin cooling banks, and especially for the AWR (apparent

wall reduction) among the tube into tube sheet installations according the ASME/DIN international procedures. With modern equipment and a method which has been honoured by the ASTM (E2906/E2906M-13) the company can measure, analyse and report any thermal application in an accurate and fast, professional manner.

The biggest advantage of this advanced APR method is the short turnaround time needed for a large number of tube measurements to

be done. So the time required, for example for a heat exchanger which is out of production, can be minimised in any area of cost, which gives the end user a total large financial benefit including a traceable preventive overall maintenance schedule.

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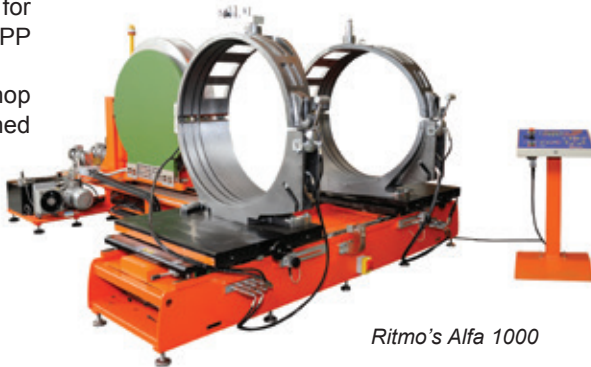
Fitting fabrication

RITMO SpA is an Italian company with more than 30 years of experience in the manufacture of plastic welding equipment and tools for thermoplastic pipes.

The company offers a complete range of workshop fittings fabrication machines such as elbows, wyes, crosses, tees, and the Alfa Line with working range from Ø 40 to 1,600mm, for the production of HDPE – PP fittings.

Alfa 1000 is a CNC workshop welding machine designed to fabricate elbows from Ø 400 to 1,000mm, and wyes, tees and crosses from Ø 400 to 800mm. The elbows jaws movement, open/close and blocking, are electro-hydraulically operated.

Alfa 1000 is an easy-to-use and precise machine. It is equipped with a machine body with two hydraulically controlled carriages; the control panel features a CNC system that makes it possible to carry out a whole welding cycle in a simple, intuitive and repeatable way, so that the operator's interference is reduced to a minimum.



A built-in memory allows the machine to store 4,000 welding cycles, including the set diameters and SDR.

The welding data can be transferred to a PC via USB slot and data management software.

Other features include a Teflon-coated heating plate with hydraulic movement (in/out) on spherical bearings guides; a milling cutter with hydraulic movement (in/out) on spherical bearings guides, operated by an electrical engine, provided with eight steel blades; and an upper cylinder, to be positioned on the jaws, for welding extra thick pipes and/or whenever it is necessary to use high pressures.

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

Flexible roll forming systems

By Jack Pennuto Jr, director of sales and marketing, Formtek Inc

WITH the increased emphasis on small batch or single piece production, to meet order fulfilment on the fly, some manufacturing processes, particularly roll forming, have struggled to respond to this new, dynamic environment.

Due to the long setup times that can be required when switching between roll formed profiles, it is common for manufacturers to run a customer order in conjunction with an amount of inventory, to cover projected needs of the product for the coming weeks or months. This is a common way to rationalise the setup cost of the machine, which can take a couple hours or up to a few days, depending on the complexity of forming the product.

Doing this with each changeover of the machine, manufacturers can quickly end up with a significant amount of finished goods inventory, and although based on historical sales and product usage, short term changes in the mix of business or other environmental factors, ie new industry codes or certifications deeming a product obsolete, can stretch the turnover of the inventory, and likewise the liquidation of the product into revenue, to much longer than intended.

Formtek has tackled this roll forming challenge by removing the obstacles that result in long changeover times. The Supermill® roll forming machine offers a patented gauge adjustment technology, for uniform compensation of tooling gaps in the horizontal and vertical planes, ensuring profile dimension consistency across a range of material thicknesses, and without the need for an operator to perform manual adjustments. The machine can be designed with multiple forming zones, to enable discrete adjustment of unique features, such as profile height, width, leg length, etc, even switching from an inside bend (C-Channel) to an outside bend (Hat Channel).

Finally, a programmable entry guide, coupled with short horizontal centres, precision bearings and roll tooling work together to form traditionally coiled products in a precut arrangement. This last feature removes the rethreading of different coil sizes when changing products, and enables the use of common fabrication tools, ie turret press, laser or cut-to-length equipment, to create the notched, tailored blanks to be formed. The end result is that the Supermill® system can produce a

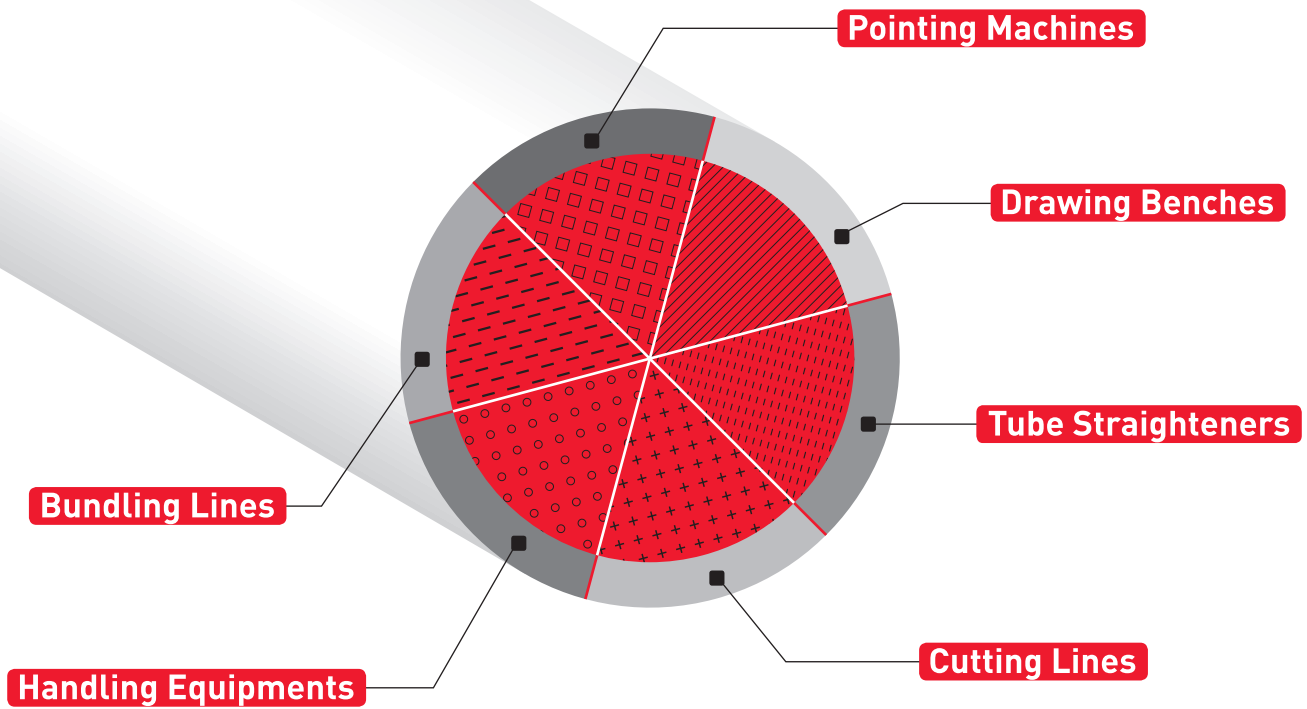
one piece roll formed order, without production of extra, finished inventory, and the changeover times are as little as fifteen seconds.

The system is equipped with motorised, programmable adjustment, so the operator can select the profile to be run, by choosing from the included part master database, scanning a barcode from the incoming material, queuing production from a network or input the profile dimensions on the operator's touchscreen. All feature dimensions, as well as over-bending, flare compensation, and material thickness, can be stored and adjusted by the main touchscreen control. The system can be supplied with an entry feed conveyor, for coupling with an upstream coil processing system or as a stand alone machine, to feed it discretely from existing fabricating equipment.

Supermill® systems such as this have been supplied for a variety of applications in the construction, fenestration, furniture, lighting, and mechanical component markets.

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Robotiq's adaptive robot gripper in encompassing grip mode

Electric robot gripper

ROBOTIQ has unveiled the 2-Finger Adaptive Robot Gripper – 200, an electric gripper with 200mm of stroke and expanded capabilities.

The gripper has been designed using feedback from automation engineers, who were challenged with the processing of a wide variety of large parts and high changeover rates, in industries such as automotive, metal fabrication, construction equipment (heavy machinery), and foundries.

“As with all Robotiq Adaptive Grippers, the goal remains the same: use a single, mechanically intelligent robot gripper to handle all your parts to reduce tooling costs, eliminate changeovers, and

maximise ROI,” commented Samuel Bouchard, president of Robotiq.

The new servo-electric gripper can be installed on any industrial robot. It provides a programmable 200mm stroke to pick various part sizes, and its three distinct gripping modes – parallel, encompassing and internal – enable the handling of different part geometries. Its high grip force can handle heavy parts. Additional features include grip detection and real-time finger position feedback.

Robotiq – Canada
Fax: +1 418 800 0046
Website: www.robotiq.com

New food grade range meets EC and FDA requirements

THE new Food Grade range from Jacob Pipework Systems is claimed to be the first product range in the market segment that meets the stringent requirements of the European EC 1935/2004 standard as well as the American FDA food regulations.

The range is a modular, stainless steel pipework system with more than 3,000 products. More than 1,000 of the components – from the steel parts to adhesives and sealing materials – were replaced or redesigned where

necessary. This ensured that all of the parts of the Food Grade products that come into contact with food satisfy the stringent EU requirements of the EC 1935/2004 directive as well as the American FDA regulations regarding contact with food.

The “adhesive-free” vulcanised U-shaped seals not only ensure food grade conformity in compliance with EC 1953/2004 and the FDA requirements, but also have better temperature and tear resistance than conventional

adhesive-bonded U-shaped seals. All components that come into contact with food are made exclusively of stainless steel that meets the quality standard of V2A/1.4301. The use of adhesives is avoided as far as possible in the seals that are incorporated in some of the steel fittings. In situations where their use is unavoidable, only food-grade adhesives are used.

Jacob manufactures pipe systems based on the modular concept in Europe with a worldwide market presence. Pipe systems for bulk material handling as well as dust extraction and exhaust air units for environmental engineering (cooling air/exhaust air) are the largest application areas for Jacob pipe systems (diameters 60 to 800mm or larger for customised production, 1-3mm pipe wall thickness). Steel pipes are primed, galvanised or stainless steel.

The company's main customers are in the chemistry, pharmaceutical and plastics industries, the food industry (eg coffee, cacao, chocolate, sugar or grain processing), feed plants, tobacco industry, automotive industry, chip industry, machine construction, and the paper and building materials industries.

Jacob Pipework Systems – Germany
Fax: +49 571 9558 160
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The new Jacob Food Grade range offers compliance with both EC 1935/2004 and FDA requirements



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and fax: +52 (55) 5279-9501

www.fivesgroup.com/fivesbronx
fivesbronx-sales@fivesgroup.com

Design and cutting of tubes

LANTEK has used all the experience and proficiency gained in design systems and programming for sheet metal cutting, punching and bending machines and applied it to the tube cutting sector regardless of the type of machine.

Lantek Flex3d Tubes allows 3D design in an intuitive and simple way, giving a real vision of the result that the user will obtain when cutting the profile on the machine. It integrates different kinds of tubular geometry importers: SAT, IGES for example.

Lantek Flex3d Tubes is a parametric system, allowing the user to change the values of any of the operations made previously; including the possibility of changing the initial parameters of each tube (lengthening, shortening, change of diameter, etc).

Once the design stage is complete, the user can simulate the optimisation of the tube (nesting) and the path followed by the cutting head, and directly generate the NC program in order to send it to the machine. Lantek Flex3d Tubes adjusts cutting information based on the characteristics of the machine

like the number of applicable axes (3 axis, 5 axis).

Technical characteristics include: Lantek Flex3d Tubes gives a real vision of the result on the screen. It displays the exact tube and simulates in 3D each process, reducing to a minimum the possibility of errors; zoom, view and rotation control tools allow for easy manipulation and editing of the design; Lantek Flex3d Tubes offers the user the possibility of creating standard tubes based on requirements; in addition to cylindrical, rectangular and triangular tubes, the user can design tube types adapted to their needs from 2D outlines; the 2D design options allow for the design or import of desired geometry, to create any type of cut out or trim; dynamic coordinate system specific for tubes. This tool offers various options to configure the coordinate system; it is totally integrated with Lantek Integra, Lantek's own ERP system; integral management of the sales process from the quotations through to invoicing. It includes sales orders, manufacturing operations, resource management,

material requirement, purchasing, production planning and time and cost control. It is also possible to incorporate workshop data collection.

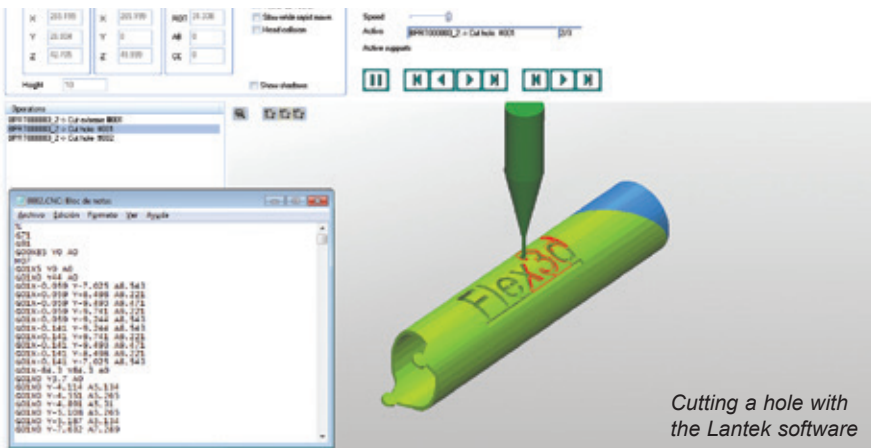
Integral management of warehouses/stocks (profiles, sheet metal, tubes, remnants, commercial product, finished goods) includes serial and batch numbers for entire traceability management.

Lantek Flex3d Tubes allows the user to obtain the best optimisation of the tube and the generation of the NC file for the machine. Optimisation can be created by importing sections from the warehouse automatically or by calculating the needs of supply. The system allows the user to locate in an intuitive way each profile and subsequent operations along the length of the tube.

Lantek Flex3d Tubes can simulate the cutting machine and the sequence over the tube. If the resultant simulation is appropriate for the user, it will automatically generate the NC file for each machine and in the same environment will integrate the information related to the design and the post-processing. Totally interactive simulation: step-by-step, forward, rewind, pause and restart.

For those tube cutting machines using a 5X head, Lantek Flex3d Tubes offers the option to automatically calculate the machining in order to prepare the cuts for the further welding process. This option permits the user to define this special machining technique, by means of angle and distance.

Lantek Sheet Metal Solutions – Spain
 Fax: +34 945 298 714
 Email: info@lanteksms.com
 Website: www.lanteksms.com



Servo positioning flag stop system to speed up setup

THE new servo positioning flag stop system from Manchester Tool & Die Inc is designed to aid setup personnel in quickly adjusting tube out through the machine's HMI (human machine interface). This system will provide consistent adjustments resulting in

quicker setup up times. The servo positioning system is available for newer M71 machines that are equipped with HMIs. Manchester Tool & Die supplies tube end forming equipment and tooling to a variety of industries, with machines ranging from 3/16"

to 3" OD capacities. Machines and parts can be manufactured for special applications.

Manchester Tool & Die – USA
 Website: www.manchestertoolanddie.com



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Tube bending machines for every application

FOR specific challenges, tailored solutions can bring the best results, especially when intelligent technology for tube processing is in demand. transfluid, a specialist in tube processing machines and tube bending machines,

offers versatile options to customise machines for the special requirements of industrial applications.

For optimal manufacturing processes, transfluid offers a portfolio starting with high-power mobile bending machines up

to efficient mandrel bending machines and tube bending machines for large tubes up to 25mm wall thickness and 300mm diameter.

The company provides efficient alternatives of tube bending machines with servo electric, hydraulic and hybrid drives, as semi-automatic or fully automatic with freeform options, handling systems and robots for a fully automatic loading and removal. transfluid also provides the 't control' software solution, which allows the importing of isometries from all established CAD systems.



transfluid's 't bend' technology for optimal tube bending

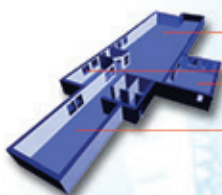
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SONOTRON™ FB system is equipped with more than 120 test channels and is capable of providing full volumetric and surface coverage of tubes, according to API and other International standards, for outside diameters ranging between 90~460mm (3.5~18in).

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

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



SAW, ERW

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

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



NDT Technologies Inc. Web: www.ndt.ca

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TEL: +1-514-457-7650 FAX: +1-514-457-7652 E-mail: info@ndt.ca

Winton Machine announce cut to length line

WINTON Machine has announced its new CNC wet abrasive machine designed to cut hard metals.

The model CTL-12A is a free-standing all-electric cutoff machine that cuts material such as stainless and Inconel. These are just a few of the metals

suited for this cutting process. Originally designed for cutting tubing, it is well suited for solid rods as well.

The cutting process makes use of a thin 9" diameter abrasive wheel. The constant flood coolant helps make sure the cut is near clean with minimal burr.

The cut lengths are programmable on the fly. Just enter the length and press the cycle button and production starts.

Winton Machine – USA
Website: www.wintonmachine.com

Steel pipes and tubes from India

RATNAMANI Metals & Tubes is a manufacturer of carbon steel welded pipes, and stainless steel welded and seamless pipes/tubes. The company caters to niche markets of many sectors, including oil and gas, petrochemical and refineries, fertiliser plants, solar projects, water distribution, and water desalination plants.

The company's product range includes carbon steel welded pipes (LSAW, DSAW, CSAW, ERW and HSAW pipes); stainless steel seamless and welded tubes (U-tubes, straight tubes, heat exchanger tubes, instrumentation tubes); stainless steel welded pipes (EFSW and ERW, TIG welded); titanium welded tubes;

stainless steel Duplex and Super Duplex tubes and pipes; and coating (3LPE/3LPP, SFBE, DFBE, internal liquid epoxy).

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Surface crack testing

THE multifunctional UV LED large area lamp from Karl Deutsch is best suited for stationary object testing. It covers both the visualisation of fluorescent testing media as used for penetrant testing and magnetic particle testing by means of UV-light and the visualisation of non-fluorescent media, eg red-white penetrant, using white light. At the push of a button it changes from ultraviolet to white light.

The 20 UV-high power LEDs provide a very high endurance. The UV-A-radiation is sharply limited to a wavelength of 365nm, thus excluding any danger due to UV-B and UV-C radiation, even in the case of defective protection glasses. UV-filter glasses are not necessary due to the applied

LED technique. The operational heat is dissipated via the anodised black cooling body on the upper side of the aluminium housing. No ambient noise occurs due to the construction without ventilating fans. The lamp contains an internal protection against overheating.

According to necessary light intensity and illumination mode several lamps can be connected in series and switched from any lamp.

The associated power supply unit provides the power for up to two lamps. A power supply unit for six lamps is available optionally.

Karl Deutsch – Germany
Email: marketing@karldeutsch.de
Website: www.karldeutsch.de





**“Based on our experience with
T&H mills, we expect to see
increased production, profitability
and competitiveness.”**

- Joao Groth, Director



When João Groth, Director at Brazil's Nacional Tubos needed a new Tube Mill, he interviewed five world-class companies before choosing the WU40—11, High Frequency Structural Mill from T&H Lemont of Countryside Illinois. “Since that purchase I was impressed that the T&H mill easily handled heavy wall products without compromising production speeds and that the tooling designs all worked flawlessly”, said João. He additionally noted, “The tooling changeovers are easy and setup is simple to complete”.

“The following year we purchased a WU20M-11 High Frequency Mechanical Tube Mill”, João said. “Based on our experience with T&H mills, we were pleased to achieve productivity, profitability and competitiveness beyond our expectations.”

**For more information, call 708-482-1800 or visit www.thlemont.com,
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RIDGID unveils new RP 340 press tool

CONTRACTORS can move around the job more with the new RIDGID RP 340 press tool. But while the RP 340 is 30 per cent smaller and 17 per cent lighter than its predecessor the company claims there is no compromise in performance – in fact, it boasts a 25 per cent longer service life. And for maximum flexibility, the RP 340 offers a unique feature – an interchangeable power source means it can be operated as a corded and battery-powered tool.

RIDGID has been providing innovative pressing solutions to the market for many years, enabling contractors to make reliable, water-tight connections to copper, stainless steel, multilayer and PEX tubing in as little as four seconds. The RP 340 is the latest press tool innovation from RIDGID and delivers a number of additional benefits.

The compact RP 340 has improved speed and convenience, helping contractors power effortlessly through job after job. At 33cm long and weighing just 3.76kg, it is 30 per cent smaller and 17 per cent lighter than its predecessor, but still supports connections up to 108mm.

The RP 340 model also gives contractors increased freedom. It features a detachable corded power adapter that can be replaced with new advanced lithium batteries (2.0A or 4.0A).

Additionally, the RP 340 is compatible with standard series pressing jaws from RIDGID and other manufacturers.

The RP 340 only requires recalibration after up to 42,000 cycles. Contractors can also squeeze out more work-per-charge with the new advanced lithium batteries (2.0A or 4.0A).

High-tech micro-processor-controlled cycles ensure a reliable press and water-tight connection every time.

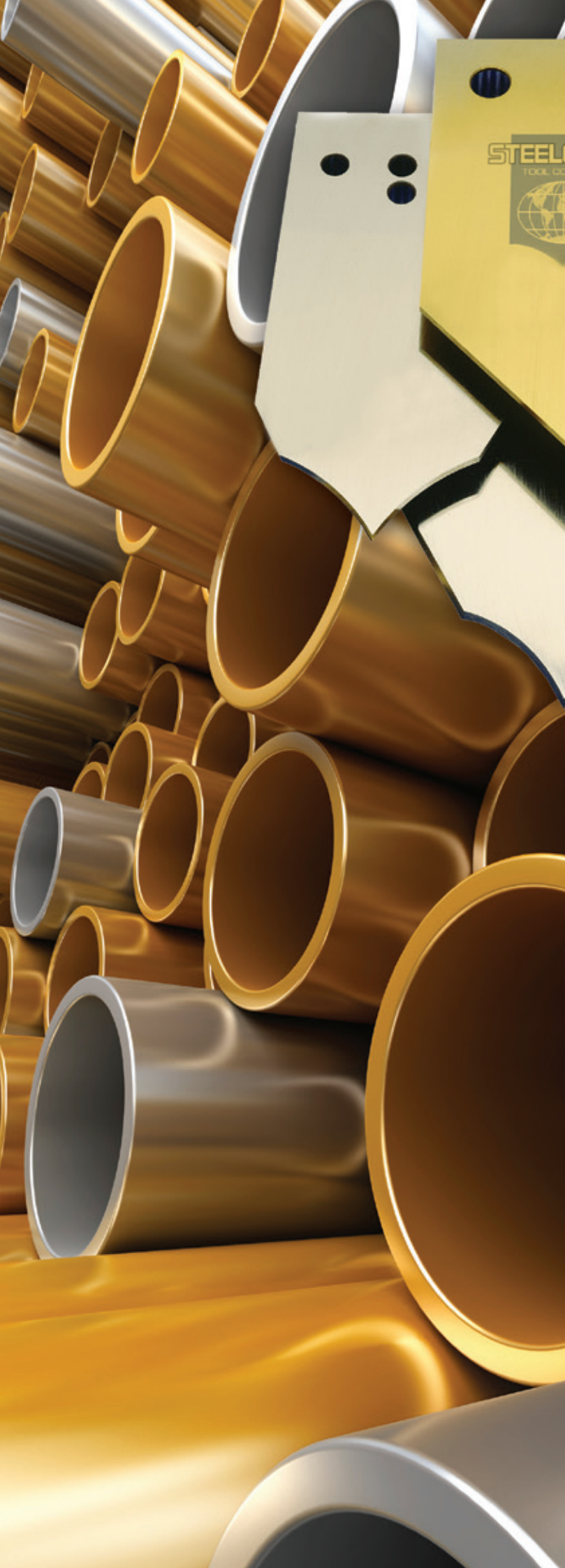
Other features of the RP 340 include: LED status indicator and warning light; White LED work light to illuminate workspaces; nylon straps for attaching a security harness; on/off button for disabling the tool; and extreme-temperature sensor to prevent the tool from operating outside acceptable limits (14°F to 122°F/-10°C to 50°C).

