





## In-Line Diameter and Shape Control

### For all Types of Pipe, Tube, Profile - Any Shape

#### **STEELMASTER** gauges for hot and cold processes

Hi-speed laser scanning. Measurement of diameter, ovality, height, width

and diagonals.



Possible measuring modes











Standard measuring ranges: 60, 100, 150, 300, 500 mm\* (2.4, 4, 6, 12, 20 in.)

No. of measuring axes: Measuring frequency: Typical accuracy:

1000/s for each axis +/- 0.005 ... +/- 0.1 mm (+/- .0004 ... .002 in.)

Measuring solutions for round and non-round products. Captures also asymmetrical shape deviations of round, oval and polygonal products.

#### PROFILEMASTER® gauges for cold processes

Advanced vision technology (light-section). For any tube and profile of any shape and material. Full profile contour measurement. Profile and critical dimensions, radii and angles can be programmed (teach-in) and monitored.



Any shape



Standard measuring range: 25, 140, 300 mm\*

No. of cameras: Measurable parameters:

Typical accuracy:

\*Largest product depending on centering

(1, 5.5, 12 in.) 1...6 (standard 4) length, width, height, diameter, radii, angles +/- 0.01 ... 0.05 mm (+/- .0004 ... .002 in.)





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<sup>\*</sup>Largest product depending on centering



We are the leading manufacturer of Mill & Finishing Solutions to the world's OCTG marketplace.

Visit www.btwcorp.com to learn more about BTW's finishing equipment and Abbev's mill solutions.

### **MILL & FINISHING SOLUTIONS**

The global tube & pipe mill and finishing installation history of Bronx and Abbey in the OCTG marketplace is unmatched. Small to large mill installations, Hydrostatic Pipe Testers to Straighteners ... the Bronx and Abbey team of engineers have a history of innovation on their side, providing solutions to maximizing production up-time, while minimizing down-time. Bronx has over 100 global installations in the last decade and Abbey's Patented Quick Change Technology is employed in recent mill installations worldwide. Let us develop a solution to meet your mill & finishing needs.



Hydrostatic Testers

Pipe End Finishing

6-10 Roll Straighteners

Bar Straighteners









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BRONK TAYLOR-WILSON



www.btwcorp.com www.abbeyintl.com

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Toolings



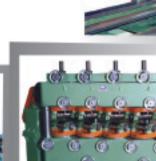


**End Facing** 





Triple Tube Hydrotester



Straightening

## **Our Technologies**

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- High Yields
- Quick Changeover
- Least Manual Operations
- Precise & Consistent Product Quality
- Advance Automation

## **C**ONTENTS

## www.read-tpt.com

#### **Entering 2010 with optimism**

While I was at FabTech, Chicago I had my first opportunity to converse with individuals in the industry face to face. This proved to be an invaluable way to not only learn about the products and machines in greater detail – and importantly to see them in action – but also proved a good litmus test to help me judge how the industry is faring, and what the level of optimism of engineers and managing directors at tube and pipe firms really is. After all, where else would you meet people not only from every corner of the US, but from Europe and Asia too?

What I found, at an encouragingly busy show, was a refreshing, if cautious, sense of optimism, even from companies in the worst hit regions of the world – the US among them. The cruel fact is that many companies have become much more lean – sadly mainly through redundancies – but that should leave them in good shape for the recovery.

It seems that the world simply cannot do without quality pipes and tubes and that the industry has largely survived unscathed, because there really are no cheap substitutes for machines that have been developed over decades. Although we are by no means out of the woods yet, the signs are undeniably promising. As I saw at FabTech, a continued emphasis on quality craftsmanship, innovation and attention to detail should remain the hallmarks of the industry as the world enters a more economically buoyant period. Read our exclusive special report on the future of the industry on page 118 for an in-depth analysis of the state of the industry.

Next issue is our Düsseldorf special so don't forget to let us know if you will be exhibiting any new machines at the show. Also in the issue will be features on 'straightening technology' and 'finishing, end-finishing and superfinishing' so make sure you get in touch.

All that remains is for me to wish all of our readers a happy and prosperous 2010.

Rory McBride, editor, Tube & Pipe Technology



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#### SPECIAL REPORT:

The future of the global tube and pipe industry put under the microscope .....

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#### FRONT COVER STORY

LINSINGER Tube cut-off machine, Type Multi-Cut MC 4 developed and manufactured by LINSINGER Austria.
LINSINGER's four saw blade technology is the most productive low-cost solution available for tube cut-off. Ideal for round, square and rectangular tube cut-off at high speed.

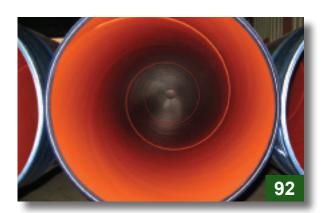
LINSINGER Multi-cut is for inlineoperation in ERW lines as a flying tube-cut
off aggregate requiring highest possible
availability. It utilises four cutters working
simultaneously around the pipe for a
surprisingly fast cut. If one of the four has an
early lifetime end, it goes into a park position.
The remaining three tool heads cut tubes
continuing until the scheduled tool change.
Thereafter there is a decrease of the tube line
speed or an increase of the cutting speed.

LINSINGER machines are engineered and manufactured in Austria. LINSINGER offers an extended product range for the tube and pipe industry. It covers mainly circular sawing machines for cutting of steel billets and tube layers, milling machines for edge preparation for wind tower construction and shipbuilding and pipe bevelling machines for bevelling of tube ends.

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When you have finished with this magazine please recycle it

#### **F**EATURES



## 90 Heat and surface treatments

The application of heat to metal is an ancient art, but one that has grown in sophisication as the need for shaping and bending tubes and pipes has grown more demanding



## 104 Tube India 2010 show feature

The fourth edition of the increasingly influential Tube India will this year be held in Mumbai, a city that is the home of India's tube and pipe industry



## 102 Tube Düsseldorf 2010 show preview

A first look at the world's biggest tube and pipe trade show, which will again feature all of the world's leading tube and pipe companies under one roof



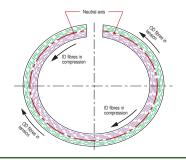
## 106 Weighing, measuring, handling& packaging technology

It's not only the actual manufacture of tubes and pipes that is vital in the engineering process: efficiently and safely, handling the materials is just as vital

#### TECHNICAL ARTICLE

## How does the Bauschinger effect change the physical strength of welded steel pipe?

By Lew Warren, P. Eng., consultant, Warren Consulting Inc



## **INDUSTRY NEWS**



## Bookings fly in for Tube 2010 halls at Düsseldorf

WITH just four months to go before the start of the world's leading industry Tube and wire trade fairs, both exhibitions are defying the global economic situation and recording consistently good registration figures.

Even at this stage the international exhibitors already occupy more net exhibition space than was the case during the same period two years ago. The companies at Tube occupy around 42,000 square metres (as of the beginning of December 2009).

Halls 1, 2 and 3 of Tube are presenting the following sectors: pipe and tube accessories, production and trade. Hall 4 forms the interface to the machinery park with testing machines, pipe and tube production plant and machinery, the tube trade and several large joint stands. Bending and forming technology for hollow materials (Tube) is presented in Hall 5, welding, cutting and surface technology (surface finishing) follow in the adjoining Hall 6. Pipe and tube-processing plant and machinery is shown in Hall 7a.

The new areas of section and section technology and the second presentation of the oil field technology zone are particularly highlighted in the hall site plan.

In almost every hall you will find exhibitors who will be showing new innovations in the tube and pipe industry.

Both section production plant and machinery along with the corresponding end-products will be shown in various materials and forms across the show.

Traditionally the wire, cable and fibre optic machinery sectors, wire and cable production and the trade are presented in Halls 9 to 12, 17 and parts of Hall 16. Exhibition Halls 9 to 12 and 15 to 17 are nearly full, but individual stands are still

available. Spring making is also located in Hall 16, while the fastener technology section (wire) is located adjacent to this in Hall 15.

You will find the latest information on both trade fairs on the respective trade fair portals on the Internet at: www.wire.de and www.tube.de

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### **Proserv chooses Parker fittings** and valves

AT Offshore Europe, Parker signed a worldwide representation agreement with the oil and gas systems integrator Proserv Group AS. Tube fittings, valves, manifolds and other components from the instrumentation products division of Parker Hannifin the global leader in motion and control technologies - will become part of Proserv's preferred system building offering.

Since its foundation in 1974, Proserv has developed a global engineering business that includes specialist system building expertise in a broad range of oil and gas applications. The Norwegian-headquartered company has grown rapidly and now operates in almost every major oil and gas centre, from over 20 locations worldwide.

To enhance the efficiency of its system services, Proserv actively seeks relationships with suppliers who are able to provide premium-quality building-block components worldwide. Parker's broad range of instrumentation fittings, valves and manifolds, and its global logistics network, proved the perfect match. In particular, Proserv was very impressed with the responsive nature of Parker's lean manufacturing operation in Barnstaple, UK.

In addition to Proserv's broad activity profile, the system builder's worldwide footprint was a major attraction for Parker, as it extends local support to several areas not currently covered by its own international office network, such as West Africa.

Parker's Sheldon Banks said: "Proserv is one of the strongest brands in the industry and has an enviable global footprint. Our agreement gives us the means to better serve oil major, design house and EPC clients - bringing mutual opportunities for rapid and sustainable growth."

"We have a large requirement for instrumentation products and expertise, and Parker's range, responsive supply chain and innovative approach gives us what we need," added Proserv Group's chief executive officer Arve Sem-Henriksen. "The product supply agreement we have will help us to build and deliver systems very rapidly and efficiently, and provide after-sales support with products from a globally recognised source."

#### **Parker Instrumentation Products** Division - UK

Email: ipd@parker.com Website: www.parker.com

## **DIARY OF TUBE EVENTS**

#### 2010

#### **FEBRUARY**

Tube India 2010 10-12 Mumbai, India Exhibition



Email: dughl@md-india.com Website: www.tube-india.com

#### **MARCH**

Boru 2010 Istanbul, Turkey Exhibition



Fmail: info@ihlasfuar.com Website: www.borufuari.com

#### **APRIL**

Tube / wire Düsseldorf 2010 12-16 Düsseldorf, Germany Exhibition



Email: infoservice@messe-duesseldorf.de Website: www.tube.de www.messe-duesseldorf.de

#### MAY

Tube Russia 2010 Moscow, Russia Exhibition



Email: ryfischd@messe-duesseldorf.de Website: www.metallurgy-tube-russia.com

#### **SEPTEMBER**

Tube / wire China 2010 Shanghai, China Exhibition



Email: tube@mdc.com.cn Website: www.mdc.com.cn

#### **OCTOBER**

EuroBlech

Hannover, Germany Exhibition



Email: info@euroblech.com Website: www.euroblech.com

#### **NOVEMBER**

Fabtech / AWS Welding Show 2-4 Atlanta, USA Exhibition



Email: information@fmafabtech.com Website: www.fabtechexpo.com

#### 2011

#### **JANUARY**

Tekno / Tube Arabia 2011

8-11 Dubai. UAE Exhibition



Email: alfaier@emirates.net.ae Website: www.tube.de

#### **SEPTEMBER**

19-24 Hannover, Germany Exhibition



Website: www.emo-hannover.de

#### **OCTOBER**

**Tubotech** 4-6 Brazil Exhibition



Email: cipa@cipanet.com.br Website: www.cipanet.com.br

**Tube Southeast Asia** 

11-13 Bangkok Exhibition



Website: www.tube-southeastasia.com

JANUARY 2010

## Thames uses 'ready-to-go' pipes for pre-treatment

A NEW pipe manufactured by GPS PE Pipe Systems is being used by Thames Water under its ongoing Victorian Mains Replacement Programme. Installed in the Crouch Hill district metering area, North London, Excel 3C is a response to calls for clean, capped pipe coils for drinking water. It eliminates a major preparatory step for water companies and contractors installing new or replacement pipes.

Excel 3C is a range of PE pipe coils that are DWI-approved for installation without pre-chlorination. The new pipe coils are claimed to save up to four days in installation time and reduce the quantity of hypochlorite solution required.

As demonstrated in Falmer Road, London N15, where old cast iron pipes were upgraded to 180mm PE, the new pipe can be slip-lined into existing ferrous pipes, in the same way as standard PE pipes from GPS PE Pipe Systems. A key advantage is that water engineers can install it straight from stock, without lengthy pre-treatment. By eliminating pre-chlorination of pipe coils, Excel 3C (clean,

capped, coiled) can cut costs and increase productivity. It is delivered to site with a factory-clean bore, which is doubly secured against contamination by end plugs and/or protective caps. The plugs and caps are fitted during online manufacture.

Excel 3C is available in 75m and 100m coils, manufactured in PE100 (Excel), and is available in SDRs 11 and 17. Standard sizes are 90mm, 125mm and 180mm with other sizes available to specific order requirements.

The product has been developed in conjunction with Thames Water and the DWI. GPS PE Pipe Systems factory-seals the new pipes so effectively that a sixmonth 'shelf life' has been determined for the product, each coil being marked with the manufactured and use-by date.

The standard full chlorination process can be time consuming, cumbersome and costly, requiring large quantities of hypochlorite solution, to allow the complete filling of pipe coils up to 4m in diameter, prior to use. Spent hypochlorite solution then has to be disposed of in an

environmentally sensitive way. The whole process can take between three and four days for each pipe coil, with the pipe coils having to be installed within seven to fourteen days, following successful 30-minute sterility tests.

GPS PE Pipe Systems – UK Fax: +44 1480 458829 Website: www.gpsuk.com



The Excel 3 in action









## years of experience in the world

- Tube Mills 1"-16"
- Finishing Equipment
- Automatic Packaging
- Slitting lines
- Cut to Length



## Mathey Dearman to boost welding and pipeline productivity

USA-based manufacturer Mathey Dearman has hired Charles G Lutz, vice-president of sales and marketing - Africa, Asia, Australia, Latin America, Middle East, and New Zealand to support the company's global expansion strategy.

Initially spending nine years with Invensys Plc, a leading UK headquartered provider of industrial control components and systems for climate control systems, Mr Lutz was its director of International Business Development.

Based in the UK, he led the entry of the company's newly formed safety electronics division into Europe. Most recently Mr Lutz was director of international sales with La-Co Industries, an industrial manufacturer of paints and chemicals. Mr Lutz holds a BS degree in business from Elmhurst College and sits on the Board for the Illinois Trade Association of Greater Chicago.

The company said the products and the technology that has made Mathey

Dearman's name synonymous with quality workmanship continues to lead the way in pipe fit-up equipment.

Mathey Dearman's focus is to increase the company's reach in the industry and to deliver technological solutions through "innovative thinking".

Mathey Dearman says its capability of spending design and engineering time on new and improved technology and listening to its customers' needs continues to put them in the forefront.

This Tulsa-based manufacturer, and its Italian subsidiary, offer a wide variety of equipment. Developing, manufacturing and marketing patented cutting and bevelling machines for all types of pipe and pipe diameters benefit pipe fitters and welding professionals to achieve quick, accurate, safer and easier pipe fit-up.

Pipe alignment and reforming clamps; welding electrode and flux ovens, and smaller pipe tools for pipe fitting and layout are manufactured.

Quality controlled, service minded -Mathey products are the most valuable in the domestic and international marketplace while maintaining the most competitive pricing worldwide.

Mathey Dearman - USA Fax: +1 918 4470188 Website: www.mathey.com



Charles G Lutz, vice-president of sales and marketing



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### This is not a pipe.

It's actually an entry ticket to huge markets. Because what you're looking at is a longitudinally welded pipe that's been normalized to oil and gas pipe standards. But there's a catch. Normalizing isn't easy. Especially for today's gauges and alloys. It demands expertise in metallurgy, control software and precise heat delivery.

The good news however is that these are areas in which we specialize—making us a leader in pipe weld-seam normalizing. Also, with more than 50 years' induction heating experience, we're experts at using technology to open new commercial opportunities for our customers.

EFD Induction is Europe's no 1—and the world's no. 2—induction company. Our systems are used to weld, normalize, anneal, harden, temper, braze, melt, forge, bond, cure and pre- and post-heat.

So whatever your pipe normalizing needs, you can turn to us for a solution. And since we're present around the world, that solution is probably closer than you think. Contact us today. There's a vast oil and gas pipe market out there. We'll help you get a share of it.



## Modular Engineering wins major industry award

PIPE Center's Modular Engineering has won a major national award for innovation in construction. It received the award for Best Product or System in the Offsite Construction Awards 2009, held alongside Interbuild at the NEC.

The award recognised the ability of Pipe Center's approach to reduce costs, save waste, protect the environment, cut accidents and deliver an assured level of quality on time and to budget.

Bob Hughes, general manager of Modular Engineering, said: "We are obviously delighted to win the award. It is recognition of the huge benefits offered by off-site modular engineering for multiservice pipework for buildings."

He added: "Given the ever tighter time and cost pressures in the construction industry, I have no doubt that use of the modular engineering approach will increase in the future."

In the conventional approach, often complex building services pipework and electrical systems required for a building – including air conditioning, M&E services, refrigeration, water and fire – are installed individually on-site.

This requires the involvement of several different trades, working in building site conditions, with the inevitable pressures and limitations this entails.

The new approach, developed by Bob Hughes and colleagues at Pipe Center, overcomes the need for such difficult and inefficient on-site working. It is based on the off-site assembly of multi-service pipe modules, containing all the piped and electrical building services required – even for the most complex buildings, such as major hospitals.

Multi-service modules are assembled in factory-controlled conditions to strict

quality standards, before being transported to site, located in position, and joined together and commissioned. The result is a reliable, fully-tested system that works.

"The savings in cost, time, manpower and materials are enormous. It also has huge benefits for the environment – as materials and components are precisely specified, resulting in dramatically reduced wastage," he says.

"It also means a big reduction in vehicle miles travelled, as the modules are delivered to site in a single drop as complete units, rather than as hundreds or even thousands of individual components, on multiple vehicle deliveries."

Scott Craig, sales and marketing director, said: "We are proud of what the

Modular Engineering team has achieved since being established just over a year ago. The approach has transformed the ability of the building services industry to deliver high quality, cost-effective solutions – on time, every time.

"Once clients see for themselves the benefits of the approach, they are won over. It has enormous potential for the future."

The award was one of the most hardfought categories in the Offsite Construction Awards, with Modular Engineering one of ten finalists.

#### Wolselev UK

Email: judy.lawson@wolseley.co.uk Website: www.wolseley.co.uk



Bob Hughes, general manager of Pipe Center Modular Engineering, receives the award for Best Product or System from Jackie Maginnis, chief executive of the Modular and Portable Building Association. They are joined by Kevin Hartshome, regional trading director, Central and West, at the Pipe and Climate Center (second left) and Scott Craig (far right), marketing director of Pipe Center







ERW TUBE MILL 1/2"-24" [API/ASTM]

#### OTUBE MILL ENTRY TO RUN-OUT TABLE

CAGE FORMING TECHNOLOGY

#### O FINISHING EQUIPMENT

END FACING & CHAMFERING MACHINE HYDROSTATIC TESTER PAINTING / VARNISHING LINE

AUTOMATIC PACKING MACHINE

OSLITTING LINE

O CUT-TO-LENGTH LINE



## Siemens strengthens market position in China by supplying reversing rolling mill to Chinalco

CHALCO North East Light Alloy Company Ltd, a subsidiary of the Aluminium Corporation of China (Chinalco), has ordered a single-pass reversing finishing mill with twin coiler from Siemens VAI Metals Technologies. The mill is part of a hot and cold mill expansion, which will be erected in Harbin. The order is worth some €13mn and includes key electrical and mechanical components together with the automation and process technology.

The new rolling mill is scheduled to start production in August 2011. The project will enable Siemens to further strengthen its market position in aluminium rolling mills in China.

Chalco North East Light Alloy Company Ltd (Chalco NELA), based in Harbin in the northern Chinese province of Heilongjiang, produces plate and sheet, strip, foil, tube and pipe from aluminium, magnesium and aluminium-magnesium alloys. The company's products are used mainly in

aviation, transport and communication as well as the electronics and lighting industry.

The new reversing mill will increase Chalco NELA's annual production capacity by 210,000 metric tons of strip and allow production of end products of increased hardness and reduced thickness at enhanced quality levels.

The plant has been designed for rolling strip with a width of up to 2,100mm at a speed of up to 363m per minute.

The finishing mill comprises a 4-high stand with automatic hydraulic gauge control as well as positive and negative work roll bending. Siroll ISV Sprays are used for spray cooling.

In addition to the mechanical equipment, Siemens will be supplying the entire automation system and the drive technology for the rolling mill, including Sinamics SM150 medium-voltage converters and Sinamics S120 low-

voltage converters, as well as thickness and profile measurement systems and the sensor technology. The automation system embraces the basic automation, including the technological controllers and the operating and monitoring equipment.

The scope of supply also includes the process automation equipment for the entire hot strip mill, which also comprises a reversing roughing mill to be supplied by a local vendor.

This degree of system compatibility ensures a consistently high product quality. All the systems and components belong to the "Siroll Alu" integrated solution platform from Siemens for aluminium rolling mills. Siemens will also be responsible for commissioning the plant and training the customer's personnel.

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## SMS Siemag inaugurates new office complex and modernised piping shop at Hilchenbach

THE doors have opened to the newly built office complex and the modernised piping shop at the Hilchenbach location of SMS Siemag AG, Germany.

More than 300 guests attended the official opening ceremony, among them the Siegen Wittgenstein District Administrator Paul Breuer, the Mayor of Hilchenbach Hans-Peter Hasenstab, and representatives of the Employers' Association of Siegen-Wittgenstein, Siegen Chamber of Commerce, the district, the town of Hilchenbach, the Works' Council, the IG Metall Trade Union, the architectural, construction, and trades companies responsible for the work, as well as the family companies of Siemag Weiss KG.

Dr Heinrich Weiss took the opportunity to emphasise that the investment programme will go ahead despite the current financial and economic crisis. It is scheduled to run up to 2012 and

dedicated to boosting the competitiveness of the works in Hilchenbach. "Here in Hilchenbach, where our family-owned company was founded more than 130 years ago, we are building Europe's most modern and productive heavy machinery workshop.

"Simultaneously, we will continue to push forward technical development – with a special focus on green technology and resource-saving machine and plant design. Products like these enable our customers to produce even more competitively so they can emerge from the crisis along with us stronger than ever."

Dr Kay Mayland used the occasion to thank the shareholders of Siemag Weiss KG for the coming investments that clearly prove their commitment to the location.

He also thanked all the project teams and companies that played a part, and explained the further stages for increasing the efficiency and improving the production logistics of the manufacturing shops between now and 2012. "The alterations and extensions," said Dr Mayland, "are already everywhere you look on the company site.

"Next up is construction of a new gear manufacturing shop and a new training workshop. We are also investing in even more powerful machine tools and machining equipment.

"The delivery traffic problem has been eased, and that will also prevent future tailbacks on the B508 federal highway. Now our new routing system directs the 70-plus delivery trucks per day from Obere Schweisfurth via the south of the site, so only outgoing traffic uses the west gate to reach the B508."

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## Renewable energy giant signs major partnership deal

RENEWABLE energy product manufacturer Stiebel Eltron has signed a major partnership agreement with the UK's biggest supplier of domestic underfloor heating systems, Nu-Heat Underfloor & Renewables.

German-owned Stiebel Eltron's deal with South-west England based Nu-Heat follows a trial of its products with the national supplier that saw heat pumps sales surge, despite the recession.

"This is a terrifically exciting deal for Stiebel Eltron UK that will unleash a significant number of new sales opportunities across a range of products," said Stiebel Eltron UK managing director, Mark McManus. "Nu-Heat is the UK leader in its field and this alliance is a massive stride forward for Stiebel Eltron and our presence in the UK green energy market. It is further testament to the standard of our products and our standing as one of the world's premier manufacturers of low carbon, green energy heat pumps.

Moreover, this deal comes at just the right time as heat pump sales are rising and awareness of the huge role they have to play in the green energy revolution is increasing."

Nu-Heat's sales and marketing director, Adrian Troop, said he is enormously excited by the deal and predicted that heat pump sales would double in 2010.

"Heating is responsible for more than half UK energy use so renewable energy heat pumps have a vital role to play in helping communities and buildings go green," he said. "This deal really is about a future where heat pumps and underfloor heating will become far more commonplace in both homes and commercial buildings.