Enver Celik, product manager at RIDGID, said: "Our contractors say bulky tools can really slow them down. But give them a smaller tool and they can move swiftly from job to job. That's what the RP 340 is all about. It's smaller, lighter, and runs off corded or battery – exactly what contractors need to get the job done."

RIDGID is committed to helping contractors learn more productive and efficient ways of working.

As part of the launch of the RP 340, the company has created a dedicated webpage – www.ridgid.eu/340 – for contractors, which explains in more detail the benefits and applications of the tool, and how it makes their life easier.

RIDGID – Belgium
Website: www.ridgid.eu



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New waterproof 'C-Clamp' encoder is versatile pipe inspection tool

AN adaptable device which is ideal for encoding manual phased array weld inspections on pipes and tubes has been launched by Phoenix Inspection Systems.

The C-Clamp Encoder, which is also suitable for linear array corrosion mapping, is compact and very simple

to attach, requiring no tools for set-up and operation. It is robust and precise, offering high-resolution encoded scans, and can be used for any single-axis inspection.

The two clamping arms separate by up to 55mm to fit around any of the vast range of ultrasonic transducers and

phased array wedges on the market today.

The arms can be quickly adjusted to the wedge width and locked and clamped into place with thumbscrews.

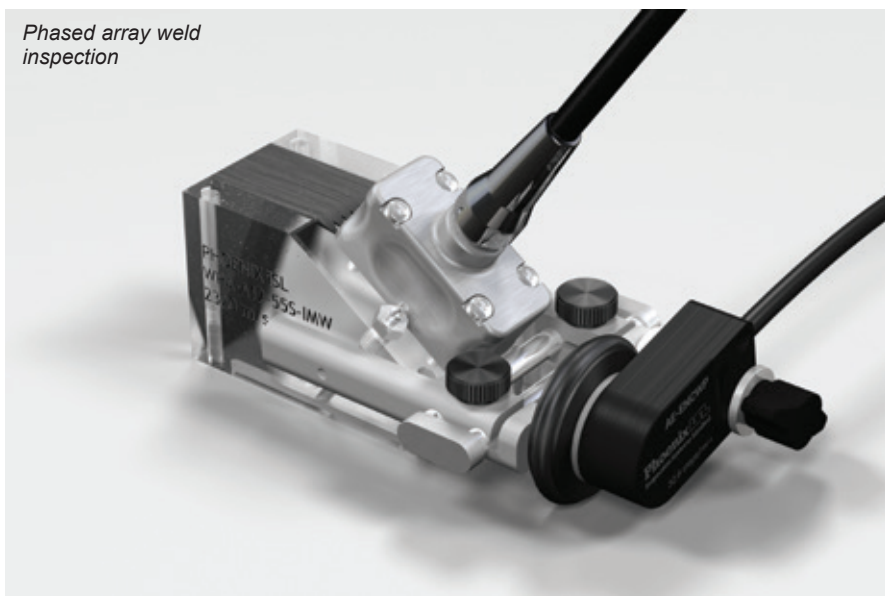
The waterproof wheel encoder can be fitted either behind or alongside the clamp, enabling B, C, D or S-scan phased array data to be recorded with its position.

The strong clamp mechanism ensures no lateral movement during scanning while the spring loading keeps the wheel in constant contact with the surface.

Andrew Brewis of Phoenix Inspection Systems said: "The C-Clamp Encoder is a small accessory that should be in every inspector's toolkit. It enables phased array inspections to be quickly recorded for sizing defects and is very simple to attach. It is robust, incorporating our new waterproof, high-resolution encoder. It complements our existing range of scanners and tools that aid operators in the field."

Phoenix Inspection Systems – UK
Website: www.phoenixisl.co.uk

Phased array weld inspection



Pair of mills nearing completion

OLIMPIA 80 has two complete tube mills in the finishing and pre-testing phase at its headquarters in Piacenza, Italy. Both lines are engineered to produce carbon steel tubes. One is destined for Russia to produce structural tubes, and the other is headed for Spain for the automotive industry.

The "blue" mill, for Russia, is the last of three lines for the same customer, one of the most important Russian tube manufacturers. The first two are in commissioning and are destined to produce structural and API tubes. Their capacities are from 21 to 89mm OD and from 40 to 133mm OD. Both lines are complete with fully automatic strip loading system, quick roll change system for breakdown, finpass and sizing sections, chamfering,

hydrostatic test with washing unit and automatic packaging machine.

This last line is the smallest, for tubes from 12.7 to 60mm OD, and thickness from 0.8 to 3mm. The maximum line speed is 150m/min and the HF welding generator has 300kW power. Special features of this line include a quick roll change system for breakdown, finpass and sizing sections, and a fully automatic coil strip loading system, which begins with a carousel with four arms of 30t each and a special car for automatic loading of each strip coil on the double decoiler.

The largest "grey" line, destined for Spain, is for round, square and rectangle sections, from 41 to 130mm OD, thickness from 1.2 to 6mm. It is designed

to produce tube in high tensile strength steel for the automotive industry. In this case the maximum line speed is 120m/min and the HF generator is 500kW. As with the previous line, it is also equipped with quick roll change system for breakdown, finpass and sizing sections, automatic loading system, and an automatic system for the load of each strip coil on the double decoiler.

Both lines have been pre-tested at Olimpia's headquarters, and are in the process of disassembling for truck loading and subsequent commissioning.

Olimpia 80 Srl – Italy
Fax: +39 0523 864584
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Erne at Stainless Steel World

ERNE Fittings will be exhibiting at Stainless Steel World in Maastricht in the Netherlands, from 12 to 14 November. On stand S842 the company will provide information about its new Duplex and Super Duplex programme, which consists of

seamless butt-weld fittings up to 6" at all schedules.

Erne Fittings endeavours to provide customers with a broad stock programme, and to keep this available at all times and in sufficient quantities. A large range of materials with different

dimensions can be processed thanks to a large tool park and an extensive machine park.

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

Heavy-duty bending machine

THE Proline BM0420HD heavy-duty bending machine is built to be tough and has a very efficient hydraulic cooling system. It keeps the hydraulic fluid from overheating under extreme job-site conditions. The operating temperatures are lowered and the entire system has lower overall operating pressures. Other advantages include safety shutdown, larger than average side plates, and specially designed filters. The rims and tyres are oversized (compared to other manufacturers' machines) so that it is easier to move the machine through sand, snow and swamp.

This particular heavy-duty machine will bend pipe from 4" to 20" of various wall thicknesses, and incorporates a compressor to power the mandrels. The Proline open-front design allows the operator to see the pipe coming into the bender and gives the operator a better view of the bending procedures, unlike the old box-shaped bending machines.

Canadian contractors who work on high production pipelines use this rugged machine in Canada. Canadian contractors are well known for their speed and expertise in laying cross-country pipelines and the need for reliable equipment to keep that production at its maximum. In Canada high production can be achieved at

40°C as well as minus 40°C. These "benders" are proven workhorses at +50°C while working on projects in the Algerian Sahara.

In 2003, Trans Canada Pipelines used a Proline pipe bending machine to see if experimental 36" x100 grade pipe could be bent and if it could be bent in cold weather. Proline's BM3042 bent the pipe in -45°C conditions along with a self-powered mandrel. In fact, it bent that pipe all day. This is the heritage that the BM0420 HD comes from.

Proline servicemen have travelled overseas to train customers' employees on the use of the equipment at their location and for start up procedures. Proline has done this for mandrels, air clamps and other Proline manufactured equipment. The company is only a phone call or email away, and stands behind everything it produces as it always has since 1967.

After 38 years in one location, Proline found that more space was needed as business grew domestically and internationally. In January 2005, Proline moved into its new 25,000ft². facility located on five acres of land in South Edmonton. In 2012, Proline celebrated 45 years of servicing and supplying customers' needs and celebrated 25 years under the same management.

While it is a manufacturer of pipe bending machines it also carries lifting slings, lowering in belts, bevelling machines and manual cutters to name a few. It is focused on helping customers reach their goals in a timely and cost effective manner. The picture shows 12" pipe being bent

in Proline's yard. The stackable plastic yellow pipe stand replaces skids that the pipe would normally rest on while waiting to be bent. They are available in standard yellow and high temperature white. Proline will pre-bend pipe in its yard for customers who have the specifications and pipe delivered. Customers around the world have benefitted from Proline technicians travelling to their job sites and holding training sessions for their employees, showing them the proper way to bend pipe.

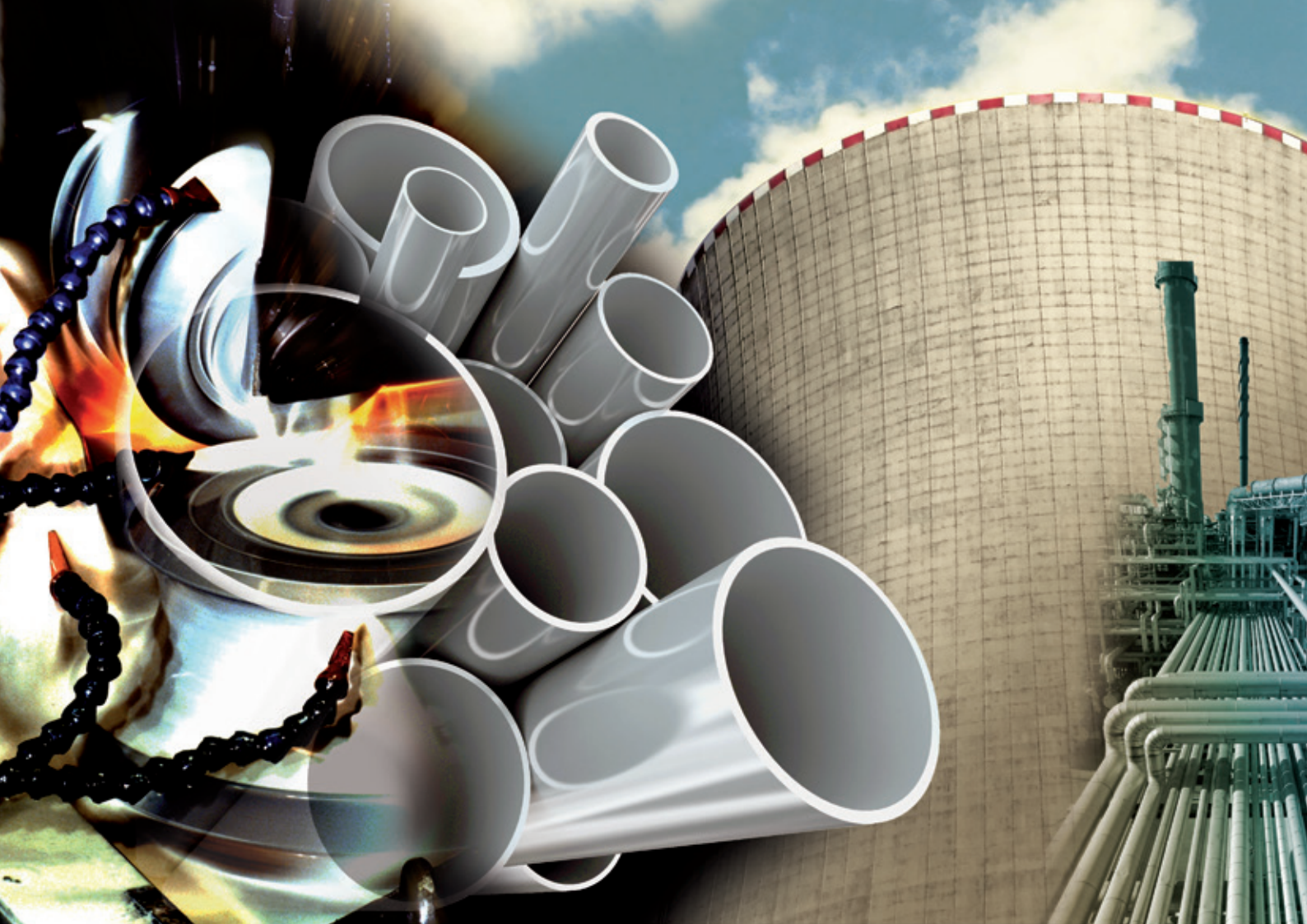
Once the class is completed, the employees receive certificates of achievement stating that they have successfully completed the course. Not only is the employee trained to work safely, the company has found that as an added benefit, the employee morale has improved and that makes for a better employee.

Proline bending machines were designed with pipeline workers in mind. In fact, a lot of good ideas were incorporated into the bending machines from the very workers who are experienced in cross-country pipe bending. That is why Proline incorporated the bending machine's shape over 20 years ago. The design and features have handled the test of time, however the company keeps improving.

Special features of a Proline bending machine include working in minus 45°C to 50°C with only a change of fluid. There are no optional "cold weather packages" or "hot weather packages". The machine simply works in these environments because that is what it was assigned to do.

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Salt contamination meter

ELCOMETER'S new 130 Salt Contamination Meter is designed to make the measuring of soluble salts faster, easier and more accurate. For use on-site or in the laboratory, the portable, hand-held gauge can

accurately and reliably carry out 24 tests per hour. Automatic temperature compensation ensures repeatable and accurate results. A calibration offset function allows less than pure water to be used for testing, automatically adjusting the reading to take into consideration the conductivity of the water used.

Individual readings are stored with date and time stamp, temperature and size of test paper, and the memory capacity is up to 150,000 readings in 2,500 alphanumeric batches.

The meter can measure salt contamination of up to 50µg/cm (3,000ppm) on flat or curved surfaces. The data can be transferred using Bluetooth to ElcoMaster™ 2.0 data management software, to enable professional inspection reports to be sent anywhere in the world instantly.

With a heavy duty, impact resistant, dust and waterproof design equivalent to IP64, the Elcometer 130 is designed for use in the harshest environments.

Performing the Bresle Method as per ISO 8502-6, each test can take up to 12 minutes to perform (10 minutes sampling, and 2 minutes to prepare the patch, test the conductivity and remove the patch and residue). The Elcometer 130 is faster: 2 minutes sampling and 2 minutes to prepare test and make good. In addition, as the test samples can be set up concurrently, two tests can be undertaken within 5 minutes.

So while the Bresle Method restricts users to five tests per hour, the Elcometer 130 can accurately and reliably achieve 24 tests per hour – nearly five times faster than other Bresle equivalent test methods.

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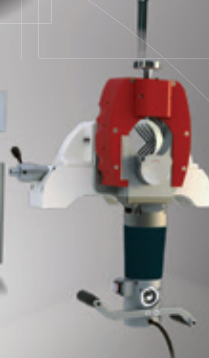
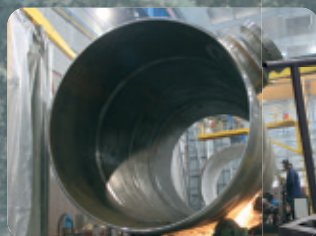
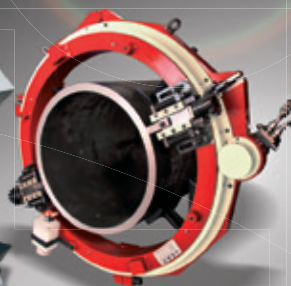
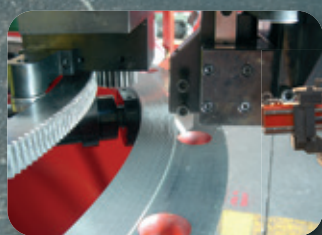


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Mobile ultrasonic flaw detector

DESIGNED with ergonomic and strictly functional characteristics in mind, the new Sonoscreen ST 10 ultrasonic flaw detector from Sonotec GmbH boasts a user-friendly menu navigation system. This improves testing reliability and saves valuable testing time.

Weld seam testing accounts for 70 per cent of all professional ultrasonic inspections in Germany. The standard ultrasonic detectors normally used for this purpose require complicated and time-consuming calibration. Incorrect settings can have dramatic consequences. "We therefore set out to develop an easy-to-operate device with an operating concept that speeds up the testing process and eliminates potential errors from the outset," explained Hans-Joachim Münch, managing director of Sonotec.

The result is the Sonoscreen ST 10 universal ultrasonic flaw detector, with an innovative menu structure, a large screen and an inclusive package with all evaluation methods. The device is supplied ready-to-use for all



The Sonoscreen ST 10

applications. By turning and pressing the left handwheel, the user scrolls through the menu and operates the Sonoscreen ST 10 intuitively. The simplified menu navigation provides all the parameters to be adapted in a logical succession and also ensures that all relevant parameters are set at the start of the test. A diagram of the probe settings also allows entries to be checked quickly. All menu items are displayed in full text and the entire menu tree is displayed with sub-items. If the tester wishes to adjust the gain setting of the signal during the measurement,

they can do so by simply turning the right handwheel. Time-consuming clicking through the menu or interrupting the test is not required. The gain setting is displayed in the top right-hand corner of the screen.

Despite its compact size, the Sonoscreen ST 10 has a large, high-resolution 16:9 graphic display. All values and measurements are displayed as large as possible. This enables the user to see details clearly and view all relevant instrument settings at a glance. Which type and how many measurement readings the device should display can be adapted to each application's specific needs.

Unlike some other ultrasonic testing devices currently available on the market, the Sonoscreen ST 10 can safely be used outside in direct sunlight. Even rain cannot harm the robust device.

Sonotec Ultraschallsensorik Halle GmbH – Germany
Website: www.sonotec.de

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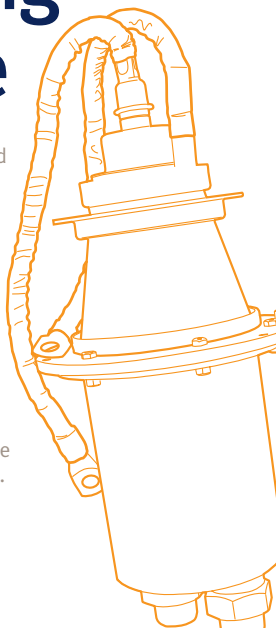
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Cost-efficient tube processing

WITH the new automatic tube loader, suitable for dry and wet cutting, ROFIN's laser cutting system becomes a versatile tube processing centre for automated series production.

Manufacturing of various, frequently miniaturised, products requires cutting or drilling of thin-walled tubes or profiles with micron-scale precision. The delicate tube material has to be machined without burrs or distortion and this is where laser systems like StarCut Tube offer inestimable advantages compared to chemical and mechanical machining procedures.

Manufacturing of parts for implants, instruments or endoscopes from round or oval tubes usually requires numerous different machining steps. Techniques like drilling, milling or eroding are carried out as separate processes, slowing down overall manufacturing speed. At the same time, the risk of production waste increases with each additional step.

The 4-axis CNC laser processing system StarCut Tube allows the

transformation of numerous mechanical machining steps into a single laser processing routine. With CNC-driven rotary-, x-, y- and z-axes and a solid granite machine set-up, even taper-free or offset cuts are as easy as ultra-precise processing of oval tubes or flat parts.

Streamlining the manufacturing process with a laser system also reduces the processing time of parts up to a length of 600mm to only a few minutes. Therefore, an automated material loading system has to provide constant tube supply for efficient series production. ROFIN developed a new tube-loading module with a side-loading magazine for tubes of 3 to 30mm diameter and up to 3m length. A pivotable pilgrim step separation assures precise and gentle handling of tubes with small diameters. Sophisticated grippers provide accurate and reliable tube feeding and the automated removal of residual material.

The automated tube loading module is also available for wet cutting. Wet laser cutting with burr-free and oxide-free cutting edges dramatically reduces necessary post-processing steps and offers huge potential savings.

The new wet-cutting option dramatically reduces the additional efforts which are characteristic for wet laser-cutting processes. The entire water-cooling system has been integrated into the

main housing. It was designed with a special focus on easy operation and maintenance. The water tank is easily accessible and removable for water change. A drawer allows the removal of finished parts without interrupting the cutting process.

The StarCut Tube can be powered with ROFIN's StarFemto FX, StarPico or StarFiber FC laser sources and achieves contour accuracies better than $\pm 5\mu\text{m}$. The femto second laser source provides pulses lengths down to 300fs and wavelengths of 1,030nm, 515nm and 343nm. Pulses shorter than 1ps are an essential prerequisite for true, cold material processing and distortion-free cutting and drilling of polymers.

Optimum laser systems are just one part of the ROFIN philosophy; medium-sized companies expect more from their partner than just selling them suitable laser systems. ROFIN's specialists take care of the employees' training, help setting up the first applications and the application support provides unbureaucratic assistance during the first months. If required, ROFIN even designs the production room according to laser safety standards.

With its various configuration possibilities and service and support from laser manufacturer ROFIN, the StarCut Tube emerges as a prospective solution for fully automated tube processing in a broad application range.

ROFIN – Switzerland
Website: www.rofin.com



e2v supplies world leading gridded tubes

FOR over 60 years e2v has been supplying customers with gridded tubes providing outstanding performance and long life. The company is one of the world's largest manufacturers of high quality, award-winning products including a complete range of power grid tubes specifically designed for demanding industrial markets such as tube and pipe welding.

EEV branded oscillator tubes are recognised for their high quality build

standard and reliability, and have been chosen as original equipment by virtually all major OEMs in the industry. Ranging in power output from 25kw to 530kw, many of the EEV triodes and tetrodes that e2v manufactures are direct equivalents for other manufacturers' devices or can be used to replace them with guidance at a relatively low cost.

e2v has recently invested heavily in state-of-the-art manufacturing

technology and equipment. All of its devices are subjected to extensive high voltage conditioning and full functional RF/DC testing procedures.

The company is committed to working in partnership with its customers, providing them with exactly what they needs and provides a high level of technical support.

e2v – UK
Website: www.e2v.com/tubes

Rebuilding and upgrading mills

UNIVERSAL Tube & Rollform, a world wide supplier of used tube, pipe and rollform machinery, can help to improve yields and get the most out of existing equipment. Continuing to operate machinery that no longer meets today's high standards for efficiency and safety can pose an unnecessary risk.

To address this situation Universal Tube & Rollform can rebuild, re-power and upgrade current machinery to the

most exact specifications, directly from its US facilities in Ohio. Its capabilities go even further, working together with Universal Controls Group (UCG) to bring options such as new controls, drive systems, die accelerators, length control and other accessories to retrofit existing machinery.

Universal's rebuild, re-power and upgrade programme provides many benefits, including: cost savings;

accurate and reliable production; enhanced safety; extended machine life; documentation for retrofits; ease of operation; installation services; and training services. Universal also offers one of the largest selections of used tube, pipe mills and rollforming machinery in the world.

Universal Tube & Rollform – USA
Website: www.utubeonline.com

Heavy-duty production crimping

OP has announced the new high-volume crimping machine Tubomatic V350ES, for crimping hydraulic hoses up to 3" six spirals and industrial hose up to 10". Designed in a horizontal position and with low centre of gravity to allow easy machining of tubes, the force of 1,000 tons is suitable for purposes other than working the hose

as it is can also be used to process steel rods, insulators and lugs. The machine features self-lubrication of moving components, silent pump, back limit switch, protactor for orientator fittings and a particularly narrow crimping head for crimping pipe ends with large flanges or fittings at 90°. Also included in the standard equipment is

the electronic control ES3 with touch-screen colour display, which is easy to use and is able to achieve excellent performance and accuracy in work management.

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Quick-change tube mill

T&H Lemont has shipped and commissioned a WU35M-11 quick-change, high frequency tube mill to a customer currently operating other T&H Lemont tube mills.

The mill was designed to form and weld carbon steel and alloys up to 6" OD x 0.312" wall standard pipe sizes, as well as tube sizes up to 6.5" OD x 0.125" wall, with material yields up to 150,000psi. For this quick mill, a second set of sub-plates is designed to run a heavier wall tube. This flexibility in mill design allows the customer to serve a number of markets, from standard pipe to high yield tubing.