"Already this year we have seen a 70% increase in sales and this deal gives Nu-Heat customers access to a whole range of competitively priced, top-of-the-range heat pumps. Furthermore, the size and power of Stiebel Eltron's larger heat pumps, which provide an output of

up to 400kW, is especially interesting as they can work in very large commercial buildings like hospitals and factories. This is a great selling point to installers and developers who are coming under greater pressure to use green energy products."

Mr McManus said the partnership will aim to spread awareness of the huge financial incentives available to help property owners meet the cost of installing green energy products.

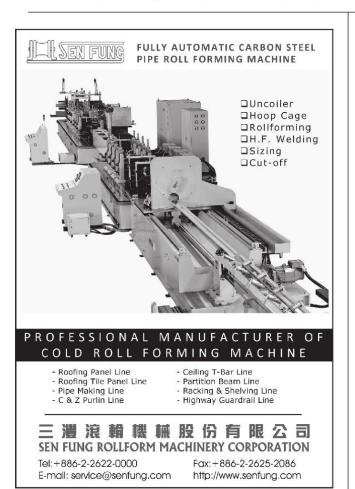
"There are a number of grants, tax breaks and Government incentives to help pay for renewable energy products," he said.

"Grant schemes such as the Low Carbon Building Programme, for example, can pay for up to half the cost of buying renewable products. The Enhanced Capital Allowance Scheme enables organisations to write off the whole of the capital cost of their investment in low carbon technologies against their taxable profits. Moreover, VAT on renewable energy products is just 5%."

Stiebel Eltron – UK

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Large selection of tooling Ex-stock.

## SteelFab 2010 reports highly successful show

NEARLY all the available exhibition space was booked for SteelFab 2010, the Middle East trade show for the metal-working, metalmanufacturing and steel fabrication industry.

The show, which was held from 11–14 January at Expo Centre Sharjah, received bookings from all over the world. The bookings were at 80% as TPT went to press but were set to rise further as more bookings were coming in right up to the start of SteelFab 2010.

"Tube & Pipe Machinery" was a special focus segment at SteelFab 2010. Visitors from the process, oil and gas, shipbuilding, MEP, pipelines and other pipe and tube user industries greatly benefited from interaction with exhibitors in this segment, who updated them on the latest machinery, equipment and technology available for the pipe and tube industry.

Exhibitors in this segment included Akyapak, DWT Babcock, Wachs, Evolution, HGĞ Profiling, Jammes, Magnatech, Miksan, Mueller – Opladen, Orbitalum, PHD Pipe Hanger Devices, Polysoude, Spa Welding, Sulzer Metco, Watts Specialties, Weld-tech, Wortelboer, Ylm-Ying Lin Machine, Zopf and others.

Metal-cutting machine tools continued to be a key attraction, under the banner "Machine Tools Middle East", and featured lathes, milling, drilling, grinding, EDMs, work centres, tool room machinery, high-precision machine tools, machining centres and affiliated machine tools. Brands such as Brobo, Chester, GFM, Hartford, Ileri, Kellenberger, Knuth, Metosa, Narvik, Okamoto, Okuma, Pathak, Pinacho, Quickmill, Sodick, Star, Takahashi, Tos, Weida participated in the show.

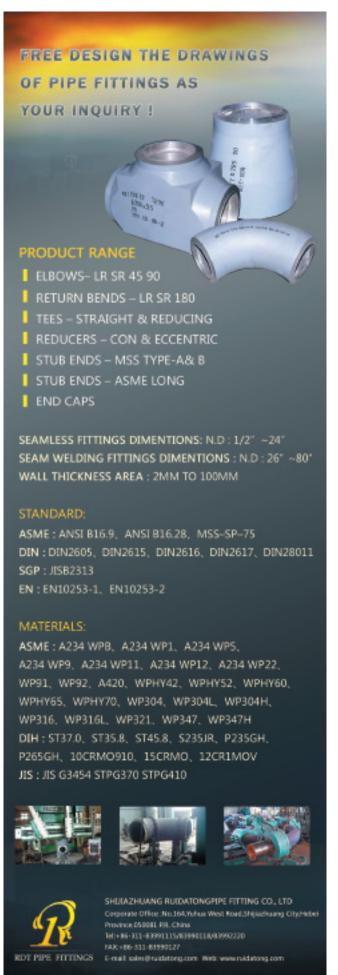
"SteelFab is supported by UCIMU-Sistemi Per Produrre - the association of Italian manufacturers of machine tools, robots, automation systems and ancillary products. Participation by ICE the Italian Institute of Foreign Trade will augment the usually large Italian participation at SteelFab," said Mr Fasahat Ali Khan, advisor to the chairman and board of directors of Expo Centre Sharjah.

"We expect the Chinese and Turkish exhibitor numbers to grow too through increased bookings from the Chinese Mechanical Engineering Society and our Turkish agent," he said.

For SteelFab 2010, apart from the regular exhibitors, enquiries have also come from several new countries and new companies that are keen to explore regional markets. Most of these companies are looking to rely less on stagnant markets and instead focus on areas that offer better opportunities.

SteelFab 2010 - UAE Fax: +971 5073 58556 Email: naveen@expo-centre.ae Website: www.steelfabme.com





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## Technip awarded contract for the Oselvar development in Norway

TECHNIP has been awarded engineering, procurement, construction and installation lump sum contract, worth in excess of €45mn by DONG E&P Norge AS for the Oselvar field development. This field is located on the Norwegian Continental Shelf, 250 kilometres offshore Norway, at a water depth of 72m.

The contract covers turnkey delivery of an approximately 27 kilometre-long pipeinpipe flowline, installation of an umbilical and subsea equipment and tie-ins.

Oselvar is the first major Subsea contract awarded to Technip by DONG. It will be executed by the Group's operating center in Oslo, Norway. Offshore installation is scheduled to be carried out in 2010 and 2011.

The Production Licence No PL 274 and 274CS (Oselvar) Owner Group consists of Norwegian Energy Company ASA (NORECO), Bayerngas Norge AS and DONG E&P Norge AS.

Pipe-in-pipe flowline: steel assembly consisting of a standard production pipe surrounded by a so-called carrier pipe. The gap between the carrier and production pipes is filled with an insulation material.

Umbilical: an assembly of steel tubes and/or thermoplastic hoses. Umbilicals can include electrical cables or optic fibers to support communications, power supply and telemetry functions.

Technip is a world leader in the fields of project management, engineering and construction for the oil & gas industry, offering a comprehensive portfolio of innovative solutions and technologies.

With 23,000 employees around the world, integrated capabilities and proven expertise in underwater infrastructures (Subsea), offshore facilities (Offshore) and large processing units and plants on land (Onshore), Technip is a key contributor to the development of sustainable solutions for the energy challenges of the 21st century.

Present in 46 countries, Technip has operating centres and industrial assets



plants, (manufacturing spoolbases. construction yard) on five continents, and operates its own fleet of specialised vessels for pipeline installation and subsea construction. The Technip share is listed on Euronext Paris exchange and over the counter (OTC) in the USA.

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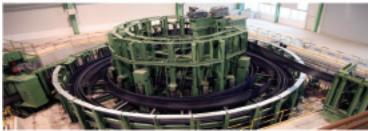
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## **Boeing Integrated Defense Systems orders bending machine**

UNISON has supplied a second allelectric tube bending machine to Boeing Integrated Defense Systems. The order for the machine came just two years after Unison delivered the first system.

The Unison tube bending machine — a Breeze 20 system capable of making precision bends on high performance alloy and aluminium tubes with diameters of up to ¾" (20mm) — was built at Unison's facility in Scarborough, UK, and shipped in mid-July.

It was installed at Boeing Integrated Defense Systems' rotorcraft manufacturing facility in Ridley Park on the outskirts of Philadelphia, to be used to fabricate hydraulic and fuel line components for CH/MH-47 Chinook helicopters, as well as for the V-22 Osprey tiltrotor aircraft.

The bending machine features a 'long nose', which allows it to shape tubes with complex bends, and very short

distances between bends, in a single fully-automated operation.

Boeing's Chinooks are medium-toheavy-lift helicopters, designed for intratheatre troop and cargo movement. They are used in a wide variety of operational roles, from combat to disaster relief, and are in service with the armed forces of nearly 20 countries worldwide.

The latest model – the CH-47F – is designed to extend the service life of the Chinook class helicoper beyond the year 2030.

Its airframe uses larger single-piece sections than previous models, to reduce vibration and the need for fasteners, and to help reduce maintenance costs.

The first production model of the CH-47F was rolled out from Ridley Park on June 15, 2006. The US Army has since taken delivery of 77 of these helicopters, and in August last year awarded Boeing a multi-year contract for 191, with options

on another 24. The Netherlands, Italy and Canada have also placed orders for a number of CH-47F Chinooks.

Unison's Breeze 20 tube bending machine uses servo motors instead of hydraulic force to control the tube bending process.

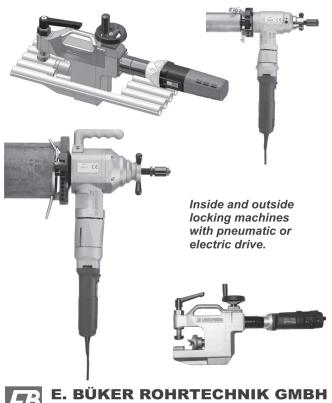
All-electric actuation provides significant advantages related to manufacturing precision, repeatability and energy consumption. Each of the tools employed during bending is under software control, allowing operators to create smooth bends with optimal flow performance and strength.

Once the machine is set up, operating parameters can also be stored, allowing machines to be reconfigured for another part or batch in a few minutes, without creating any scrap. Further, as the actuation elements of the machine only need energy when a bend is being made, total power consumption is greatly reduced.

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



## Mobile Tube Endpreparation machines



# A first for the UK no dig industry

A TRENCHLESS solutions provider has solved a challenging dilemma while at the same time achieving a first for the UK trenchless technology market.

Warrior Worldwide was contacted by a drainage contracting company who had been asked to replace a section of process pipe work at a leading soft drinks factory.

"Due to the high temperatures used in production of drinks, the drainage system had been severely damaged," said Warrior's managing director, Tony O'Brien. "High temperatures also meant that plastic pipe could not be used in the renovation project."

As the pipeline was crucial to the production process, the drinks factory had been lining with a resin pipe and making patch repairs on a regular basis, an extremely expensive cost to the company but one they could not avoid.

It was at this stage that the contracting company, who had witnessed one of their live demonstrations, approached Warrior Worldwide for a solution.

"The nature of the production equipment and the confined facility at the factory meant that traditional open cut excavation was not an option; pipe bursting was the only other solution," explained Mr O'Brien. "Rather than plastic pipe, we (Warrior) installed a new stainless steel pipe using trenchless pipe bursting methodology. This new pipe has an expected life span of 50-70 years."

The answer to the technically difficult project was Warrior's pipe bursting equipment, the powerful WR33.

The WR33 uses hydraulic rams to pull a wire cable attached to a bursting head through an underground pipe. The bursting head is slightly larger in diameter than the pipe causing the existing pipe to burst apart as it is pulled through. The new pipe to be installed is attached to the rear of the bursting head.

The process pipeline was at a depth of approximately three metres, but due to the modular and compact size of the equipment the WR33 was easily installed at the base of an excavation to gain access at the head of the run. The WR33 pulled through the stainless steel pipe in one metre sections. The design of the WR33 allowed the pipe to be turned so the

sections could be welded at the same time by a separate team. The WR33 enabled the pipe to be pulled through and welded in situ," said Mr O'Brien.

"From arrival to departure, the job took 7.5 hours in total. Excavation, even if possible, would have meant the factory would have been out of action for at least a week, with damaging effects on productivity."

Other benefits for the client were minimum noise levels, reduced contamination, reduced downtime and

minimum reinstatement. Plus there was no negative impact on the environment.

"The WR33 was the perfect solution to the challenging brief," concluded O'Brien. "As far as we (Warrior) are aware, there has been no other successful attempt at pipe bursting using a replacement pipeline of stainless steel in the UK."

Warrior – UK

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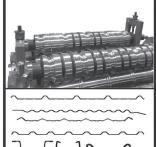
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## Bhushan Power&Steel uses drive technology and automation systems from Siemens

SIEMENS VAI Metals Technologies has received an order from Bhushan Power&Steel Co to supply the drives and automation system for expansion of the company's compact hot rolling mill in Orrissa, India.

The scope of supply also includes two reactive-power compensators for electric arc furnaces. Commissioning is scheduled for July 2010.

In Orrissa, a federal state of India, Bhushan Power&Steel has been operating a compact hot rolling mill with an annual capacity of 0.8 million metric tons since April 2008. The plant is being expanded in order to double its capacity and also to enable rolling of thinner steel strips with a minimum thickness of 1.2mm.

To this end, the hot rolling mill is to be equipped with a second caster, a sixth finishing stand and a second coiler. Siemens is to supply and install the associated drives and automation system, which are based on the Siroll HM solution platform specially developed for hot rolling mills. For the first construction stage, Bhushan had already decided in favour of drives and automation systems from Siemens. Moreover, Siemens supplied the reactive-power compensation equipment for the drives and the electric arc furnaces.

Within the framework of the current project, Siemens is supplying additional cyclo-converters and the motor for the finishing stand, the main drive and the main motor for the coiler, as well as other auxiliary drives and motors for the new parts of the plant.

The caster will be automated on the basis of Simatic S7 and PCS7 with Simelt CC Control. Simatic TDC and PCS7 systems will serve as the basis for extended automation of the finishing mill. On top of all this, Siemens is supplying two reactive-power compensators (Static Var Compensators, SVC) for the electric arc furnaces, whereby each compensator has an output of 120 Mvar. Simetal PQ (Power Quality) is being used to ensure the quality of the power supplied.

Siemens is also responsible for installation supervision and commissioning of the supplied drives and automation system.

The automation solution from Siemens for the new parts of the plant is a uniform, integrated system with a high degree of standardisation. Integrated diagnostic functions ensure a high level of transparency, simple operator control and the ability of the operating personnel to react quickly in the event of a fault. The open communication protocols will facilitate additions to the plant in future.

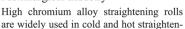
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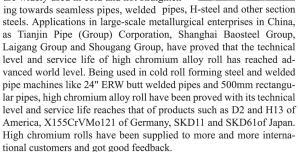


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## The next edition of METEF-FOUNDEQ in Italy

THE next edition of METEF-FOUNDEQ, the international exhibition dedicated to the technologies, machining, products and applications of technological metals and aluminium, will take place from 14 to 17 April 2010 at the Garda Exhibition Centre in Montichiari. Brescia.

The organisers say the 2010 exhibition represents an important opportunity to restart the market giving all operators the chance to play an active role in the recovery.

As Stefano Zanolini, organisational manager of the exhibition, commented: "In this phase of significant change in which everything is rearranged by the competitive dynamics, there are many opportunities available for businesses and it is especially important for them to be present and very visible in the context of the reference market to reaffirm their role and to promote their products; and METEF-FOUNDEQ will meet, even more than in the past, the needs and expectations of the operators".

For this purpose, METEF-FOUNDEQ arranged a series of initiatives to give exhibitors and visitors the best opportunities to know and seize all the possibilities provided by the recovery.

METEF-FOUNDEQ strengthens its position as an international reference event, which works as a bridge in the Mediterranean and Middle Eastern area. Thanks to its strategic position, the exhibition is gathering many participants and attendants, many of which come from this important geographic area.

Many foreign delegations from North Africa, the Middle East, Eastern Europe, Asia, the United States and Latin America are expected to visit the pavilions of the exhibition from 14 to 17 April 2010. An internationality which is by now a tradition for METEF-FOUNDEQ resulting from the multiple high level initiatives developed over the years. The collaboration and the support of all the reference Italian associations – including Assomet and Amafond – as well as authorities and institutions like the ICE will allow METEF-FOUNDEQ to further strengthen its international presence in the 2010 edition.

According to the data released by Assofond, at the end of 2007 the Italian foundry industry was comprised of more than 1,000 enterprises, with a workforce of 35,000 plus an ancillary workforce of 12,000. It is a strong and articulated system that places the Italian foundry in second place in Europe for casting production, first for non-ferrous castings (1,084,400 tons produced in 2007) and third for ferrous castings, preceded by Germany and France. At a global level, the Italian foundry industry is in the tenth position. Of the 2.5 million tons of castings produced in Italy, more than a million are absorbed by the transport industry.

This important industry, which today is focused on innovation, technology and new materials for its relaunch, will have a dedicated area at METEF-FOUNDEQ, created to provide good visibility to a fundamental component of the "Made in Italy", well known even abroad if we consider

that many quality cars are produced or have components produced by Italian foundries. A system that needs visibility and valorisation more than ever today. These are the objectives with which the METEF-FOUNDEQ Foundry Area is established in collaboration with Assofond.

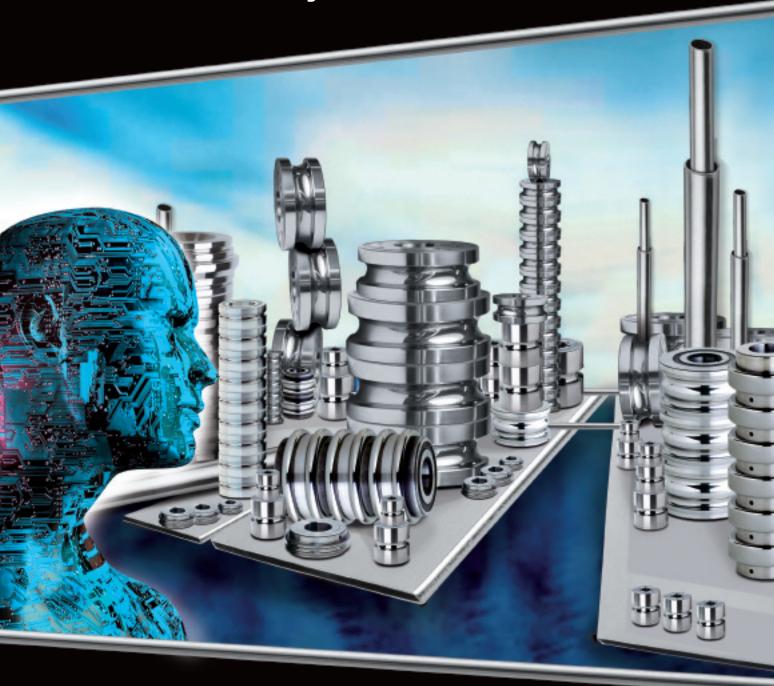
The Rolling area is one of the most remarkable innovations of METEF 2010: the technologies and the market of rolled light alloys have seen not only remarkable progress and development in these years but especially a potent change of players. The rolling world of today is very different to what it was just a few years ago and this can be observed not only in the typical emerging Countries (India, China, and Brazil) but also in the Old Continent. The other "half of the business", that is, the plastic machining of aluminium, seems to have learnt from extrusion and is watching the end users and their needs with growing attention. As a result, technologies and know-how must evolve faster, look farther ahead, and look for new markets and new areas to compete.

The new Rolling area at METEF 2010, supported by the most important operators in the sector, will represent the entire production chain, from plants, machinery, equipment and production technologies to products and their machining and finishing, up to their use in packaging, transport, mechanics, electronics, building products and furnishings.

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AND THE FUTURE IS ON.

## RathGibson welcomes new customer in Latin America

RATHGIBSON, a manufacturer of welded, welded and drawn, and seamless stainless steel, nickel, and titanium tubing, has announced it will work with Peruvian channel partner, ABSISA, to provide commercial grade stainless steel tubing to industrial equipment manufacturer Ingenieria Fabricacion Y Montaje SAC. Also based in Peru, Ingenieria has developed a glue water production process for a flour company. Ingenieria's first order is for approx-imately 140,000

feet of RathGibson's SA249 stainless steel tubing with 1.5" OD. RathGibson's bid was chosen among numerous offers thanks to the efforts of its sales and technical representatives.

Cristian Rohde, director – business development for Central and South America, said: "Teamwork was instrumental in this project. People worked through vacations and time zones to bring our channel partner and end user real solutions in real time."

Another factor in RathGibson's award of this project was a strong recommendation from another customer.

"RathGibson's reputation for high quality products and services comes directly from our customers," said Mr Rohde. "To earn such approval is a great source of pride for us. To have that commendation positively affect another customer is the finest award of all."

RathGibson – USA Website: www.rathgibson.com

**Greenville Tube** – USA Website: www.greenvilletube.com

Mid-South Control Line – USA Website: www.controlline.com

### SIKORA opens up new office in Japan

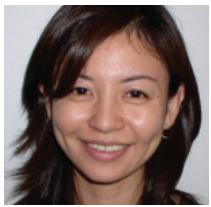
IN autumn 2009, Die SIKORA AG opened up a new office in the Japanese capital Tokyo. With the establishment of SIKORA JAPAN, SIKORA's internal distribution network now increases to ten offices.

The sales manager of SIKORA JAPAN is Ms Yumi Ito, native-born Japanese from Tokyo. The 31-year-old speaks English and German fluently, in addition to her native Japanese. Ms. Ito has completed six months of technical training at SIKORA's headquarters in Bremen,

Germany, which thoroughly prepared her for her future job.

With the establishment of SIKORA FRANCE and SIKORA TÜRKIYE at the beginning of this year, SIKORA JAPAN now makes the third new office within one year.

SIKORA AG – Germany Fax: +49 42148 90090 Email: sales@sikora.net Website: www.sikora.net



Ms Yumi to manage SIKORA JAPAN

## Merger of reel handling equipment specialists

TULSA Power Holdings Corporation has announced the merger of Reel-O-Matic Inc and Tulsa Power Inc. Both companies are US manufacturers of reel handling equipment for processing and distributing tubes and pipes, cable, wire and other flexible materials.

The companies will maintain manufacturing facilities in Oklahoma City and Tulsa, Oklahoma respectively. All key personnel will remain the same at each location, with Terry Simmons as president of Reel-O-Matic, and Mike Spence as CEO of Tulsa Power.

"The Reel-O-Matic merger combines two highly regarded manufacturers with brand-name recognition into one parent company, diversifying our existing product lines and expanding our end markets," said Mr Spence. "We are excited by the new opportunities this merger creates for our customers".

Mr Simmons added, "With almost 100 years of combined experience and shared technology, both companies are in a greater

Tulsa has merged with its former rival

position to enhance and improve their equipment for everyone's benefit".

The companies manufacture shafted and shaftless take-up and payout machinery, high speed spoolers, coiling equipment and caterpullers, and specialise in the design and development of customised handling equipment for manufacturers and distributors of wire and cable, wire rope, pipe, hose and tubing, telecommunications, utilities, mining, shipbuilding and drilling contractors.

Reel-O-Matic Inc – USA Fax: +1 405 672 7200 Email: sales@reelomatic.com Website: www.reelomatic.com

Tulsa Power Inc – USA Fax: +1 918 584 3421 Email: sales@tulsapower.com Website: www.tulsapower.com

## »Proven endurance: The LASER 2010 T having almost unlimited lifespan.«

Peter Früchtenicht, Manager of Operations, SIKORA AG





#### **LASER 2010 T**

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Available for product diameters from 0.05 to 500 mm (2-axis version) and 0.1 to 100 mm (3-axis version)

Significant cost reduction
Optimized productivity
Continuous quality control



## Vallourec & Mannesmann Tubes Deutschland expands its research activities in Riesa

THE V & M Deutschland GmbH and the Riesahousing association (WGR) have celebrated the laying of the first brick at the Tube Research Centre in Riesa. The 2,500m² complex will be built on a site in the district of Gröba, where the world market leader for seamless hot rolled steel tubes will be able to test new production methods under realistic conditions.

The results of the research will be incorporated directly into the development of innovative steel tubing products. The company's technicians and engineers will carry out their work in the new building from March 2010.

The directors of the facility, Dr Rolf Kümmerling and Dr Thorsten Anke, as well as Roland Ledwa, general manager of WGR, embedded a stainless steel capsule in the ground to mark the laying of the first brick. "Riesa will be home to one of the most modern tube research centres in our industry," explained Norbert Keusen, Chairman of the managing board of V & M Deutschland GmbH. "The findings will allow us to launch new premium products

more quickly and efficiently, and optimise established production processes. We are also laying the foundations for the future of our company."

The mayoress of the city of Riesa, Gerti Töpfer, added: "The long-term commitment of a large company such as Vallourec & Mannesmann Tubes provides a valuable stimulus for Riesa as a centre for industry, research and training."