T&H Lemont designed and built the mill with two features to decrease change-over time and increase productivity. The first feature was the design and construction of the mill with the Third Stand Quick Change System. This system couples and connects the mill line universal drive shafts with the mill stand drive shafts while providing a quick release feature when making tube size changeovers. Each third stand is supported and mounted to the mill base in back of the inboard roll stand.

Quick-change third stands are equipped with universal drive stud supported in slide blocks which house tapered roller bearings. Each sleeve is assembled with a spring-loaded detent drive pin and is connected to the mill side universal joint bolt style flange. A drive

pin socket is supplied and mounted on each upper and lower roll stand roll shaft inboard input stub.

In mill run mode, each mill section sub-plate is securely locked and held in position by the quick change mechanical and hydraulic cylinder system. Hydraulic pressure maintains sub-plate position against the rear alignment blocks and held down by four locking bars and posts.

During change-over the hydraulic cylinders push the sub-plates forward away from the stop blocks several inches to disengage the third stand adapter sleeves. Once clear of sleeve engagement, an overhead crane is attached to the sub-plate to vertically lift and remove the sub-plate from the mill.

The new sub-plates are positioned and placed over the mill base locking posts. The hydraulic cylinders are then used to pull the sub-plates back against the mill base stop blocks and are locked in run position.

While the sub-plates are being pulled back, the adapter sleeve spring loaded detent drive pins depress. Once the sub-plates are hydraulically secured, the mill drive is jogged and all of the spring-loaded detent pins align with the inboard drive pin socket slots, and snap into place. After final set-up checks, the mill is ready to run.

Air cylinders and stop blocks will be utilised to locate the upper and lower roll

shaft position of the third stand to match the inboard stand. With this feature the set of sub-plates can be set up off-line.

The second feature designed for this mill is the AutoSet System, for precise, automated roll adjustment. The system is designed to minimise set-up times. Using encoder and drive technology, the time required for roll adjustment on a new set-up is reduced and can be accomplished from the operator station without the use of hand tools.

Utilising AC vector drives, a PLC, absolute position encoders and a colour touch-screen interface, the mill can be programmed to have the rolls automatically return to a predetermined location.

In addition to complete production systems, T&H Lemont provides a variety of components and services to the tube, pipe and roll-forming industries. Services include tube and pipe roll design, mill alignment and operational consulting. Components offered include cut-offs, entry equipment, accumulators, seam orientation stands, weld boxes, edge conditioners, bead scarfing systems, straightening systems, single point adjustment systems, dedimplers, rolls, blades, jaws and shafts.

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LENOX Instrument Company's extensive line of rugged, high performance sectional, extendable borescopes are modular in design and allow the user to add extender sections to provide long working lengths up to 120ft (36.6m).

Lenox sectional, extendable borescopes are available in diameters of 23, 35, 45 and 70mm and deliver uncompromising image resolution to allow identification of flaws as small as 0.0005". These extremely versatile instruments speed up inspection time and provide sharp, clear illumination of welds and surface defects, like pitting, corrosion and denting, inside tubing and pipe.

All Lenox sectional, extendable borescopes can be provided with a Lenox colour video minicamera that attaches to the eyepiece and produces clear, high-resolution, images. Colour images can be viewed and recorded on a digital video recorder/player with a high-resolution display.

Various viewing heads like right angle, bottoming, retrospective, forward oblique, and circumference are available for Lenox sectional, extendable borescopes.

The circumference (panoramic) viewing head, which is designed to allow for rapid inspection of tubing or other cylindrical shaped structures, projects forward to view the wall at slanting incidence so a 360° band, several inches wide, can be seen at a glance. A centrally located mirror provides a right angle view for more critical examination of the area just scanned by the panoramic view as the borescope is advanced.

Lenox sectional, extendable borescope systems are a viable alternative to more expensive and labour-intensive videoscope systems, and offer users the advantage of being

able to inspect large internal surface areas in less time.

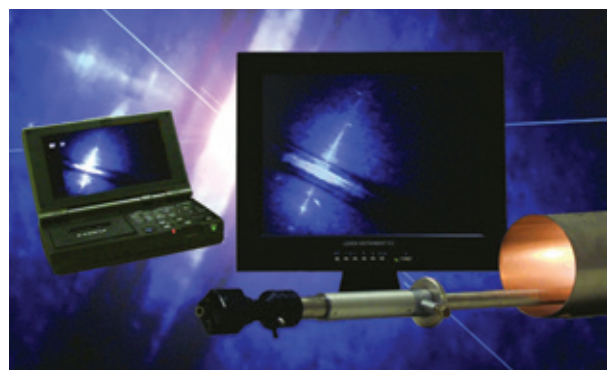
Each Lenox sectional, extendable borescope system is designed, manufactured and serviced in-house by Lenox Instrument Company, and is backed by a two-year warranty.

Lenox Instrument Company – USA

Email: sales@lenoxinst.com

Website: www.lenoxinst.com

Lenox's extendable borescope



Speed and precision for tube forming

transfluid Maschinenbau GmbH, Germany, designs individual solutions for tube processing which guarantee excellent production times and value for money for the customer.

transfluid designs advanced technology which copes with the special challenges of tube forming intelligently.

Tube endforming machines for the axial use – with supplementary clamps and up to eight stages as well as horizontal and vertical tool change – are available as well as rotary forming machines which can form tubes with the rotation procedure, and roll beading machines (from 4 to 168mm) which can be used in versatile ways to form geometries from outside to inside, from inside to outside and to cut the tube.

To reach ideal tube results it is important to complement the tube forming to the tube bending process or to use it as a stand-alone process. REB

is the series of forming machines for extreme degrees of tube forming, rapid tool changes and complex geometries – allowed by the supplementary clamping unit. These systems are suitable for an economical mass production process at the highest level.

To give already axially formed tubes a further form and to produce an excellent surface and sharp-edged contours for sealing elements, the solution provider transfluid designed rotary and CNC-controlled tube forming machines, which enable an optimised production. Customers can find it in the series SRM in the t form portfolio.

transfluid can be visited at FABTECH Chicago at stand S5684.

transfluid Maschinenbau GmbH –
Germany
Website:
www.tube-processing-machines.com

Spent emulsions

SEPAR 5000, installed in the Marcegaglia Industries headquarters in Gazoldo degli Ippoliti, Italy, has a broad versatility. It is claimed to be the largest ultrafiltration plant ever built in Europe for this kind of application, with a normal treatment capacity of 8,000l of spent emulsion and 1,000mc of recirculating emulsion per hour.

The unit can treat a broad range of emulsions: mineral oil-based emulsion (eg from rolling mill and tube profiling); synthetic lubricoolant (eg from tube profiling or from skinpass of coils); solvent-based lubricoolant (eg from tube cleaning or from stainless steel skinpass); spent alkaline degreasers; and water and oil mix (coming from pit cleaning).

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Siempelkamp expands its product range with ring-rolling mills

THE first ring-rolling mill designed and built by Siempelkamp has passed its crucial test at its initial startup at the Krefeld plant. In July, Siempelkamp manufactured the first rings made of steel with the rolling mill, which will be delivered to the Russian JSC Metallurgical Plant Electrostal shortly.

The ring rolling mill with maximum radial and axial pressing forces of 6,300kN each enables the precise manufacturing of rings with an external diameter of up to 2,500mm and a height of up to 600mm.

Siempelkamp not only completely manufactured the rolling mill at the Krefeld location but also assembled and started it up there as well as extensively tested the hot rolling process. The startup in Krefeld has proven that the plant not only meets the customer's desired specifications but even exceeds them in some areas. The ring-rolling mill is forecast to be installed in Russia at the end of the year and will start operation in 2014.

The first Siempelkamp plant of this type manufactures rings made of steel and special materials such as nickel-based, titanium and aluminium alloys. The rings with rectangular or profiled cross-sections made of these extremely

rigid yet lightweight special materials are mainly used as mechanically and thermally stressed components in the aerospace industry.

With the ring rolling mill, Siempelkamp once again demonstrates its competence as a systems supplier and provider of complete solutions which designs and builds presses for all stages of metal forming.

This ring-rolling mill is the second plant which Siempelkamp supplies to the Russian customer JSC Metallurgical Plant Electrostal: the company also operates a 20,000 ton precision closed-die forging press made by Siempelkamp which, among other products, provides the feedstock for the ring rolling mill.

JSC Metallurgical Plant Electrostal carries out the entire production process of rings made of high-alloyed steel in its own plant and thus raises the depth of value added to its own production.

With a variety of design details, Siempelkamp achieves exceptionally high precision during ring rolling. For example, the diameter of the rings during ring rolling is precisely measured via laser measurement systems.

High process accuracy is also guaranteed by the SicoRoll control, which Siempelkamp specially developed

for ring rolling. The program package SicoRoll supports the user during process planning.

With an advance simulation, which takes the threshold values of the machine into account, all relevant rolling parameters are determined. The program uses a database, which stores the tool and material data. Furthermore, it contains the common rolling curves and strategies as the basis for the planning process. According to the customer's requirement, the system can be expanded.

The calculated rolling parameters are transmitted to the machine control, which ensures the optimal ring rolling process and keeps the rolling parameters synchronised with the process. The rolling process can be completely documented and archived.

Next to the rolling mill, the scope of supply includes the complete hydraulic system, the automation of the roll as well as the SicoRoll control – the kernel of which gives the dimensions of the blanks for the closed-die forging press.

By using design principles that have proven themselves in other Siempelkamp presses, the equipment achieves a long operating life.

Extensive FEM calculations are the guarantee for the high fatigue strength of the mechanical structural components.

This is further supported by the fact that the housings for the tapered rolls, which experience high mechanical stresses, are designed as one-piece castings without weld seams. Similarly, all bearings are designed with a long operating life in mind.

During the design process, the Siempelkamp design engineers placed great importance in using many standard components, especially for highly stressed component parts such as the gears. For customers this translates into cost savings because maintenance and spare parts are easily procured.

The rings are made of billets manufactured on another Siempelkamp press

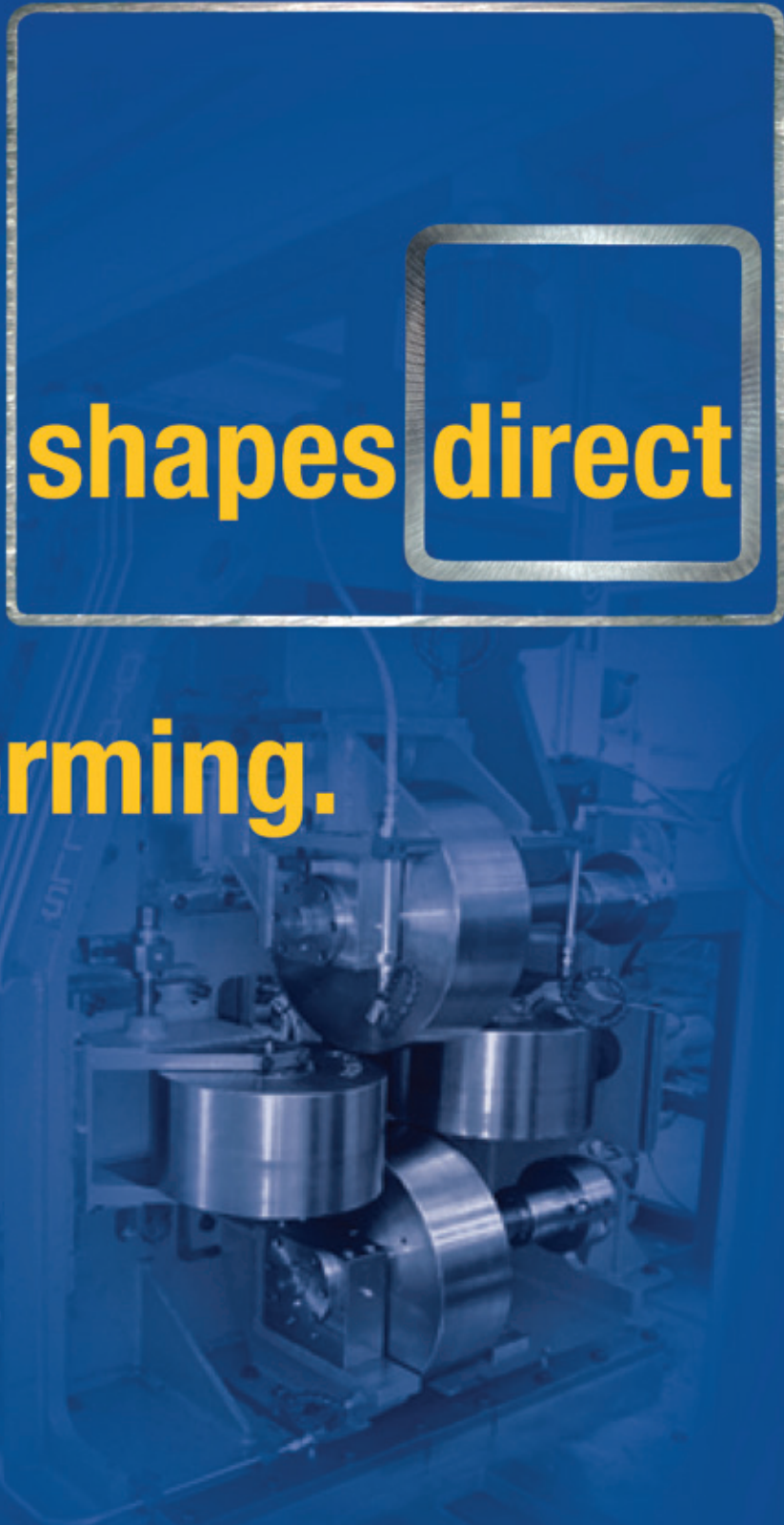


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The dynamic way to saw

BEHRINGER unveiled its new HBE Dynamic series to an eager public for the very first time at EMO 2013 in Hanover. It has been heralded as the answer to ever-growing market demands for more efficient, more economical and more precise sawing machines. "Increased performance coupled with reduced energy consumption, a smaller footprint, and improved occupational safety without compromising handling simplicity were only part of the product brief for the development team working on this new machine," said CEO Christian Behringer. Available in four model types – 261, 321, 411 and 511 with corresponding cutting ranges – the new HBE Dynamic series will cover a broad application spectrum for the steel trade, for mechanical engineering, tool making and for high-end metalworking shops.

With an outstanding tool life of over 400 sawing cuts in 200mm diameter 42CrMo4 material, for instance, the new HBE261A Dynamic performs well above



The HBE Dynamic series from Behringer

standard, taking even the most stringent demands easily in its stride. Playing a key role in this achievement are proven Behringer features such as further improved cutting pressure control, which consistently helps prevent tool overload. A stable saw frame made of vibration-damped grey cast iron and double-sided bearings for the band wheels take care of minimised noise and optimum cutting precision. Tests have revealed increases in tool life of up to 30 per cent, with a visible improvement to the quality of cut surfaces. The inclined position of

the band wheels also helps protect the bandsaw blades as a result of reduced flexural stress.

Production using minimal resources and efficient, sustainable use of energy are recurring themes which are constantly in the news. Rising energy prices mean that companies are having to rethink their existing processes and develop innovative technological solutions to achieve higher output with lower energy input. "With the new HBE Dynamic series, we are proving that energy efficiency and high-performance hydraulics are not a contradiction in terms," explained Mr Behringer. With the use of state-of-the-art frequency-controlled drive systems from renowned manufacturers and application-orientated gear speeds, a simple kW motor output specification is no longer any guarantee of high cutting output.

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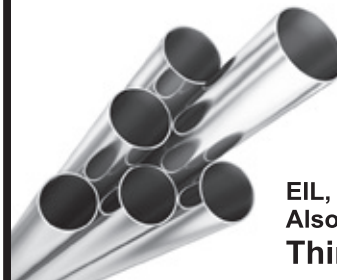
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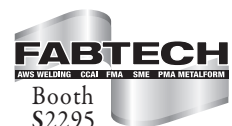


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Economic outlook

A Canadian observer expects Europe to emerge stronger than ever from its most critical period since World War II

“One wouldn’t wish on Europeans the economic hardship they have endured and continue to suffer. That said, the potential silver linings from the crisis are a kilometre wide, for a newly efficient European super-economy in which no member country is left behind.”

David Olive, a business and current affairs columnist at the *Toronto Star*, sees persuasive signs of sustained recovery in the European Union – good news for a North American comeback that has been muted due to diminished exports to Europe, and for North American investors. These include Canada’s major retiree pension funds, for which European investments are once again attractively priced.

Among the turnaround signs cited by Mr Olive in “Europe Rising” (2 Aug):

➤ The anticipated result of relaxed austerity measures across the continent will be a resumption by next year of vigorous economic growth. Germany’s GDP is expected to clock in at 1.8 per cent in 2014, well ahead of this year’s 0.4 per cent. Even the much harder-hit Ireland and Spain are forecast to post healthy GDP gains of 2.2 per cent and 0.9 per cent, respectively, in 2014.

➤ That growth will also be spurred by a return of global investor confidence in Europe. Ireland, Spain and Italy – which not long ago were paying rates of 7 per cent to 8 per cent on newly issued bonds – are able to sell new debt at yields of just 4 per cent to 4.5 per cent.

➤ A European Central Bank (ECB) now headed by Mario Draghi, the former Italian finance minister, realises (as Ben Bernanke, head of the US Federal Reserve Board, earlier did) that central banks must not permit the control of inflation to crowd out the other half of their dual mandate, which is to promote economic growth. And so, as the Fed has done, Mr Olive wrote, “The ECB has been stepping into the market to buy government and corporate debt at reasonable rates. [Newly available] cheaper money is kick-starting business expansion while relieving some of the debt-obligation pressure for EU governments.”

The *Star* columnist readily acknowledges the worries, centred mainly on unemployment, that still abound. But in his view it is becoming steadily more difficult to describe Europe as “struggling.” Recommending that the prefix be dropped after half a decade, he noted that the European common currency zone has welcomed Latvia as a new member; and Lithuania is not far behind, for an expansion of the eurozone to 19 member nations.

Moreover, the EU has begun negotiating a free trade deal of unprecedented ambition with the US. Mr Olive posed the

question: Why would America take on that arduous task if the 27-member-nation EU, which welcomed Croatia as a new member last year, “were heading for the dustbin of history, as we were hearing as recently as 2011?”

In his view, America is determined to get in on the ground floor of a New Europe before a fully recovered EU can demand tougher terms, the goal behind Canada’s own four-year-long negotiations to secure a Canada-EU trade pact. Meanwhile, a euro that was once dismissed as Monopoly money has been steadily strengthening, gaining 10 per cent against the US greenback since the spring.

➤ That is no less a headache for European exporters than for their Canadian counterparts, coping with a “loonie” at or near par. Yet, Mr Olive pointed out, while the strong euro can be a short-term inhibitor for exporters, longer term it has the salutary effect of forcing providers of goods and services across Europe to shed obsolete practices and otherwise raise their game.

Adding to signs of a strengthening recovery in Britain, the nation’s industrial production rebounded at midyear

After a second-quarter expansion of 0.6 per cent, the British economy gained from a surge in manufacturing in June. On 6 August, in London, the Office for National Statistics (ONS) said that industrial output had increased 1.1 per cent from May, exceeding economists’ forecast of a 0.7 per cent increase.

All 13 categories within manufacturing recorded an increase in June, for the first time since June 1992. The increase was led by transport equipment, up 5.3 per cent; other manufacturing and repair; and computer and electronic products. Also surpassing expectations was the 1.9 per cent jump in factory output indicated by the median of 33 estimates in a Bloomberg News survey.

In the three months through June, total British production increased 0.6 per cent from the previous quarter, matching the estimate in the gross domestic product report of 25 July. The ONS said the data released 6 August will have no impact on the GDP estimate. Manufacturing rose 0.7 per cent in the period, the most since December 2010.

Steel

➤ As reported from Kolkata by Jayanta Mallick of *The Hindu* (20 August), a Tata Steel joint venture has secured a key land-use license for its iron ore project in the vast Millennium Iron Range area of northeastern Canada. According to New Millennium Iron Corp, the Indian company’s 20 per cent partner, Tata Steel Minerals Canada Ltd (TSMC) signed an agreement with the appropriate aboriginal council in south Labrador, paving the way for mining and building infrastructure related to the direct shipping ore (DSO) project.

Initial production at a rate of 1 million metric tons per year is projected to rise to 3 million mtpy in the second full year of operations. Output from the project, owned and operated by TSMC, is shipped as pellets and sinter fines to Tata Steel's European units, formerly without a captive source of iron ore.

A sector analyst with a global investment firm told *The Hindu* that Tata Steel could realise significant cost savings from a consistent supply of Canadian ores, improving its chances of profitability in Europe.

➤ Strong local demand was cited by Tokyo Steel for its decision to raise prices on two products for September delivery by about 3 per cent. Heavy plates and hot-dip galvanised steel coils are now at \$706 and \$839 per metric ton (pmt), respectively.

Kiyoshi Imamura, the managing director of Japan's top producer of construction steel, told reporters in Tokyo (19 August), "Local construction demand for heavy plates and hot-dip galvanised coils has clearly picked up and supply of these products looks tight."

Given the high output in the April-June quarter of some other products, Mr Imamura said their prices remain unchanged. H-beams, the company's main product, still go for \$757pmt, hot-rolled coils for \$634pmt.

Tokyo Steel's pricing is closely watched by competitors intent on boosting their exports to Japan. These include POSCO and Hyundai Steel Co, both South Korean, and China's Baosteel.

➤ Despite sluggish demand, some US steelmakers have been raising their spot-market prices in an effort to boost profits and revenue. Effective with 1 October shipments, AK Steel (West Chester, Ohio) declared a rise of \$25 per ton in the spot price of its 200, 300 and 400 series flat rolled stainless steel products. The new per-ton prices are: \$675 (hot rolled); \$775 (cold rolled); \$795 (hot dipped galvanised).

The move came on the heels of a rise on the same products, by a minimum of \$40 per ton, announced in mid-June. Poised to gain from healthy automotive demand, AK Steel also said that base prices for its automotive exhaust grades would be increased by two to four cents a pound.

Energy

Electricity companies are expected to account for 67 per cent (\$7 billion) of IT spending by Western European utilities in 2013

Western Europe Utilities Industry IT Spending 2012-2017 Forecast, a report from IDC Energy Insights, indicates that the outlay by that industry for information technology (IT) will

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reach \$12.7bn by the end of the period. Software spending is expected to see the most significant boom, growing at a CAGR (compounded annual growth rate) of 7.4 per cent to reach \$3.2bn by 2017.

The outlook is likewise positive for IT services, expected to grow at 4.9 per cent. At a significantly below-average rate of 0.7 per cent, the hardware sector will barely grow at all.

In the nearer term, IDC Energy Insights (Framingham, Massachusetts), expects IT spending by Western European utilities of \$10.4bn in 2013, with electricity companies accounting for 67 per cent (\$7bn) of such spending.

The major portion (62.9 per cent) of the overall total will be dedicated to IT services.

According to Gaia Gallotti, research manager for the market intelligence and advisory firm, Western European utilities are "more than ever" striving to make the most of every dollar spent to achieve operational excellence and reduce inefficiencies.

However, she wrote, "The need to comply with energy policies and regulation will continue to drive ICT (information and communications technology) investments, translating into an estimated total Western European utilities' 2012–2017 CAGR of 4.9 per cent."

Perceiving 'an existential threat', US utility companies join forces against a tiny rival: rooftop solar electricity

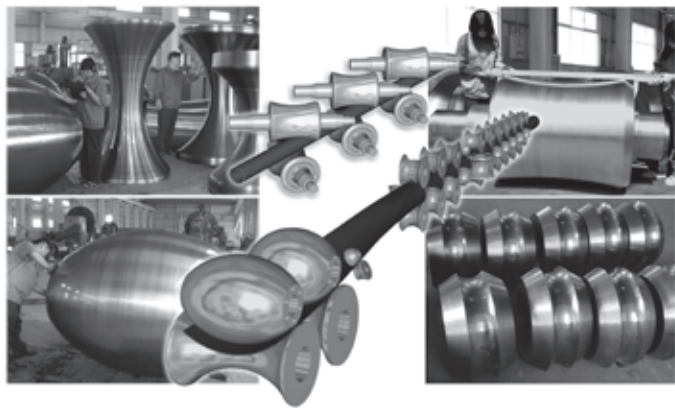
"We have found an amicable solution that will result in a new equilibrium on the European solar panel market at a sustainable price level." The solution, announced by Karel De Gucht, the European trade commissioner, would settle a dispute over exports of low-cost solar panels from China. The deal announced in Brussels on 27 July will require some implementing. Fiercely criticised by the European manufacturers that had filed the complaint against the Chinese exporters, it also complicates a similar dispute between the US and China. But Mr De Gucht's news averted the immediate threat of a wider trade war between two of the world's largest economies.

It remains to be seen whether a smaller-scale but quite an acrimonious dispute over solar panels, brewing in the US, has a chance of even a stopgap resolution. Diane Cardwell summarised the situation in the *International Herald Tribune*: For years, power companies have watched warily as solar panels have sprouted across the nation's rooftops. Now, they are fighting hard to slow the spread. Ms Cardwell wrote, "Alarmed by what they say has become an existential threat to their business, utility companies are moving to roll back

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government incentives aimed at promoting solar energy and other renewable sources of power. At stake, the companies say, is nothing less than the future of the American electricity industry." ("On Rooftops, a Rival for Utilities," 26 July)

According to the US Energy Information Administration, rooftop solar electricity – the economics of which often depend on government incentives and mandates – accounts for less than a quarter of 1 per cent of the nation's power generation. And yet, as reported in the *Herald Tribune*, industry executives claim that such power sources could ultimately threaten the ability of traditional utilities to maintain the nation's electricity grid. "We did not get in front of this disruption," Clark Gellings, a fellow at the Electric Power Research Institute, a non-profit arm of the industry, said during a panel discussion at the annual utility convention in June. "It may be too late."

Advocates of renewable energy say that such sentiments are wildly overblown. For now, solar industry executives say, the government needs to help make the economics of renewable power work for ordinary Americans. Without incentives, the young industry might wither: and so might its potential profits, Ms Cardwell observed.

➤ At the heart of the fight is a credit system called net metering, which pays residential and commercial customers for excess renewable energy they sell back to utilities. According to the US Energy Department, currently, 43

states, the District of Columbia, and four territories offer a form of the incentive. The battle lines over the application of this system are drawn among energy executives, lawmakers and regulators across the country.

Utilities in California won a concession from the state legislature, which ordered the Public Utilities Commission to conduct a study to determine the costs and benefits of rooftop solar to both customers and the power grid, with an eye toward retooling the net metering policy. Results of the study are due to be published before the end of the year.

Oil and gas

After investing heavily in new equipment to process Canadian tar sands, refiners in the US are wrong-footed by their own country's shale boom

Until recently it was believed that all the world's "easy oil" had been found and that only extreme oil – so called for the rigours it imposes on explorers and drillers – remains. Then the US shale boom unlocked vast quantities of light, sweet crude. Without fear of contradiction, Matthew Philips, an

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associate editor for *Bloomberg Businessweek* in New York, pronounced it “some of the best oil on earth.” Not the least of the light oil’s attributes is that it is readily refined into gasoline, and this has confounded American refiners who responded promptly when heavy mining equipment in western Canada began teasing bitumen out of tons of dirt and sand. Hard to extract, this heavy crude is also hard to refine. US refiners invested some \$20bn in new equipment designed to process thicker types of oil.

The plentiful light oil coming out of North Dakota and west Texas changed the picture in another way: it quickly brought down the price of domestic crude. Starting in 2011, West Texas Intermediate (WTI) – the benchmark for US light, sweet crude – began trading at a discount to Brent, its international equivalent. From March 2011 to March 2013, a barrel of WTI was, on average, about \$17 cheaper than a barrel of Brent. But, as reported by Mr Philips, by midsummer the price of WTI had surged nearly 25 per cent, rising from \$86 a barrel in April to above \$107 on 1 August. With the discount now under \$2, all that new US crude was still of high quality but no longer cheap. Alert to a chance to finally recoup their investment, domestic refiners began casting about for cheap heavy oil.

An attractive source lay near at hand. Since the end of June, Mexican heavy crude had traded at a discount to WTI. As of 2 August, a barrel of Mexican Mayan crude was \$8 cheaper than a barrel of WTI. US imports of Mexican crude reflected that discount, rising from an all-time low set in March. As it happens, Adam Sieminski, who heads the US Energy Information Administration (EIA), had been talking publicly for more than a year about a swap of US light, sweet crude for heavy, sour oil. “When I first took over I said we should start thinking about [it],” he said in a recent interview. “The first place to look should be Mexico.”

MEXICO A STAND-IN FOR CANADA?

The Mexican option may seem attractive, but *Bloomberg’s* Mr Philips is not persuaded. (“Swapping US Crude for Mexico’s Heavy Oil Won’t Really Work,” 6 August). Here, briefly, are his objections:

- Mexico uses heavy oil to generate electricity. The EIA chief reasons that sending more light crude to Mexico could help the country make the transition to using cheap, US natural gas in its power plants. While the amount of natural gas the US exports to Mexico has tripled in the last three years, swapping it for more expensive lighter crude is improbable;
- Mexico’s oil production is falling. President Enrique Peña Nieto has proposed breaking the state-owned monopoly on oil production and allowing private companies to invest in oil and gas operations. That could spur Mexican production, but real gains are probably years away;
- The US has been so successful at cutting oil imports – reducing them by more than a million barrels per day over the 12 months through July 2013 – that its stockpiles are lower than normal. Given tight supplies, said Sam Margolin, an energy analyst at Cowen and Company, “A swap with Mexico just doesn’t make sense right now. Plus, I’m not sure how it really helps Mexico.”

➤ In Mr Philips’s view, what US refiners “really want” is Canada’s heavy crude. He wrote, “While Mexican oil has only just started trading at a discount to WTI, heavy oil from

Western Canada has been cheaper for years. A barrel of West Canada Select is \$21 cheaper than a barrel of WTI, twice the discount that the Mexican crude offers.” Valero, the biggest refiner in the US, started its own oil swap with Canada this year, sending at least two shipments of west Texas light crude to its refinery in Quebec. This facility is set up to process lighter oil rather than the heavier grades that Valero’s Texas refiners are now capable of handling. Said Valero spokesman Bill Day, “We would like to increase heavier supplies from Canada and continue sending Texas crude up there.” [Mr Philips’s translation: Valero wants the Keystone XL pipeline to be approved.]

➤ In mid-August, as the Obama administration inched closer to a decision on the pipeline expansion that would transport heavy crude from the Canadian province of Alberta through the states of Montana, South Dakota, Nebraska, Kansas, Oklahoma and Texas, costly cleanup efforts in two US communities devastated by oil spills highlighted potential hazards. Even if Keystone XL does win approval, fluctuating oil prices make it unclear that the US refiners will ever recover their collective investment in heavy oil processing. “They’ll never make that money back,” Fadel Gheit, an energy analyst at Oppenheimer, told *Bloomberg Businessweek*. “It’s gone.”

Automotive

In a banner year for car and truck sales in the US, parts suppliers can be overwhelmed by the faster pace

With their sales likely to reach 16 million for 2013, American automakers are poised to send more new cars and trucks into the market next year than shoppers have seen in about a decade. But, writing from Detroit, *Free Press* business writer Alisa Priddle sounded a cautionary note: it takes only one missing part to delay or stop production. Confident of selling more cars if it could make more, Ford Motor Co is squeezing extra production from all of its domestic plants. Jim Tetreault, Ford vice-president of North American manufacturing, told Ms Priddle that the company increased the line rate at almost every plant this year, even after a 3 per cent increase in capacity in 2012.

On the supply side, a May survey of its members by the Original Equipment Suppliers Assn (OESA) found median capacity use of 75 per cent. And Federal Reserve Board data showed auto suppliers operating at 79 per cent capacity in June, further suggesting a comfort zone. The problem is, according to the *Free Press*, that “about 25 per cent of suppliers are running close to 100 per cent capacity, leaving no room for hiccups or error.” Sectors experiencing the most shortages are powertrain and electronics, especially highly machined components. Some suppliers can tap underused plants in another region – Europe, say – to meet demand in North America. But Staci Kroon, president of Eaton Automotive (Beachwood, Ohio), pointed out that this expedient raises transportation costs and can disrupt JIT (just-in-time) delivery schedules. (“Auto Suppliers Scramble to Keep Lines Running,” 11 August). With automakers set to launch 41 new vehicles in the US next year, up from 17 this year, Neil DeKoker, CEO of OESA, said that 75-80 per cent of

auto parts suppliers have been preparing themselves. Those who have not invested significantly in plant and personnel know they are in danger of losing business to a competitor, Mr DeKoker said. Fortunately, the automakers well understand the importance of their suppliers to the common enterprise. General Motors has put 200 quality engineers in the field to help mitigate stress on the supply chain. Ford, too, has some 200 engineers working to prevent bottlenecks and quality issues. Bill Krueger, who oversees purchasing and manufacturing for Nissan Americas, summed up for the producers: "We need suppliers to cooperate to maximise production opportunity."

➤ Mr Tetreault, of Ford, said he meets twice a week with suppliers and purchasing executives about any strains in the system. If there is a shortage of radios, or some other component, sometimes Ford will adjust the mix of vehicles and equipment packages. "It's something we do really well," Mr Tetreault told the *Free Press*. "We are all world-class scramblers." Birgit Behrendt, who heads Ford purchasing for North and South America, said the automaker is also rolling out the next phase of a programme aimed at bringing 104 select suppliers into vehicle development sooner.

Elsewhere in automotive . . .

➤ Honda Motor Co, which already had invested nearly \$2.7bn in its North American operations over the previous

three years, on 8 August said that it will spend \$215mn more in Ohio. About \$180mn will go to expand work on aluminium die casting and parts production at the company's engine plant in Anna. In addition to a training centre for Anna, Honda plans a \$35mn training centre for workers and engineers at its Marysville auto assembly plant. Honda says that the building will also house a heritage centre to document the Japanese company's history in North America.

➤ Despite high hopes for electric cars, results so far have fallen well short of the million of them President Barack Obama predicted would be on American roads by the middle of this decade. According to the auto research site Edmunds.com, only about 36,000 battery-powered vehicles were sold in the US this year through July, many of them at a heavy discount from the sticker price. In marked contrast, automakers sold some 298,000 hybrids over the same period, and the cars which run alternately on gasoline and battery power may confidently be said to have entered the mainstream of the American market. With more than 40 conventional hybrids available, these models account for about 3 per cent of overall industry sales, and market leader Toyota Prius is one of the top ten best-selling passenger cars. Reasons for the popularity of hybrids seem evident. They cost less than most electric models and, unlike battery-powered cars, they impose no limitations on driving range. Moreover hybrid technology, having been tested over time in real-world driving conditions, is no longer dauntingly mysterious to American car buyers.

Dorothy Fabian, Features Editor (USA)

NEW PRODUCT

➤➤➤ Tube Max Scarf ➤➤➤

Flying cut-off (single and twin cut off)

● **Longer service life achieved by lower damage rate**

Features

- Optimized tooth shape, tooth grade, and advanced coating achieve longer service life.
- The embedded tooth and optimized gullet shape achieve longer service life on cutting welding bead smoothly.



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KANEFUSA

<http://www.kanefusa.net>



Chicago, USA

18-21 November 2013



■ Venue

McCormick Place
2301 S Lake Shore Drive,
Chicago, Illinois 60616, USA

■ Organisers

Fabricators & Manufacturers
Association, International
Tel: +1 815 399 8775
Email: information@fabtechexpo.com

■ Opening times

18 November: 10:00 – 18:00
19 November: 9:00 – 17:00
20 November: 9:00 – 17:00
21 November: 9:00 – 15:00

Whether or not fabrication and fabulous have a common root, to many thousands of visitors to FABTECH since its inception the two words have made a natural conjunction for some time now.

The 2013 edition of FABTECH expects to welcome 35,000 attendees to examine the best that more than 1,500 exhibitors have to show them. But, despite its comprehensiveness, North America's largest metal forming, fabricating and welding exposition never loses touch with its fundamental purpose: to bring the buyer and the seller together in an environment that fosters the lasting business relationships essential to them both.

As for the programmes on core technologies and processes on which FABTECH has built its renown, the list begins with "Arc Welding" and ends with "Welding Machines". In between can be found every category of interest to someone requiring to be fully informed about state-of-the-art metalworking.

Thousands of live equipment demonstrations of metal forming, tube and pipe fabrication, stamping, lasers, thermal spray, welding, and every conceivable related technology are on show. This time, there will be even more to see, of the most advanced processes and equipment on offer.



www.fabtechexpo.com

V304 plasma and oxy-fuel cutting system

DURING Fabtech in Chicago, Voortman will show for the first time the Voortman V304 plate processing system on booth S1773. The V304 with multi-torch oxy-fuel cutting, plasma straight cutting and plasma beveling will be officially revealed to the public. Also the V320 combined plate cutting and drilling system as well as the V630 beam drilling system will be demonstrated.

The V304 is one of the successors of the VCS Compact, VCS Thermo and VCS Multi from the VCS range of plate processing systems. It has a maximum working width of 13 feet and a table length of up to 80 feet. The V304 can process material up to 8" thick. The V304 can be equipped with two plasma torches, six oxy-fuel torches or

a combination of all which makes this system suitable for large production runs and repetitive pieces.

The V304 is one of the new developments in the Voortman plate processing range and has the following new features:

The V304 can be equipped with up to six oxy-fuel torches to achieve a higher output or to cut strips from stock plate simultaneously. The automatic ignition eliminates any manual intervention and thus saves valuable time. The automatic gas supply always provides the cutting torches with the right amount of gas. The oxy-fuel triple torch module was developed for weld preparations and produces X, Y, K or V cuts to simplify further production steps.

The V304 can be supplied with a large variety of plasma sources for different cutting processes and different material thicknesses.

A maximum of two plasma torches can be mounted to the machine for simultaneous cutting plates up to 3.2" with the HPR 400XD or thicker depending on the plasma source. An automatic 3D bevel unit makes it possible to produce X, Y, K or V cuts for weld preparations up to a bevel angle of 50°.

Available on the V304 is True Hole Technology from Hypertherm® and Contour Cut from Kjellberg® to create exceptional hole qualities compared to the conventional cutting methods. An automatic gas control switches from cutting to marking if required and ensures the right gas combination and gas flow during the entire cutting process.

The V304 is equipped with high precision gantry movement by means of double synchronous driven servo drives in combination with double linear guides and helical rack and pinion system. The linear guides are covered to eliminate contamination and extend the working life.

Nesting software: Voortman offers various nesting programs on the V304 from simple nesting software to advanced optimising software for saving valuable time and material.

Voortman – The Netherlands
Website: www.voortman.net



Pipe manufacturing equipment

NAKATA Manufacturing, a provider of support of pipe manufacturing equipment from design to follow-up services, has been developing the next generation of its pipe-making machine: the FF3rd, also known as ODF.

ODF makes use of multiple die blocks, which are connected together and move in the circumferential direction on an

endless track. Due to the continuous constraint on the edge of the strip, both heavy gauge and extra-thin pipes can be formed stably without any slippage between tool surface and forming materials.

With a compact configuration of mill line, there is no need to change any forming die before fin-pass at the

maximum OD range 3:1, with less forming strain than roll forming and higher productivity.

Nakata Mfg, Co, Ltd

– Japan

Fax: +81 6 6303 1905

Email: sales@nakata-mfg.com

Website: www.nakata-mfg.com

Customised 4-way forklifts

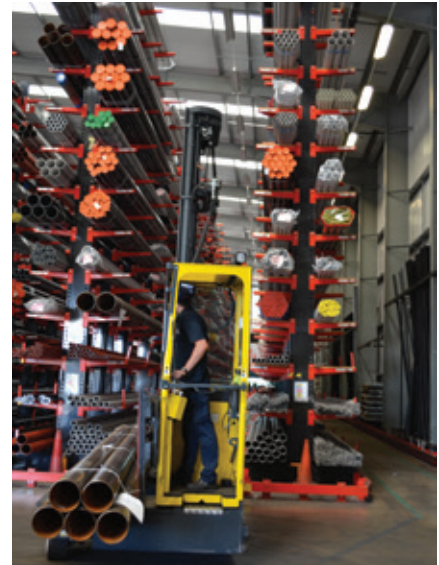
COMBILIFT Ltd manufactures a wide range of customised 4-way forklifts, all of which are designed for the safe and space saving handling and storage of the large and bulky loads typically handled in the fabricating sector. The exhibits on Booth S2381 at this year's Fabtech are a small selection of the products that Combilift manufactures at its HQ in Ireland and exports to over 75 countries worldwide.

Alongside a model from Combilift's original core C Series, exhibits will include a model from the ST stand-on range. This features a very narrow cab for operation in much narrower aisles than the original C series, making it suitable for use in steel and pipe stockholding facilities, for example. The compact counterbalance

design 4-way Combi-CB on show caters for the requirements of operations that need to handle a mix of palletised and long loads.

Combilifts work as counterbalance, sideloader, and narrow-aisle forklifts, and allow for the maximum use of all available storage space. Sideways travel with loads resting on the platform avoids the need for hazardous high-level transportation, significantly improving safety procedures.

With fully synchronised 4-way steering providing manoeuvrability and flexibility of use, Combilifts can be deployed from the initial stages of offloading raw materials, during the manufacturing process, through to the handling, storage and dispatch of finished product.



Combilifts work as counterbalance, sideloader, and narrow-aisle forklifts

Combilift Ltd – Ireland
 Fax: +353 47 80501
 Email: info@combilift.com
 Website: www.combilift.com

Tube, pipe and cutoff mills

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

Rafter has remained busy throughout the recent economic downturn. An RT-3000 automotive tube mill was commissioned this year for the production of drive shaft tubing. The mill is capable of producing tubing up to 127mm OD x 4.8mm wall (5" x 0.188") with a maximum diameter-to-thickness (D/t) ratio of 78:1. The line included a complete strip entry system with vertical strip accumulator through an overseas partnership. All the drive electrics and controls for the mill and entry system were sourced through the US and are serviced locally. Also included was a web-based VPN diagnostic portal that allows Rafter to access the PLC remotely.

In addition to mill equipment, Rafter provides mill accessories. These mainly include weld squeeze boxes, seam orientation units, and turkshead straighteners. In the past year, Rafter has provided many upgrades in these areas.

For 2013, Rafter will offer a new machine design for the roll forming industry. This design will be targeted for custom roll formed profile producers that require high-quality machinery with quick-changeover capabilities. The new machine will be officially introduced in November at the Fabtech International show in Chicago.

Originally started in 1917 as a

roll forming machine builder, the company was purchased, relocated, and transformed into North America's premier tube mill manufacturer in 1988.

Since this time, Rafter Equipment has provided nearly 100 tube mills and more than 400 mill accessory upgrades. Its focus is to provide robust equipment that is simple to operate and maintain, and it supports its equipment through personalised and dedicated after-sales service and spare parts.

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

Rafter Equipment Corp – RT-3000 Tube Forming and Welding Mill



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Moscow, 105062, Russia
Tel: +7 495 411-5353
E-mail: premium@tmk-group.com

Bending complex tube systems flexibly

THERE must be enough room for the broadest range of pipes such as exhaust gas return tubes, injection and cooling water lines in the most confined installation spaces in aeroplanes and cars. To make production of these complex curve contours with the smallest bending radii easier as well as more time – and cost-effective, German tube bending machine manufacturer Schwarze-Robitec has developed the fully electric CNC 40 Rotary. This machine is also suited to the tubular steel furniture industry. At this year's Fabtech, the company will present the machine together with North American distributor Trilogy Machinery, Inc on Stand S 3938.

In just one operation, the CNC 40 Rotary tube cold bending machine



CNC 40 Rotary tube bending machine

processes tubes in all current materials, such as aluminium, titanium, copper, steel and stainless steel, with a diameter from 6 to 40mm.

Even tubes with preformed contours on the straight tube can be bent flexibly to the right and left.

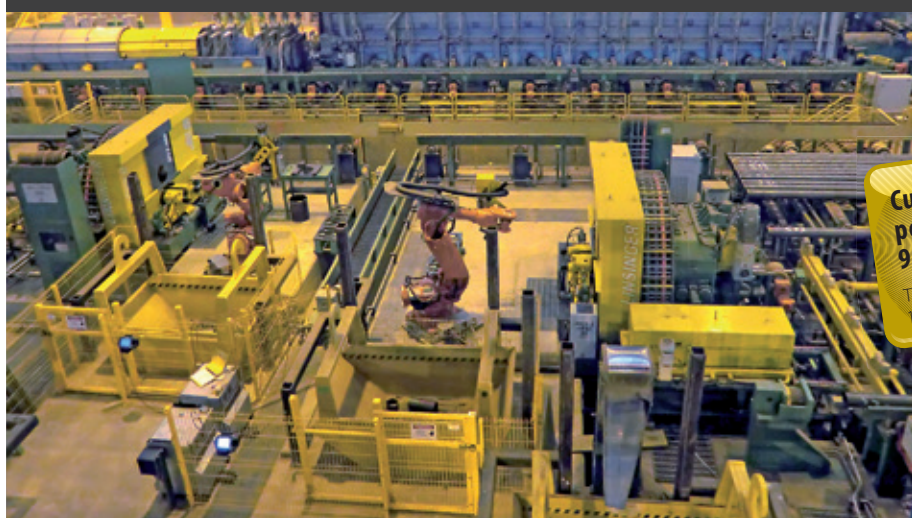
“With the bend former return integrated as standard, complex bend contours can be removed from the interfering contour areas with no problem after bending,” Bert Zorn explained. The result is a reduced cycle

time with no loss of bending freedom and avoidance of damage to the tube surface. The machine works with up to 13 CNC axes. “In the development, we have been more mindful of ergonomic design and a high level of user friendliness,” Mr Zorn added. The machine is also geared for all requirements with respect to partially and fully automated production.

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

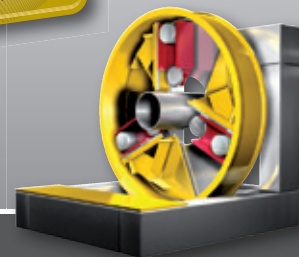
Stationary tube cut-off machine Multi-Cut for tubes

LINSINGER
 Austria



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Tube Ø 244 x 13,5 mm, P110



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www.linsinger.com

Medium and large diameter fully electric bending machines

FOR many years the market has been requesting Crippa to supply machinery and solutions in the field of large-sized tubes (between 100 and 150mm diameter).

However, despite having several projects in the drawer that have been kept in continuous progress and updated at the pace of technology progress and daily experience in the field, the company has always preferred to focus its offering on lower sized machinery in diameters up to 80mm.

After completing the "full electric" offering in diameters up to 80mm, Crippa has entered into the large diameter field with an innovative fully electric machinery platform, which uses the entire experience from Crippa that was acquired across over 60 years of activity, and meets customers' needs and market trends. The mission is to reaffirm the Crippa role as the preeminent field reference in large diameter tube manipulation.

The fully electric offering for large diameters was developed through machinery that is built based on specific objectives and issues, such as conceptual and operating simplicity, full structural rigidity, flexibility, sustainability considered as energy saving, ergonomics, ecology, and using state-of-the-art technology, and characterised by the greatest operating flexibility and the widest possibility of customisation, tailor made according to users' needs.

There are two new models of these



An example of a Crippa bend

bending machines, the CA N114 and the CA N150.

Some main characteristics and functions include: tube-bending machines for tubes to 114 and 150mm diameter; the concept of these bending machines is to reach the utmost structural rigidity on several tube-bending planes, combined with construction simplicity and the use, where possible, of direct control transmission.

Wide use of digital "full electric" axes, being activated and controlled by servo motors and Siemens CNC, which compared with hydraulic machinery, ensures higher precision, repetitiveness and ecological characteristics such as energy saving, silence and cleanliness; the use of state-of-the-art electronic devices ensures the minimising of the electrical power used during manufacturing with a considerable economic saving over time.

The time schedules for changing tooling and programming are minimised as no mechanical adjustments are required.

The roller bearing guides for mounting and scrolling of equipment promote the precise positioning and controllability of all axes.

Existing tooling sets owned by customers may be used, thanks to the high vertical Z-axis excursion and particular mechanical solutions, eg

the customisable die holder flange in the area where the equipment is mounted.

The one-block bend arm is built by building in the clamp-blocking axle with the benefit of rigidity and precision, as well as the possibility of bending tubes with very small pipe radius; knife-shaped tube cutting device which can be built on the machines for sequential cutting operations in the same manufacturing cycle.