The company will not only train its own employees in Riesa, it will also provide training and experience at the Tube Research Centre for other institutes in the area

V & M Deutschland began its research activities in Riesa in March 2009 in cooperation with the Verein zur Förderung der Umform- und Produktionstechnik (Association for the Promotion of Metal Work and Industrial Engineering, VFUP) – an important training centre in the steel tube industry. The company will modernise and expand the VFUP's current universal crossrolling mill. From March 2010, this plant will be relocated into the new building

and, with a three roller drawing unit, it will form the heart of the research centre.

V & M Deutschland GmbH – Germany Fax: +49 21196 02345

Email: juliane.neubueser@vmtubes.de Website: www.vmtubes.de



The centre will research tube technology



## Hexagon acquires Mahr

HEXAGON Metrology has acquired all the assets and intellectual property of Mahr Multisensor GmbH. Hexagon Metrology will reorganise the business, and has agreed to employ certain technical service, development and application engineering staff from Mahr Multisensor GmbH.

The vision business unit will be integrated into Hexagon Metrology, the world's largest industrial measurement group, incorporating the leading industry brands Brown & Sharpe, CE Johansson, CimCore, CogniTens, DEA, Leica Geosystems (Metrology Division), Leitz, m&h Inprocess Messtechnik, PC-DMIS, ROMER, Sheffield and TESA.

"This acquisition will enhance our offering in multisensor vision technology and confirms Hexagon Metrology's commitment to offer the widest range of measuring systems," said William Gruber, chief executive officer and president of Hexagon Metrology.

**Hexagon Metrology** – UK Website: www.hexagonmetrology.com

# SOLID STATE WELDER FOR API PIPE WELDING



## Allied Tube & Conduit Corporation makes \$30mn investment in flagship facility expansion

ALLIED Tube & Conduit Corporation, a business within Tyco Electrical & Metal Products (TEMP) – which is a segment of Tyco International – has announced the grand opening of a 514,000ft<sup>2</sup> expansion of its manufacturing centre in Harvey, USA.

The \$30mn investment will double the size of the existing facility and is expected to be complete by early 2010. Marking what will be the company's first LEED-certified project, the facility's technology will streamline manufacturing, warehousing and distribution, creating efficiencies that enable it to better serve customers in the surrounding community and across North America.

"Building on a half-century of innovation, Allied's people, products and processes have helped to reshape the tube and conduit industry, and we are proud to celebrate today's expansion in Harvey as a renewed commitment to our employees, customers and the community at large," said Nelda Connors, president Tyco Electrical & Metal Products. "The Harvey community has played a key role in our success, and our investment in this facility not only positions us to better serve our customers, but also to strengthen our roots in the community for years to come."

In addition to technological advancements in warehousing and distribution, the new space will make room for additional capacity and capabilities in Harvey for steel coil slitting, gauge reduction, roll forming, threading, product packaging and other secondary operations. It will also improve railroad spur service and inbound and outbound truck loading and traffic lanes, enhancing order fulfilment and processing.

The expansion project also reflects Tyco's commitment to sustainable business practices, meeting enough LEED requirements for new construction to achieve a Silver certification. Most notably, it incorporates sustainable architectural design features, environmentally friendly construction practices and building products and energy-efficient systems that benefit both indoor and outdoor environmental Several eco-sensitive attributes quality. include:

- Designed and installed high energy efficiency building envelope, heating and ventilation systems, water heating, power, and equipment systems to maximise performance with minimum energy usage.
- Provided measurement and verification systems for continuous monitoring of

cooling load, air/water economiser, and air distribution systems.

- Met the ASHRAE Indoor Air Quality standards for ventilation with the HVAC system design.
- Reduced potable water consumption through water efficient landscape and low-flow lavatories by 20%.
- Encouraged utilisation of renewable energy sources, by purchasing Renewable Energy Certificates to offset percentage of annual building electricity usage.
- Diverted construction waste from the landfill by implementing waste management plan during construction by recycling or salvaging up to 75% of the construction and demolition waste.

"Since pioneering the process of in-line galvanising in 1959, Allied has remained dedicated to advancing the industry while saving our customers valuable time and money," added Connors. "In the same spirit on which the company was founded, we'll continue to seek opportunities to improve the quality of our products and services, lower manufacturing costs and build on our trusted global brand."

**Tyco Electrical and Metal Products** – UK Email: lwinter@tyco-emp.com

## Barloworld seals partnership with Irion Sideloaders

BARLOWORLD Handling has announced an exclusive UK supply agreement with Irion Sideloaders, offering a product range designed to handle long and awkward loads such as piping and tubes.

Barloworld, one of the largest suppliers of materials handling equipment in the UK,



will provide nationwide sales and service support for the Irion brand. The Irion product range is designed for handling long and awkward loads in industries such as textile, wood, timber, building products, steel, cable and aluminium. Its strong durable construction is ideally suited to tough outdoor applications where performance, reliability and operator comfort are of paramount importance.

Graham Jones, general manager UK sales at Barloworld Handling, said: "We are committed to providing a complete portfolio of durable and reliable handling equipment with superior support for our customers. The Irion range gives a wider choice in specific industry sectors".

Irion, a division of the Terra group of companies, is one of the leading sideloader

brands in Europe with manufacturing facilities in Austria and France. The DFQ fixed wheel range is available with diesel/LPG options, hydrostatic transmission, fully enclosed operator cab, a lift capacity between four and eight tons and lift heights of up to eight metres. Irion products are available with an extensive range of options and attachments to suit specific application

"To date, Irion has had little exposure in the UK but with the backing of the Barloworld support infrastructure it represents an excellent new solution in our portfolio to help businesses operate efficiently, reliably and at reduced cost when handling long and bulky loads," added Mr Jones.

Barloworld specialists provide free site surveys and advice on all elements of a material handling fleet including service, finance, short-term hire and fleet management.

Barloworld – UK Fax: +44 1628 820418 Website: www.barloworld.co.uk

# 

### Plants for the steel and non-ferrous metal industry





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Finishing lines











#### ASMAG

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phone: +43 7616 8801 0 email: sales@asmag.at



## Water pipework construction project at UK hospital is completed by Georg Fischer

GEORG Fischer (GF), a leading provider of plastic piping solutions to the construction and public sectors, is celebrating the completion of its work at the new Portsmouth Queen Alexandra Hospital, UK, together with the new pathology centre, having been chosen to provide water piping systems to the project. Services included not only providing product but also technical expertise, installation and training capabilities in the use of ABS pipe fittings and valves, prefabricated PE sections and ELGEF electrofusion systems.

ABS had been specified for the chilled water pipework element of the project, while GF was also able to offer PE solutions for the condensed water element of the programme. In order to meet the needs of the contract, GF undertook significant training of partner contractor Haydon Mechanical & Electrical's staff in order to bring all the pipefitters up to speed in terms of the plastic piping installation techniques

required, including butt fusion and solvent cement jointing.

With a high concentration of Glycol in the water, GF had to show that its ABS systems were able to perform technically in a demanding environment, as well as working from an ease of installation perspective. In addition, large diameter PE systems were needed that could withstand the harsh 45°C environment of the condensing water system – and again, GF was felt to offer the perfect technical solution for the build programme.

Challenges for the programme included extremely limited site access and GF worked with logistics contractors to co-ordinate a 'just in time' delivery mechanism for pipework. The units were also cut to three metre lengths in order to overcome limited access to some of the floors.

lan Wright, senior project manager at Haydon Mechanical & Electrical, noted: "We chose to work alongside GF because of its technical expertise and commitment to work alongside and train our team in terms of working with large diameter polyethylene systems. Between ourselves and Georg Fischer, we have formed an extremely effective partnership that delivered the piping systems on time and on budget."

Georg Fischer's marketing manager, Simon Alder, commented: "It's been a privilege to work alongside Haydon and main contractor Carillion plc on the PFI project at Queen Alexandra Hospital. In a challenging environment, we were able to bring innovative, total plastic piping building solutions to the project in what was a great example of the capability of Georg Fischer's piping systems and its commitment to client service."

Georg Fischer – UK
Fax: +44 24 7653 0450
Email: uk.ps@georgfischer.com
Website: www.georgfischer.co.uk

### Plymouth Tube appoints manager

BILL Henricks, general manager of the East Troy, USA facility of Plymouth Tube Company has announced that Kathy Balota has accepted the position of operations manager.

Ms Balota joined Plymouth Tube in May 2006 as the manufacturing excellence manager for both the East Troy and Trent facilities. Prior to working with Plymouth Tube she was with general manager of Delco Electronics in a variety of positions such operations manager, industrial engineering, forward planning, production control and logistics.

Her extensive experience with manufacturing operations will prove valuable as she moves into her new role at Plymouth

Tube, said Mr Henricks. Ms Balota has a BA from University of Milwaukee and a Masters Degree in Manufacturing Management from General Motors Institute (now Kettering University). She is also a member of AME (Association for Manufacturing Excellence) and the Southeast Wisconsin Lean Consortium.

Plymouth Tube is a global tube manufacturer for the energy market offering austenitic, ferritic and superferritic stainless steels sized 0.500" to 2" OD\s, carbon and alloy boiler tubing sized 1.25" to 5.563" ODs. Plymouth Tube proudly manufactures SEA-CURE® Condenser, XtraLowStress® Feedwater Heater, boiler and oil and gas tubing.

Headquartered in suburban Chicago with 11 manufacturing plants across the US, Plymouth Tube Co is positioned for continued global growth supplying the aerospace, transportation, energy, and industrial markets.

Additionally, Plymouth Tube Co Chicago Processing offers coil slitting as well as a wide variety of specialty edging options.

Plymouth recently celebrated its 85<sup>th</sup> anniversary serving the steel tubing industry with continued manufacturing excellence practices and technical expertise that promotes industrial partnerships with many of their customers.

Plymouth Tube Company – USA Email: anorris@plymouth.com Website: www.plymouth.com

### Walter AG takes over Valenite

WALTER AG is expanding its tooling portfolio by integrating Valenite into the group.

The move will see the US company's range of indexable insert tools for turning, drilling and milling, as well as special-purpose tooling, being incorporated with Walter's carbide and PCD insert tooling for turning, drilling and milling, the Walter Titex drilling

products and the Walter Prototyp threading and milling tools.

Walter chairman Peter Witteczek, said: "The addition of the Walter Valenite products will not only improve our presence in North America but will also enhance our worldwide position in the automotive sector."

Walter Valenite will be integrated into

the operations of Walter North America.

Valenite, which was founded in 1943 as MODCO for the manufacture of special tools, has for decades been recognised as a market leader in the US, particularly in the automotive sector, which it continues to supply alongside the medical industries.

**Walter AG** – USA Fax: +1 1527 839499

Website: www.walter-tools.com



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## **AWL** joins the European Fire Sprinkler Network

OVER the last couple of years AWL has gained experience in fire protection, especially in designing and building machines capable of welding prefabricated tubes for sprinkler systems. And in so doing, AWL has been actively involved in saving lives.

Fire kills an estimated 4,000 and injures a further 100,000 Europeans every year. It also severely damages local environments and is estimated to cost economies 1% of their gross domestic product (GDP). The sad thing is that this need not happen. In cities where fire sprinklers have been widely installed, fire deaths have been almost eliminated and injuries and property

A CLEAN ENVIRONMENT IS OUR COMMITMENT

damage have been reduced by over 80%. Many fire-safety experts are now convinced that the widespread fitting of fire sprinklers is the most efficient way of reducing fire

AWL supports this goal and has therefore joined the European Fire Sprinkler Network. The EFSN is a European organisation that collects and distributes accurate information about fire losses and fire sprinklers.

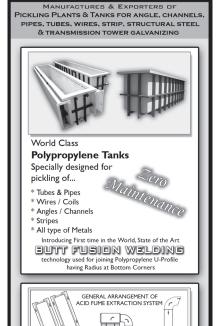
It is a network that connects and supports those across Europe who believe that fitting fire sprinklers is essential to helping Europe save itself from fire. EFSN is dedicated to promoting the use of fire sprinklers and persuading governments to change regulations so that it will be mandatory to install these sprinklers in schools, public buildings and hotels in the future. The members of the European Fire Sprinkler Network consist of insurance companies, sprinkler manufactures, authorities, certification bodies. contractors

manufactures who together form a unique group of people dedicated to saving lives.

By becoming a member of this elite group, AWL wants to show its commitment to promoting fire safety. AWL is able to supply machines that can automatically produce good quality prefabricated pipes for sprinkler installations. This contributes both to reducing the cost of a sprinkler installation and to ensuring the good quality of the product. AWL believes that the combination of AWL's know-how in automated welding and the extensive knowledge within the EFSN will result in solutions for good quality sprinkler installations at a lower cost all over Europe. AWL said its experience with three major prefabricated-tube manufacturing companies confirms this.

AWL-Techniek BV - Netherlands Fax: +31 341 411822 Email: r.daggers@awl.nl Website: www.awl.nl





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High Performer

## **Comco acquires Cambridge**

COMCO USA has acquired Cambridge Machinery of Madison, TN. Comco are makers of the Comco (formerly KEINS) CNC tube benders, rotary head CNC bender, "1-D" booster benders, NC benders, highend end formers, cutoff machines, premium heat exchange machines, and much more.

The newly formed Comco-Cambridge Machinery will continue to be located in Madison, USA and has a full service, engineering, and sales staff for tube forming needs.

The technological innovation of Comco's design staff coupled with Cambridge's

engineering and service capabilities creates a team that is more equipped than most to meet your needs, Comco claimed.

If a company's needs involve tube bending, end forming or tube cutting, Compo said it can solve the problem. A spokesman said: "We can also solve your integration problems from communication software for peripheral applications to simulation software, which will hopefully help save you time and money."

Comco – USA

Website: www.cambridgemachinery.com

### Roll-Kraft tube seminar boost

ROLL-KRAFT has seen an increased demand from customers around the world for tube and pipe and roll forming educational seminars and services during the economic slowdown. Areas have included Canada and Venezuela, along with various US locations all the way from Pennsylvania to Utah and Texas.

With reduced manufacturing obligations, many companies have taken advantage of this time to sharpen their own skills and catch up on very important machine maintenance issues, which are often neglected, due to demanding production schedules.

Roll-Kraft has had a full schedule of service calls and seminars over the past several months.

Mr Robert Sladky, vice-president of Tube Mill Engineering, uses his many years of experience and knowledge to help companies make improvements that will be of benefit to them.

Mr Sladky was a recipient of the TPA Industry Education Activities Award in 2003.

Joining him in various sessions are Chuck Summerhill, vice-president of US operations, and Bret Molnar, roll design engineer.

Roll-Kraft provides services that include tube and pipe and roll forming mill evaluations, consultations, and mill alignments, as well as on-site seminars, all of which have a goal of improving profitability and increasing machine life.

Mill evaluations and consultations can help identify problem areas that may adversely effect manufacturing tube and pipe and roll formed products. Small issues can often be rectified quickly to avoid larger problems later.

Roll-Kraft manufactures tooling and equipment for the tube and pipe and roll forming industries. With over 45 years of experience, Roll-Kraft says it is a proven leader and is known worldwide for its engineering expertise and product design.

Roll-Kraft – USA Fax: +1 440 205 3110 Website: www.roll-kraft.com

# Machine tool Exhibition

MTA Malaysia is the leading exhibition of Precision Engineering, Machine Tools and Metalworking Technology in Malaysia and it will return to the Putra World Trade Centre, Kuala Lumpur from the 5-9 May.

Launched in 2002, this world-class exhibition has been identified by many Government departments and Trade Organisations as the ideal platform for companies entering the Malaysian market and already hosts numerous International Trade Pavilions from many of the world's leading machine tool exporting nations.

Malaysia is designated a high growth market and considered a key destination for exporters of machine tools, precision engineering and metalworking technology.

Overseas Exhibition Services – UK Fax: +44 20784 02111

Email: atodd@oesallworld.com Website: www.allworldexhibitions.com





## Boru prepares for the sixth Rendezvous

HAVING held its fifth edition in March 2009, the International Pipe and Fittings Fair has helped bring many national and international firms and their customers together.

The Traditional Pipe and Fittings Fair is now set to host the industry from 4-7 March 2010 at the sixth edition.

Last year there were 181 exhibitors from 20 countries and around 20,000 visitors in total.

Being the first and only fair that caters specifically for the pipe and fittings industry in Turkey, the exhibition hopes to make trade more productive in 2010 by bringing the sector under one roof.

In Turkey a number of new projects are being started every day from natural gas projects, infrastructure works, new residential constructions, as well as a successful rise in exports, which will all be shown at the exhibition.

Exhibitors will include producers, purchasing representatives, contractors and municipalities.

The 6<sup>th</sup> International Pipe and Fittings Fair, which will be held at the Istanbul

Expo Center, will be the best place to meet with the leading lights of the Turkish and international pipe and fittings industry.

The Turkish pipe sector has enjoyed a productive last five years and is increasingly seen as one of the up and coming regions in Europe, with many breakthroughs made in 2006 particularly. During this period there was a great deal of investment in natural gas in the domestic market. While this growth has so far largely been in the domestic market, Turkey is rapidly becoming an important player in international market.

Recent research shows that the country ranks as second – lying only behind Italy as a pipe producer in Europe. The production of pipes and fittings in the country is higher than

12 other nations that entered the European Union after 2005 and, therefore, it can be argued that the pipe and fittings industry is an increasingly important global market. According to analysis based on figures as of the end of September 2008, 3.2mn tons of pipe production were recorded, and of that 1.6mn tons were exported.

Turkey has proved that it is one of the thriving production centers for the European Union and the exhibition hopes to establish itself on the list of essential exhibitions to visit.

Ihlas Fair Inc – Turkey Fax: +90 212 454 25 06 Email: info@ihlasfuar.com Website: www.ihlasfuar.com





**Specifications:** Stainless steel seamless tubes for Instrumentation & Hydraulic, Heat Exchanger

**Standard:** EN10216-5, ASTM A269/A213, DIN17458

**Sizes:** O.D. 1mm -O.D.89mm\* W.T.0.2mm-W.T.10mm

**Length:** Standard 6 meters or 20 feet, or customerized, extra long tubes up to 26 meters are specially for Heat Exchanger applications.

**Surface finish:** Mill's finish/ Polished Surface from 180G to 600G/Bright Annealed







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## Infrastructure projects completed

ECETAS INSAAT SANAYI TICARET AS, a Turkish infrastructure construction and pipe manufacturing company, has been working closely with the government to complete a number of urban infrastructure projects. For more than 40 years, the company said, the name ECETAS AS has become synonymous with the construction of infrastructure projects including sewage systems, drinking water systems, storm water systems and the WWTP's in Turkey.

ECETAS AS also has its own pipe manufacturing facilities located in two different regions in Turkey in which various kinds of pipe production facilities are being undertaken by the brand name EBS (ECE PIPE SYSTEMS). ECETAS AS prefers EBS pipes ((GRP (Glass

reinforced plastic pipes), MRP (Metal reinforced plastic pipes), HDPE (High density polyethylene pipes), SRTP (Steel reinforced thermoplastic pipes)) in its own projects and supply pipes to both domestic and international infrastructure projects.

EBS produces metal reinforced polyethylene pipes (DN 600-DN 1,600mm) with stiffness up to SN 20 kN/m² and steel wire Reinforced Thermoplastic Pipes (DN110-250mm), used for high pressure and high temperature applications.

#### ECETAS INSAAT SANAYI TICARET AS -

Turkey

Fax: +90 31242 52407

Email: ecetasas@ecegrup.com.tr Website: www.ebsboru.com

## SMK gets ready for the future

SUMITOMO METALS KOKURA (SMK) is to replace the existing three-roll finishing block of its specialty bar mill in Kokura/ Japan by a three-roll block of the latest generation of Friedrich Kocks GmbH & Co KG, Germany. After completing modernisation the mill will consist of the roughing mill, the intermediate mill and the finishing mill, all three of them in a twohigh design and the three-roll reducing and sizing block in heavy duty-design [RSB++] as three-roll finishing mill.

More than 20 years ago, SMK implemented a combined Kocks threeroll finishing block into its existing rolling mill prior to all other speciality steel bar manufacturers worldwide. Back then and today the decision for the three-roll technology has not been made only on the basis of the quality of the finished products regarding to roundness and tolerance but also because of the reliability and the excellent results of this technology.

The fundamental reasons for this investment are the improvement of quality as well as the production capacity for special steel bar, which are both strategically very important for SMK. The monthly production of the bar mill will be increased by 10% to 90,000t/m.

An SMK forecast indicates that the total demand for special steel bar will increase and customers' requests for higher quality steel grades will accelerate in the long run. The heavy duty design of the new reducing and sizing block allows rolling with higher rolling forces as well as - even combined with temperature controlled rolling - a better product quality.

Considering the decrease of rolling efficiency for the production of high quality steel grades, the RSB will increase the efficiency of the whole rolling mill and at the same time will assure competitiveness on the market by saving energy consumption.

#### Friedrich Kocks GmbH & Co KG -Germany

Fax: +49 2103 54028 Email: v.d.heiden@kocks.de Website: www.kocks.de

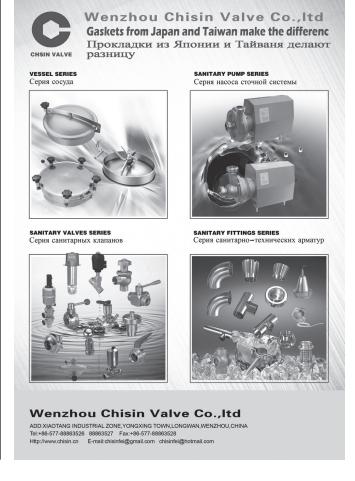
### Handling line for hot-rolling

PRESTAR has delivered a new automation line to Interpipe, its client in Ukraine. The line is designed for transport and handling hot-rolled tubes within the range of outside diameters 168mm to 340mm and length up to 15m. The automated line provides the transport between individual technological operations at the non-destructive testing of tubes. The control system on the basis of tubes quality evaluation (surface quality, wall thickness and inherent defects) evaluates the further transport of tubes.

The tubes designed for surface defects repair are sent to independent storage points and rotation steadies the tubes to repair the surface. The operator in the semiautomatic regime controls the supply of individual tubes to the position of abrasion. tubes rotation and a displacement of tubes after abrasion.

Prestar SRO - Czech Republic Fax: +420 5537 59721 Email: prestar@prestar.cz Website: www.prestar.cz





# Rafter and TAKECO reveal far reaching business partnership

RAFTER Equipment Corporation, USA, has formed a strategic alliance with TAKECO Company Limited of South Korea to sell and service TAKECO's strip entry, flying saw cutoff, and tube packaging equipment to the North American market. The partnership now gives Rafter the ability to be a turnkey line provider to the tube & pipe industry.

Under this collaboration, Rafter will have exclusive rights to North America for TAKECO's product line of strip coil payoff reels, strip peelers, strip flatteners, strip coil end joiners, strip accumulators, flying saw cutoffs, and tube packaging systems. To make the equipment more acceptable to the North American market, Rafter will work with TAKECO to integrate US-sourced electrical components, programming, and hydraulics wherever

practical. In addition, Rafter will be the customer's primary contact for any aftersales service and support issues.

Originally a Japanese-based company with a 30-year history, TAKECO became a wholly-owned, private Korean company in 1988 and a limited shareholding company in 2004. During this time, they have been a strong OEM supplier of tube mill equipment to the Asian markets. Their patented vertical strip accumulator design offers a unique solution that is both simple and rugged. Rafter is pleased to have partnered with a company that so nicely complements our own business philosophy. Please visit Rafter's website at www.rafterequipment.com for more information.

Rafter Equipment Corporation manufactures tube and pipe mills, roll forming

machines, cutoff machines, auxiliary and other related tube and pipe mill machinery. Additional services include rebuilding and upgrading mill equipment. Originally started in 1917, the Rafter name is known for reliable, high-quality tube mill and roll forming equipment.

Rafter Equipment Corporation – USA Fax: +1 440 572 3703

Email: mprasek@rafterequipment.com Website: www.rafterequipment.com



## Van Leeuwen Pipe and Tube Australia open facilities

AFTER earlier investments and expansions of offices and warehouses in Brisbane and Adelaide, a new office and warehouse facility in Sydney, Australia has been officially opened by Mr Peter Rietberg, chairman of the board of the Van Leeuwen Pipe and Tube Group in the presence of a large group of customers, suppliers, business relations and Van Leeuwen management and staff from all over Australia.

The new premises in St Mary's, about 60km west of Sydney, include the new head office of the Australian operations, an office for the New South Wales branch

operations and a state of the art new warehouse with enlarged inside and outside storage capacity. Customers throughout New South Wales will benefit through even higher service levels and the availability of a broader and deeper stock assortment.