With dramatic reductions in process scrap achievable; possibility of integrating the machinery with "tangent boost", a device that limits the swerve on the last curve of any bent tube, with considerable material saving.

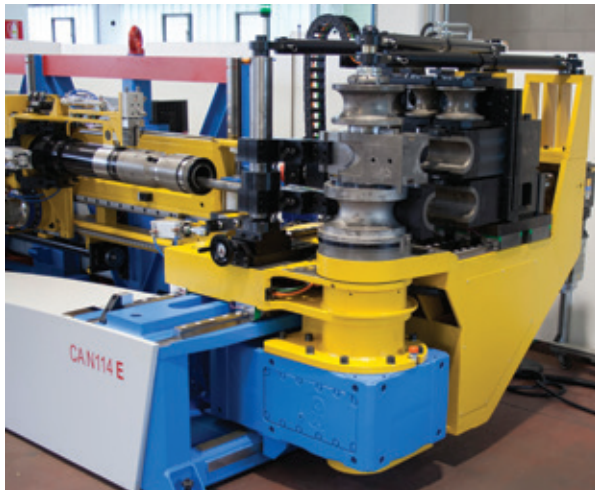
Bending machines that can be fully programmable with the use of the graphic interfacing Software "UII" developed by Crippa, which ensures the possibility of carrying out accurate feasibility analysis and accurately simulating the bending; thus ensuring a fast manufacturing stage and successful manufacturing from the first sampling.

The fine-tuning of program steps can be achieved by optimising the program generated by a graphic simulator through ISO code processing; the number of working planes is variable according to the geometry of the tube to be bent and any different bending radii; guarantee of bending with a very high diameter/width ratio and a very small bending radius; possibility of bending with variable radius; ease of tube loading and unloading either in manual or automatic mode, thanks to a very ergonomic loading area; right or left bending sense; and high repeatability and precision but also reliability thanks to the use of electrical/electronic components and devices, which are currently some of the best on the market.

The new technology is suitable for many applications, especially for those who operate in automotive (lorries and earth movement), railway, aviation and plant design and for people who have to face hard bends on large diameter tubes, narrow and often small bending radius.

Crippa – Italy
Email: carlo.fratini@crippa.it
Website: www.crippa.it

Bending of up to 150mm can now be undertaken

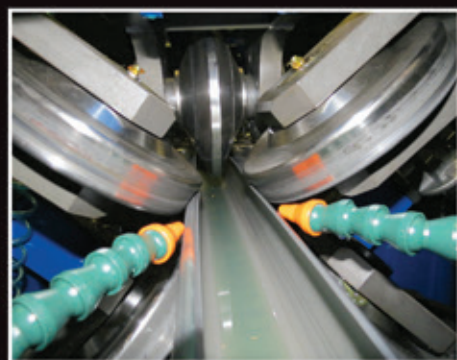




TUBE MILLS



LINEAR CAGE FORMING



PATENTED

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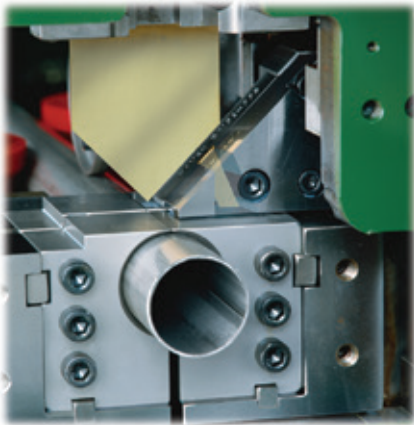
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Haven Manufacturing visits Chicago show

HAVEN Manufacturing will exhibit at the Fabtech 2013 show in Chicago this Autumn. This year's show, to be held 18-21 November at the McCormick Place Convention Center, is expected to attract over 35,000 visitors. With over 1,500 exhibitors showing off products focusing on metal cutting, tooling, work holding, forming, fabricating, and finishing systems along with the control systems, CAD-CAM systems, and automation tools to get the job done, Haven Manufacturing did not want to miss an opportunity to show off the quality, reliability, and reputation of its products to customers who have not had the chance to experience the increased production and lower maintenance costs enjoyed by Haven customers worldwide.

Haven Manufacturing, best known for perfecting the dual-blade tube shearing process, will be showing a variety of products designed for shearing, cutting, sawing, chamfering, trimming, parting, and de-burring tube and bar finished parts.



It will also show systems designed to aid manufacturers in handling, inspecting and processing those parts. Although Haven's product line is too broad and too easily customised to demonstrate all of the material handling and processing expertise in a single trade show, the company hopes to give potential customers an indication of their expertise by featuring both Haven and SOCO Machinery products through video demonstration. Haven formed a partnership with SOCO Machinery in order to more effectively provide service and products to the tube and bar processing market.

According to Dave Erickson, president of Haven: "Our customers have always thought of Haven as the leading manufacturer of tube cutting equipment. We remain committed to our traditional markets, but our partnership with SOCO

Machinery, coupled with our expertise in designing and manufacturing systems for material handling, appeals to manufacturers beyond our traditional market segments. Haven's ability to adapt to a variety of industries and applications combined with our company's capability to design and build special one-of-a-kind machines and handling systems, gives Haven the ability to help manufacturers that might not be as familiar with our products."

Haven Manufacturing is proud of its 30 years of manufacturing tube and bar cutting, shearing, cold saw, and material handling systems. Visit Haven at Booth S3519 to learn more about its products and applications.

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

Tube process machinery

AT Fabtech, Burr Oak Tool Inc will discuss its line of production and tube processing machinery, primarily for heat transfer applications.

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

quality machines, service and parts to customers worldwide reinforces Burr Oak's slogan, "Global experience... local solutions."

Founded in 1944, Burr Oak Tool Inc has remained family owned and operated in Sturgis, Michigan, USA for 65 years. Its history represents both domestic and export markets in approximately 70 countries. The management team

represents over 100 years of experience in the industry of heating and air conditioning manufacture.

Its corporate officers and employees are committed to quality and service to the customer.

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

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The designing, manufacturing and assembling of machines and integrated lines for the finishing of API and OCTG tubes for us is not a novelty but a sign of continuity, thanks to a back-up experience gained from more than thirty lines operating around the world and supplied to the most important makers of ERW and Seamless tubes (**ALL MADE IN ITALY**).

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Rotary-draw tube bending tools

BEND Tooling Inc will exhibit a line of rotary-draw tube-bending tools at Fabtech 2013, on Booth 4077 in the Tube & Pipe Pavilion. The company will display inserted mandrels and wipers along with die sets.

The company manufactures tooling for most makes and models of rotary-

draw tube-bending machines for 25-140mm (1" to 5.5") diameter tubing.

It also manufactures tooling for square and rectangular tubing, and has supplied tube-bending companies throughout the world for over 25 years.

Bend Tooling is a supplier of tooling for the OEM automotive, performance automotive and recreational vehicle industries.

Its line of fully machined (no hand work), precision finished, close-tolerance tooling, is suitable for tube-bending companies that require reliably consistent replacement tooling for quick, repeatable set-ups.

The company offers mandrels in inserted and solid-body models, with either connecting links or cables.

It also offers wipers in inserted and solid-body models.

Its replaceable mandrel and wiper inserts are fully machined to close tolerances, so that machine set-up does not have to be altered when changing inserts.

The solid-body mandrels and wipers are suitable for extreme-pressure and non-round tube-bending.

Bend Tooling's die sets offer a full range of features and are custom-made to the specifications of machine and tube bending applications.

This includes stacked sets with compound clamps and fixed reaches.

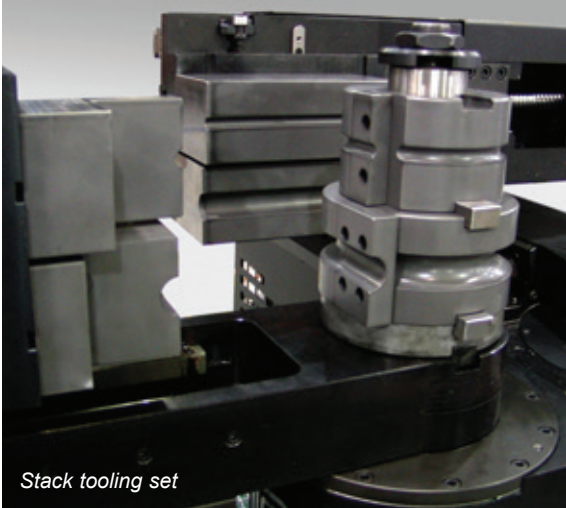
The company also offers effective tapered-leaf style die sets for square and rectangular tube bends, which can be used on almost all machines without additional mechanisms for loading and releasing the tubing.

Bend Tooling, Inc
- USA

Fax: +1 616 454 9958

Email: info@bendtooling.com

Website: www.bendtooling.com



Stack tooling set

SHANGHAI YUEYUECHAO STEEL TUBE

Established in 1994, Shanghai Yueyuechao Steel Pipe Group mainly deal with seamless steel pipe, seamless square/rectangle steel pipe, large OD LSAW manufacture. The specification for LSAW of Shanghai Yueyuechao Manufacture Tube Co., Ltd is $\Phi 356\sim 1422 \times 8\sim 60\text{mm}$. The specification of cold drawn seamless steel tube for Jiangyin Yueyuechao Manufacture Tube Co., Ltd, ranges from $\Phi 6\sim 426 \times 1\sim 20\text{mm}$, hot expanded tube specification ranges from $\Phi 168\sim 630 \times 4\sim 50\text{mm}$. Quality standards are API/ASTM/GB/ISO/DNV/JIS.



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Web site: <http://www.yyc88.com>
A D D: 10th floor, 1588#, Youyi Rd.,
Shanghai



Dependable construction and performance

THE Heim Group has been designing and manufacturing presses for over 65 years.

The company's Heim and Rouselle press brands are known worldwide for their quality construction and performance.

Built in the Chicago factory, using American-made components, whenever possible, the presses have a reputation for dependable operation, competitive price and superior support from dealers and inside staff.

Each Maxi Stamper straight side press is engineered with the latest CAD technology and built by experienced craftsmen.

Every aspect of the machine is manufactured with high-performance, unmatched accuracy and years of reliable use in operation.

This series of eccentric-gear tie rod straight side presses is available in the 300 to 1,000-ton range. Users select the stroke, speed, shut height and bed area.

Standard drive rating is 0.5" above bottom stroke, but other options are available to meet all applications and energy requirements.

Likewise, customers may select a more rigid frame deflection from the standard 0.002"/ft.

Smaller press requirements are served by the Maxi Stamper II series of C-frame, front-to-back shaft designed presses in the 90 to 300-ton range.

Built with the same heavy-duty standard designs, these presses have similar features and performance to straight side presses.

Maxi Stamper II presses are also offered in a solid frame design for applications sensitive to frame deflection.

On the Heim booth, a before/after remanufactured press and a battery of other services will be displayed. Heim maintains a considerable inventory of remanufactured presses, plus offers the capability to retrofit or rebuild any Heim, Rousselle or select other brand of presses in the market.

Booth personnel will include company president Katie Heim and other executive team members, as well as technical and sales personnel.

The company is exhibiting at Booth S4363 during Fabtech in Chicago.

The Heim Group – Germany
 Email: info@theheimgroup.com
 Website: www.theheimgroup.com



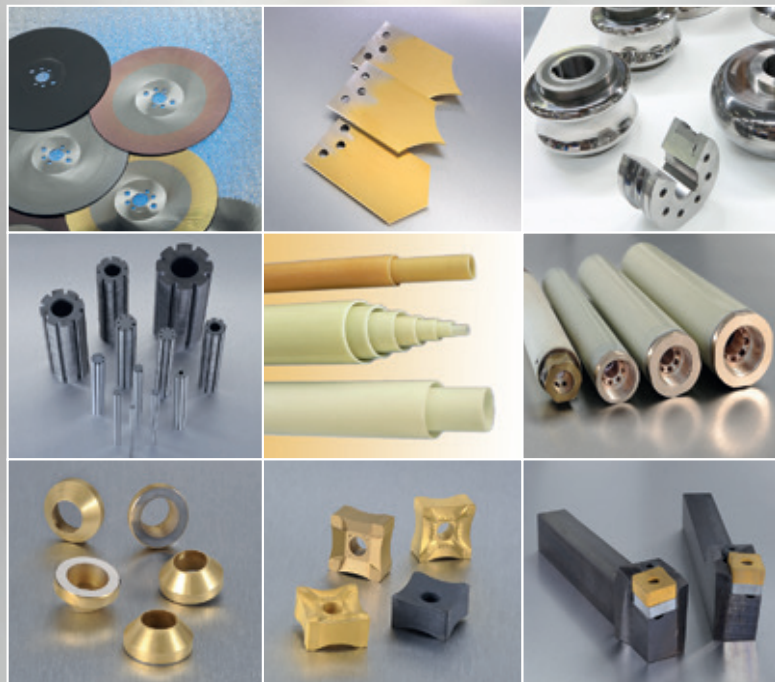
The Heim press

C O N T R A S T

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- Carbide base plates
- Tool holders
- Cutting rings



- Inside scarfing tools
- Rolls for tubes
- Capacitors for H.F. welders
- Tube's cleaners

Tube and pipe spray guns

WALTHER Pilot North America will be showcasing several pieces of equipment that have proven to be valuable to the tube and pipe industry. In addition, several new items will be on display that will continue to be major contributors to tube and pipe mills across North America.

The Pilot WA 81, dubbed the 'Pipe Crawler', is a specially designed spray gun for coating the inner surfaces of tubes and pipes. It is made entirely of

stainless steel and features a special disk nozzle that produces a 360° circular spray pattern. With an outer diameter of only 20mm, it is compact enough to fit into very small pipes. It can also be drawn along on a special carriage to facilitate the coating of any length tube or pipe.

The Pilot Signier is a versatile and reliable automatic marking gun. Many steel and pipe mills across North America have utilised this spray gun as part of their part identification systems. The Pilot Signier features a stainless steel needle and nozzle and virtually zero overspray. It is available in standard, recirculation, flushing, and recirculation and flushing versions.

Also available is the Pilot Signier Membrane, a variation of the Pilot Signier that uses a diaphragm as opposed to a needle seal

packing. This is particularly helpful when working with abrasive or moisture-curing material. The membrane ensures higher durability when working with these materials, and delivers the same performance as the Pilot Signier.

For spraying systems where reduced space is a major requirement, the Pilot WA 51 features a small profile (20mm width, and length of 68.5mm for round jet and 71mm for wide jet), which allows spraying in even the tightest confines. It also features stainless steel wetted parts, which allows spraying of water-based and solvent-based media without issue.

Walther Pilot North America will also have a number of other system components on display, including pressure tanks, nozzle extensions with 45, 90 and 360° spray patterns, manual guns, automatic guns and pressure pumps.

Walther Pilot North America – USA
Email: sales@waltherpilotna.com
Website: www.waltherpilotna.com



Pilot Signier



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Welding technology



Photo: K-TIG – Australia

Many of the considerations that inform tube welding are basic to the method: selection of materials, joint preparation, cleanliness. But particular metals – stainless and carbon steel, aluminium, nickel-alloy – call for welding protocols that are as distinctive as the materials themselves.

Today's welding professionals are the successors of those who learned from experience not to take a brush that has been used on a stainless or carbon steel workpiece to one made of aluminium.

To the companies represented here, the differences – in grain structure, melting point, thermal conductivity – among metals, and among the welding techniques that these differences dictate, are very well understood.

Perfect welds may be taken for granted by the customer of a state-of-the-art tubing plant. Why? Because, gained the hard way, respect for the individuality of metal feedstocks is second nature to the work force.

Axxair facing tools

AS a global player in the tube processing world, Axxair has enlarged its offering of innovative facing tools for thin wall tubes. This new DC range is complementary to the orbital cutting and welding machines.

They are innovative as they offer a unique quick fit system allowing the customer to easily change from one head to another in order to cover a wider range of tubes with same power tools. The very powerful battery drill can therefore be used as a normal drill with a chuck for drilling holes or just for

screwing and can be plugged onto Axxair heads for facing tubes that usually need to be squared before automatic welding.

Squaring a tube is requested to avoid chips to scratch electro polished tubes mainly in semiconductor and pharmaceutical industries to get the end of the tube perpendicular when it has been cut with a band, for example. Orbital welding machines need precise preps in order to ensure the welds are sealed correctly: the orbital cutting machines and/or the facing tools are the best response.



The 2" head offers two additional new features: endless cutting tool adjustment from outside that offers optimal use of all the edge of the tool bits to get better productivity and a planetary reduction integrated in the head itself for maximising torque from the battery drill and therefore always allowing correct speed adjustments.

Last but not least, Axxair has launched a DC 221, allowing facing up to 8" tubes with concentric clamping coming from its cutting range. The main advantage is to avoid the use of clamping collets for each diameter that needs to be faced. The concentric clamping system through six clamping jaws offers a unique wide range from 2" to 8".

The 2" and 8" machines can also use an angle tool holder for making small bevelling when requested for welding.

Wherever and whenever you have to work on thin wall tubing, Axxair can give an optimised response through orbital cutting, facing and welding machines. Those machines are shown on the website www.axxair.com through online videos to give you an exact idea of their advantages.

Axxair – France
Website: www.axxair.com

SE2-PTD programmable saddle and elbow cutter

BUG-O Systems is an expert in motion control and automating cutting and welding. It offers a large product range including an entire line of circle burner and circle welders and pipe cutting and profiling machines.

The SE2-PTD is a programmable saddle and elbow cutter by way of its pendant, capable of passing 2" to 4¾" (50mm to 120mm) through the centre of the machine. The machine can also cut pipe larger than 4¾" by chucking on the face of the unit; maximum capacity is 16". When the machine is in pipe mode the operator has the ability to make the following preprogrammed cuts by entering only the pipe size data required. The cuts are saddles, offset saddle, laterals, mitres and holes. A second mode can be selected to cut customised shapes in pipe. Also available are two

programs that interface the saddle and elbow cutter to your PC. Rotation speeds range from 0.3rpm to 3.7rpm. This machine can be set up for oxy-fuel or the plasma process. Although this machine is designed to perform a great deal of work, it is an extremely economical choice and portable enough to sit on a worktable.

Bug-O Systems was originally developed to fabricate the landing craft used on D-Day during World War II. Since that time, the company has been continually developing new products to give customers an excellent return on their investment. From the St Louis Arch to the Disney Cruise ships, and now pipelines all around the world, Bug-O's full line of products and components can be designed to fit virtually any application.

Bug-O Systems – USA
Website: www.bug-o.com





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Robot welding technology in pipe shops

THE production of pipe spools for shipbuilding is a complex and time-consuming process. Weld quality and dealing with tolerances are just a few of the critical factors for effective and efficient production in pipe shops. Kranendonk 'Smart robotics' has introduced a solution that automates pipe spool production: a flange assembly cell. This robot production system takes care of assembly and welding of flanges to tubes, with high quality results.

The flange assembly cell, already in use at shipyards in Holland and Singapore, extracts the information it needs directly from the end user's 3D CAD system. As a result, manual programming of the production line is not needed. This makes the cell highly flexible and capable of handling continuously changing designs. Production tasks are centrally controlled which means that the system can be run by just one operator.

The development of the robotic pipe shop is a result of a thorough analysis of pipe spool production. Results indicated that by welding flanges before bending pipes, 90 per cent less rework was needed for pipe fitting. This resulted in a change in production flow. The robotic pipe shop thus brings a significant competitive advantage over traditional pipe spool production.

For highly accurate flange assembly, Kranendonk developed a robot vision system. Vision technology enables robots to recognise flange and tube location, size, centre point and bolt holes. This ensures smooth assembly in the correct orientation for any pipe length. After picking and placing flanges, two of the four robots perform tack welding on both sides of the pipe.

Final MIG/MAG welding is done by four robots simultaneously at the inner and outer side of the flange. A clamping unit rotates the tube at welding speed. Welding settings such as voltage are automatically applied by the central control system. Process data can be monitored as well as logged for quality purposes. Thanks to integrated seam tracking in the ESAB welding equipment, the system compensates for product tolerances (ie unroundness) to ensure accurate end products.

The system can be integrated in a fully automated pipe shop to achieve a highly efficient production flow. This includes transport buffers, a high-rise storage for 300 pipes, saw and grinding tool. Smart logistics software monitors each pipe individually to finish

a pipe every four minutes. In this way production time and cost per pipe spool is drastically reduced while weld quality is increased.

Kranendonk – The Netherlands
Website: www.kranendonk.com

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Automated plasma power sources deliver improved productivity

VICTOR Thermal Dynamics® has launched the Ultra-Cut® XT Series of power sources for automated plasma cutting as part of its integrated system of components that deliver higher productivity and lower cutting costs. "The Ultra-Cut XT series is the most advanced power supply available today," says Martin Quinn, CEO, Victor Technologies. "This next generation series provides exceptional cost-performance benefits, and supports our integrated approach of optimising each component at the cutting table, leading to more profitable plasma cutting."

The Ultra-Cut XT systems' superior cut quality enables parts to go directly from the cutting table to welding, painting or assembly without expensive secondary operations. The Ultra-Cut XT delivers ISO Class 3 or better cuts on any material from gauge to 2" thick, noticeably reducing bevel and the need for post-cut finishing.

On non-ferrous materials, the Ultra-Cut XT produces superior cut quality and a lower cost per cut using the Water Mist Secondary (WMS™) process, which incorporates nitrogen as the plasma gas and ordinary tap water for shielding. On stainless steel, the WMS process cuts up to 300 percent faster and lowers cost-per cut by 20 percent or more compared to systems that use argon-hydrogen for the plasma gas.

With the ability to cut 1" thick steel at 80 inches per minute (IPM) and 2" thick steel at 30 IPM, the Ultra-Cut XT 400 can lower the cost per cut and makes it competitive with the oxy-fuel process.

The Ultra-Cut XT also lowers the cost per cut by using HeavyCut® consumables for cutting at 300 and 400 amps. These consumables use a multiple hafnium insert as opposed to a single insert and feature a two-piece tip that runs cooler.

Better cooling extends parts life and



Ultra-Cut XT 300

cut accuracy across the life of the tip, especially when piercing at higher amperages. These combined features extend consumables life by up to 45 percent, which in turn reduces cut cost per foot.

Compared to previous models, Ultra-Cut XT systems draw 20 per cent less primary current and have an average electrical efficiency of 92 per cent. They meet EU Level Five efficiency standards and help companies everywhere lower utility bills.

The Ultra-Cut XT series is available in 100 to 400-amp configurations for cutting plate up to 2" (50mm) thick. All models feature a common cabinet and components.

Users can increase the output from 100 amps all the way up to 400 amps by adding inverter blocks. With its modular design, parts inventory is minimised along with repair time.

An LED error display indicates machine status to accelerate troubleshooting, and should an inverter block malfunction, cutting can continue with the remaining blocks.

"The Ultra-Cut XT Series works the way our customers work – intelligently," said Dirk Ott, VP – global plasma automation brand, Victor Technologies. "The ability to add inverter blocks means fabricators never have to worry about purchasing a system that does not have enough capacity to meet future needs."

Victor Thermal Dynamics – USA
Email: media@victortechnologies.com
Website: www.victortechnologies.com

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Bronze award for Arc Energy Resources for going above and beyond the call of duty

ARC Energy Resources, a provider of weld overlay cladding and fabrication services for the oil and gas, nuclear and marine industries, was awarded the Investors in People Bronze award for going above and beyond in the way it develops, supports and motivates its staff.

The Bronze award is achieved by just over 5 per cent of Investors in People recognised organisations in the UK, all of which have demonstrated an additional 26 or more pieces of evidence above the Investors in People core Standard.

The Investors in People framework, which is suitable for organisations of any size and in any sector, transforms business performance through people, helping companies to achieve their objectives by targeting specific priorities within the organisation.

Rosemary Robinson, director of Arc Energy Resources, which has some seventy employees, said: "Having received a glowing report from the assessor at our 2010 review we were given a strong recommendation to work towards a Bronze Level Award in readiness for our next review. We are very proud that our company, which is our people, has achieved the Bronze level in a single review."


Organisations that have achieved the Investors in People Standard generally have lower staff turnover and sickness rates, lower recruitment costs and a reduced likelihood of litigation. In addition, they tend to have increased levels of profitability, employee engagement and productivity.

John Telfer, managing director of Inspiring Business Performance Ltd (IBP), the organisation that delivers Investors in People for London and the South, said: "Arc Energy Resources should be very proud of its achievement, particularly as the company has gone beyond the core requirements of the Standard. I hope other organisations will look to Arc Energy Resources as an example of what can be done when staff and managers work together."

To find out more about IBP and the benefits of Investors in People, visit www.inspiringbusinessperformance.co.uk

Arc Energy Resources – UK
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Tube scarfing equipment

TSE GmbH Tube Scarfing Equipment, Germany, is an international operating company offering high quality solutions for tube inside and outside weld bead scarfing (deburring) of longitudinally welded steel tubes, strip conditioning, bead chopper applications, welding equipment, sawing technology, filtering technology and turning/milling/drilling processes.

Its product range includes tube inside weld bead scarfing tools/systems, carbide cutting rings for tube inside weld bead scarfing, carbide inserts and holders for tube outside weld bead scarfing, bead choppers, strip shaving units, welding impeders, ferrite cores, epoxy fibreglass tubes, silicone fibreglass tubes, mica silicon tubes, induction coils, flexible PTFE tubes, HSS/HSSE/TCT saw blades, filter systems, filter fabrics, carbide inserts and holders for turning/milling/drilling.

The company works with a network of representatives worldwide to offer the best service.

TSE GmbH Tube Scarfing Equipment will present its new products at Tube Düsseldorf at booth no 6 A14.

TSE GmbH Tube Scarfing Equipment
– Germany
Email: info@tube-scarfing.de
Website: www.tube-scarfing.com



Orbital welding electrodes

DIAMOND Ground Products has introduced a service to supply custom-made TIG/plasma electrodes pre-ground exactly to the customer's specifications.

This service provides the users of orbital and automatic welding systems the confidence that the weld quality will remain consistent and keep welders more productive.

Users are no longer forced to purchase from their welding equipment manufacturer and can purchase

directly from Diamond Ground Products.

Diamond Ground Products longitudinally prepared pre-ground electrodes are made to exact specifications and offer improved arc starting and stability, greater longevity, and consistent welds at economical prices.

Diamond Ground Products – UK
Email: sales@diamondground.co.uk
Website: www.diamondground.co.uk

Reactive welding helmet

DESIGNED for use in all welding applications, ESAB's new Warrior™ Tech welding helmet meets the needs of welding professionals requiring a high specification, ergonomically designed lightweight helmet that provides protection from dangerous UV/IR radiation, heat and spatter.

Critical for any welder is the performance of the lens, and with the Warrior Tech, four welding arc sensors provide high response levels and a wider sensory coverage than many alternative helmets of this type. It has a large viewing area of 98 x 48mm – a wider than normal field of vision, to increase spatial awareness. It features shade adjustment between DIN9 and DIN13 with an automatic shade darkening filter (ADF) lens. This lens also gives the welder optimal viewing clarity and excellent optical quality.

The helmet offers optimal performance for most fabrication and out-of-position welding. Its sensitivity control is a useful adaptable feature when welding with low amperages, such as when TIG welding,

and ensures a better reaction to darker arc light.

The delay control allows the welder to set how long the lens stays dark after the welding arc stops. A short delay will help to get the job done faster during tack welding, whilst a longer delay is useful for high amperage welding. The delay and sensitivity can be adjusted from the inside.

Designed for high operator comfort, the helmet's headband is fully adjustable over the head, and there are three longitudinal adjustments to increase field of vision. For enhanced comfort, the angled front pad sits flat on the forehead to

reduce frontal lobe pressure.

With five-point rake adjustment, the helmet can be positioned at five different angles.

Available in yellow or black, the Warrior Tech is available with various options and extras, and the shell has "B" grade impact safety rating.

ESAB – UK
Email: info@esab.co.uk
Website: www.esab.co.uk



ESAB's Warrior Tech welding helmet



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Compact, robust welder for the toughest conditions

ENERGY-saving and cost-efficient arc welding technology was the focal point of EWM's appearance at Schweissen & Schneiden 2013.

With its BlueEvolution sustainability initiative, Germany's largest manufacturer and one of the leading suppliers worldwide in this field allows welding to be both environmentally friendly and economical across the whole product range.

This is also true of one of the company's trade fair highlights: the new "Pico 350 cel puls" is very energy efficient due to its standby function. But most importantly, the MMA inverter power source is extremely sturdy and exceptionally powerful, and can also be used for MIG/MAG CC and CV welding

as well as TIG lift arc welding.

The Pico 350 cel puls can be used in temperatures of -25 to +40 degrees and in extremely tough conditions due to its specially constructed base. It is also impervious to dirt and water. This makes it particularly suitable for offshore environments and for pipeline, steel and bridge construction.

The new welding machine's cellulose electrodes also make it up to 100 per cent safe for vertical-down welding. It also masters vertical-up welds thanks to the new PF pulse function. Complete



EWM's "Pico 350 cel puls" is an MMA welding machine which can also be used for MIG/MAG welding

generator compatibility, operation on extension cables up to 200m long and VRD functionality allow the Pico 350 to be deployed flexibly worldwide.

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

HF welding simplified for diverse API product manufacturer

ONE of the world's largest suppliers of ERW pipes has completed the installation of a new 800kW HAZControl™ technology dual (induction/contact) solid state HF welder at one of its North American facilities. Dedicated to serving the growing demand of the global oil and gas industry, the North American producer chose Thermatool to meet API standards required by its customers.

The organisation has a wide product matrix of API products ranging from 4.5" to 8.6" OD and 0.188" to 0.5" wall pipe. The manufacturer chose Thermatool's HAZControl™ Technology Welder software for the ability to select HF weld power and frequency in ± 1 kW and 1 kHz increments, resulting in industry leading heat input control during welding.

To maximise up-time during product change-over, the predictive algorithm built into the HAZControl™ technology software guides operators to the initial heat settings. When a product has been tested and proven successful, the software allows operators to store and then easily recall welding recipes so

Patented Thermatool® HAZControl™ technology 800kW dual welder



HF welding variability is reduced and repeatability is achieved regardless of operator know-how or shift-to-shift operations.

The dual welding option offers the manufacturer many product options with the flexibility of using two welding processes, induction or contact, on one welding system. This gives the pipe producer the ability to achieve significant power savings when welding large diameter pipe with high frequency contact welding, yet still choose the induction welding process when needed.

With the new equipment in place, the manufacturer can reliably produce high quality API and proprietary grade pipe to meet the growing demand of the global oil and gas industry.

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

Keyhole TIG redefines tube and pipe welding

AUSTRALIAN welding innovator K-TIG is now in full production of its game-changing keyhole TIG welding solution, and is focusing predominantly on the tube and pipe welding market.

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

K-TIG's first export sales have been to the UK, Middle East, China and India where K-TIG's distributors are focused on the tube and pipe, oil and gas and other markets.

K-TIG has recently appointed Sydney-based Innovative Welding to spearhead its Australian distribution.

"We are absolutely delighted to be representing K-TIG in Australia," said Adam Poole, general manager of Innovative Welding. "The reception to this autogenous technology has been tremendous, and productivity benefits are shaping up to be enormous. It

already appears to be set to become the de facto standard for circumferential and longitudinal pipe welding," he said.

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

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

"Due to the single-pass, full-penetration nature of the process, the weld quality tends to excite the head of engineering, the enormous cost savings get the attention of the CFOs while the massive reduction in energy consumption tends to get interest from CEOs," said Mr Le Quesne.

"The opportunities within the tube and pipe sector are enormous. There are 100,000 kilometres of new pipeline currently in the planning or construction phase around the world," said Mr Le Quesne.

As well as offering huge benefits to the tube and pipe industry through time saving, reduced energy costs and lower reliance upon highly skilled labour, the K-TIG system is cloud-enabled and records comprehensive weld data for audit and control purposes.

The recording and auditing capabilities of the system are considered vital to tube and pipe sector, where traceability is now becoming a critical issue.

K-TIG founder and R&D manager Dr Laurie Jarvis led the 20-person CSIRO team who developed the underlying technology.

"Creating and stabilising a keyhole in molten metal using TIG welding was previously not thought possible," says Dr Jarvis.

Fully understanding the physics involved and developing techniques to fully control the process took Dr Jarvis and his team more than eight years. "We ultimately developed the tools and high speed processing capability required to deliver an extremely robust welding process which is up to 100x faster than TIG, uses up to 95% less power, up to 95% less gas, requires no edge preparation and allows high-speed, full-penetration, single-pass welds to be performed by individuals with no welding experience."

"The K-TIG process excels with materials that are traditionally very challenging to weld," he said.

"Stainless steels, titanium, zirconium, nickel alloys, cobalt alloys and others are welded to nuclear industry standards in a fraction of the time taken by traditional TIG welding."

"Take a 16mm titanium steel pipe," said Dr Jarvis. "When welded using TIG, you would need to prepare the edges of the material into a V profile, you would need to perform the weld in 12 separate passes, and for every metre travelled you would have an arc-on time of 156 minutes, consume 665 grams of filler wire, 5,000 litres of gas, and the weld would need to be performed by a highly skilled welder," he said.

"When welded with K-TIG, the same weld requires no edge preparation, no filler material, no skilled welder, and for every metre travelled you have arc-on time of just 4 minutes, and gas consumption of just 240 litres of gas."

"The K-TIG process is ideally suited to both longitudinal welds which run along the length of the pipe, and circumferential welds which join pieces of pipe end-to-end. The next stage of development is a 5G variant of the K-TIG system which will be clamped to a track on the exterior surface of a pipeline in the field to automate pipeline welding," said Dr Jarvis.

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

The K-TIG welding system



Longitudinal welding lines

THE Machines Yvonand SA has continued to expand the field and application areas of the well proven LSL type forming and longitudinal welding lines.

New is the use of very thin gauged high precision tubes in the automotive, medical, aeronautical and aerospace sectors.

In addition to the wide range of alloys that can be used, the particular feature of process stability in the manufacture of the thin-walled precision tubes must be highlighted and emphasized.

The LSL range of equipment is used in the manufacture of tubes ranging from 2 to 125mm in wall thickness from 50 micron (0.05mm) upwards, and engineered and conceived for line speeds up to 60m/min.

The continuous and non-contact laser welding is subjected to a full in-line and real-time 100 per cent verification and testing. Additional measuring and visualisation systems support the process management and line control.

Given that the setup and re-tooling time of the line, for making other dimension tubes, is in the range of a very short 30 minutes makes the LSL range also suited for small lot and batch size production or JIT (just in time) orders.

Also new is the welding of aluminium tubes without any edge trim and without

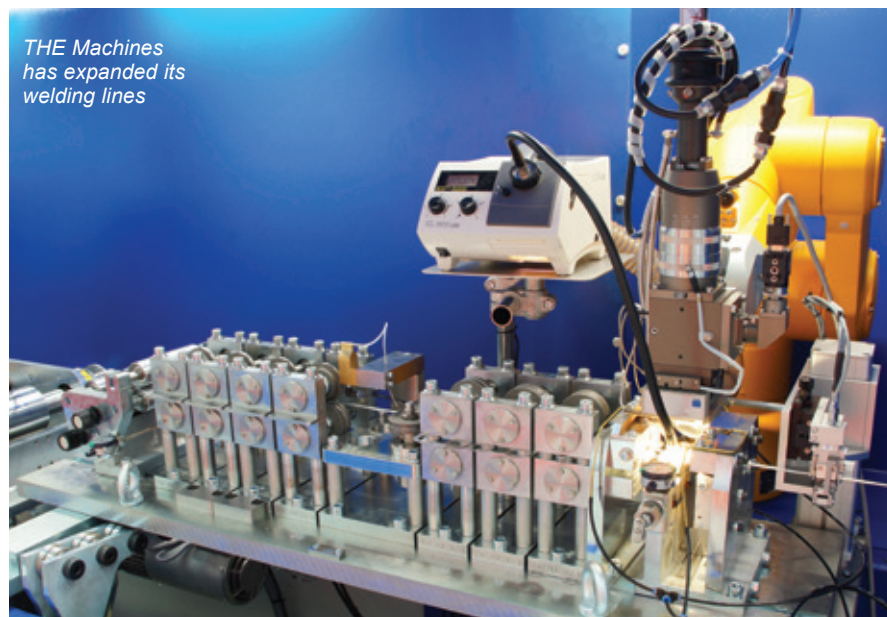
protective gas which, given the shortage of helium, secures and assures the future supply of these products. Since the edge trim alone makes up some 15 per cent of total material requirement in the manufacture of smaller tubes, the materials savings not necessitated by elimination of this process step can be deducted in the equivalent amount.

The actual laser source and power can be individually tailored to suit customer application needs, thus resulting in a highly favourable energy efficiency requirement when compared to alternative welding technologies (eg TIG, HF and older laser types).

Weld seam reproducibility, (weld shape and microstructure) and full process stability are achieved by the consequent absence of any setting adjustments, especially in the forming benches.

THE Machines Yvonand SA supplies alongside the LSL line the complete range of equipment for the continuous and endless production of tubes, including laser cross welding of the coils as well as tape accumulators with all other up and down stream requirements, right through to the full turnkey process and solution.

THE Machines Yvonand SA –
Switzerland
Website: www.the-machines.ch



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Launch of Argweld pipe weld purging systems

HAVING been manufacturing tube and pipe weld purging systems since 1975 Huntingdon Fusion Techniques HFT® has evolved the science of weld purging to new levels.

The company has now reached the fifth version of its tube and pipe weld purge system designs by launching the new PurgElite® range systems for diameters from 1" to 24" diameter inclusive.

These systems are suitable for all industries using tubes and pipes.

In particular, PurgElite® systems can be used in high quality tube and pipework where the internal surfaces may be polished to ensure minimum entrapment

and low corrosion resistance. With the new IntaCal® specially designed in line purge valve and the synthetic hose protection, there are no metal parts to scratch the tube or pipe surfaces.

IntaCal® needs no setting or controlling, but is precisely manufactured for the PurgElite® method of weld purging.

This new range comprises 15 models for tube and pipe sizes from just under 1" to 24", each one overlapping the range of the other so that all internal diameters from 20 to 610mm are covered.

The new series has a number of major advantages over previous weld purging systems and has taken into account the evolving technology in all market places

where much higher specifications of materials and work finish are available and expected.

PurgeGate™ is a worldwide patented device fitted to the front of each inflatable purge system to protect it from bursting. No matter how high operators turn up the pressure, it is impossible to cause the purge system to burst due to over pressurisation. A benefit to this device is that the flow rate may be increased as desired without damage to the weld purge system.

Huntingdon Fusion Techniques Ltd
– UK

Website: www.huntingdonfusion.com

Weld engineering supports oil and gas projects

HIGHLY specialised welding and complementary services such as fabrication, machining, corrosion protection and NDT in the oil and gas sector are available to meet the diverse needs of equipment suppliers manufacturing a range of components from pipelines and flanges to risers and pigging systems.

However, finding all, or even a few, of these disciplines from a single-source supplier is rare as the need for

an in-depth understanding of so many disciplines, and their equally wide and demanding quality standards, requires vast knowledge and experience.

Gloucestershire, UK-based weld overlay cladding and fabrication specialist Arc Energy Resources has successfully completed many projects that required such a multi-disciplined approach.

Commenting on the multi-disciplined approach to its welding service, managing director Alan Robinson stresses the company's significant investment in training and its commitment to meeting worldwide certifications and industry standards. Whatever a customer needs, from design for manufacture to final NDT, Arc Energy has the industry standard resource to exceed its clients' expectations.

In addition, Arc Energy holds ASME U and National Board R Stamps, enabling the company to provide code compliant pressure vessels and subcontract welding on free-issue ASME standard material.

These accreditations are part of Arc Energy's list of qualifications, which also include ISO 9001:2008 quality management system, ISO 14001:2004 environment management system,

Investors in People, and OHSAS 18001 health and safety management system.

Arc Energy also remains one of the few welding specialists that can boast accreditation to the ISO 3834-2 welding quality standard and conformance to ISO 14731, Welding Coordination.

If size and tight tolerances require stress relieving after weld overlay cladding, even with large items of equipment, Arc Energy is able to carry out post-weld heat treatment in one of its own calibrated furnaces.

Add to that the fact that Alan Robinson is himself one of very few UK registered International Welding Engineers, has a Masters degree in welding, and is a Chartered Engineer, a European Engineer and a senior member of the Welding Institute. All of this reinforces the fact that few welding specialists can equal this list of accreditations, or provide Arc Energy's capability to support clients with a multi-disciplined welding, fabricating and engineering service delivered by highly qualified and experienced welding staff.

Arc Energy Resources – UK

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Email: sales@arcenergy.co.uk

Website: www.arcenergy.co.uk



Arc's cladding station

Portable plasma cutter

WELDING and cutting technology firm ESAB has launched the PowerCut™ 700 portable plasma cutting package, suitable for use on all electrically conductive materials in production, assembly, repair and maintenance applications.

Well balanced and with a convenient, comfortable carrying handle, the PowerCut 700 can be carried easily from one work site to the next, or to exactly where it is needed in the workshop.

However, the machine can also be fitted with a CNC interface so that it can be connected directly to a cutting table.

Its compact dimensions (559 x 211 x 381mm) and light weight (21.3kg, including the torch) mean that the PowerCut 700 is portable.

The PowerCut 700 can also be powered from engine-driven welders when working remotely without access to a mains power supply. The maximum material thickness that can be cut is 15mm for a high-quality cut or 20mm

when the finish and speed is less important.

The Dynamic Arc Control controls the pilot arc when cutting grate or mesh for continuous operation without any arc outages.

To enhance the cut quality and improve the ease of use, particularly when operatives are inexperienced, the PowerCut 700 has been designed for drag cutting along straight edges or around templates. Another user-friendly feature is the Voltage Booster, which helps to achieve drop cuts on thicker plates.

Each PowerCut 700 is supplied with a PT-39 plasma torch and a kit of wear parts. The PT-39 torch has been designed to be compact, lightweight and ergonomic, with a comfortable grip and compact head that provides better arc visibility.

For connecting the PowerCut 700 to a table for CNC cutting applications, ESAB offers an interface kit that includes a PCB, cable harness and connector.

ESAB – UK

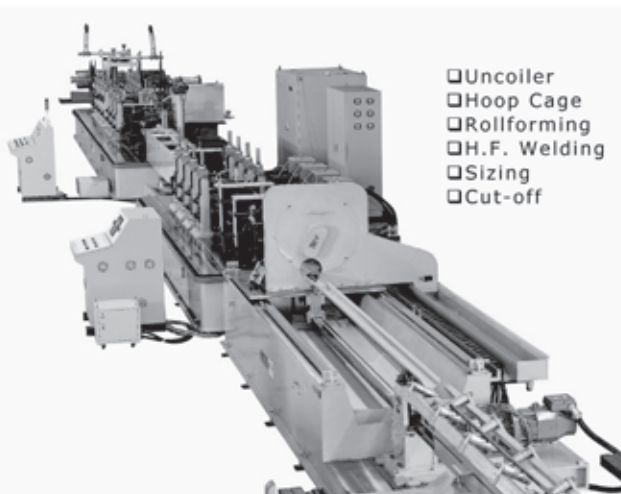
Email: info@esab.co.uk

Website: www.esab.co.uk



ESAB PowerCut 700

SEN FUNG FULLY AUTOMATIC CARBON STEEL PIPE ROLL FORMING MACHINE



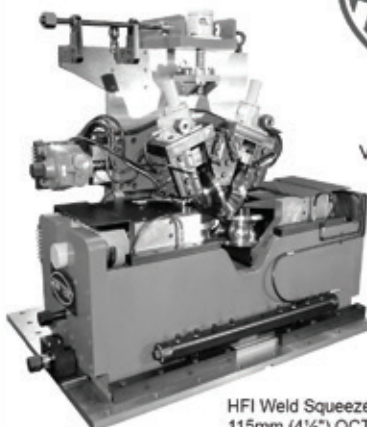
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www.rafterequipment.com

Low-power Weldac a hit in USA

IN 2011 EFD Induction added a range of low-power (50-225kW) welders to its Weldac range. "We knew that there was a demand for this power range, but we never anticipated such a positive reaction," said EFD Induction sales manager Peter Runeborg. "For example, in just two years these systems have come to dominate the US market for new induction profile welders."

To mark the success of the new Weldacs in North America, EFD Induction will be displaying a 150kW model at this year's Fabtech event in Chicago. Mr Runeborg commented, "Visitors can learn first-hand how the welder's IGBT transistors, patented switching technology and automatic electronic matching make it ideal for high-throughput profile welding."

According to Mr Runeborg, the automatic electronic matching is suitable for profiles because such work-pieces typically feature 'cut-outs', places where the metal has been cut or stamped out.

Peter Runeborg with a 150kW Weldac similar to the one to be displayed at Fabtech



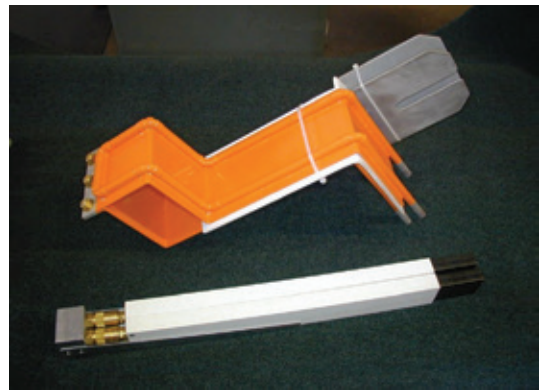
These areas produce major impedance changes. Obsolete welders attempt to handle these changes with voltage and current 'overkill', but the result is often unsatisfactory weld quality.

"Automatic electronic matching is one of the hallmarks of EFD Induction Weldacs," said Mr Runeborg. "That we can now offer such a benefit in a low-power package is a real boon for manufacturers – and not just as regards weld quality. Productivity is boosted, too. For instance, the Weldac is faster by metres per minute at welding profiles than are laser and TIG alternatives."

Mr Runeborg was, however, keen to highlight that a physical welder is only half of any EFD Induction welding solution. "Yes, all Weldacs offer automatic matching, rugged IGBT transistors, and a high constant power factor of 0.95. But our customers also want the scheduled maintenance, genuine spares, operator training, logistical support, and the local presence that only a global player such as EFD Induction can provide." Weldacs offer a five-year warranty on all inverter modules.

Fabtech will also showcase some of the products and services available from Electronic Heating Equipment (EHE), the impeder, welder coils and scarfing specialist acquired last year by EFD Induction. Based in Washington State, EHE supplies manufacturers worldwide with everything from Canticut internal scarfing systems to induction coils and impeder clusters.

EHE will share Booth S3642 with EFD Induction, and plans to display a selection of its impeders and induction coils. "Visitors from the oil and gas industry will



Two products from the EHE line-up: an induction coil specially designed for profile welding, and an impeder

be particularly interested to learn more about EHE's innovative ID scarfing system, where the impeders are fully integrated into the design of the ID mandrel," said Mr Runeborg.

It is claimed that this innovation can reduce weld power consumption by up to 30 per cent compared with other ID scarfing methods. Supporting the scarfing tool on a cantilever also removes the need for internal rolls, allowing the mandrel to cover a wide range of tube sizes, and eliminating the problem of rolling weld spume or other debris into the tube wall. A typical Canticut unit can ID scarf and chop 8" to 16" pipe using a single mandrel.

EFD Induction will also be holding live demonstrations of a Minac 25/40 Twin mobile induction heating system. "An EFD Induction Minac always draws a crowd," said Mr Runeborg. "And it's easy to see why. Visitors are usually amazed at the speed, ease and safety of operation, and the fact that one power output can, for example, be brazing copper while at the same time the other output is shrink-fitting a steel ring."

The Minac features automatic electronic matching that lets it handle virtually any electrically conductive material. "Versatility is what the Minac is all about," said Mr Runeborg. "It can be used as a stand-alone stationary system, it can be attached to a robot, it can be used with standard power outputs or with hand-held transformers attached via long, flexible cables. It can be fitted with a special elongated coil and used to remove the huge bolts on power station turbine covers. It can even be loaded onto a helicopter and flown out to offshore oil and gas platforms."