As put forward by Mr Emmanuel Zammit, managing director of Van Leeuwen Australia, in his opening address, Van Leeuwen Australia is now truly ready for further growth in the various industry segments that are currently being serviced. Its nation wide branch network and strong product offering combined with the strength

of being part of an international group of companies, will enable Van Leeuwen Australia to further focus on segments such as the hydraulic and mechanical industry, construction/building and mining industry and the larger projects in the oil and gas industry. Through organic growth and possibly future acquisitions, Van Leeuwen Australia will further expand its market share.

Van Leeuwen Pipe and Tube Group BV

The Netherlands

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## **TECHNOLOGY** UPDATE

# New concept tube finishing equipment

DANIELI Centro Maskin is a branch of Danieli & C SpA, one of the three worldwide largest suppliers of equipment and plants to the metals industry.

As an integral part of the production process of seamless and welded tubes and pipes, Danieli Centro Maskin is able to supply a wide variety of equipment, both in the hot rolling and finishing areas.

Danieli Centro Maskin has supplied 156 carbide-tipped circular saws plants for various applications in the steel industry since the mid-1950s, with 37 machines awarded in the last five years, acquiring a consistent market share worldwide.

The carbide tipped saws can be used for cutting bars upstream of the re-heating furnace, for cutting of layers of pipes into length downstream of the cooling bed, and

finally also for cutting of blank couplings in the finishing shop. In case of single piece cutting the maximum diameter processed is 810mm, with maximum layer width of 1,500mm.

The elimination of vibrations, the measures taken to increase the blade life, the stable movement of the cutting head, and the precise cutting control, allow a high productivity (50 seconds to cut a 300 mm round bar of C45, HB 200) and an excellent utilisation factor of the cutting equipment.

Danieli Centro Maskin has recently completed the design of a range of innovative, CNC threading machines for both tubes and couplings. The finished threaded products fully respect API and GOST standards, with the capability also to produce premium threads. The thread

diameters achievable currently range from 1.9" to 20" according to the machine model. The state-of-the-art technical solutions and the innovative design of thread cutting head and tool holders guarantee an excellent utilisation factor, even with the most varied product mix.

The tube threading machine carries out facing, chamfering on internal and external diameters, taper turning and threading on both internal and external diameters, and thread de-burring.

Until today, most production of premium joints was only possible by using lathes, working with the pipe rotating. Lathes permit the creation of all thread profiles, but have a major disadvantage that they have low production rates due to the handling of the tube and due to the reduced cutting speed which is limited by the rotation speed of the tube itself.

The innovative Danieli Centro Maskin design of the thread cutting head and of the tool holders guarantees the same flexibility as a lathe, but ensures a considerably higher production rate (up to 185 pieces per hour).

The coupling threading plants consist of two twin thread cutting heads, each one performing the complete production cycle on one half of the coupling. Such machines can work independently or can be supplied together with non destructive testing, marking, phosphatising and painting equipment integrated into a completely automatic line, without the need of intermediate storage areas.

An excellent thread quality is obtained since the work piece is held rigidly in position during the entire working cycle, from the loading to the unloading operation. As with the tube threading machines, the innovative design of the tool holders allows the production of premium joints with a very high output, compared to the alternative lathe technology (up to 130 pieces per hour).

Danieli Centro Maskin also offers the following auxiliary tube finishing equipment:

- · facing and bevelling machines
- coupling starter, screw-on and full stroke drifting units
- rotating tools/rotating pipe cut-off machines
- · OD and ID protector applier units.

The above machines can be integrated into complete tube manufacturing plants supplied by Danieli, or also as stand alone units in existing plants.

Danieli & C SpA – Italy Fax: +39 0432 1958082 Email: dcmk@danieli.it Website: www.danieli.com

The Danieli carbon tipped saw



## Hydroform and hydraulic presses unveiled

BECKWOOD Press Company unveiled its new triform sheet hydroform press model (16-5BD) at the Fabtech Tradeshow in November.

Beckwood demonstrated a new active levelling control system, equipped with the latest in four-corner parallelism and HMI control features. It also exhibited benchtop presses and its new hot stamping press, developed with Hastings Manufacturing.

Beckwood presented the latest in

hydraulic press, hot stamping and sheet hydroform technology and also showcased a wide variety of hydraulic, hydroform and hot stamping press examples, along with a drawn part exhibit of products.

A special focus on presses for compression molding and off-centre loading was also featured with the hydraulic press display.

Beckwood Press Company offers a variety of hydraulic presses (2-2000+

tons), servo motion presses (2-150+ tons) and standardised benchtop presses (3-40+ tons). Beckwood manufactures sheet hydroforming presses for Pryer Technology Group (PTG) and hot stamping presses for Hastings Manufacturing.

Beckwood Press Company - USA

Fax: +1 636 343 4100

Email: info@beckwoodpress.com Website: www.beckwoodpress.com

## Industrial gauging technology

AS a manufacturer of X-ray, isotope and optical gauging systems for the steel, aluminium and metalworking industries, the IMS team has set itself the aim of optimising the performance of production lines, improving the quality of products and contributing to reducing costs for its customers.

Steel and aluminium strip, sheets and tubular products, for example, are measured continuously using non-contact data acquisition.

Deviations from production targets are corrected directly, ensuring a consistent standard of quality.

IMS gauging systems allow measurement of wall thickness, wall thickness profile, eccentricity, diameter, outside profile, position, temperature and speed.

In close collaboration with plant manufacturers and their subcontractors, and in co-operative partnership with R&D institutes, IMS engineers develop special gauging and automation concepts and techniques for their customers' plants. Small projects are worked on with the same attention to detail as large and all-inclusive projects.

IMS Messsysteme GmbH, Germany, was formed in 1980 by a group of employees

from Hartmann & Braun AG, following that company's decision to withdraw from the field of radiometric gauging technology.

Initially located in rented premises, the business developed quickly, and a tailor-made building was erected in Heiligenhaus in 1986. Three annexes have been added since, and the company maintains subsidiaries in the USA, China and India, as well as having representatives in Australia, Brazil, Italy, Japan, Korea, Mexico, Russia, Scandinavia, Spain, South Africa and Venezuela.

IMS Messsysteme GmbH - Germany

Fax: +49 2056 975 140 Email: info@ims-gmbh.de Website: www.ims-gmbh.de



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# New technology widens rollformer application use

DREISTERN, Germany, has created a new concept in rollformers, with a priority of expanding the range of applications for the machine to ensure better utilisation under new, complex conditions.

Like all models of the P3-series, the new P3.Flex allows the user to set-up any type of cross-sections. With the push of a button the machine changes into Flex-mode, and can be used like a duplex rollformer with variable width for the production of U, C, C+ or  $\Sigma$  profiles.

Another feature of the machine is that sections of the machine can be adjusted independently within Flex mode. This allows a highly complex part family with a variable cross-section, eg a leg with variable width, to be manufactured without additional cost for tooling or additional lost time for rolltool settings. All adjustments are fully automatic, enabling dimension changes to be performed in less than three minutes.







Driven diagonal rollers

Dreistern's P3.Flex works in a zippered merge pattern (patent pending), meaning the rollers form the profile similar to a zip, alternating at the left and the right side of the profile. To adjust the profile width, each second stand can be moved laterally to set-up for the new profile width. Thanks to driven diagonal rollers the P3.Flex is suitable for processing sheet metal blanks. After adjusting the P3.Flex, a new section can be produced immediately.

P3.Flex creates opportunities for the flexible production of product families with a high degree of dimensional variation, and the concept can be retrofitted to many existing machines.

Dreistern GmbH & Co KG - Germany

Fax: +49 7622 391 88 220 Email: sales@dreistern.com Website: www.dreistern.com

#### Saw blade sharpening and saw machines

EYAN Machine Tools Co Ltd is a professional manufacturer of a wide range of saw blade sharpening machines and circular saw blade machines.

It has obtained 30 new model patents in the United States, Japan, Taiwan and mainland China following many years of research and innovation and its products are applied to aerospace, automobile, electric machinery, medical equipment and other industries, and the company says it as won a good reputation by providing customers with excellent aftersale service.

Eyan adds that is the only manufacturer that produces saw blade sharpening machines that are able to grind saw blades with 1,200mm diameter, which it says can help increase systems efficiency and cut down on production costs. If customers are uncertain about which type of sharpening machine is needed Eyan says it is more than happy to offer specialist advice.

Eyan Machine Tools Co Ltd – Taiwan Fax: +886 42693 5648 Email: eyan@eyan.com Website: www.eyan.com.tw

# Not getting enough attention?







#### PP compound used in pipe coating for off-shore pipelines

LYONDELLBASELL Industries has launched a new polypropylene (PP) compound that addresses customer needs in the rapidly-expanding market for flexible pipeline systems used in off-shore, deep-sea oil exploration. The new Hifax EBS 153D NAT product was developed for use in multilayer syntactic coating structures for flexible risers and flowlines, in order to create high-impact strength, improved flexibility and good compression strength in semi-flexible pipeline coating applications.

The company claims that, compared to standard PP compounds used in syntactic pipe coating, Hifax EBS 153D NAT features unmatched softness, an essential advantage for flexible off-shore pipeline utilities. "LyondellBasell's new grade addresses growing market needs, as flexible pipes are becoming the preferred solution in oil exploration," commented Sean Comerford, LyondellBasell's technical service manager for pipe coating. "Today's installation techniques require extensive bending of the pipes, and customers are requesting

highly flexible coatings provided by products such as Hifax EBS 153D. The PP materials traditionally used for syntactic layers are more rigid; a semi-elastomeric coating layer based on Hifax resin enables customers to reduce the risk of stress and breakage in the coating during pipeline winding and installation. It also eases exploitation because the energy dissipation of the total pipeline system improves when exposed to seadrift."

The new resin also meets the demanding requirements of new polypropylene coating structures designed to provide high thermal insulation and high heat resistance. Offshore pipelines laid in deep water environments present new and more demanding operating requirements for pipe materials. For example, deep water lines are exposed to extreme cold water temperatures on the exterior of the pipeline, while oil temperatures inside the line exceed 130°C.

Coating systems must therefore ensure not only anti-corrosion protection, but sufficient insulation properties to

avoid increased viscosity of the crude oil during transport from the seabed to the oil platforms and floating vessels.

Coating pipelines at greater depths presents additional challenges. Coating layers must provide resistance to high compression as well as shear stresses that the pipe sections are subjected to during laying operations.

#### LyondellBasell Industries -

The Netherlands

Website: www.lyondellbasell.com





#### Largest single numerical toolkit for MATLAB

METALLURGISTS and metal commodity traders seeking a broad range of mathematical and statistical functionality important to metal refining, metal product quality control, and financial forecasting, without the considerable expense of sourcing multiple Matlab toolboxes, can now access 1,415 numerical routines in the Mark 22 release of the multipurpose Nag Toolbox for Matlab.

This one-stop solution for the metal industry's computing needs also allows metallurgists to easily and confidently migrate prototype code developed in the Matlab environment to final production code in advanced programming languages such as C or FORTRAN while still using the same robust algorithms. NAG is renowned for the quality of its documentation and example programs to assist users. In addition, this release of the Nag Toolbox for Matlab includes more than a dozen quickly accessible Matlab-based examples of advanced programming for optimisation problems, simulations, time series analyses and other functions important to the metal industry.

A no-cost trial versions of Nag Toolbox for Matlab can be requested via: www.nag.com/ downloads/downloads entry.asp?pc=MB.

Commenting on the algorithmic quality in the Nag Toolbox for Matlab, Dr Ning Guo of the University of Warwick, UK said: "I am especially impressed by the optimisation algorithms provided. One improves my maximum likelihood estimates where sample size is small causing non-concentration likelihood. Ordinary algorithms perform poorly."

David Cassell, product marketing manager for the Nag organisation said: "Like all Nag products, the Nag Toolbox for Matlab has been developed to help users safeguard and future proof their software investments. All the routines included in the Nag Toolbox for Matlab were written by experts in their fields and rigorously tested for correctness, reliability and robustness. No other Matlab toolbox can match the level of expert documentation included or the detailed example programs - invaluable aids in selecting the right algorithm without wasting time."

Nag – UK

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## Olympus introduces new industrial videoscopes

OLYMPUS has launched the new lplex LX and Iplex LT industrial videoscopes. The small, lightweight videoscopes, which are used for a wide range of remote visual inspections of parts or structures where access is limited, offer portability, ease of use and durability.

The compact lplex LX and LT systems are one-third the size and approximately half the weight (2.7kg including battery) of the Iplex FX, the most recently introduced Olympus videoscope. The reason for this small size is that the LCD monitor is built into a main operating unit that is just 64mm wide (2.5") excluding the handle. The LCD monitor uses a large 6.5" screen with low ambient reflection, allowing accurate inspection, even outdoors in direct sunlight. The size and weight makes the new lplex units suitable for applications where operator access is limited, such as inside boiler rooms, airplane fuselages or wind turbine gearboxes.

The Iplex LX and LT provide rugged durability in harsh environments. They comply with IP55 standards and with United States Defense Standards MIL-STD-810F,

Method 510.4/506.4 for resistance to dust and rain, and with MIL-STD-810F. Method 516.5 for the 1.2-metre drop test. They can be operated safely in many difficult field environments and in dusty or sandy

The videoscopes can be operated by users of any experience level. Almost every menu and feature can be accessed by a maximum of three presses of the quickaccess buttons on the ergonomic lightweight handset with power-assist TrueFeel™ scope articulation control. The display features an intuitive icon-based menu that makes it easy for the operator to quickly select the required menu option.

The Iplex LX features WiDER™ (wide dynamic extended range) image processing capability, which brings out detail in shadowed and highlighted areas to produce bright, contrast-balanced images across the entire depth of field. For optimum magnification, the new units offer a range of interchangeable optical tip adapters. The integrated LED system fitted within the optical tip adapter delivers vivid illumination

regardless of scope length and eliminates the need for a fibre light guide. In addition, the SmartTip™ feature permits recording of adapter information along with captured images for inspection traceability, ease of set up, and confirmation of tip security.

High quality JPEG still images and MPEG-4 movies can be recorded directly to a removable USB flash drive. Saving or retrieving images requires a single button press, while the thumbnail view allows instant review of inspection results. The free of charge Iplex Viewer-Plus software features image data management and precise measurement (or re-measurement) of objects in recorded images.

The Iplex LX will soon offer the advanced Olympus-pioneered stereo measurement technology that enables high-resolution image capture with two parallax lenses, permitting accurate measurement of almost any object from any angle.

Olympus NDT - USA

Email: info@olympusndt.com Website: www.olympus-ims.com



#### Automatic Large-Caliber Steel Pipe Measurement Equipment



The Method and Range of Measurement The above equipment is characterized as measuring "external diameter, roundness, straightness and length" by using its non-contact sensor.

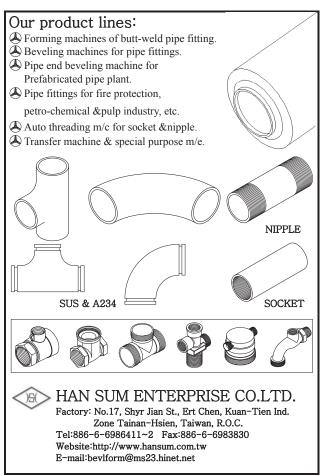




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## FD Machinery

- Made-in-China machineries are cheap but not good, maybe you are told, After visit FD you won't think so;
- FD is a formal Chinese machinery manufacturing company of precise workmanship and in pursuit of perfection, specialized in manufacturing ERW tube/pipe machineries, with more than 21 years professional manufacturing experiences and 30 items patents.
- FD's machineries are built and installed in Europe, America, Japan and other regions in the world for long term,
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- Perfect design together with precise manufacturing to machinery,
  - -- FD is delivering the finest machineries to the world,
- Cheap and amount are not a purpose, we only supply you superior machineries,
- The best performance /cost are our pursuit.
- We are going to join the Tube 2010 International Tube & Pipe Trade Fair at Düsseldorf between April 12th and April 16th 2010. We are welcome you to visit our booth (6E10-6).





#### Sawing technology

LINSINGER Austria is a manufacturer of large carbide circular sawing machines and also has its own tool production, allowing the company to offer tools and machines from one source. To simplify repairs and maintenance, and to reduce standstill times of the sawing machines, Linsinger also supplies turnkey grinding centres that allow the user to regrind and reassemble used carbon tips saw blades.

For the sawing of continuous casting billets or ingots, Linsinger specialists combined the benefits of vertical and horizontal technology, to create the inclined-bed circular sawing machine. Claimed advantages of this machine include better machine stability, longer tool life, and the processing of material rigidities up to 1,400 N/mm². The machine is designed for three-shift operation, and can cut work pieces up to 630mm.

Linsinger's circular sawing machines for the cutting of tube layers are developed using the most modern vibration technology, and are designed for heavy three-shift operation. Tubes with material rigidities up to 1,400 N/mm² can be cut. Linsinger, as general supplier, also provides the necessary transport systems, length measuring stops for head, tail and section cuts as well as additional clamping devices for layers, and can create turnkey solutions including integration to existing finishing lines.

The company's Multicut saw is fitted with two to four axle-controlled sawing stations, working independently. Sawing of the tube starts simultaneously at several positions, and segments are cut along



Linsinger offers circular sawing machines and has its own tool production plant

its circumference. The saw uses small, coated one-way saw blades with a high number of cutting teeth, resulting in less burden on the blade and increased tool life. Additionally, small chips with negligible burr formation are generated. The coated saw blades allow delicate material qualities to be cut.

The machine features a quick tool change; if one sawing unit is stopped, the remaining units continue working until the scheduled tool change. The axle control also allows square and rectangular tubes to be cut.

Linsinger's strip edge milling machines, for longitudinal seamless ERW tube mills, were designed for welding edge preparation with high accuracy, using vertical and cross copying milling units. The cross copying milling unit compensates the strip sabre. The fully developed milling concept is significant for high cutting performance and minimising of tool costs. The milling

units can also be applied with profile milling tools.

The Linsinger double strip edge milling machine is provided for integration in spiral tube lines with point welding. A significant advantage is the breakdown strategy, as milling is possible with only one milling station, while the tools of the second milling station are automatically changed. The double milling technology increases line speed and achieves high removal rates.

In large tube mills, the Linsinger plate edge milling machine is used for preparation of welding edge profiles, and is operated with vertical copying milling units. The company's pipe bevelling machine enables simultaneous bevelling of both tube ends.

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

## HDPE pipes from Greek manufacturer

POLIECO Hellas AEBE, an affiliate company of the Polieco MPB Srl group, was established in Athens, Greece, as an industrial producer and trader of HDPE structured wall pipes, in order to supply the Greek and the Balkan area market.

Production consists of a wide variety of pipes, produced in either rolls or bars from 40 to 1,200mm OD, along with fittings, manholes and jointing kits for any kind of installation.

The Polieco Group's products can be divided into four categories: cable conduits in HDPE, for the protection of electric and telephone underground cables; drainage pipes in HDPE, for artificial drainage of

ground field; sewage pipes in HDPE, for sewage systems; and manholes and special fittings.

The company's twin-layer cable conduit, an HDPE pipe for the protection of electric and telephone underground cables, is made of two coextruded layers: the outer wall is corrugated to assure greater resistance to deflection and flexibility, while the inner wall is plain, to ease cable insertion and slipping.

The company's drainage range also includes Drenosewer, a slotted HDPE pipe with a corrugated external wall and a smooth internal wall. The pipe is available in coils of diameter from 110 to 200mm, and has a resistance to compression higher than 450N, with a deformation of the external diameter equal to 5%.

Drenopal slotted HDPE pipe is available in diameters from 160 to 1,200mm OD, in 6m pipes, and according to the stiffness classes SN 4kN/m², SN 8kN/m² and SN 16kN/m².

Ecopal HDPE corrugated sewage pipe is used in underground sewer ducts not under pressure, and is manufactured in compliance with the EN 13476type B standard, stiffness class corresponding to SN 4kN/m² or SN 8kN/m². The pipe is produced in 6 or 12m bars, with jointing by a PEAD coupling and EPDM lip seal, and is available from 160 to 1,200mm diameter.

Polieco Hellas AEBE – Greece Fax: +30 210 6669628 Email: info@polieco.gr Website: www.polieco.gr



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#### **Customised laser tube cutting machines**

BALLIU Machine Tool Corporation manufactures the SLF range of laser tube cutting systems. The range consists of machines that can handle tube lengths from six to 13m long and up to 160mm in diameter.

Balliu offers three levels of integration into the client's production process. A standard SLF has its own automatic tube loading and unloading system and operates independently. Weld seam detection is one of the optional features. In the second level of integration Balliu engineers seamlessly integrate the SLF machine into the client's production line. The tube loading and unloading systems are adapted with features like part sorting and positioning, tube measuring (QC), slug removal, part cleaning, chemical treatment and drying installation. The third level of integration is a fully customised machine that is specially designed to the client's requirements (tube length, shape, diameter, thickness, etc).

Balliu's international clientele is mainly situated in the car, furniture, stable and fencing industries. These companies

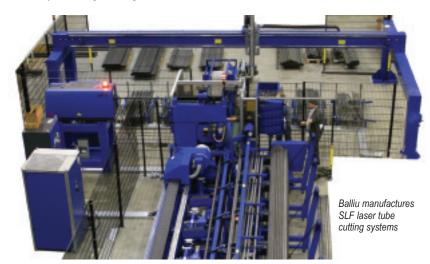
choose laser cutting as an economical onestep process, as an alternative to drilling, sawing and punching. Benefits include fewer production steps, lower noise level, no de-burring, engraving features and the absence of any tooling. According to Balliu, the greatest advantage of laser tube cutting is flexibility in design: designers have the freedom to design products that look better and are quicker and easier to manufacture.

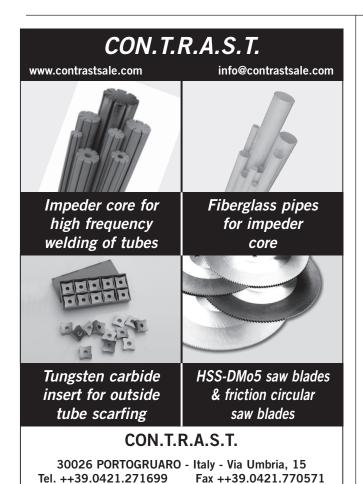
The company implements efficient CAMsolutions for the most popular CAD file formats, and uses quality components such as Siemens NC-controls, Precitec cutting heads and Rofin DC-Lasers.

#### Balliu Machine Tool Corporation nv –

Belgium

Email: info@balliu.be Website: www.balliu.be





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- BURR OAK return bender machine <sup>3</sup>/<sub>8</sub>", <sup>1</sup>/<sub>2</sub>", <sup>5</sup>/<sub>8</sub>". Model MRB-M3-70.
- BURR OAK size and rings machine. Model SRM-M7
- BURR OAK hairpin bender machine. Model VBHBM2-10
- KIRCHEIS C press type Pet25 made by KEMA.
- Side plate dies suit BURR OAK dies for 3/8", 1/2"
- STRIPPET punching machine super 30X30 Model 6200.
- Tube straightening and sawing machine locally made for <sup>3</sup>/<sub>8</sub>" and <sup>1</sup>/<sub>2</sub>" copper tubes.
- URZADZEN C press. Poland. Capacity 16 tons.
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#### OMAX sees three-month ROI using Jetcam for its machines

OMAX Corporation, based in Washington, US manufactures high-end waterjet machines under both OMAX® and Maxiem™ brands. Many of the machines' components are manufactured using waterjet technology, and while the company's own CAM software provided a workable solution, OMAX was looking for ways to reduce programming and setup time, while also reducing material waste.

As the company had already had a successful partnership with Jetcam and US distributor NestOne Solutions for two years,



and with many of its customers with high-end requirements already using the software, the company decided to implement it in-house. A single license of Jetcam Expert with High Performance Nesting was installed and configured to drive two OMAX 2652 waterjets, along with Jetcam Orders Controller (JOC) on the shop floor.

Benefits included programming time being reduced by 25%, as once the original part is designed and cutting information stored, it is immediately available for nesting on either machine. Any changes made to a part are automatically reflected in any relevant nests. Order information for parts or assemblies is placed into JOC, allowing job queues to be remotely constructed and then passed to Jetcam for automatic nesting. A company spokesman said that this has created a change in the way that it works: "It's given us the ability to take the day's orders and nest multiple parts into one sheet in a very short amount of time, which is often so short that we feel we can create dynamic nests anytime they are needed and save money and material."

Nesting efficiency also provided immediate savings, with nests often yielding a 25% saving over previous manually created nests. Machine setup time was reduced by a quarter, and fewer sheets needed to be handled throughout the day.

For runs requiring a single component nest OMAX uses Jetcam's Single Component Automatic Processing (SCAP).

This allows the user to specify the number of parts required, with Jetcam immediately creating nests. Additional features such as common line cutting can be applied automatically, and NC code can be generated in seconds. The spokesman concluded: "We find Jetcam very easy and powerful to use. As we expand we will train more people to use the system. With the savings we made in both time and material the system paid for itself within three months. It saves us time, and time is money."

Jetcam International sarl – Monaco Email: info@jetcam.com Website: www.jetcam.com

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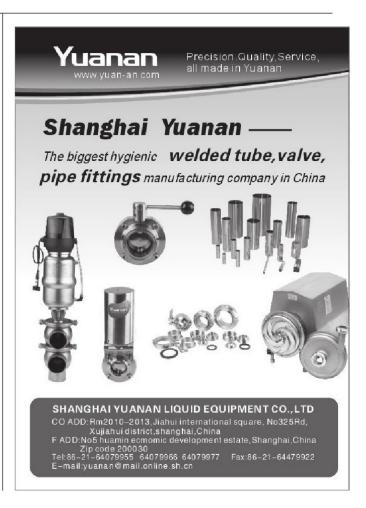
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## Direct extrusion of mineral-filled PP pipe

A COMPLETE extrusion line for direct extrusion of highly filled PP pipe has gone into operation in Egypt. The KraussMaffei Berstorff line, complete with all downstream units, will produce three-layer PP pipe for domestic waste by sanitary equipment specialist Hamza Industry Co, Cairo.

Hamza Industries will produce its own pipes using the flexible direct extrusion method, a combination of compounding and processing in one extruder. The KraussMaffei Berstorff direct extrusion line for highly filled three-layer PP soundproof pipes consists of a KMG 81-40 co-rotating twin-screw extruder as main extruder for the middle layer, a KME 45-30 B/R co-extruder for the thin inner and outer layers, and a KM-3L RKW 74 three-layer mixing head.

The line includes the complete downstream for pipe production - calibration, cooling, hauloff, sawing, chamfering and socketing. The stiff and impact resistant PP block polymer used for the middle laver is fed into the extruder's main feed throat via gravimetric differential scales, together with stabilisers and colour masterbatch, and regrind if it is

being used. 70% by weight barium sulphate is fed into the side feed throat. A KM-ZSP 90 gear melt pump generates the necessary die counter-pressure.

The whole line is controlled by the main extruder's C5 controller. The line is configured to produce pipe from 50 to 250mm diameter, and for output of up to 700kg per hour. Alternatively, the output of PP melt highly filled with barium sulphate can be directed to an underwater pelletising unit via a hydraulic switchover valve. Pellets

produced in this way can be used to injection mould the necessary connecting parts.

KraussMaffei has three divisions: injection moulding technology, extrusion technology and reaction process machinery. The group markets its products under the KraussMaffei, KraussMaffei Berstorff and Netstal brands.

#### KraussMaffei Technologies GmbH – Germany

Fax: +49 89 8899 3092

Website: www.kraussmaffei.com



(From left to right) Albert Brunner, sales manager for the Egypt region at KraussMaffei Berstorff, Safa Aboozeid, general manager, and three technicians from Hamza Industry Co, in front of the new direct extrusion line in the KraussMaffei Berstorff lab

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Representatives welcome

### TLAser130s laser micrometer

LASERLINK, a manufacturer of noncontact, precision measurement systems, has announced the release of a new laser scan micrometer. The TLAser130s is a compact, high-speed, single-axis model for wire, centreless ground parts, multi-strand measurement such as monofilament, and many other processes. Its non-contact, high-speed scanning is useful for flaw detection in small extruded products.

With an accuracy rating of up to ±0.00004", the TLAser130s is suitable for measuring diameter, detecting short defects, or profiling parts. It operates at a rate of 1,600 measurements per second as standard, with an option of 4,000 scans per second.

The micrometer features a separate transmitter and receiver, similar to the TLAser122s, TLAser160s and TLAser1120s. Its 30mm measurement window fills a gap in the LaserLinc

range, between the TLAser160s (60mm measurement window) and the smaller TLAser122s (22mm measurement window). The separate transmitter/receiver gives the unit versatility for products that require more horizontal room for measuring or more space below the scanner.

As with all LaserLinc scanners, the TLAser130s links, via the TLAser400TM micrometer interface card, to a PC running Total VuTM software, LaserLinc's measurement/data processing package. Total Vu runs on any Windows-based PC and provides in-process tolerance checking, trending, SPC, feedback control, data logging, recipes and other features.

LaserLinc Inc - USA Fax: +1 937 318 2445 Email: info@laserlinc.com Website: www.laserlinc.com

## High-tech straightening machines

AFTER the development of high-tech straightening machines for the tube industry, Reika has created various straightening line installations at several well-known tube mills world wide recently.

Tube quality requirements have increased within the past years, regardless of tube material or capacity. Reika's latest state-ofthe-art machine design with key features has: high rigidity by solid blocks, closed ring frame design, individual roll drives, CNC positioning, special roll geometry for maximal surface contact and wear compensation cover these requirements perfectly.

The company claims that all further known disadvantages of competitor's machines have also been solved by Reika's machine design. Reika's know how, combined with customer's practical experience is the basis for an excellent result.

Especially the drastically improved straightness accuracy and the elimination of un-straightened tube ends provide customers with a quick return on investments. Required straightness accuracy of all delivered straightening machines has been targeted by the company, in order to meet customer demands.

Additional highlights are a totally enclosed and compact design to fulfil the market demands of noise reduction and no emissions/environmental protection, individual roll drives minimize the wear of the rolls, free access into the working room without disturbing columns for easy maintenance and operation, central clamping of the roll carriers, which is wear free and secures the precise angular and vertical adjustment without any backlash.

Adjustment and guiding components are completely protected from scale, dirt and water in order to avoid corrosion or excessive wear of adjusting elements. Also complete line equipment as for example fully automatic unscrambling systems can

As a preview to Tube Düsseldorf 2010, Reika announces the presentation of its new "ring saw machine" for high-speed cutting of bars, profiles and big wall tubes.

In addition to the well-known Reika cutoff machines, the "ring saw machine" will complete Reika's product scope for several applications.

Reika GmbH & Co KG - Germany

Fax: +49 23319 69036 Email: info@reika.de Website: www.reika.de

## Pipe coating systems and pipe handling equipment

SELMERS, a privately owned company from The Netherlands, specialises in the manufacture of plants and equipment for internal and external pipe coating, pipe cleaning and pipe handling.

The company's products include tailormade equipment for onshore and offshore pipe coating and pipe handling facilities. All design and engineering work is done

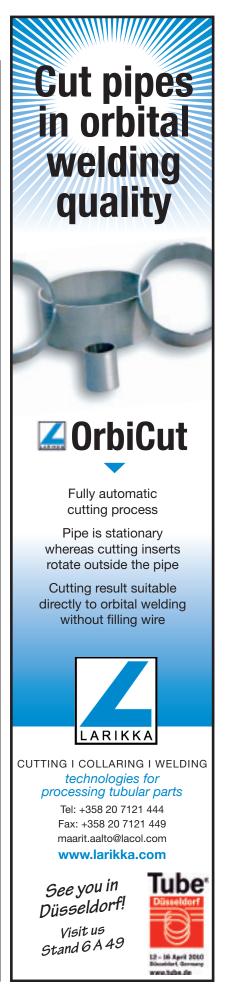
Selmers' product range comprises an extensive external multi-layer and internal lining pipe coating plant programme, with abrasive blasting equipment, ovens, chromate and acid wash units, liquid and powder epoxy equipment and in-house made extruders.

The company also features an offshore programme aimed at pipe handling and firing line equipment for pipe lay barges, field-joint blasting and coating systems, and multi-jointing facilities for pipe spool bases (rollers, line-up systems and pipe

pushers). In addition to these programmes, Selmers offers concrete weight and cement mortar coating equipment, rebar powder coating lines, in-situ equipment, containerised configurations, quality control equipment, self-propelled coating removal and re-lining machines for in-situ pipeline rehabilitation purposes.

The product range is compliant with all necessary international standards, supported by a highly qualified engineering department (utilising CAD/Inventor) and a state-of-the-art quality management system. Equipment is offered with full project support from first design, engineering, construction and manufacturing, to installation, commissioning and after-

Selmers BV - The Netherlands Fax: +31 251 220 777 Email: sales@selmers.nl Website: www.selmers.nl



## RathGibson increases polishing capabilities

RATHGIBSON's newly installed 12-head mechanical polisher, manufactured by Loeser GmbH, allows the company to offer ultra-fine OD finishes for its finest precision-engineered welded, welded and drawn, and seamless tubing.

"We have established high internal standards to meet and exceed applicable regulations," said Dave O'Donnell, director of process and product development. "The challenges of customer specifications are also a priority to us. The new polisher allows us to meet even more polishing requirements." Polished tubing from RathGibson may be used in the food, dairy, beverage, pharmaceutical, biopharmaceutical, chemical, petrochemical, power generation and solar industries.

In addition to the 12-head mechanical polisher, RathGibson's Janesville facility

also employs an 8-head mechanical polisher. Before a RathGibson tube enters a mechanical polisher, the ends are plugged to protect the tubing interior. As the tube travels through the polisher, it is covered with lubricant and abrasively polished at each head.

After exiting the polisher, tubing is rinsed and air blows off any residuals before visual inspection, vinyl capping of the ends, line marking for complete traceability, and heat sealing in a poly-sleeve. While the 8-head mechanical polisher produces a 30µ-in Ra (0.8µm) OD maximum Ra surface roughness, the new 12-head mechanical polisher achieves less than 10µ-in Ra (0.25µm) OD Ra surface roughness.

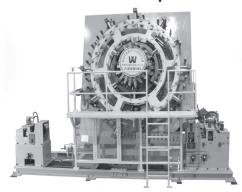
By electro-chemically polishing or removing metal, RathGibson achieves an interior surface that has minimal crevices, to greatly decrease the chances for microbial contamination.

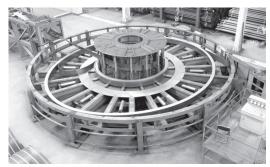
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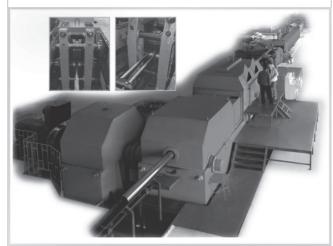
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## **Automatic systems for plastic** pipe packaging and handling

SICA SpA, Italy, a leader in plastic pipe processing machinery, has introduced machines that use the latest technologies in the automatic palletising of rigid or flexible plastic pipes: Multipack, Multipallet and Technocoil.

Multipack machines (for rigid pipes) make individual packs composed of layers of pipes, placed in plastic separator saddles, and



Sica's Technocoil 2200 polisher

then tied together with plastic straps. The machine, which can work simultaneously with pipes of different lengths, has been specially developed for installation in lines producing pipes between 32 and 160mm in diameter, and from 500 to 4,000mm in length (+socket).

The Multipallet machine (for rigid pipes) for package handling picks incoming packs, rotates them if necessary, and places them on trolleys in predetermined layouts. It also picks separator boards from dedicated storage and places them between layers to increase the stability of the stack. The system can process packs of varying widths between 290 and 620mm, with a maximum height of 400mm. According to Sica, maximum productivity for pick up of a single pack and its positioning on the cart is 35 seconds per pack.

Sica's Technocoil 2200 coils flexible plastic pipe with polypropylene straps. Its modular design provides working flexibility and a choice of two configurations. The

main difference between the two versions is in their width and the ability to offload finished coils from one or two stations. The machines can handle single or double wall, flexible, corrugated, PE, PVC-U and PP pipe between 32 and 200mm in diameter, as well as smooth LDPE and HDPE pipe between 16 and 63mm in diameter. Maximum coil diameter is 2,200mm, and maximum width is 680mm. Minimum core diameter is 400mm.

Sica SpA - Italy Fax: +39 0544 81340 Email: info@sica-italy.com Website: www.sica-italy.com



The Multipack and Multipallet machines are designed for packing rigid pipes

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## Positive material identification with point-and-shoot simplicity

THERMO Fisher Scientific Inc has added the Niton® XL2 series handheld x-ray fluorescence (XRF) analyser to its range of Thermo Scientific Niton alloy analysers.

"With the introduction of the Niton XL2, we now offer a range of products to the aerospace, metal fabrication, foundry and related industries which are engineered from the ground up to help eliminate any guesswork in verifying metal alloys for manufacturing quality assurance," said Olaf Haupt, director of European sales and marketing for Thermo Scientific Niton Analyzers. "We know that the potential for material mix-ups is very real and that the need for traceability is a priority. Our non-destructive analysers provide a worryfree solution that takes control of material verification, recovery of lost traceability, isolation of finished welds to validate filler material and dilution, and confirmation of finished products - all without damaging samples in any way, which can save both time and additional testing expense."

Handheld Niton XL2 and Niton XL3 series XRF analysers are purpose-built for taking measurements in any location, with accurate results available in seconds, saving expense in comparison to traditional laboratory testing. The easy-to-use, non-destructive instruments provide integral storage of all test results,

Thermo

NITON XLZ

which

completely

are

tamperproof. Multiple communication options include Bluetooth wireless, USB and RS-232 serial communication ports.

The analysers come as standard with Thermo Scientific Niton Data Transfer (NDT) software, a suite of data management utilities that allows users to set operator permissions, print certificates of analysis to document results or operate the analyser remotely from a PC. The NDT file format preserves and protects the data from each sample analysis, ensuring that this data is not unintentionally or intentionally compromised.

Replacing the Niton XLt analysers, Niton XL2 analysers are lightweight yet rugged, for harsh production environments. Ergonomically designed and featuring daylight readable icons, the Niton XL2 incorporates customisable menus for ease of use, multi-language options and a standard analytical range of more than 25 elements.

Niton XL3 GOLDD analysers deliver improvements in sensitivity measurement times, as much as ten times faster than analysers using conventional Si-PIN detectors, and up to three times more precise than those with conventional SDD detectors. The Niton XL3 GOLDD measures light element content (magnesium, aluminium, silicon, phosphorus and

> sulphur) without the need for helium or vacuum purging. This means it has the capability to accurately sort additional grades including, titanium alloys, aluminium and silicon bronzes,

and aluminiums for silicon and magnesium content, and can even identify SS303, SS416 and other free-machining stainless steels based on sulphur content.

In addition, the Niton XL3 GOLDD includes an integrated CCD colour camera to record an image of the actual test area along with the analysis data. The optional small spot feature allows users to isolate and test small sample areas, such as welds and seams.

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# Stainless steel tube-welding line gets CTA technology revamp

VAI SEUTHE GmbH has carried out the upgrading of a stainless steel tube-welding line with CTA® technology, for the French tube producer ArcelorMittal Stainless Tubes Europe SA.

CTA (central tool adjustment) allows the flexible manufacturing of a wide range of tube and pipe diameters with the same automatically controlled tooling set. This solution, combined with the installation of a laser welder and a unique flying-saw unit, resulted in a number of decisive operational and cost benefits for the producer.

ArcelorMittal Stainless Tubes Europe, a customer of VAI Seuthe, had been operating a stainless steel tube-welding line for many years. It was outfitted with a 6" TIG welding aggregate, a conventional forming section and a flying band saw. With the given equipment, a maximum line speed of only about 5m/ min was possible, depending on the wall thickness of the end product. Set-up times for tool changes typically required between 12 and 24 hours. It was mainly because of these uneconomic operational parameters that the decision was made to modernise the line. VAI Seuthe was selected as the partner to jointly develop a modernisation concept and put the solution into practice.

The upgrade of the existing 6" welding line comprised three main activity areas:

Installation of an advanced  $CO_2$  laser-welding aggregate by the customer in addition to the existing TIG welding unit: This allowed the line and production speed to be increased from 5m/min to 15m/min, depending on the wall thickness of the tube. By keeping the old TIG welding unit in the line, greater production flexibility was provided, since the TIG tube welding method is vital for specific applications.

Replacement of the first five forming stands of the conventional forming section with the patented CTA forming solution: This step enabled necessary changing times of the tube-welding line to be kept to less than three hours, as requested by the customer. This was possible because the same set of universal forming rolls mounted in a roller cage can be used for the production of a multitude of tube dimensions in the forming section up to the fin-pass stands.

Replacement of the existing band saw with a newly designed flying cut-off unit: this was developed and built by VAI Seuthe in accordance with the customer request that it be capable of cutting the entire product mix of the line at low costs. The use of nearly backlash-free planetary gearings combined with a fine adjustment control provided by Siemens Simotion software allows high-

speed steel saw blades with a diameter of only 600mm to be used for all tubes produced on the line up to the maximum tube diameter.

Following the start-up of the stainless steel tube-welding line, the average line production speed could be increased three times and the set-up times for tool changes could be reduced to less than three hours.

Overall line flexibility could be increased to produce a wider product range and set-up times for dimensional changes were reduced, as it was no longer necessary to replace the saw blade with one with a larger diameter.

VAI Seuthe GmbH (Siemens VAI) – Germany

Email: info@siemens-seuthe.com Website: www.siemens-seuthe.com

#### **ArcelorMittal Stainless Tubes Europe** – France

Email:

stainless.tubes-europe@arcelormittal.com Website:

www.arcelormittal.com/stainlesstubeseurope





### McRae rally factory installs Teseo

TESEO Air Systems have been installed at the Extreme Race & Rally factory in Essex, UK, where the late rally legend Colin McRae's name is being kept alive thanks to the continuation of the endurance rally vehicle project that he started before his untimely death.

The McRae Enduro, designed by McRae himself, is a V8 twin turbo diesel engined rally thoroughbred that runs on a Land Rover running gear and will contest the 2010 Dakar Rally. The car has picked up numerous class wins on events contested in 2009, driven by Alistair McRae, Colin's brother.

Ernie Turner, workshop manager of Extreme Race & Rally explained the attraction of the Teseo system: "Teseo's system delivers compressed air into our factory and is flexible enough for us to be able to modify the number and location of outlets as required in our manufacturing process. We're working on a number of different vehicles at one time; when we need to add an outlet to the system we can use the Teseo hot tapping technique to add the line without affecting pressure anywhere else in the factory. It's ideal for the job: it's neat, safe - we don't have dirty, dangerous lines lying around on the floor - and visually it looks neat and professional."

Teseo's hollow bar system (HBS) and aluminium profile (AP) products feature aluminium extruded piping that has an external rectangular section with tee slots and a fine, smooth internal bore. A wide

selection of angle and straight joints and quick clamping pieces make the system flexible in layout and quick to install.

The system is mounted on the factory walls with individual drops down off the ring main. Teseo's own 'hot tapping' technique allows extra drops to be added while the system is in use with no down time or pressure loss. Lighter than traditional steel airlines to install, Teseo lines are also more energy efficient due to higher flow rates of a smooth profiled aluminium tube (typically 30% higher than steel) which equates to a lower pressure drop and overall energy and cost savings compared to traditional galvanised systems.

**Teseo Air Systems** – Italy Website: www.teseoair.com



## Advantages of shrinkable products

WARM applied shrinkable products from Vogelsang, Germany, consist of a polyethylene carrier foil, coated on the inside with a permanent plastic infusible mass of a self-developed special butyl rubber that closes damages up to 6mm diameter automatically after approximately ten days, by means of a 'self-healing' effect.

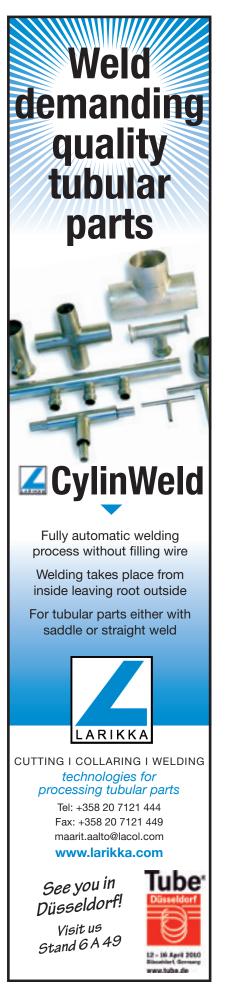
Due to the cross-linked stabilised polyethylene carrier foil and the self-healing effect, activated by the special butyl rubber, Vogelsang's shrinkable products offer a high mechanical protection for a reliable protection from corrosion.

Another advantage of the products is the use of butyl rubber, instead of hot melt adhesives that have to be heated at a minimum of 70°C in order to activate the adhesive. Butyl rubber requires no primer, in contrast to the hot melt adhesive. In addition, hot melt adhesive requires a blasted surface due to the epoxy primer, while butyl rubber requires only cleaning by brush. During application the butyl rubber does not melt, but softens until it can flow into voids and cavities, so preventing the formation of cavitations.

Vogelsang's shrinkable products are suitable for use in application fields such as welded joints, flange joinings, Tyton socket joining and shrinkable tape. The products meet the requirements of DIN 30 672 and DIN EN 12 068.

Dipl.-Ing Dr E Vogelsang GmbH & Co KG – Germany Fax: +49 2366 800888

Email: info@e-vogelsang.com Website: www.e-vogelsang.com



JANUARY 2010

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# CRC-Evans introduces compact and light weight P625 welder

CRC-EVANS Automatic Welding has launched a new dual-torch external automatic welding machine for small-diameter offshore and spoolbase applications. The P625 offers leading-edge technology and outstanding weld quality in a compact machine that brings high productivity to offshore jobs.

The P625 is fully digital, with throughthe-arc tracking and pulse MIG to maximise speed and produce high quality welds. Computerised monitoring and control keep the torch and bead in perfect position, removing the chance of human error in the welding process. From pre-weld programming to realtime operation and post-project assessment, digital technology takes care of accuracy and repeatable performance.

The P625 allows software to be upgraded in the field, so that changes in weld parameters can be made on the fly, getting the machine back to work quickly. In the office, a PDA user can program parameters and then download them wirelessly to the P625, or data can be

uploaded to a PDA in the field and taken back to the office for analysis and reporting. The P625 is also designed with scalable architecture that will accommodate future innovations, so it can be updated with the latest technology.

CRC-Evans Automatic Welding designs and builds the automatic welding systems for land and offshore pipeline construction. In addition to renting and selling these systems on a project basis, the division provides other services such as engineering, on-site technicians and training. The company is a subsidiary of CRC-Evans Pipeline International, a provider of equipment and services for the construction of pipelines. CRC-Evans manufactures pipeline construction equipment and automatic welding systems, and provides managed subsea services and inspection services.

**CRC-Evans Automatic Welding** – USA Email: sales@crc-evans.com Website: www.crc-evans.com

# **Stainless** products

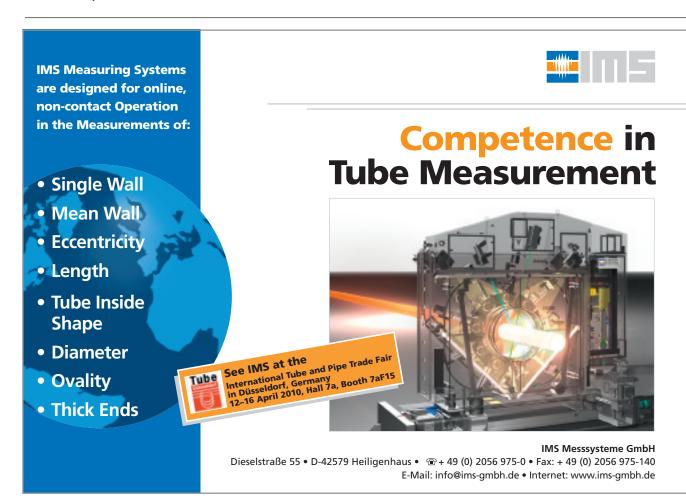
KALLAS Edelstahl GmbH is a stockist for stainless semi-finished products, in particular welded stainless steel tubes and pipes, round and flat bars, and angles.

The company was founded in the summer of 2001 and, with the support of Italian tube mills Satinox Tubi Inox SpA and Tubinox srl, was able to establish itself in Germany and the neighbouring countries.

Two saws are able to cut fixed lengths from 100 to 3,000mm, in outside diameters from 8 to 80mm. The company specialises in cutting polished and mirror polished tubes without damaging the surface, and is able to polish small diameters and non-standard dimensions.

The company's delivery programme includes welded process tubes and pipes, annealed and not annealed, welded dairy tubes and welded tubes for construction.