EFD as – Norway
Email: knl@efdgroup.net
Website: www.efd-induction.com

模块化打捆生产线

OMP推出了根据客户需求定制的新的模块化设计打捆生产线。公司有着20多年打捆成型系统经验，这次将所有专业知识投入到了新的生产线系列，它适合所有生产环境，能处理重达3,500千克的六角形、方形以及矩形捆。

模块化使交货时间更短，安装更快。以前需要两个不同的团队（机械和电气的）安装几天，而现在只要一个专门的技术人员就能完成，使客户在很短的时间里就能准备好打捆系统并投入使用。

电子部分由带远程总线控制模块的PLC系统控制。该方案减少了电缆数量，将所有通道在机器框架上分组，不需要修改定位机器的工厂地面结构。在安装以及机器运行期间可清楚看到这些好处，提供快速、简单的管理。

OMP Srl – 意大利
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网址: www.omp-group.it

独立工具管道成型的里程碑

对效率要求越来越高的复杂要求是管道成型的主要挑战。尤其是对造船行业。对成型机器所需工具的高投资一直都不是不必要的成本动因。对于管道形状和直径所有可能的组合必须有相应的工具可用。

transfluid Maschinenbau的工程师们2011年就意识到了这个问题。当时，他们在第一台数控旋转式成型机上开发了高效的管端独立工具成型解决方案。有了另一个新工艺，公司现在正在迈入成型技术新的里程碑——无需复杂的工具。

“我们已经成功的开发了一台有积极导锥的扩口机。这台机器只需要一个夹具用于翻边工作。” transfluid总经理Gerd Nöker表示。

细节的关注使公司的工程师们开发了一个达到商业上可行的技术。这意味着扩口锥不再需要像传统系统那样与成型

外形匹配。好处包括降低了工具投资和储存成本、减少了设置时间，制造过程优化了周期时间，因成型有时是在两个



独立工具管道成型技术利用新的transfluid扩口机，提供有效的管道加工方法

阶段完成的，或者法兰是焊接到管端上的。

因为扩口锥是安装在旋转轴上的，相对难以控制。这就是为什么锥体允许自由摆动，只有轴向进给用作“控制媒介”。

这使得整个机器的构造简单而稳固，而且成型过程中素有成型选择仍是开放的。

最近交付的第一台机器能够对42.4到325毫米的管道进行翻边。管道和法兰之间的过渡半径可以自由选择，而且半径可以有角的或圆的。

transfluid Maschinenbau GmbH – 德国
传真: +49 2972 9715 11
电子邮件: info@transfluid.de
网址: www.tube-processing-machines.com

用于海上施工的灵活的切割机器人

海上施工制造商需要灵活的自动化应对他们使用的各种钢型材。管道、H型钢和工字钢用来建造大的钻探设备、钻井平台和顶部平台。来自荷兰的机器人技术中心Kranendonk推出了能在同一系统上非常灵活地切割管道以及钢梁的新机器。

“有了这个管道和钢梁切割系统，海上施工制造商只需要一个投资就能处理他们使用的大部分钢型材，”营销经理Jan Kranendonk解释道，“该系统能够处理切割的同时在另一边完成装载和卸载，这样改善了生产流程。这种多站设置也节约了平米数。”

使用机器人能极度灵活地切割复杂形状的大型管道和钢梁。该系统能处理直

径2300毫米的管道以及1250毫米宽的钢梁。Jan Kranendonk补充道：“我们将机器人放在轨道上，进一步延伸了它伸出的范围，这样能达到60平米的有效切割区。这样，机器人可以沿大型管道和钢梁移动，尽可能的完成每个切割。”直径90毫米内的管道可以通过浮动卡盘进给，在两边同时切割，无需再夹紧，节约了时间。

除了灵活性，海上制造商对切割精度要求也很高。如果部件不能完全符合，焊工必须花几小时来调整缝隙。Jan Kranendonk表示：“我们使用智能测量系统来调整切割轨迹，使其与实际产品匹配。激光校准机器人适应可能出现

的所有偏差。该技术能更完美的切割材料，更好的适应连接部件。

该系统具有开放式软件，意味着客户偏爱的切割方案可以纳入系统设置中。自动化编程、CAD接口以及参数的易于编辑，因此不需要深入的机器人知识。因此，只需要一个操作工就能运行系统。

Kranendonk拥有超过25年的海上工业机器人切割线经验。公司的新系统为灵活的海上施工提供了精确可靠的切割解决方案。

Kranendonk – 荷兰
网址: www.kranendonk.com

激光测量系统在线监控质量

对钢铁工业来说在矫直完成后直接有效地检测质量是非常重要的。总部位于吕内堡的激光测量技术专家LAP，使管道和钢棒平直度现在可以实现非接触式测量了。

LAP开发的Straightcheck非接触式测量系统为管道和棒材制造商在线质量保证提供了不可思议的潜力——无需耗时的人工测量。

许多管道和钢棒制造商正一次又一次地面临着同样的问题。矫直管道能满足客户的质量标准吗？平直度是很重要的标准。如果不满意，钢棒和管道是不能出售的。LAP用Straightcheck激光测量系统找到了解决这一问题的方法。这个过程无需使用直尺进行费时而又复杂的检查。

LAP方案可以直接集成到生产过程中。现有系统不需要改变。“Straightcheck系统内的METIS传感器测量钢产品的平直度”，LAP钢铁行业销售和分配人员Frank Lohmann解

释说，“在矫直过程中，管道或棒材沿着纵向轴每分钟大约转400转。因此唯一合理的解决方案是使用我们的传感器测量平直度。我们通过同步实时测量获得这一信息。为了能在线测量，扫描过程中所有传感器必须完全同步。在第一次矫直后我们的Straightcheck软件能直接提供数据，判断产品是否符合规范。在进入其他制造过程时也保证了产品的生产员工。总之，不需要改变现有的生产线。”

激光测量系统可以确定超长管道和钢棒的平直度，即使是30米长的也可以。为此，测量范围，即整个产品的产度，将被细分为一米、二米或三米长的段。然后再分开测量，以确定工件每个部分的平直度。

“管道或钢棒的典型直径为80毫米或更小，但使用我们的标准方案能够在线测量200毫米的直径。”Lohmann先生补充道，“我们的METIS传感器能测量管道和棒材的最小和最大直

径。Straightcheck还使用得到的信息计算椭圆度，无需额外的工作和成本。”

25年多来，LAP一直为几何量如产品位置、宽度、厚度、长度、直径和平面度的测量提供高精度激光测量系统。LAP提供的系统因其在极端条件下实现的极高精确度而闻名。每天有成百上千的系统正在钢铁和轧钢厂证明其效用。

公司目前有180多名员工，客户包括Baosteel、Posco、ThyssenKrupp Steel、Vallourec & Mannesmann和其他领先的钢铁生产商。

我们也生产激光投影系统。他们以CAD文件为所有形状如依比例的形状生成光点、线、交叉或外形轮廓。

LAP的员工通过位于吕内堡的公司总部以及由分公司和技术销售代表形成的国际网络为全球客户提供服务。

LAP GmbH Laser Applikationen – 德国
电子邮件: t.armbruster@lap-laser.com
网址: www.lap-laser.com

将制造业带回北美

NEW-FORM Tools 公司专门为高强度材料提供刀片和切割系统。公司30多年来一直为管道、滚压成型和卷材加工行业提供金属切割解决方案。其钛涂层剪切刀片、夹紧装置和滚压成型工具耐冲击、耐磨。防破碎和断裂的耐用工具使New-Form Tools成为优质金属切割解决方案好的来源。出了这些节约成本的发展，New-Form Tools还能提供在北美和南美生产的高速钢和特殊高速钢圆盘锯片。每个锯片全部是在内部生产完成的，

为所有应用提供更快的交货期和经得住考验的质量。从制造过程到重磨、涂装和定制设计，它能帮助你找到适合你应用的圆盘锯片。New-Form Tools为所有制造要求提供无限的创造力。能达到最严格的公差、满足高质量期望、提供卓越的客户服务和始终如一的准时交货。

New-Form Tools – 加拿大
电子邮件: tjantzi@newformtools.com
网址: www.newformtools.com

用于高精度直径控制的大视场扫描仪

瑞士Zumbach Electronic公司扩展了用于大尺寸非接触式在线直径测量的ODAC®激光扫描仪。

现在ODAC 550可用于测量500或500毫米以上的大型钢棒、管材和卷材，精度达到几微米，速度为2,000次/秒。而且还能很好地测量其他材料，如钛、铜、合金和塑料制品等。

这是通过开发一种具有高度并行和无缝测量场(无死区)的革命性光学扫描技术实现的。

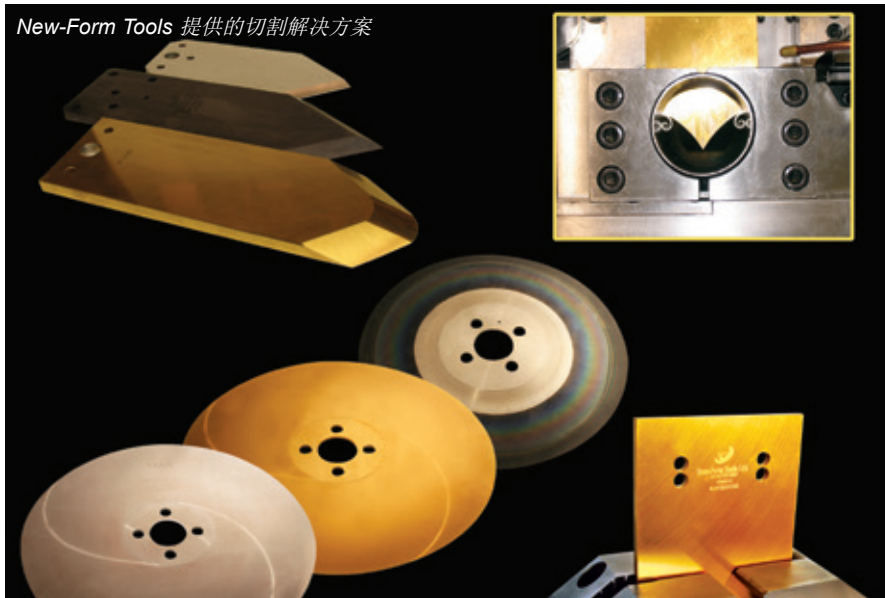
该技术可根据可用的空间条件分隔很远安装发送器和接收器。该系统为去皮、研磨、抛光、矫直以及质量控制(无损检测)等典型工艺提供新的解决方案。

直径和椭圆度等尺寸数据可通过USYS处理器直接反馈给用户网络或为操作者提供实时显示，并反馈给机器。

完整的配件，如二次保护外壳、冷却装置、空气净化、空气刀等可供重负荷环境使用。

Zumbach Electronic AG – 瑞士
电子邮件: sales@zumbach.ch
网址: www.zumbach.com

New-Form Tools 提供的切割解决方案



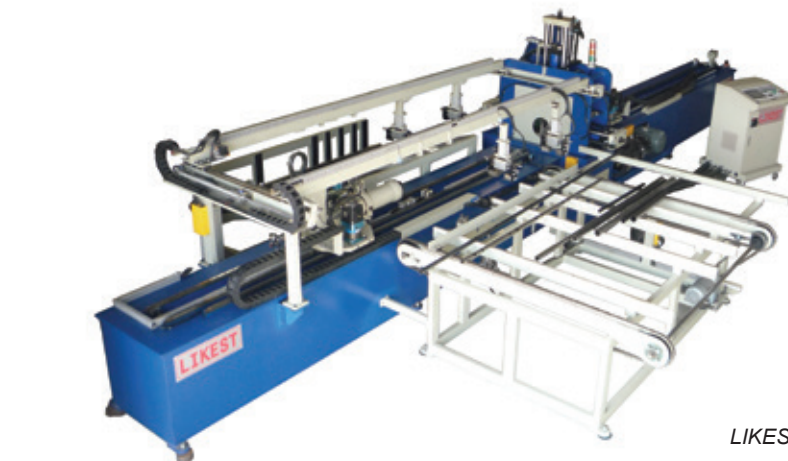
钻孔和冲孔技术

LIKEST公司台湾领先的管道/板材钻孔和冲孔机器制造商，公司从1985年开始经营。

公司今年最新的管道熔化穿孔和冲孔机器是U型三液压缸自动管道冲孔机，有三个冲压头（2个水平的，1个垂直的），带旋转伺服系统。

该机器在同一根管道上可以冲出六种（或六种以上）不同的孔。其新功能是U型，带三套动力压力机（带液压缸的冲孔装置）、模具以及自动送料机。冲压能力：液压冲孔机有两个水平头和一个垂直头，每一个都有最大的功率：顶部垂直冲压头、左边水平冲压头和右边的水平冲压头。用户能够在UPN槽道管或任何型材上冲压不同大小和形状的孔，无需更换模块。

该机器驱动带自动喂管功能。用于材料长度的伺服进给定位器框架：6000毫米（标准尺寸、特殊设计的或更长的管道也受欢迎），用于不同长度的管子。冲孔/熔化穿孔孔型：盲孔、通孔、穿孔。可选择的功能还有：Y轴（进给）和B轴（旋转）伺服电机，可以在不同



LIKEST钻床

角度夹住并旋转管子，完成冲孔。超过设计范围的特殊款也受欢迎。

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优质合金用于要求极高的海上环境

Sandvik生产的用于井内维护、井上部、海底以及井底的优质不锈钢和特种合金钢材产品于5月份在德克萨斯州休斯顿举行的2013国际石油展上展出。

“石油和天然气行业是我们最重要的市场领域，而2013国际石油展为我们提供了理想机会，向广泛观众展示我们大量的材料技术和专业知识，” Sandvik全球石油和天然气销售和营销经理Nigel Haworth表示，“现在，我们的产品用于全球一些最深的、要求最高的油井。提供正确的材料解决方案是石油和天然气生产商保持生产安全、可靠以及具有成本效益。”

Sandvik在优质不锈钢和其他耐蚀合金（CRA）方面的专业知识意味着拥有业内最广泛的产品系列之一。范围包括无缝和焊接管道，管件和法兰、棒材和空心棒材、钢丝绳、近净成形的热等静压产品、立管用Sandvik ClikLoc快速接头以及焊接材料。

一些材料如超双相不锈钢Sandvik SAF 3207 HD为无缝管提供了更高的屈服强度，而且能够承受更大的压力。还能够使脐管壁厚更薄，从而减少重量和卷材大小，有助于降低深海安装成本。

在侵蚀性和腐蚀性环境中，井下生产套管和油管可能遭遇酸的井下环境。优

质合金材料如Sanicro 28能很好的抵抗含硫化氢、二氧化碳和氯化物的恶劣环境。对于近净形产品的生产，Sandvik提供强大的冶金基热等静压用于生产复杂的组件，如歧管、回转接头和岔管。

Sandvik为控制和化学剂注入线提供单一来源的全球解决方案，有一个专业服务中心以及得到了大量的库存支持。这可以确保准时交货，不管是要求定长切割线或一组包括封装、冲洗、填充和直接运到现场的生产线。

Sandvik Materials Technology – 瑞典

网址: www.smt.sandvik.com

Mach 3双冲孔线

Apollo Srl公司的双冲孔线以不同的长度生产，可配备自动储存装置用于管道装、卸，使操作工的工作降到最少。

因光电屏障集成到布置在机器周围的2米高的黄色或黑色网上，使操作工能够安全地工作。

Twin模式一次可冲四个槽，而且可以同时处理两根管道，使生产力翻倍。它配有两个相对的头，而且还可以配备第三个垂直的头。专属的系统使该

机器能处理半椭圆或矩形管道，且没有气泡。

另一个重要方面是通过接头可快速更换工具和配件。特别是该系统将螺丝使用量降到最少。

加工精度从第一个到最后一个孔都是 ± 0.2 毫米。

Apollo Mach 3是一个数控笛卡尔轴机械手，用于装载冲孔管道以及冲孔后将管道卸载到两个托盘上。主要用于与

Twin冲孔线结合使用，但也可以与其他Apollo冲孔线结合。通过能精确快速的布置管道的磁力夹具可以快速更换管道尺寸。机械手使冲孔线全自动化，而且能安全的布置管道。

Apollo Srl – 意大利

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更紧凑的单层产品测量系统

选择Sikora的X射线测量仪都希望改善生产流程和简化搬运以及将新产品简单的集成到生产线中。为满足这些需求，Sikora的工程师们设计了更紧凑的X-Ray 6035。“集成新设备的时候节省空间是最重要的，”Sikora AG首席执行官Harry Prunk表示。“如果生产线必须重建将花费很多。”

Sikora提供了两套X射线测量系统，用于软管和管道挤出质量控制：X-Ray 6000和Pro系统。尤其是对于测量单层材料或总厚度的生产线，X-Ray 6035是最合适的。它是一台具有成本效益的强大的仪器，能连续测量单层管道的内径

和外径、壁厚以及偏心率。不仅能可靠地测量各种聚乙烯、高密度聚乙烯、聚氯乙烯和乙丙橡胶管道，还能测量泡沫管和三元乙丙橡胶、尼龙、橡胶或硅制管道。在X-Ray 6035身上，Sikora的工程师们将其尺寸成功减少了20%——这不仅节省空间，还节省资源。在进行过程中，产品经过X光检测，同时高分辨率CCD传感器数据在瞬间为测量值准备提供依据。生产数据在直接集成到测量系统的7"触摸屏监控器上显示出来——看一眼，操作者就能得到所有所需的数据，用于导向架精确定心。可选择与处理器系统Ecocontrol 600、1000 或

2000结合，可自动可靠的控制挤出机速度或线速度，而且考虑到最小值。该技术与其他替代技术相比有一个巨大的优势——X-Ray 6035无需校准。“该仪器可在各种环境条件下工作，如被测量产品的温度。”

X-Ray 6035适用于直径5到30毫米的单层产品。对于多层管道和软管，Sikora提供了X-Ray 6000 Pro。根据需要可提供650毫米的尺寸范围。

Sikora AG – 德国

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石油和天然气项目焊接工程

石油和天然气领域高度专业化的焊接和补充服务如制造、加工、防腐以及无损检测可满足设备供应商制造从管子、法兰到立管和清管系统一系列组件的各种要求。

但是，从单一来源供应商那找到全部或甚至是一少部分这些专业都入需要深入了解这么多专业一样罕见，而且他们同等宽的且要求严的质量标准需要大量的知识和经验。

然而总部位于格洛斯特郡的堆焊和制造专家Arc Energy Resources公司已成功完成了有这些多专业方法要求的许多项目。

对于焊接服务的这种多专业方法的评价，总经理Alan Robinson强调了公司对培训的重大投资以及对满足全球认证

和行业标准的承诺。从制造设计到最后的无损检测，不管客户需要什么，Arc Energy都有超过客户预期的行业标准资源。

此外，Arc Energy拥有ASME U & National Board R Stamps认证，使公司能够提供符合规范的设备和压力容器，在免费发放的ASME标准材料上分包焊接。

这些认证只是Arc Energy资质清单中的一部分，还包括ISO 9001:2008质量管理体系认证，ISO 14001:2004环境管理体系，投资于人以及OHSAS 18001健康和安全管理认证。

Arc Energy也是获得ISO 3834-2焊接质量标准和ISO 14731焊接协作任务和职责的少数焊接专家之一。

如果尺寸和紧密公差要求堆焊后消除应力，即使是用的大的设备，Arc Energy也能够在自己校准的炉里进行焊后热处理。

还有一个事实就是Alan Robinson自己就是为数不多的英国注册国际焊接工程师之一，拥有焊接硕士学位，而且是特许工程师、欧洲工程师以及焊接学会高级成员。所有这些更说明了很少有焊接专家可以比得上这些认证这一事实，或者很少能够像Arc Energy这样为客户提供多专业焊接、制造以及由高素质经验丰富的焊接人员提供的工程服务支持。

Arc Energy – 英国

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网址: www.arcenergy.co.uk

铝制圆管和平行流冷凝器管

平行流冷凝器(PFC)管、多孔挤压管(MPE)、微型槽道管和多孔管这些都是需求量很大的铝管。

这些扁铝管通常用于生产汽车工业用换热器、冷凝器、蒸发器、散热器、油冷却器、加热器芯和二氧化碳应用。这些管道具有高耐腐蚀性、良好的导热性以及耐高压，如果是用标准铝棒挤出的话，还具有成本效益。这些管道是根据标准规范和规定挤出的不同大小的合金管道。

汽车行业正在不断寻求和开发更有效的部件，以实现更轻的车辆以及降低二氧化碳排放。铝制圆管和平行流管道在实现这一目标中起着重要作用。

BWE Ltd是英国一家工程司，专门为各种应用生产连续挤压机(Conform™和 Conklad™)以及冷压焊机。

Conform和Conklad是有色金属、电缆和管道行业已得到认可的连续挤压技术。典型应用包括铜和铝制矩形线(变压器线圈线)、实心铝导体(用于电缆的SAC)、铜母线、接触导线和异性导体、AS线、OPGW、CATV、圆形制冷管以及各种合金制成的多槽道PFC管。

新的Conform S315i专门用来挤出圆形或多槽道PFC管道，使用的材料是相同的铝棒(9.5毫米、12毫米或15毫米直径)。一位客户专门为此从BWE那购买了十条线。

简单的工具更换，同样的机器能挤出实心的铝或铜导体，使其成为一个非常灵活的机器。

BWE有着各种大小的PFC(10到105毫米)、孔形(圆形、方形、三角形，带内部翅片)以及合金(1000系

列、3000系列和特殊合金)生产经验。公司推出的感应加热工具系统使生产效率提高。

减少预热时间以及达到恒定的高温成为可能，从而减少启动时对精致而复杂的芯轴造成热损伤。

Conform工艺实现低资金和运行成本、高产出、高产品质量和短的转换时间。产品具有极好的表面光洁度、高尺寸公差和精度，甚至是颗粒结构。

Conform是连续挤压工艺，有非常稳定的运行条件，使产品的机械性能保持一致，沿长度没有变化。

BWE Ltd – 英国

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Narrow Gap TIG welding

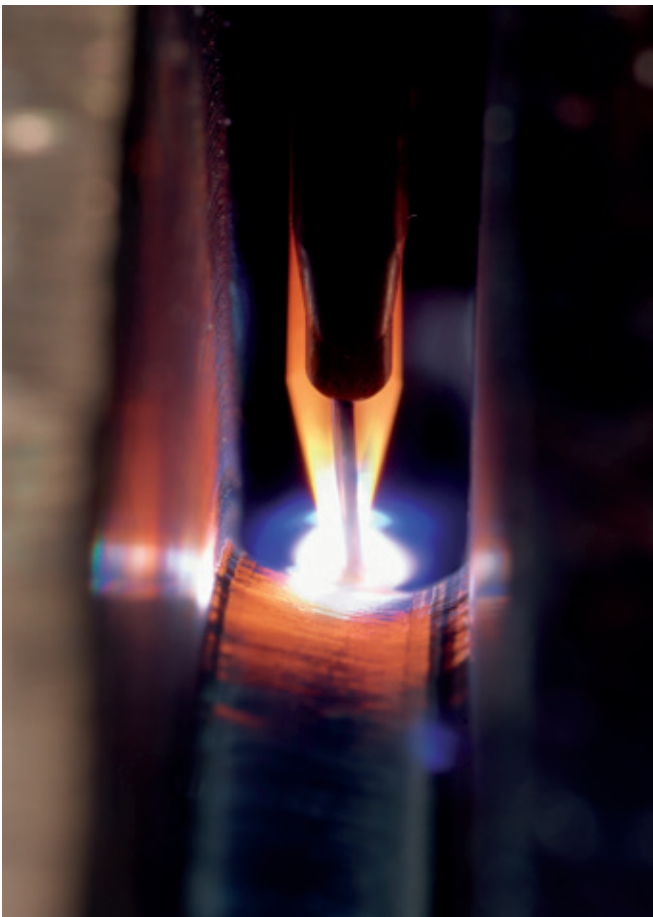
By Jean-Pierre Barthoux, Polysoude SAS, France

The quality and productivity requirements relating to welded joints are inexorably driving industrial companies towards the implementation of automatic processes.

These primary objectives are, however, supplemented by more subtle notions such as energy management, bead regularity or even aesthetic criteria for sectors affecting the general public. Several decades of progress in TIG welding have seen it become an essential process that offers not only the widest scope of use but also reasonable operating constraints compared with more recent developments (laser or electron beam welding).