Kallas Edelstahl GmbH – Germany Email: info@kallas-edelstahl.com Website: www.kallas-edelstahl.com



## Laser saw guide hits the mark

SCOTCHMAN Industries has introduced a new laser saw guide for circular cold saws. The industrial grade laser light minimises set-up time and ensures the material is being sawed to the correct length and squareness, by helping the operator see the line marked for cutting. The guide simplifies lining up and cutting to the desired length, and can increase productivity and operator efficiency.

Scotchman also produces the Advanced Feed System, designed to allow companies to increase productivity, decrease set-up time, reduce operator error and eliminate waste. The system, coupled with a Scotchman circular cold saw, turns a semiautomatic machine into a fully automatic production machine.

Operators can either manually enter dimensions into the controller or pull a cut list directly from the controller. Powered by TigerStop, the programmable controller stores up to 99 programs. Another option is to download cut list information directly from a PC, which can speed up production and reduces the chance of operator error.

The Scotchman Advanced Feed System can be used as a programmable stop system or a fully automatic programmable push feed system with an optional material

Scotchman Industries Inc - USA Fax: +1 800 843 5545

Email: info@scotchman.com Website: www.scotchman.com





The Scotchman advanced feed system can store up to 99 programs

## **Total condenser services for** power generation customers

CONCO, USA, a provider of condenser and heat exchanger services to the power generation industry, has launched a new service for power generation customers called Total Condenser Performance.

The programme focuses on eliminating tube related forced outages and improving condenser efficiency through the coordination of services on a regular maintenance schedule.

Total Condenser Performance features tube cleaning, eddy current and leak detection services delivered through a patented system designed and developed by Conco.

"With tube related forced outages on the rise, we've created a programme that takes the guesswork out of condenser maintenance for our power generation customers," commented

Saxon, president of Conco's marketing communications department. "According to plant managers, efficiency, reliability and availability are the core concerns they focus on with regards to their condensers. Total Condenser Performance helps to achieve all of these goals in a simple, efficient process."

The service will be available globally through Conco's network of offices located in North America, Europe and Australia, as well as a network of licensed distributors. The company has also created a brochure to promote the new service, available from the Conco website.

Conco Systems Inc - USA Fax: +1 412 828 3336 Email: info@concosystems.com

Website: www.concosystems.com



JANUARY 2010

## **Isar GFK** product development

ISAR GFK in Wörnitz deals with fibre composites, especially for the manufacturing of tubes and cylinders.

Its new development method makes it possible to reinforce bands, tubes or cylinders with fibre composites like fibre glass, carbon fibre, aramid fibre, natural fibre and so on. These types of fibre composites usually have the disadvantage that they do not provide any wear surfaces.

Isar has developed a new technology to get a stiff wear surface of the fibre composite component, which provides the properties of hardened tool steel.

Furthermore, it has managed to give the fibre composites a very high temperature stability, so it is possible to produce temperatures of up to 300°C economically.

This method means it is possible to produce highly dynamic components, and especially for this production the company

developed a new production line, which enables new applications in the machinery and plant engineering.

Finally, it is possible to fulfil the important conditions of conventional materials by means of the fibre composites.

Isar is a developer and manufacturer of fibre composite components and with this product innovation would like to present the advantages for new and existing applications.

#### Isar GFK Kunststofftechnik GmbH -

Germany

Email: vertrieb@isar-gfk.de Website: www.isargfk.eu



Isar can reinforce tubes and cylinders

## Tube end forming machines

MANCHESTER Tool & Die Inc offers standard and custom-built tube end forming machines with OD capacities ranging from <sup>3</sup>/<sub>16</sub>" to 3" and a research and development lab to help meet customers' specific applications.

Manchester Tool & Die highlighted its full line of tube end forming machines at the show, as well as Aristo Machines Inc tube end forming systems for automotive and truck, construction, HVAC, plumbing and other markets. BKB Manufacturing machining and tube end forming capabilities for machining centres, lathes, saws, mills, MTD equipment and EDMs were also to be

Manchester Tool & Die's manufacturing facility is available for customers' machining needs such as CNC and manual turning.

Manchester Tool & Die Inc - USA

Fax: +1 260 982 4575

Website: www.manchestertoolanddie.com





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- ALLOY STEEL PIPE FITTINGS (ASTM A234 W P1/P5/P9/P11/P22/P91)
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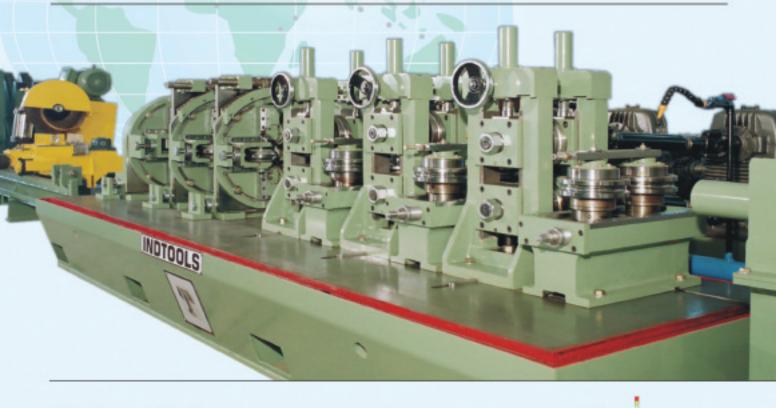
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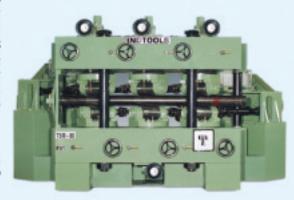


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# Air pollution regulations drive deployment of flexible solutions

TO ADDRESS the growing complexity of air pollution regulations, which have to address a multi-tiered array of local authority, national and international requirements, AirProtekt of Cambridge, UK, is offering a total package air pollution service that embraces process assessment, project design, supply of the air pollution equipment, installation and commissioning.

Many air pollution applications call for highly flexible abatement systems to be designed and deployed, especially where there is a requirement for batch based production runs. Low running costs together with the ability to run the abatement at low process flow rates are vital. A quick start up system also offers major benefits.

AirProtekt's flexible, total package approach to providing engineering solutions means that the company is capable of combining and tailoring modular equipment to meet exacting air pollution requirements in a cost-effective way.

For the majority of abatement applications catalytic oxidation is more expensive than thermal oxidation at low flow rates. However, the reverse is often the case for high flow rates. Thermal oxidation abatement solutions tend to be more economical at very high VOC concentrations whereas catalytic oxidation is typically more economical at moderate VOC concentrations.

AirProtekt recognises that no two applications are the same, and each requires careful assessment before a value for money solution can be implemented. For example, although an alternative solution to a catalytic oxidation could be the use of a thermal oxidation system, this may result in high running costs because natural gas would have to be brought into the factory area.

A thermal oxidation approach in certain cases can prove inflexible, because if production demand dropped to low levels the abatement plant still would need to be kept running. A reliable Honeycat Air Pollution Control System offers a catalytic oxidation solution that provides an expected availability of more than 99% and can be equipped with a superior performance catalyst to ensure environmental emission limits can be easily handled.

"One of the most cost-effective Honeycat Air Pollution Control System solutions we offer features a compact skid mounted oxidiser designed to minimise on-site installation times, which makes the unit ideal for batch production runs," explained Trevor

Lawton, AirProtekt's managing director. "Our engineering team often specifies an electrically pre-heated abatement system to provide processors with a very low maintenance solution. We also aim to offer systems that operate very quietly to ensure that any nearby residential properties are not disturbed by 24-hour operations."

The industrial air pollution control catalysts favoured by AirProtekt comprise thin-walled honeycomb supports coated with a fine dispersion of Platinum Group Metals, impregnated into a high surface area washcoat. The catalysts, which form the heart of AirProtekt's catalytic oxidation system, are derived from proven autocatalyst technology and offer benefits that include a long effective life (typically five to seven years), and the ability to withstand high temperatures and temperature cycling (maximum 650°C continuous and peaks to 725°C).

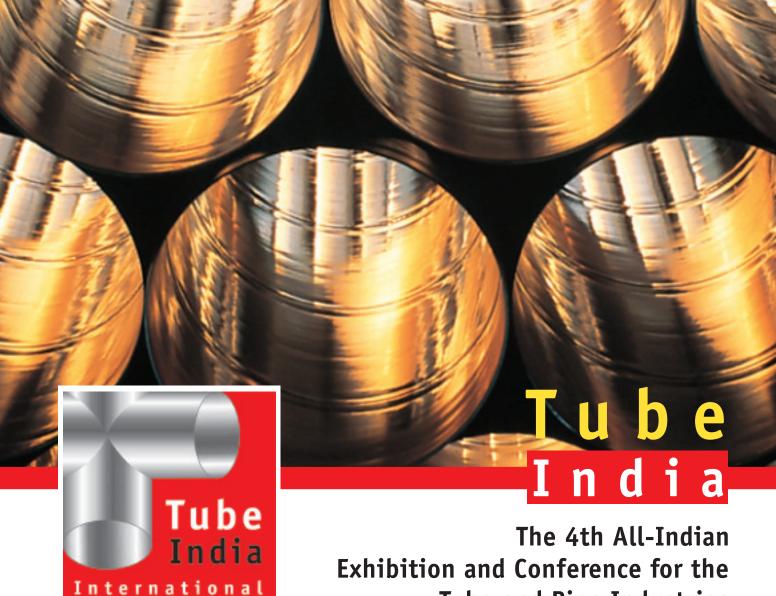
A range of high poison resistance catalyst types are available from AirProtekt, which include a standard VOC oxidation catalyst; a chlorinated VOC catalyst; an LHC catalyst for methane, ethane, propane as well as a sulphur-resistant catalyst. AirProtekt's systems are also capable of running at low catalyst operating temperatures to minimise running costs, thermal stress and ensure a long operating life.

AirProtekt – UK

Email: sales@airprotekt.co.uk Website: www.airprotekt.co.uk

A catalytic combuster





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# New modular extruders bring flexibility

AMERICAN Kuhne has launched a new single screw extruder design. After working closely with customers in both industrial and medical markets, the company now offers a wide range of modular production extruders that enable barrel and screw modules to be changed guickly and easily.

For applications that are very sensitive to contamination and/or resin changes, the ability to easily separate the screw and barrel from a machine and replace it with a clean 'on-deck' module can be critical to both product purity and profitability.

For processors that run a wide range of product sizes and throughput, the ability to change the extruder size by quickly switching to a different diameter and/or length screw and barrel provides a high level of processing and production scheduling versatility.

The extruders are available in four different styles. The small modular extruders can be changed by hand, and range from 0.5" to 1.25". The medium size designs include barrel modules mounted on wheels,

and range from 1" to 1.75". The large barrel modules include precision sub-bases with built-in fork pockets, and range from 1.75" to 3.5". The extra large size ranges from 3" to 4". Metric extruder sizes and complete turnkey tubing and pipe systems are also available.

American Kuhne has supplied over 1,200 extruders worldwide, and supplies single

screw extruders, feed screws, extrusion systems and extrusion process controllers for plastic, rubber, and silicone. Customers range from small custom extrusion shops to Fortune 500 and 1000 companies.

The company has an ongoing technology exchange with its partner, Kuhne GmbH, Germany, a manufacturer of sheet and blown film systems.

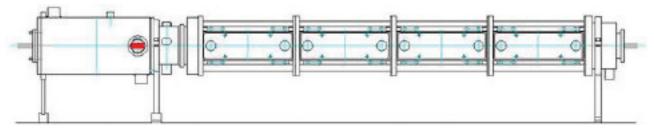
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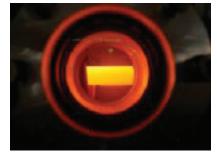




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**KUHN TEC**, Rochettes 34, CH-2072 St-Blaise, Switzerland kuhntec@bluewin.ch

Tel. +41 (0)32 753 6235

## Cold-drawn carbon steel seamless tubes

NEO Seamless Tubes Ltd is a manufacturer of cold-drawn carbon steel seamless tubes, and claims to be the first of its kind in Eastern India. Being a subsidiary of Jalan Tubes, Neo Seamless Tubes has inherited expertise and experience while being equipped with its own innovation and the latest technology.

Situated in the city of Kolkata, the first capital of India and the main industrial hub for Eastern India, Neo Seamless Tubes covers 30,000m<sup>2</sup> of land, where an eco-friendly manufacturing plant has been installed, equipped with the latest technology from around the world. The company manufactures tubes from scratch, from piercing to testing.

The company carries out mechanical testing such as elongation, bending, hardness and tensile tests. High end testing equipment, including eddy current tester and hydro tester, maintains quality even in extreme situations and pressures. The chemical components are regularly inspected by qualified engineers in the company's own chemical laboratory.

Neo Seamless Tubes Ltd - India

Fax: +91 33 2290 3755

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

## Steel pipe producer's profiled tubes range

SALZGITTER Mannesmann Line Pipe (MLP) is a manufacturer of high frequency induction longitudinally welded steel pipe. The company has more than 100 years' experience in pipe production, including oil and gas line pipe, oilfield tubes (OCTG), pipe for drinking water and sewage systems, tubes for machinery and plant construction, pipes for long-distance heating systems and structural tubes.

The company uses a wide range of steel grades to produce tube with outside diameters from 4.5" to 24" (114.3-610mm) in wall thicknesses from 0.126" to 0.812" (3.2-20.6mm).

MLP has upgraded its inductive quench and temper production line, as well as its production capability for tubes and structural hollow sections. All of MLP's available pipe dimensions up to a diameter of 610mm can be annealed. The capacity amounts to 24t/h. API 5CT grades up to N80Q can also be produced, and higher grades such as P110 for oilfields are under development.

The company has also increased its standard range of circular, square and rectangular hollow sections up to a wall thickness of 20.6mm. The production range covers crosssections of 610mm (circular), 400x400mm<sup>2</sup> (square) and 500x300mm<sup>2</sup> (rectangular), and further enhancement of wall thickness (25mm) and outside dimensions is planned.

Salzgitter Mannesmann Line Pipe GmbH - Germany

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# Ultrasonic scanners for line-pipe

SCANMASTER is a manufacturer of ultrasonic inspection systems for a wide range of applications including pipe, plate, aerospace, rolling stock and automotive.

Pipe scanners for ERW, SAW-H and SAW-L pipe include configurations to test strip, weld, body and ends of the pipe in online or offline condition. ScanMaster systems meet quality standards such as API-5L. ISO-3183. DNV and EN.

ScanMaster's scanners for ERW pipe include strip, weld, body and ends scanners for line-pipe with diameter from 2" and greater. Offline systems allow high scanning speed in the range of 1m/s with excellent durability and uptime. Integrated weld and ends testers can throughput more than two pipes per minute.

Scanners for SAW-H pipe include weld, body and ends scanning within a single mechanism, saving time and mill space. An innovative scan head for helically welded pipe includes linear guidance of the probes, resulting in fast setup and minimal calibration time, while allowing maximal number of probes to be placed around the weld. A weld tracker based on laser technology, also developed by ScanMaster, may be integrated with the scanner.

Display and reports of the scanners include all the technical and general information of the scanned product as well as results listing and defect mapping. Displays of the scan, A-, B- or C-scan as well as customised mapping methods are included. Reports can be automatically exported into common format files and integrated with other industrial or information systems.

ScanMaster, EVS - Israel Email: info@evs-sm.com Website: www.evs-sm.com

ScanMaster has been a supplier of NDT systems since 1989



# Hydroform presses unveiled

PRYER Technology Group (PTG), in conjunction with Beckwood Press Company, has unveiled its new triform sheet hydroform press.

PTG had a live demonstration of Model 16-5BD at Fabtech, which has a 500 ton (5,000 PSI) capacity and is equipped with a 16" bladder diameter. PTG also featured a wide range of press examples and showcased a drawn part exhibit of products.

The Triform family of hydroform presses utilises the latest computerised engineering software, modern hydraulics and advanced CNC styled controls. PTG has created compact hydroforming presses, focused

on the sheet hydroforming industries. A wide range of material, bladder sizes and pressure sizes can be utilised, with or without a punch, for deep or shallow draw applications.

The reduced weight and height of the press eliminates the need for special flooring. CNC programmability offers precision control of the process variables with complete diagnostic and recipe handling capabilities.

Pryer Technology Group - USA Fax: +1 636 343 4100

Email: webmaster@pryertechgroup.com Website: www.pryertechgroup.com



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Tube 2010: Hall 6, Stand C42

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# Enhanced production of 'spiral wound' corrugated pipe

THERMATOOL has announced the successful commissioning of another CFC 150kW solid-state HF contact welder, which has recently been installed on a line producing high frequency welded 'spiral wound' corrugated pipe.

Spiral wound corrugated pipe is particularly suited for use in water drainage applications, where the corrugation serves to increase the radial strength of the pipe, making it suitable for storm drains installed under roads, car parks and areas where water run-off is an environmental concern.

The installation produces water culvert and drainage pipe from both aluminised and galvanised steel material, with outer diameters over the range 12" to 12ft (305 to 3,658mm) and wall thickness of between 0.035" and 0.165" (0.9 to 4.2mm), at production speeds up to 100ft/min (30m/min).

Thermatool CFC series HF welders provide an alternative to the traditional lock seam method of producing this type of product. Thermatool's solid-state HF

welding solution also delivers a high quality, water-tight forge weld and eliminates the waste of 6" (152mm) of material that would otherwise be consumed on the previous lock seam. Additional claimed benefits are greater product strength, higher production speeds and improved electrical efficiency.

Thermatool Corp – USA Fax: +1 203 468 4281 Email: info@ttool.com Website: www.thermatool.com

Close-up of the spiral corrugated process



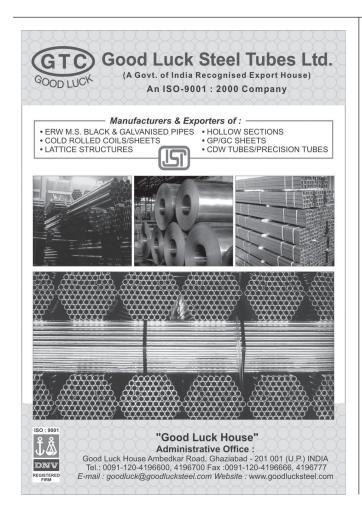
# Magnetic welding angles

INDUSTRIAL Magnetics, Inc (IMI) provides permanent magnet devices for use in material handling, work holding and automated or robotic applications.

The company's two new switchable, rare earth magnetic welding angles allow welders to set up, weld, and quickly move on to their next job with fast, easy on/off magnet control. A simple turn of a knob activates and deactivates its holding power, which allows precise placement and control and a non-marring release. The adjustable welding angle works on flat or pipe surfaces and easily allows debris to fall away.

The on/off, 90° magnetic welding angle is suitable for 90° heavy weld jobs and allows precise placement and strong holding power. Its versatile design includes pre-drilled holes that allow for the addition of magnetic bases for extreme holding power.

Industrial Magnetics, Inc – USA Email: imi@magnetics.com Website: www.magnetics.com





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# Big demand for short-term hires

IN response to growing demand for high capacity forklifts on short-term hire in the UK, Barloworld Handling is promoting its extensive range of high capacity and specialist short-term hire equipment with free delivery on certain models.

A 'big' forklift truck is usually described as a machine that provides more than eight tonnes lift capacity. Typically they are specialist machines built to order and, due to high investment costs, have

a longer working life than an average forklift truck.

"Some businesses are forced to buy high capacity forklifts, even though their requirements may be seasonal or fluctuate. In today's climate however, businesses are looking to reduce risk through the short term hire of high value equipment," explains Mark Ward of Barloworld Handling.

Barloworld has increased its stock of high capacity short-term hire trucks



Short-term hires could be the future



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in support of ports and terminals, manufacturing and heavy industries. "In response to growing enquiries, we have deployed high capacity trucks to our regional hire centres to suit the needs of local industries. Next day delivery is available in most cases and we have availability of trucks up to 18 tonne," explains Mr Ward.

Barloworld has regular offers to promote its hire fleets and is currently offering free delivery on short-term hires of more than four weeks for modern Hyster trucks with capacity between 8-16 tons. These trucks are ideally suited to industries involved with the handling of paper, wood, beverage, metals, ports, automotive or construction materials and for operations with high attachment usage.

"Short-term hire is of course more expensive than a long term contract, but by making modern, specialist equipment available, it has become a realistic option for businesses managing peak periods, and helps to reduce risk," Mark says. The company has around 2,000 trucks in its UK rental fleet, ranging from electric warehouse equipment, diesel/LPG trucks and specialist equipment such as highlevel order pickers and ATEX compliant 'Pyroban' protected equipment.

"Big trucks and the more specialist types of equipment are often unavailable elsewhere or in poor condition," he adds. All rental trucks supplied by Barloworld are LOLER certified and maintained by its team of local technicians, who can respond quickly in the event of breakdown.

Barloworld offers equipment on a daily, weekly, monthly or yearly basis and expected to see seasonal growth in the lead up to the Christmas period as businesses look to supplement their core fleet.

**Barloworld Handling** – UK

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Services

# New laser welder adds capacity and flexibility

XL Precision Technologies has become renowned for the manufacture of stainless steel tube components and assemblies, producing around 900,000 individual parts each year. To meet the ever increasing demand for these products, the company purchased their second laser welder earlier this year.

The new StarWeld Select compliments XL's existing Rofin laser, which has been in production for over two years, and provides not only the much needed additional capacity, but also ultimate flexibility in the way in which the system can be used. Rofin's StarWeld Select is an ergonomically designed and fully integrated laser welding system. The system incorporates four high precision axes which can be controlled manually by use of a joystick or operated under full CNC control.

The multi-mode operational capability of the StarWeld Select is particularly suited to the needs of XL Precision Technologies, enabling different techniques to be used for product development, prototyping and full production runs. Used in its simplest form, as a manual welding machine, component sub-assemblies can be aligned and tacked manually if required. When used in semi-

automatic mode, the system can be operated under joystick control for manual deposit welding or prototyping new and complex welding geometries. The full CNC operational mode provides the functionality required for large batch and continuous production runs.

Typical examples of medical industry components and sub-assemblies laser welded by XL Precision Technologies include part of a minimal invasive surgery (MIS) procedure instrument. Comprising six individual items – four tubes and two spacers – the part is produced in two separate stages. The first operation is to circumferentially weld the smaller 1.2mm outside diameter tube, longitudinally to the larger 1.6mm outside diameter tube.

Two sub-assemblies from the first operation are subsequently located in a custom designed fixture, together with the two spacers, and then laser welded on both sides to complete the assembly. All welding operations on these parts are performed by the StarWeld Select laser under full CNC control. The dimensional tolerance achieved on the finished assembly in this application is ±0.030mm. A further example is an irrigation tube

used for operation procedure irrigation fluid vectors. At first glance this might look like a relatively simple part, however with an outside diameter of only 2mm and an acute welding angle this is an especially challenging component to produce. The welding operation on this part requires accurate positioning as well as precise control of the welding parameters and complex component manipulation, all key attributes of the StarWeld Select.

### XL Precision Technologies – UK

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# Mobile welding automation

THE MWR-350 from Servo-Robot Inc is a new robotic welding concept. The mobile robot's flexibility allows automation to be brought directly onto large weldments. It also allows the operator to run several systems simultaneously.

The MWR-350 three axes robot can improve quality and productivity compared to traditional manual welding, as well as that done using motorised welding carriages. It also complements traditional articulated robots that may be already be in production. It is easily hooked up to any power source, making for a guick installation.

The system is easy to program due to its intuitive teach pendant and vision-assisted robot teaching capability. With a Servo-Robot MWR-350 system, it is claimed that submarine hull sections can be welded in the a third of the time of previous methods.

Benefits of the system include: dramatic quality and productivity improvements are easily achieved over manual and mechanised welding; automation can be brought to the workpiece; remote process monitoring removes operator from the welding zone: and precise seam tracking for consistent penetration and accurate bead placement.

The MWR-350 easily integrates to any welding system, and automated teaching reduces setup time and increases flexibility.

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

# **Spinformed** hollow tube shapes

THE Formitt Metal Labs division of Hess Industries, Inc offers tube spinforming and flowforming contract services. Formitt was created specifically to support product development for a variety of industries, offering development, prototyping and production runs that utilise patented technologies to create hollow tube symmetrical and asymmetrical shapes, fabrications, and assemblies.

Tube spinforming technology facilitates the insertion of filtration elements, heat exchange components and catalytic elements into the tube before end reduction. Cost savings are recognised by eliminating the need to stamp then weld end-cones to

Spinformed end cones are said to enhance overall component quality, reliability and appearance. Formitt hollow tube fabricated assemblies are currently being used in the automotive, HVAC, filtration, marine and other industries.