The effectiveness achieved in producing quality weldments using the TIG process, both in terms of compactness and control in all positions, is at the origins of a large number of automatic applications including orbital welding.

Figure 1: Narrow Gap TIG welding – an essential process



This technique has now been popularised with the creation of numerous machines which have boosted recognition of the TIG process as a real alternative for the automated welding of a wide variety of materials. Efforts made in tool design (miniaturisation, robustness, increased duty cycles, etc) have made it easier to optimise the designs and service performance of the equipment to be built. The whole range of benefits linked to TIG welding has not only encouraged the automation of sequences that were previously only done manually, but has also been the starting point towards applications involving increasingly large workpieces.

Consequently many variants or developments towards high-power welding power sources, or the introduction of additional functions such as the use of hot wire or double wire feed, or the creation of specific tools such as cladding and narrow gap torches, have decidedly widened the scope for TIG. Nowadays it is no longer unrealistic to consider using TIG to weld workpieces from 30 to 300mm thick, given the numerous relevant advantages.

The TIG welding approach on thick workpieces does, however, require some specific knowledge with regard, on the one hand, to the choice and use of equipment and, on the other, to workpiece preparation and the development of operating techniques. Productivity is a question that is invariably posed on developing a Narrow Gap operating procedure. However, in order to choose an operating technique, the strengths and weaknesses of that technique must be known beforehand to avoid ending up in an impasse.

Productivity gains are considerable and increase in proportion to the thickness to be welded. It is vital, nonetheless, to assess the thresholds below which the restrictions involved in Narrow Gap welding outweigh the substantial gains.

Figure 2: Turbine rotor welding with thicknesses of up to 300–400mm



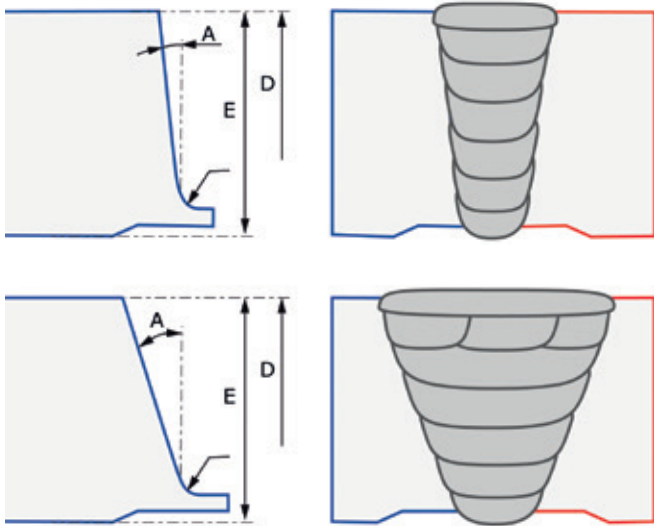


Figure 3: Increase in productivity between a conventional groove and a Narrow Gap groove

Several decisive factors come into play when analysing this question and the final choice must take account of the notion of relativity which may exist between the various situations.

It can therefore be seen from comparative tests that, for thicknesses ranging from 12 to 15mm, the increase in productivity between a conventional groove (angle of approximately 20°) and a Narrow Gap groove optimised in relation to the materials is not significant. Profitability will then increase, reaching a factor of 3 on sections around 55 to 60mm thick.

At thicknesses of 30mm and above, apart from the specific case of welding one-off parts, a Narrow Gap procedure must be used. The difficulties relating to materials or other operating restrictions are to be considered in order to choose the Narrow Gap technique that is appropriate and compatible with the application in question.

Today, Polysoude has a comprehensive line of Narrow Gap welding torches for all thicknesses from 30 to 300mm.

The ranges and thicknesses to be welded are to be considered on the basis of the line of torches created and constructed according to various technological constraints. Each torch has a scope which enables it to be used from maximum thickness (maximum torch insertion depth into the groove) up to completion of surface capping runs.

With conventional torches from 0 to 45mm, electrode stick-out has to be adjusted over a 5 to 10mm range.

So-called conventional torches remain fully versatile torches that are suited to all types of work. A category of intermediate tools called "V2 and V3 nozzles" exists for 0 to 100mm thick sections.

These nozzles have the particular feature of being insulated and channelling the gas to the root better than a conventional torch but without guiding the tungsten via a true electrode lance. From an insertion thickness of approximately 45mm, these nozzles are combined with removable trailing shield

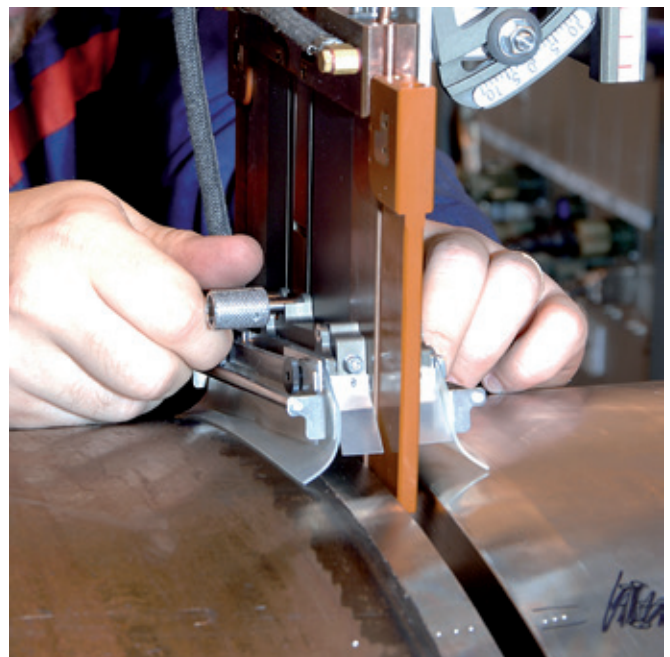


Figure 4: Narrow Gap V2/V3 torch module for thicknesses of 0–100mm

assemblies to complete the weld, oscillated capping run included. For thicknesses of 0 to 150mm, 0 to 250mm and finally 0 to 300mm, a line of torches is also available with trailing shield assemblies (removable if necessary) for all runs from root to cap. All Narrow Gap solutions (ie 0 to 100mm V2 and V3 nozzles, and 0 to 150 mm, 0 to 250mm and 0 to 300mm NG torches) exist as fixed electrode or oscillating electrode versions.

The deliberate reduction in the volume of metal to be deposited, which is the main objective of Narrow Gap applications, highlights several operational difficulties including that relating to the lack of visibility for operators to track the welding.

Figure 5: Narrow Gap NG torch module for thicknesses of up to 300mm



These difficulties are explained by the effect of several combined factors that differ slightly according to the applications, but which include:

- Groove width commonly between 10 and 20mm for depths of 100 to 300mm
- Welding on flat sheets or large diameter workpieces rendering tangential viewing angles almost impossible
- Preheating which is very often used when welding heavy wall thicknesses

In addition to these technical aspects, it is also natural to seek comfort for the operator stations and to move them away from the arc given that the radiation remains quite strong due to the use of high currents.

To remain compatible with the industrial environment and refrain from overburdening the tools, it is possible to integrate the video function by design, as opposed to the use of add-on external cameras, which disfigure the industrial nature of the equipment.

The torch is not only the most complex tool, but is also the one that has the greatest exposure and the greatest influence on weldment quality. Consequently, testing methodologies have been developed to verify and validate the predominant functions where failure could impinge on welding results.

Two essential factors are to be considered:

- The duty cycle (all functions mounted on the torch being globally combined and validated by the lack of deterioration of its initial function over time)
- Bead shielding quality

Validation is performed for each new torch reference with regard to functions such as video and gas shielding.

More comprehensive tests are performed per torch family or as a result of a notable technological development.

Once validated, the concepts are reused per family to reduce the development time of variants and to capitalise on lessons learned on each model. It can be considered today that there are no longer any technological issues in using a Narrow Gap torch to weld sections with a thickness of 30 to 300mm.

As there is no technological barrier, only technical criteria can be considered.

Figure 6: NG torch with integrated front and rear cameras

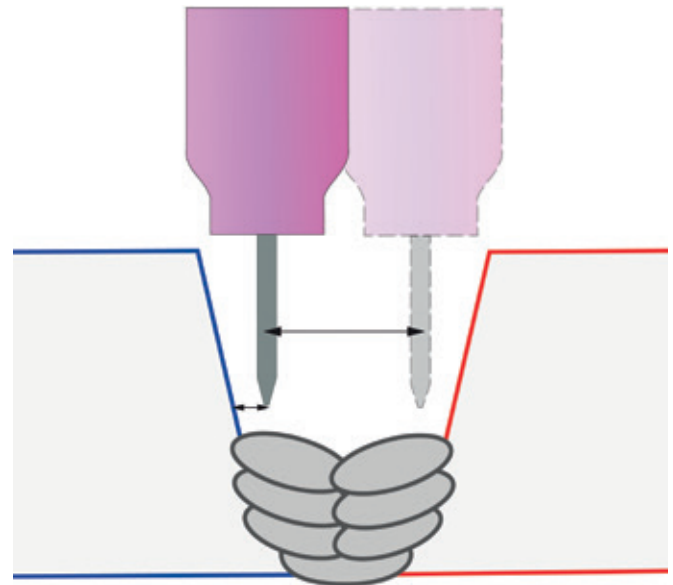


Figure 7: Single stringer bead

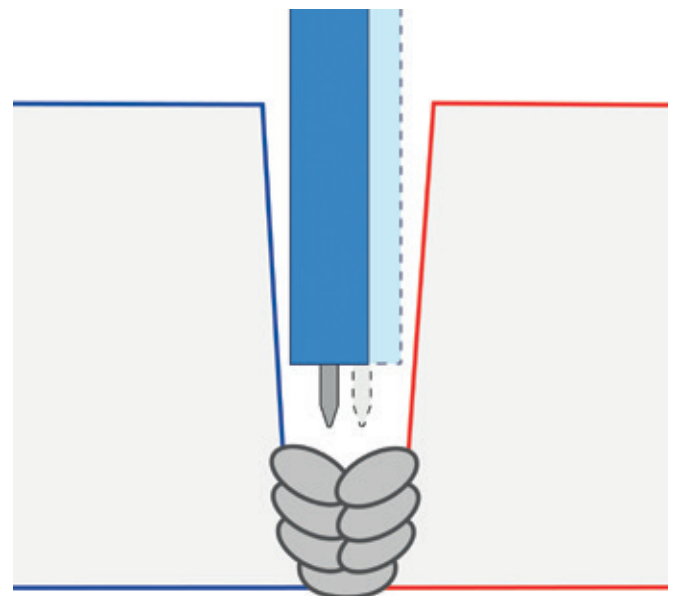


Figure 8: Multiple-pass stringer bead

Based on this fact, what are the alternatives, the common features, and the strengths and weaknesses associated with each methodology? The first choice to be made in TIG welding concerns the process variant: cold wire TIG or hot wire TIG welding.

Hot wire TIG welding machines generally have higher duty cycles with the capacity to use currents approaching 450A.

There are only advantages to be gained in opting for hot wire welding over the cold wire process and the former is increasingly used to weld sections over 10mm thick. These machines also offer the benefit of versatility and can make use of the two TIG welding variants quite easily. The only benefit of the cold wire TIG process may lie in the portability of the equipment for occasional use with a lower purchase price, as a direct consequence of the difference in power, for a complete installation.

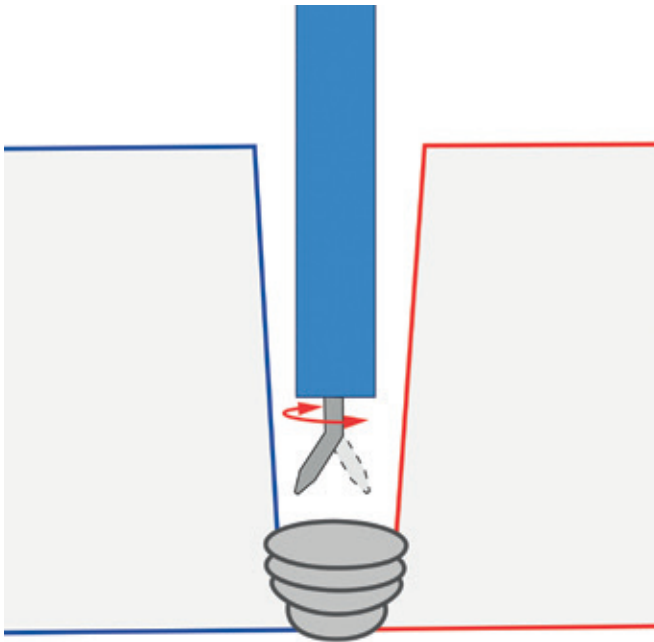


Figure 9: Single oscillation pass

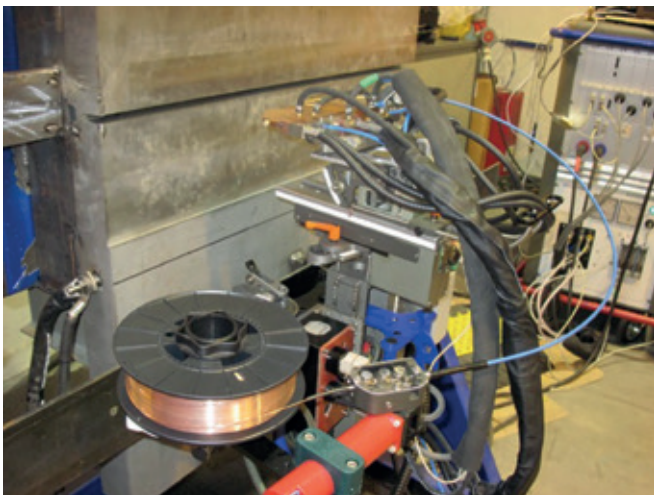
The various welding procedures are differentiated by the filling run layering strategy (cf. Comparison of the various NG filling techniques).

Four essential approaches and their advantages shall be examined:

- Single stringer bead per layer for welding performance and productivity in all positions where shrinkage and preparation are fully controlled
- Multiple-pass stringer beads per layer for optimum control over welding energy and difficult bimetallic joints
- Single oscillation pass per layer for welding in positions 5GT and 6GT with limited variations in width – a good compromise between productivity and ease of implementation
- Multiple oscillation passes per layer (rarely chosen) to use Narrow Gap TIG welding while adapting to existing preparations

Workpiece profiles, thickness ranges and the environment are all essential data when it comes to defining welding equipment.

Figure 10: Carriage-type head with narrow rail



Welding machines are generally matched to the welding tool to be used. A few typical examples of equipment configuration according to the thickness of the sections to be welded are provided below. For sections less than 45mm thick, usual mechanised or orbital welding equipment is suitable as long as it is compatible with the required duty cycles.

More versatile and modular PC power sources are suited to mechanised applications, or even more complex applications such as welding robot-type holder-based solutions or orbital cutting machines.

“Carriage”-type heads offer the advantage of being able to be used on circular or straight rails. The POLYCAR MP (friction drive) can be implemented on combined sections (curved or elliptical, etc). Due to the simplicity of the POLYCAR MP profile, industrial companies can create their own tool.

Straight rails are identical to the “bed” notion except for the fact that they can be used in all positions and are an easily implemented solution for linear welds. For thicknesses up to 100mm, the torch holders are the same as for conventional torches.

Beware however of circular welds in a horizontal plane which, other than the particularity of being so-called self-restraining welds (high stress concentration), also call for Narrow Gap torches with a curved profile (to be avoided).

Beyond 100mm, the tools gradually increase in size forming, in certain cases, modules that weigh several hundred kilograms (turbine rotor applications, for example).

For so-called mechanised applications, the solutions are identical but constructed on the basis of more robust components adapted to the context, the geometry and the weight of the subassemblies, in keeping with the thickness of the workpieces.

For orbital welding, however, the weight of the torches, the engagement strokes and the need to consider use of 15kg spools (justified by the volumes of metal to be deposited) call for larger tools than the POLYCAR 60-3 and MP orbital heads.

In this case, choose heads capable of moving heavy loads (80kg) with an offset providing sufficient flexibility to adapt to heavy-duty sheet metal workpieces.

Figure 11: Turbine rotor welding module



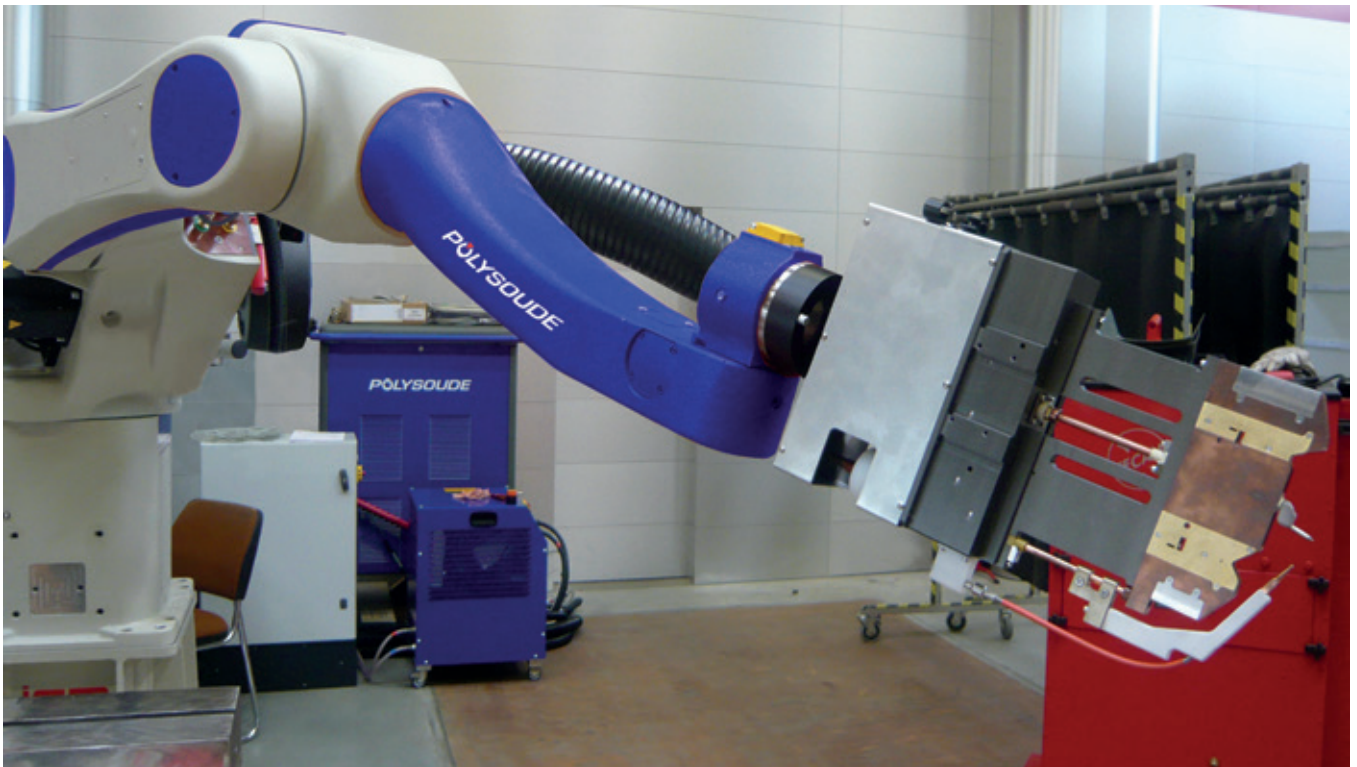


Figure 12: Narrow Gap welding with robot

Use of a welding robot is also recommended for anything other than circular trajectories or where the industrial company wishes to acquire a more versatile tool.

There are no particular considerations for solutions involving torches intended for applications up to 45mm. A retractable nozzle torch offers a multipurpose solution provided that electrode changing can be accepted as a non-automatable operation.

For heavy wall thicknesses, torch weights and dimensions must be integrated and robots compatible with wrist loads of 10 to 50kg selected. The notion of trajectory remains linked to the profile of the torches which limits movements and implies studying torch positioning along the usual three axes.

The use of a Narrow Gap torch renders the notion of automated preventive maintenance, such as electrode changing, somewhat illusory.

The other approaches are specific to robot use and are to be addressed according to workpiece dimensions and the level of automation (gantry, multi-robot station, seam tracking, etc).

Narrow Gap TIG welding is no longer a solution for exceptional circumstances. It is important to consider it whenever the thickness to be welded exceeds 30mm.

An initial analysis is imperative to ascertain the potential benefit, verify the absence of notable contraindications and above all to choose the methodology and equipment best suited to the context.

There are a multitude of solutions with a significant level of industrial maturity confirmed by numerous concrete examples.

The difficulties involved in implementing the welding procedures vary according to the chosen technique. The temptation to take a simplistic approach and skip a case-by-case assessment must, however, be avoided as there is no universal solution.

Moreover, in terms of tools, the entire 30 to 300mm thickness range is covered with numerous variants and adaptation possibilities for special cases.

For the welding process, knowledge and mastery of TIG are highly important and enable the technique to be popularised, with recourse in the event of difficulties. From the point of view of industrial companies, the implementation of a Narrow Gap application calls for a structured approach with marked steps. In parallel, corresponding approaches for machining facilities, tracking and traceability of materials and inspection techniques may need to be undertaken requiring validation steps close to those used in welding.

All of these anticipatory measures are justified by the prospect of substantial gains compared with the use of more conventional techniques.

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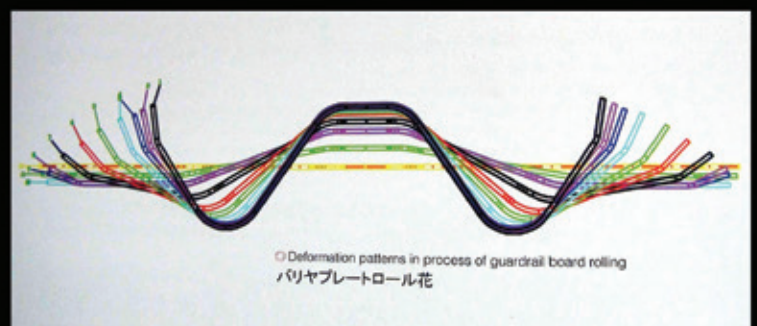
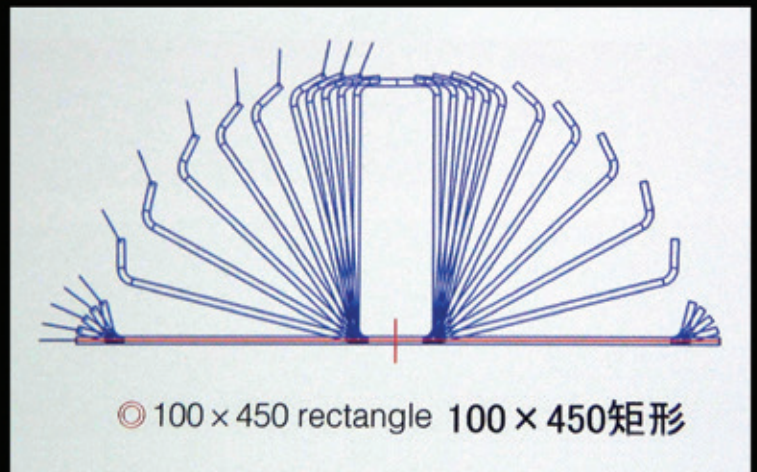
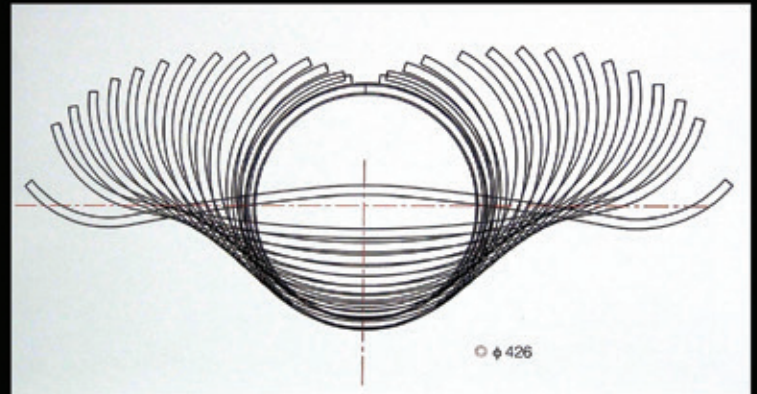
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