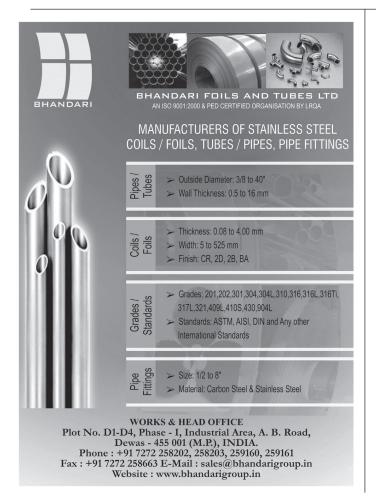
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Email: sheffer.rick@hessindustries.com Website: www.hessindustries.com



Spinformed parts





# Simmons and Dapco Industries Inc sign marketing agreement

DAPCO Industries Inc, USA, and Simmons Machine Tool Corporation of Albany, New York have signed an agreement to offer DAPCO's Turnkey Ultrasonic Inspection Systems for use with the Simmons Stanray and Hegenscheidt U2000-400 underfloor wheel profiling machines as well as other key Simmons Axle and Wheelset Metrology and Inspection systems.

The companies will provide complete integration of DAPCO's ultrasonic inspection product into the above mentioned Simmons products. DAPCO's Turnkey Ultrasonic Inspection Systems are used in a wide range of systems but have recently been adapted to inspect for possible sub-surface cracks on railroad wheels and axles.

Integrating the Dapco Wheel Inspection system into the profiling operation allows the end user to inspect the wheel either before or after the profiling operation.

Having this added feature provides the rolling stock engineering groups with the

flexibility needed to find the type of defects that cause broken wheel derailments. Dapco has recently installed similar systems for Amtrak and the Union Pacific Railroad.

Dapco Industries (www.dapcondt.com) is part of Nordco Inc and the Nordco family of companies offer an extensive selection of products and services that help the railroad industry keep its trains running safely, efficiently and on time

The family of companies consists of Nordco Inc; JER Overhaul; Shuttlewagon; Dapco Industries; and Nordco Rail Service. Nordco is headquartered in Oak Creek, Wisconsin, with operations in Oshawa, Ontario, Canada; Arcola, Illinois; Grandview, Missouri; Ridgefield, Connecticut; and Blue Springs, Missouri.

Dapco Industries, Inc – USA Email: bcoakley@dapcondt.com Website: www.dapcondt.com

# X-ray agreement with Indian partner

3DX-RAY, supplier of x-ray inspection solutions for industrial markets, has announced a partnership agreement with component manufacturer Castmaster India Pvt Ltd to distribute 3DX-RAY's security and industrial product ranges within India, Nepal and Bhutan. The agreement will lead to the creation of a joint venture, Castmaster-3DX, in India, responsible for distribution, local support and servicing of 3DX-RAY's products across the region.

3DX-RAY is a specialist in high performance x-ray systems, which it claims provide the best image-to-cost ratio on the market. The company has provided standard product and bespoke systems industrial market customers worldwide.

In the long term the joint venture will involve establishing a manufacturing presence in India to supply the Asian market. This will also involve sourcing certain components locally.

3DX-RAY – UK Website: www.3dx-ray.com



# **Delivery programme for feeding** units and drawing benches

THE delivery programme of sema Systemtechnik includes feeding units, drawing benches, straightening machines, sawing units and testing lines, and also packaging machines for tubes and profiles.

The packaging units are designed for bars and tubes with a diameter range from 5-200 mm and for profiles (hex, square, etc) from 8-50mm. Also hot-rolled profiles and Ú-, IPB and special profiles can be packed.

Mostly the round materials are packed to hexagonal shaped bundles. Hexagonal and square profiles are packed to square bundles, where hexagonal materials are packed on the edges. All other profiles can be packed nested depending on their cross section. Therefore these materials are automatically turned during the transport to the stacking station. After stacking the finished bundle is transported across out of the stacking The stacking station can start stacking the next bundle immediately.

The bundles can optionally be strapped manually or automatically. By using automatic operation the bundles are transported longitudinally. During the longitudinal transport the bundle can be wrapped with foil at the positions where the bundle has to be strapped with steel belt. The strapping positions are pre-selectable at the operating desk.

In other packaging combinations it is also possible to strap the bundles with plastic belt. Weighing devices can be integrated into the sema packaging machines.

Futhermore, sema Systemtechnik manufactures packaging machines for the copper tube industry. These machines are often small bundling machines where 5-20 tubes are collected into small bundles and are wrapped with adhesive tape. These small bundles are then gathered into large bundles which can also be strapped.

### sema Systemtechnik Sewing **GmbH & Co KG** – Germany

Email: a.burkamp@sema-systemtechnik.de Website: www.sema-systemtechnik.de

# **Drills that** penetrate deeper

THE successful Walter Xtra.tec four-edged Insert Drill range has been expanded to include sizes from 16.5mm to 35mm diameter with depth to diameter ratios of two to five.

Due to the balanced positioning of the indexable inserts and combined with the wiper function, in addition to higher surface quality of holes produced, the inherent rigidity and stability of the design has been acclaimed for the ability to spot drill from solid - and can even be applied directly to crowned surfaces.

The Insert Drill is available in two geometry variants for medium demand machining conditions as a universal tool with a rake angle of 13°. The E57 tool is ideal for cast iron, steel and corrosion resistant materials. For more difficult conditions when cutting cast iron and steel, the A57 has been introduced with a rake angle of 0°.

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# Flexible batch machining

WITH twin pallets of 1,000mm by 1,000mm complemented by an optional 360° B axis and X, Y and Z axes travels of 2,100 mm by 1,350mm by 1,400mm, the new Hyundai-Kia KH-1000 horizontal machining centre, available from exclusive UK distributor Ward CNC of Sheffield (www.wardcnc.com), offers an unlimited range of flexible machining solutions for the high quality but cost-effective production of multi-loaded workpieces.

A wide range of prismatic parts can be mounted via a variety of fixturing systems on each pallet, which are of shuttle-type and can accommodate loads of up to 3,000kg each. With 8,000 revs/min available via the 22/26 kW spindle plus rapid traverse rates of 20m/min in all axes as well as cutting feed rates of 5,000mm/min, endless options are available for multiple batch processing.

As standard, 60 tools of up to 245mm diameter and 600mm long can be used in the automatic toolchanger – tool-to-tool

and chip-to-chip times are just 9 and 13 secs, respectively – with ATC capacity options available for 90 and 120 tools.

The standard control system is Fanuc 18iMC with Manual Guide-i programming. Reliable, accurate and stable machining can easily be achieved courtesy of the machine's large capacity, design and build quality, oil cooling system and rigid one-piece bed cast iron construction. Linear

scales, full B axis NC rotary table and up to 70 bar through-spindle coolant is available within some of the machine options available.

## TW Ward CNC Machinery Ltd

– UK

Fax: +44 11427 00786 Website: www.wardcnc.com Email: lwilson@wardcnc.com



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# Intelligent YM52 high-power welding head

WELDING variable joint positions is a challenge that not every welding head can master and the tools of choice here are intelligent welding heads, says Precitec. These measure the position of the joint in order to place the weld seam at the correct position.

Every welding task also requires a spot size that is adapted to the application - and the effective width of the laser beam can be flexibly optimised from one seam to another, ensuring a stable process. The weld seam width is thus only as wide as necessary, enabling the highest possible welding speeds.

Precitec is presenting the YW52 high power welding head with controlled welding position and weld width for the first time. All the functions are fully integrated into the new YW52 welding head, without the need for additional external sensors, cameras or external linear positioning drives. The WobbleTracker uses the welding optics to coaxially measure the joint only a few millimetres in front of the TCP. The position acquired is immediately transferred to the controllable deflection mirror (also fully integrated) and a pre-selected Wobble amplitude and frequency is then overlaid. The minimum pre-process times (less than one tenth of a second) and the optimal distribution of the energy input per unit length over the weld seam width guarantee short cycle times in a fully optimised process.

Based on the modular concept of the YW30 Welding Head, the YW52 is designed to operate with maximum aperture and minimal overall size and is suitable for use with fibre, disk or diode lasers in the high power segment. In the basic version, the head is inexpensively priced, and its range of functions can be expanded to match the requirements of customer-specific applications. All well-known pre-process,



in-process and post-process modules by Precitec can be integrated for fully automated production.

The combination of quality monitoring systems and processing heads provides a complete solution for highly-automated processing. One example of Precitec's extensive experience in laser joining with concerted process assurance and monitoring of quality is the welding of power train parts with the SOUVIS® 5000 system. The inspection head can be automatically switched from the preceding operation mode (for highly accurate control of the laser beam) to the succeeding measurement of the seam position and quality. Circumferential weld seams allow correlating the joint position to the seam position and therefore the system detects lack of fusion caused by faulty seam positioning even on seams with perfect appearance. These new functions are to be seen live on Precitec's exhibition stand.

The new HP SSL Cutting Head is ideal for the use in flat bed systems and pipe-cutting machines with fibre-coupled lasers and laser

power up to 6kW. Modelled on the design of the successful and reliable HP series, the HP SSL has integrated distance sensors with extremely durable stability and a monitored protective window cartridge, which extends the life of the optics. The piercing sensor integrated into the new model considerably accelerates the cutting process.

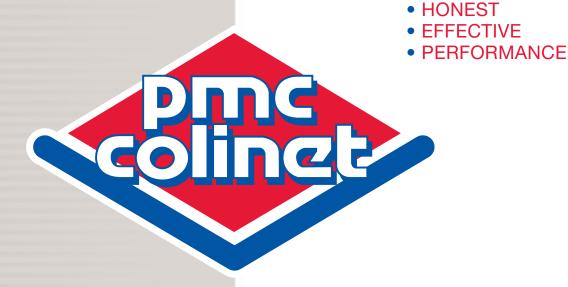
Pre-programmed waiting times at the beginning of the cutting procedure are shortened - the cutting process can now start directly after piercing. Motorised focal position adjustment enables the cutting of different sheet thicknesses within the same cycle - manual intervention is no longer necessary. The replacement of lenses for various focal lengths is fast and easy thanks to preadjustable cartridges. The mechanical interface is also the same for all HP1.5" Cutting Heads and this enables simple changing between CO2 lasers and fibrecoupled solid-state lasers.

The YRC Cutting System is the result of Precitec's many years of experience in laser cutting. The fast-reacting distance sensors with integrated height adjustment guarantee constantly high cutting quality at high speeds - even in the case of complex moulded components. The lenses are dust-proof sealed and the optical path is completely sealed – an absolute prerequisite for long-life optical components. The system is already used by well-known automotive companies, supply companies and job shops. The YRC system has a wide range of applications, including the cutting of holes in finished bodies and cross members of a vehicle or the cutting of hot-formed steel and hydro-formed profiles.



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# **GLOBAL MARKETPLACE**



# Oil and gas

# Acquisition of a Canadian producer and refiner will help oil-poor South Korea to secure its supply

The purchase of Harvest Energy Trust, of Canada, by Korea National Oil Corp (KNOC) in a deal worth C\$4.1bn (US\$3.9bn) will greatly strengthen South Korea's ability to satisfy domestic demand. Oil consumption in Asia's third-largest economy, after Japan and China, exceeded two million barrels per day in 2008. The country produces little oil of its own and is a net importer.

Harvest's reserves in western Canada and its refining operations on the eastern seaboard should go far toward squaring South Korea's failure, last June, to acquire Geneva-based Addax Petroleum. In a battle of state-run oil companies, KNOC lost out to China's Sinopec for Addax's assets in West Africa and Iraq.

KNOC is not new to Canada. In 2006 it bought a lease on an oil sands prospect from Newmont Mining for \$270mn, and is expected to dovetail the development of that operation with Harvest's production, as well as to increase Harvest output. In a message to investors in September, Calgary-based Harvest estimated that it was producing between 50,000 and 51,000 barrels of oil per day. At the end of 2008 the Canadian producer and refiner reported reserves of 154mn barrels of oil and oil equivalents.

Harvest is the first of two such acquisitions that KNOC had said it was looking to make last year, and Canada appears to be central to Seoul's quest for a steady supply of oil from overseas. In a statement accompanying the Harvest announcement, Youngwon Kang, president of KNOC, said his company "has ambitious plans for future growth and is committed to a long-term investment strategy in Canada".

The deal with Harvest, announced 22 October, was expected to close by the New Year.

### Of related interest . . .

South Korea has also been cementing ties with Europe. After two years of negotiations, on 15 October the country signed a free trade agreement with the European Union under which the two sides will remove virtually all trade barriers between their economies — tariffs as well as many non-tariff items — over a five-year period. The European Commission (EC), the executive arm of the EU, said the trade in goods between Europe and South Korea totalled about \$97bn in 2008, and that the deal was worth \$28bn to European exporters alone. The EU runs a trade deficit with South Korea.

Analysts believe that the pact, achieved in a climate of deadlocked global trade and fears of rising protectionism, could spur other nations to press ahead with bilateral pacts of their own. A free trade



agreement between the US and South Korea, reached in 2007, is yet to be ratified as American politicians contend with the objections of domestic auto makers.

Also opposed to the EU-South Korea trade deal is the European Automobile Manufacturers' Association, which alleges it would lead to unfair competition. But the EC, evidently believing that this is a risk worth taking, stressed the potential benefits of the pact to several European industries, particularly in the removal of the many regulations and standards in the non-tariff barrier category.

# China's CNOOC may be about to test the waters of the Gulf of Mexico

China, too, is looking toward the Americas to help satisfy its energy needs, second only to those of the United States. On 16 October, *Dow Jones Newswires* reported that the China National Offshore Oil Corporate (CNOOC) was close to closing a deal to buy stakes in some 20 of the 451 drilling leases in the Gulf of Mexico held by Norwegian national oil company StatoilHydro.

Very little oil is involved, even in prospect. But it will be remembered that, four years ago, CNOOC's \$18.5 billion bid for the California-based oil company Unocal first shook the US political establishment, then foundered altogether under congressional opposition. Since then, China has formed oil alliances and joint ventures in Venezuela, Russia, and Brazil, and Chinese companies are actively competing for exploration and development rights in Africa. Now China is making a gingerly approach to oil lying in waters that lap the shores of the US.

In addition to StatoilHydro, oil companies like London-based BP, Royal Dutch Shell, and Brazil's Petrobras are already heavily invested in the Gulf of Mexico, with its highly motivating deepwater potential. And several large American oil companies, including Chevron, ConocoPhillips, and Devon Energy, have wide-ranging investments in China.

But there may be, as one energy policy researcher surmised, "still a hangover from Unocal" in the US. Even so, Amy Myers Jaffe, an energy specialist at Rice University (Houston, Texas), foresees little or no opposition in the US to China's dipping a toe into the Gulf of Mexico.

"It's completely unthreatening," she told the *New York Times* (17 October). "There is no reason why any American should be concerned about a Chinese company taking a small stake in the Gulf"



# Having angered Beijing with a 35% tariff on Chinese tyre imports, the US moves on – and up – to steel pipe

The US International Trade Commission on 30 October voted 6-0 to authorise a Commerce Department investigation into charges that Chinese steel pipe producers sell at unfairly low prices in the United States. In this eighth ITC investigation last year into allegedly unfair Chinese pricing practices, three American companies and the United Steelworkers union were seeking anti-dumping duties of 98.37% on \$382mn worth of pipe. In addition, the petitioners sought countervailing duties, to offset subsidies they suspect Chinese steel makers of having received from their government.

The investigation covers seamless carbon and alloy steel standard, line, and pressure pipe used in industrial piping systems. The ITC (despite its name, a domestic agency that provides trade policy advice to branches of government) launches a probe on "reasonable indications" that specific imports could harm US producers. By that point in 2009 it had found sufficient grounds for Commerce to impose final anti-dumping or countervailing duties on nine Chinese products. These include small welded stainless steel pipe, steel threaded rod, and circular welded carbon quality steel line pipe. The investigation approved in late October covers imports from China that the Commerce Dept claims have increased nearly 132% by volume from 2006 to 2008. The agency's decision on the countervailing duties was expected in December; on the antidumping duties, in February. Final determinations must be reached this year. For its part, China promptly applied to the World Trade Organisation (WTO) to start a dispute resolution process whose 60-day term will likely overlap the ITC procedures.

An earlier ITC case, involving imports of Chinese oil country tubular goods, was decided in favour of the United Steelworkers and the domestic producers US Steel (Pittsburgh), Wheatland Tube Co (Sharon, Pennsylvania), and Evraz Inc NA (Portland, Oregon). In September, after an ITC investigation into the merits of the largest countervailing duty complaint ever lodged by American companies against Chinese-made products, the Dept of Commerce imposed import duties of up to 31% (average, 21.3%) on OCTG from China.

In one of his first major decisions on trade policy, President Barack Obama on 11 September imposed a 35% tariff on tyres from China. The move was intended to bolster the domestic tyre industry, in which more than 5,000 jobs were lost over five years as the volume of Chinese tyres in the US market tripled.

But if any of the steel pipe events should turn out to be the opening volley in an all-out trade war between America and China, the Chinese will find that sentiment in US producer circles is not unanimous in these matters. Writing in the Engineering News-Record. Dan Carsen noted that, when the OCTG determination was published, a Washington, DC-based industry trade group promptly protested it as being protectionist and unfair.

Eugene Patrone, director of the Consuming Industries Trade Action Coalition, said the tariffs would "hurt US industries by raising their costs and making sources of supply uncertain," as well as aggravating the difficulties of oil and gas exploration and production. ("Duties Hit China Pipe Imports," 23 September)

Roughly \$2.8bn in Chinese steel pipe is imported into the US annually. Industry analysts consulted by Mr Carsen say that the tariffs could cause a sharp decline in those imports or even cut them off altogether.

# Other news of pipe . . .

United Spiral Pipe LLC on 30 October dedicated its new spiral-weld pipe manufacturing and coating plant in Pittsburg, California. The formal announcement by the company — a joint venture of US Steel Corp with Pohang Iron and Steel Co (POSCO) and tube maker Seah Steel Corp, both of South Korea - noted that the plant represents some 320,000 hours of local building and construction trades labour: an irrelevant statistic in ordinary times but not now when manufacturing jobs are scarce in Northern California.

At its peak the new facility will produce 300,000 tons of largediameter (24" to 64" OD) product per year to meet anticipated demand in North America for line pipe for oil and natural gas transmission projects. US Steel and POSCO, each with a 35% stake in the new venture, have been partners in a steel finishing plant in Pittsburg for more than 20 years.



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# ArcelorMittal delivers good news in a subdued voice

The world's largest steel company is a weatherglass of the world economy, and ArcelorMittal's report on 28 October of a third-quarter profit of \$903mn was welcome news in the steel sector and well beyond it. Even though attributable largely to a \$900mn tax benefit, the results broke the company's losing streak of the three previous quarters. More heartening still, ArcelorMittal announced that it was ramping up production.

The Luxembourg-based steel colossus - formed in 2006 by the combination of a European consortium and Mittal Steel Co, founded in India - had already responded to a brightening outlook for steel by restarting several plants that will thereupon also punch up their capacity. The revival of expansion plans for Brazil, India, and Liberia should help the company to tap into emerging-market demand, forecast to grow 10% to 15% in 2010.

Chief executive Lakshmi N Mittal said the company's steel shipments rose 7%, to 18.2mn tons, from the second to the third quarter. Its crude steel capacity utilization rate was expected to reach 70% in the fourth guarter, up from 61% in the third guarter and 50% in the second quarter. While he looks for further gradual improvement through 2010, Mr Mittal said that "the operating environment remains challenging".

The measured tone was not lost on Matthew Curtin, of the Wall Street Journal, who suggested that ArcelorMittal "is determined to keep a lid on expectations". He considers this prudent but perhaps overly dampening, in light of the success of the company's "frenetic efforts at refinancing and cost-cutting" in 2009. ArcelorMittal slashed net debt by \$10bn to \$21.6bn in the year through September and refinanced acquisition-related bank debt. Fixed costs were also cut 30%, to \$18.5bn, improving cash flow. ("ArcelorMittal's White-Knuckle Ride," 28 October)

Mr Curtin, who writes from Paris on the European economy, noted the ArcelorMittal chief's own assertion that some 20% of the cost cuts made by the company will be permanent, with all that that means for its fighting trim. A much leaner ArcelorMittal employs 63 people for every ton of steel it ships, compared with 79 a year earlier, and need not do any rehiring to return to full capacity.

True, ArcelorMittal is still at least a quarter away from returning to profit. And Mr Curtin observed that, with Chinese demand likely to cool short-term, a true return to form "depends on a turnaround in North America and the European Union where ArcelorMittal makes 55% of sales."

But the company's third-quarter results appear to signal more settled conditions just ahead. And, according to Lakshmi Mittal, for Europe and North America "the de-stocking phase is over". That is encouragement enough, for now, for a cautiously hopeful industry.

### Elsewhere in metals . . .

South Korea's POSCO, the world's second-largest steel maker by market value, is reported to have entered a joint venture with Kazakhstan's Ust-Kamenogorsk Titanium and Magnesium Plant (UKTMP) to produce titanium slabs in Kazakhstan. According to the Silk Road Intelligencer (SRI), the two companies on 1 October signed a memorandum of understanding to build a plant in Ust-Kamenogorsk, to be completed by 2012. SRI said that POSCO

plans to ship the slabs to its domestic plants for processing into titanium plates, and sell the product in the South Korean, Chinese, and European markets. The equal partners have each committed to invest half of the estimated \$50mn cost of the plant.

# **Automotive**

The Tokyo Motor Show, which ran 24 October to 4 November in the suburb of Chiba, was much smaller than the previous edition of the biannual event. But the ten exhibitors (down from 35 in 2007) more than upheld the show's reputation for techno-whimsicality in a period of leaden earnestness for most of the world's auto makers. Among the "concepts" - as distinguished from models available for purchase – on display:

- The Toyota FT-EV II, a zero-emissions electric vehicle recharged partly by solar cells, with no steering wheel, accelerator, or brake pedals. Starting, speeding up, steering, and stopping are by means solely of hand controls mounted on a bow-shaped panel;
- The Honda Skydeck minivan with seats fixed to the centre console, seeming to float, unattached to the floor of the car;
- Subaru's Hybrid Tourer with only one door but this a very big

A few gasoline-powered and production-ready cars were shown. These included the Toyota FT-86, a sports coupe with a Subaru engine; the Honda Euro-spec Civic Type R that went on sale in Japan in November; and the Lexus LFA supercar, with a top speed close to 200 miles an hour and a sticker price of \$375,000.

Nissan showed its Leaf electric car, which goes on sale this year, plus the first hybrid from its Infiniti Div – a version of the M sedan. Suzuki and Mitsubishi presented design studies of either all-electric or gasoline-electric hybrids. Mazda reviewed developments in gasoline and diesel-engine design.

# **Aviation**

# Post-rescue, Japan Airlines will hold membership in one of three major airline alliances. Other carriers are keen to know which

"JAL's operation covers more than a half of Japan's sky and, considering its global network and how it connects regional economies, its revival is extremely important for Japan's economy as well as for our policy."



Transport Minister Seiji Maehara spoke on 29 October, the date on which Japan Airlines confirmed that it would apply for financial assistance from the Enterprise Turnaround Initiative Corporation (ETIC), and a month after the troubled carrier first said it would need state aid. The newly formed agency is empowered to buy the debt of Japanese companies in trouble, and has access to up to \$17.7bn of government-guaranteed bailout funds.

How much of this aid JAL requires, and how much it receives, will depend on the determinations of the ETIC specialists sent in to study its finances and restructuring plan, probably over the course of several months. These experts have their work cut out for them. JAL's losses totalled \$1.1bn in the April-June quarter of 2009 alone. Its debts are estimated at up to \$15bn.

While the ETIC does its spadework, other interested parties have ideas of their own as to the best course for JAL and the government that wants to save it. On 5 November, executives with the SkyTeam airline alliance were reported to have said they would like to welcome Japan Airlines to their group. Delta Air Lines, Alitalia, Air France-KLM, and Korean Air are all members of SkyTeam.

Japan Airlines may of course elect to remain a member of the rival oneworld group, to which American Airlines, British Airways, and Qantas also belong. The biggest alliance, Star – whose members include United Air Lines, Lufthansa, and Singapore Airlines – has not weighed in; but it may be presumed to be ready and willing to help itself along with helping JAL.

Something else that goes without saying is that, with every airline alliance a jumble of carriers' flags, nationalist sentiment will not be a factor in the deliberations on JAL's future.

# A possible boon for Delta

The most interested observer of the rescue effort is almost certainly Atlanta-based Delta, for which the outcome could hold nearly as much significance as for JAL. The world's largest airline by fleet size, Delta already has a presence in Japan by way of its acquisition in 2008 of Northwest Airlines. But its market share is much smaller than that of Japanese carriers.

Delta and JAL had reached out to each other for some time before the ETIC announcement. On 12 September it was reported by Japan's national broadcaster NHK that JAL was seeking an investment of some \$550mn from Delta, as well as a capital injection from Air France-KLM. Delta was even reported to be in talks to take a minority stake in the Japanese carrier. NHK also reported that Delta and JAL contemplated joint operation of international flights.

Such an arrangement would have meant much to Delta, whose SkyTeam alliance lacks a Japanese affiliate. In addition to shared routes and passengers, a tie-in with JAL would give Delta coveted access to Tokyo's Haneda Airport. Through its merger with Northwest its operations are now confined to the main international airport, Narita, at some distance from the capital's business center.

Writing at that time in the *Atlanta Journal-Constitution*, Kelly Yamanouchi noted the observation of airline consultant Bob Mann that Japan is a "very concentrated market" for airlines, with only two major carriers – Japan Airlines and All Nippon Airways. Both their alliances compete with Delta's SkyTeam. Mr Mann said: "Not having either of them in SkyTeam is a major disadvantage" to Delta. (11 September)

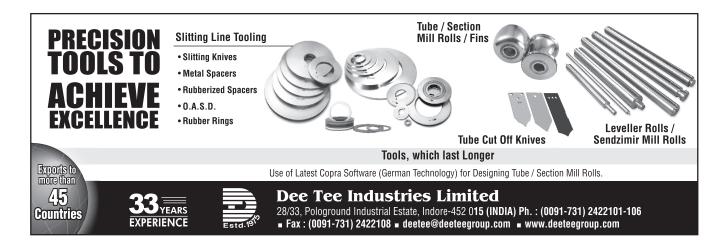
The *Journal-Constitution* noted that, while restrictions on foreign ownership of airlines have tended to limit such activity, some US airlines have held small stakes in foreign airlines in the past. These include an American Airlines stake in Spain's Iberia and a Continental Airlines stake in the parent company of Copa Airlines, of Panama.

### In brief . . .

Sustained high oil prices and a forecast for economic growth in 2010 have significantly brightened Russia's economic outlook – so much so that, on 5 November, the country's finance minister met with bankers in London to discuss a possible new government bond issue. This was considered the strongest sign to date that Moscow plans to resume foreign borrowing for the first time since its 1998 default on debt. With almost all its Soviet-era public debt paid off, and the rise in the price of oil making another default far less likely, Russia is in a good position to negotiate favourable terms with lenders.

On 28 October the 7.6-mile Incheon Bridge in South Korea opened to traffic on time, 52 months after the privately financed \$1.6bn project was launched. The crossing, which links Incheon City to Yeongjong Island, incorporates a 0.9-mile cable-stayed bridge with a 2,625-ft steel box-girder main span. Britain's Amec PLC was project manager of the turnkey joint venture. Builder Samsung Corp worked to a design by Canada's Buckland & Taylor Ltd detailed by Japan's Chodai Co Ltd.

Dorothy Fabian, Features Editor (USA)







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# HEAT AND SURFACE TREATMENTS

The application of heat is the oldest non-mechanical means of changing the character of a metal, and the heat treatment of tubes and pipes one of its greatest challenges.

No miscalculation in metallurgy is without its penalty; but a slab offers a margin for error that a length of pipe – freighted with responsibility out of all proportion to its size, weight, and surface area – does not. Because heat and surface treatments of tubes and pipes are unforgiving, advances move quickly from the development into the perfectibility phase, where they remain:

- Reducing oxygen loss in the heat treatment of steel pipe;
- Minimizing the loss of tube material due to local overheating in the furnace;
- Controlling the super-elastic force of nickel titanium alloy tubes during heat treatment.

These are the kinds of concerns that engage the suppliers profiled in the pages of this section. Heat and surface treatment of metal is a highly evolved process. The evolution of the heat and surface treatment of tubes and pipes, and the equipment in which these are performed, is ongoing and unceasing.

Electric arc furnace for tapping weights

between 5 and 35 tons

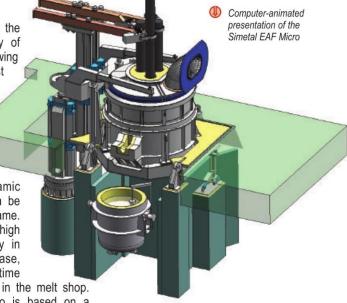
WITH the new Simetal EAF Micro, Siemens VAI Metals Technologies has extended its range of steel making solutions to include an electric arc furnace for low tapping weights between 5 and 35 tons. The system has been specifically developed for foundries and micro steel works, and combines the advantages of the electric steel making process with a high degree of flexibility in terms of production volumes and the qualities of the steels produced.

Operators of foundries and micro steel works face the challenge of casting relatively small quantities of steels of different qualities in quick succession. The new Siemens electric arc furnace combines flexibility in production volume with the advantages of electric steel making with respect to melting and refining. In contrast to conventional melting processes, the integrated oxygen system enables even complex metallurgical process steps, such as deoxidation and decarburisation, to be carried out. The electric steel process is

also less dependent on the state and heterogeneity of the input materials, allowing the use of the widest range of raw materials and qualities of scrap.

The new electric arc furnace has a tilting frame with enhanced dynamic characteristics, and can be installed on a base frame. This design permits a high degree of pre-assembly in the manufacturing phase, and minimises the time

required for installation in the melt shop. The Simetal EAF Micro is based on a modular design, and slight modifications to a few components quickly adapt it to handle the complete range of possible tapping weights.



Siemens VAI Metals Technologies GmbH & Co – Austria

Email: contact.metals@siemens.com Website: www.siemens.com

# In-line bright annealing system

ELIND SpA designs and manufactures complete solutions for applications where induction heating is required, including rolling mills, hot forging, and heat treatments such as hardening and tempering of bars and pipe, and annealing and heating of tube and pipe.

Following its experience in the field of stainless steel tube annealing, the company has developed an in-line bright annealing system able to work on TIG and laser welding stainless steel tube mills. The equipment is composed of three main sections: heating, soaking (available on request) and cooling.

The concept of modularity is applied on all three sections of the equipment, which can be tailored to the needs of the end-user and easily improved in the field in terms of number of inductors, power and cooling section length.

The heating and soaking sections are composed of one or more inductors, driven by a generator with an output power ranging from 50 to 500KW and over, according to the process needs.

The generator is based on a highefficiency IGBT inverter, able to work within a wide range of frequencies. The cooling section has been designed for achieving the best results in terms of short cooling time, and to make change of tooling fast and easy.

Both inductors and cooling section are assembled on a movable, water-cooled frame that can be easily removed from the tube mill in case annealing is not required.

Stainless steel tube is heated up to the annealing temperature (which is maintained for a while if the soaking section is used), and subsequently cooled down. The entire process is performed in a pure hydrogen atmosphere, to keep the surface of the tube clean and bright. Special seals in input and output, together with a sophisticated gas management system, make the equipment extremely safe, while a temperature control system keeps the annealing temperature constant, even in case of possible feed variations. The standard equipment is supplied complete with a separate cooling unit and an operator control panel.



Elind SpA – Italy Fax: +39 011 95 72 502 Email: info@elind.net Website: www.elind.net

# New tube materials in development

FOR energy-conducting tubes (oilfield, conduits and boiler tubes), the trend is moving towards higher-tensile alloys as preferred materials. Pipeline producers must operate their pipelines under increasingly harsh environmental conditions and at higher pressure, in high-tensile steel grades such as X80, X100 and higher. In addition, the trend in the large tube sector is moving towards thicker walls and increased resistance to low temperatures.

# New hot strip grades for oil and gas pipelines

Germany's largest steel producer, ThyssenKrupp Steel AG, is a manufacturer of feedstock for tube production. Since the middle of the 1980s the company has been supplying hot strips for tubes welded with longitudinal and spiral seams. In doing so, the supplier specialised in input stock for tubes with diameters of more than 20" (508mm) and in sour-gas resistant qualities. ThyssenKrupp Steel delivers around 500,000 tons per year to tube manufacturers around the globe.

The company is also aware of the increasing demands of the input stock. Customers mainly demand higher strengths in order to be able to transport larger oil or gas volumes at higher pressure, among other things. While a few years ago, an operating pressure of 80 bar was standard for gas pipelines, today pipes are run at a pressure of up to 100 bar. To keep pace with this trend, the development of higher-tensile tube steel grades with a classification of X80 for the standard grades and X70 for sourgas resistant materials is underway. The 'X' classification is based on the American

measuring units and measures the strength in kilopond per square inch. The approximate value for the minimum limit of elasticity in Megapascal (MPa) results from the multiplication of the X-value with a factor of seven.

Micro-alloyed tube steel grades contain exact amounts of niobium, vanadium and titanium, which are used to precisely determine the strength of the material. The viscosity of the materials is also controlled via the alloy concept. For example, high viscosity can

prevent the creation of kilometre-long tears caused by small defects exposed to the pressure in a pipeline.

# High-tensile, sour-gas-resistant tube steel grades

Just under a quarter of the pipe casings supplied by ThyssenKrupp Steel are comprised of the so-called HIC (hydrogen induced cracking) grades. It is planned to expand the strength range of these sourgas resistant tube steel grades and offer HIC steel grades with strengths of up to X70. If the transported oil or gas contains hydrogen sulphide, hydrogen-induced cracks can appear in the pipeline tubes. Such sour-gas wells exist in the Gulf region, as well as in Canada and Mexico.

During hydrogen induced cracking, the hydrogen sulphide connects to the water or water vapour in the oil or gas to form sulphuric acid, which attacks the tube walls. During the corrosion process, hydrogen is produced, which diffuses into the steel and can lead to cracking. This can only



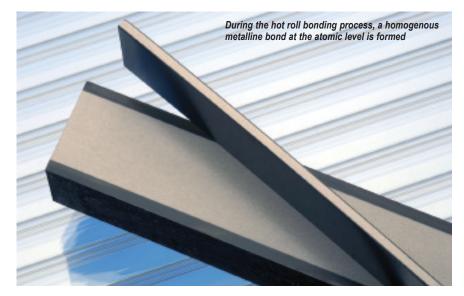
be avoided by producing steel grades with a high purity level and an even texture. HIC grade steel must be desulphurated, so it contains less than 0.0015% sulphur. In addition, calcium is injected into the liquefied material during production.

# Composite materials with customised characteristics

Tribond®, a new product from ThyssenKrupp Steel, is described as a customised composite material off the coil. The hotrolled material combines various, in part oppositional, material characteristics in one three-layer steel strip. The basic idea revolved around the development of a material that combines high resistance to wear and tear with good plasticity. In the meantime, there are further developments that combine a comparatively low-cost, quality, hot rolled steel strip with a thin corrosion-resistant stainless steel surface. Further research concerns MultiBond® products that expand the original threelayer TriBond design to five or more layers.

Hot roll bonding of various steel grades in itself is not new. However, to date it has not been used with coil material, but rather for heavy plates in the production of corresponding slabs. The procedure creates a homogenous metalline bond at the atomic level between the individual layers in a single step. The high adhesive power of this bond can be evidenced using shear tests, among other things. As a coil material, TriBond can be processed economically, and it can be etched, cold-rolled and processed like conventional steel strips.

During production, the preliminary strips and the appropriately prepared slabs are first cleaned of any forging scales, placed on top of each other and connected with circular welds. The welds stabilise the steel package and prevent the intrusion of furnace atmosphere between the individual layers



during the heating process, which leads to the creation of forging scales. The material bond is created when the steel package, heated to approximately 1,200°C, is prerolled in the roughing stand of the hot strip mill at a pressure between 2,000 to 4,000 tons. Afterwards, the material may be rolled to hot strips of 2.5 to 7.5mm and cold strips of 0.1 to 2mm. The selected thickness ratio of the individual material layers remains stable during the entire process.

The composite material can conceivably be used in automobiles, as a crash element, for example. During an axial crash test, a rectangular TriBond tube with the dimensions of 60mm x 60mm x 350mm and a wall thickness of 1.13mm was tested. The C70/C15 test sample made of cold-rolled. annealed plate, which had been formed into a tube using a longitudinal laser weld, showed very even energy absorption along the path of distortion and very symmetrical distortion.

Researchers are currently working on the further exploitation of the potential of the procedure. For example, asymmetrical layer designs can be produced, where layers of varying thickness and strength enclose a core material that can be re-formed. In addition it is possible to combine high tensile



strength and good re-forming characteristics or to connect wear-resistant materials with weldable ones.

A further project in development is Nirosta® TriBond as three-layer combination

of high-grade steel with low carbon ratio with corrosion, acid and heat resistant steel grades. Possible uses in this regard are tubes with corrosion-resistant surfaces for the chemical industry as an economical alternative to stainless steel tubes.

New developments in the tube material sector are a central topic of the international trade fair, Tube 2010, which will take place at the Düsseldorf exhibition grounds from 12 to 16 April 2010.

In addition, the trade fair will again present the entire range, from tube production and processing to utilisation. After a successful premiere in 2008, the sections Pipelines and OCTG Technology will again be showcased.

Information supplied by Messe Düsseldorf **GmbH** 

ThyssenKrupp Steel AG – Germany Email: info@thyssenkrupp.com Website: www.thyssenkrupp.com

Messe Düsseldorf GmbH - Germany Email: info@messe-duesseldorf.de Website: www.tube.de

Photo credits: ThyssenKrupp Steel



# **BORU 2010**

6th Int'l Tube, Pipe, Fittings and Machinery Fair



# 04 - 07 March / 2010

Istanbul Expo Center - Visitings Hours: 11.00-19.00

# **Exhibit Profile**

Tubes, Pipes and Accesories - Raw Material - Machinery and Process Technology Tools Testing, Measuring and Control Technology - Logistics - Pipeline and OCTG Technology

www.borufuari.com





# RFID design tags

CONFIDEX, an expert in RFID design, manufacturing and engineering, has launched SteelWING, a passive UHF C1G2 special label that is able to function directly on metal surfaces.

In applications such as metallic asset tracking, item level tagging, metal RTIs (returnable transport items) or plastic RTIs with high metal content, potential RFID users face obstacles to find a tag that is simultaneously well-performing, easily installable and cost-effective.

Due to the traditional problem of RFID labels' inability to function on metal surface, there have been challenges in those applications where on-metal hard tags cannot be used.

With up to 10m (32ft) read range on metal surfaces, UHF Class 1 Generation 2 compliant Confidex SteelWING was designed to overcome the challenges of metal asset tagging.

The key design targets were high performance, compact structure and cost-efficiency. The lightweight tag has an adhesive background and can be directly attached to a metal surface without any extra spacer material.

The drawback of label solutions where the RFID label is lifted away from the metal surface is that when the antenna bends closer to metal and the distance to metal reduces, the RFID label performance decreases significantly.

Instead of avoiding metal contact, contact between the metal and the antenna of SteelWING actually acts to significantly improves the operational performance.

Wide-band Confidex SteelWING is equipped with NXP G2XM IC which has extended user memory, and Confidex can deliver the SteelWINGs with pre-encoding or customer specific data labels showing visually the encoded data in barcode or human readable form.

SteelWING is often selected when the use of hard tags is not justifiable due to cost, and when there is no need for ultimate mechanical protection for the tag.

The product therefore fills the gap in the market caused by the lack of suitable high-performance RFID labels for metal surfaces.

Confidex – Finland Fax: +358 10424 4110 Email: contact@confidex.fi Website: www.confidex.fi

# **EFD Induction at Düsseldorf and Mumbai**

EFD Induction will showcase its Weldac and Minac systems at Tube Düsseldorf and Tube India.

The Weldac on display is a single-cabinet 600kW model. According to Peter Runeborg of EFD Induction, the Weldac range has established itself as the benchmark in IGBT solid state welders. EFD Induction will also be demonstrating a mobile Minac induction system at the Düsseldorf and Mumbai shows.

Visitors to Tube Düsseldorf can see EFD Induction at Hall 06, booth C26. The company will be at booth C21 at Tube India. To learn more about EFD Induction tube and pipe solutions visit their website or visit them at one of the shows.

**EFD Induction** – Norway Email: pru@no.efdgroup.net Website: www.efd-induction.com



NDT Technologies Inc. 20275 Clark Graham Baie D'urfé Montreal, Québec Canada H9X 3T5

Tel: +1 (514) 457-7650 Fax: +1 (514) 457-7652 info@ndt.ca

# Manufacturer Integrated Ultrasonic and Eddy current Testing Systems for ERW, SAW, SMLS Tubes







www.ndt.ca

# Speciality metal plant adds vacuum annealing furnace

WESTINGHOUSE Specialty Metals Plant in Pennsylvania, USA, has purchased a high vacuum retort annealing furnace to process zirconium tubes. Westinghouse is increasing its plant capacity to meet the needs of customers in both China and the United States.

The vacuum annealing furnace is custom engineered to meet the tight uniformity standard of  $\pm 5^{\circ}$ F in the 48" x 6" x 216" hot zone. The furnace is rated for 1,200°F and will be equipped with a cold cap high vacuum diffusion pump.

Westinghouse Electric Company offers a wide range of nuclear plant products and services to utilities throughout the world, including fuel, service and maintenance, instrumentation and control, and advanced nuclear plant designs. With headquarters in Monroeville, Pennsylvania, Westinghouse

has operations in 12 states and 15 countries. After designing the first commercial pressurised water reactor nuclear power plant in Shippingport, Pennsylvania, in 1957, Westinghouse and its licensees provided more than 40% of the world's 434 operating commercial nuclear plants.

Seco/Warwick's vacuum team custom engineers vacuum furnaces for most processes, including hardening, tempering, annealing, solution heat treating, brazing, sintering, carburising, carbon/carbon composites, CVD-graphitising, high pressure quench and degassing. The company has entered into a strategic alliance agreement with Retech Systems LLC, offering advanced technology for VIM, VAR, electron beam and plasma arc furnaces, along with powder production and environmental remediation equipment.

Seco/Warwick manufactures industrial heat processing equipment including heat treat furnaces, vacuum furnace technology, atmosphere generators and aluminium reverb melting and holding systems. The company provides heat treating equipment and services worldwide for customers involved with primary aluminium, aluminium recycling, automotive, aerospace, commercial heat treating, HVAC, electronics, lighting, medical equipment, nuclear applications and high temperature sintering.

Seco/Warwick Corporation – USA Fax: +1 814 724 1407 Email: info@secowarwick.com

Website: www.secowarwick.com

**Westinghouse Electric Company** – USA Website: www.westinghousenuclear.com

# **Electronic temperature indicator**

TEMPIL, USA, has introduced an electronic contact temperature indicator that provides an instantaneous digital readout of surface temperature at the point of contact. It is not



Developed by Tempil for critical temperature measurement applications, the patented E-Stik design combines the latest

in micro, thermocouple technology with a bold digital readout to instantly display the surface temperature with an accuracy of ±1%.

The new technology provides high accuracy and consistency of surface temperature measurement of ridged, polished or non-polished surfaces.

Designed to easily fit into a pocket, the Tempil E-Stik is quick and easy to use. The user simply activates the I/O switch on the

side of the E-Stik and touches the contacts to a work surface.

The temperature is instantly displayed on the digital display located on the top of the unit. Multiple measurements are made by simply moving the contact point to another area.

The E-Stik is constructed of durable thermal plastics, with an integrated safety shield that slides over the thermocouples when the unit is not in use.

Tempil – USA Fax: +1 908 757 9273 Email: tempil@tempil.com Website: www.tempil.com

# 1,000 high-resolution continuum AA spectrophotometers sold

ANALYTIK JENA has reported sales of over 1,000 units of its ContrAA range of flame and graphite furnace AA spectrophotometers.

The ContrAA is a high-resolution spectrometer that allows the user to select background correction points from the spectra at any wavelength. This gives true-simultaneous optical background correction with no false positive or negative errors. The spectrometer uses a high-powered xenon lamp as the source for all AA analytical lines between 185nm and 900nm. This eliminates the need to buy a new lamp for each element of interest and also reduces the running costs.

The lamp source allows access to all available lines at the same intensity. This means that using secondary lines is now a realistic way of measuring high levels of analyte without the need for dilution, and makes uniform sample preparation for multi element methods possible. It also opens the possibility of using molecular absorption lines such as SC for the determination of non-metals such as sulphur or halogens.

The company states that the highresolution ContrAA offers better detection limits on all elements by factors between 3 and 7. In many cases this allows the use of the flame for analysis rather than having to use a graphite furnace. This saves time with the analysis, the cost of investing in a furnace system and the ongoing costs of running a furnace system.

The ContrAA offers fast multi-element analysis, since all atomic lines are available from the single lamp. There is no need to switch between lamps for each element and wait for individual lamps to warm up and stabilise.

Analytik Jena – UK Fax: +44 208 429 7539 Email: sales@aj-uk.co.uk

Website: www.analytikjenauk.co.uk

# Fluoroplastic tubing

PARKER-TEXLOC is a manufacturer of fluoroplastic tubing products with over 24 years' experience in fluoropolymer tubing. The company's Texfluor® products are used throughout the chemical processing, aerospace, robotics, medical, and semiconductor industries.

Texfluor fluoropolymer tubing can provide heat resistance up to 260°C, coupled with

chemical resistance and lubricity. Featuring a low coefficient of friction and anti-stick properties, each material has specific dominant characteristics, but all are suitable for high temperature applications and are chemically inert and non-leaching.

Texfluor PTFE tubing is manufactured from a fluoropolymer that exhibits attributes not found in other plastic materials and has the lowest coefficient of friction of any plastic, allowing for unrestricted flow without deposit build-up. It also has a

working temperature of 260°C. Texfluor PTFE tubing is used in high pressure hose applications requiring a long flex and impulse life. On aircraft, it is used as a conduit for wiring systems and in semiconductor applications, for the transporting of DI water and acids. Texfluor PTFE tubing is available as a single or multilumen tube, with stripes or laser markings, natural or in colours, and in custom sizes up to 102mm ID.

Parker-TexLoc – USA Email: texloc@parker.com Website: www.texloc.com

# Stress relief prior to pipe-end swaging

RADYNE IHWT is a leader in the design and manufacture of induction heating equipment, serving numerous applications within the oil and gas sector worldwide, both onshore and offshore.

One application where Radyne engineers have considerable experience is in the field of onshore induction heating of pipe-ends, prior to the swaging process. It is well known that the operating service life for a length of drill pipe can be extended by improving both the torsional and the bending strengths in the swaged area of the pipe.

By using fast and efficient induction heating, residual stresses in the pipe can be removed prior to swaging, enhancing the overall quality of the product. Precision induction heating is carried out using a concentrically aligned induction coil that moves along the pipe axis to pre-heat in accordance with the customer's specific requirements. Induction heating is also cleaner and better for the environment than conventional heating by gas.

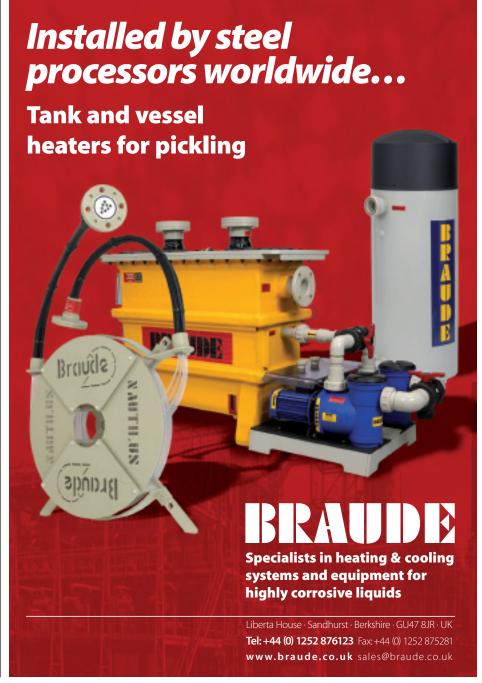
Induction heating also assists the precision swaging of pipe-end sections prior to threading. Stress relieving a pipe-end section is necessary if the exact pipe dimensions or geometry need to be free from distortion, enabling precision threading of the pipe to be achieved.

# Inductotherm Heating & Welding Technologies Ltd – UK

Fax: +44 1256 467224 Email: info@ihwtech.co.uk

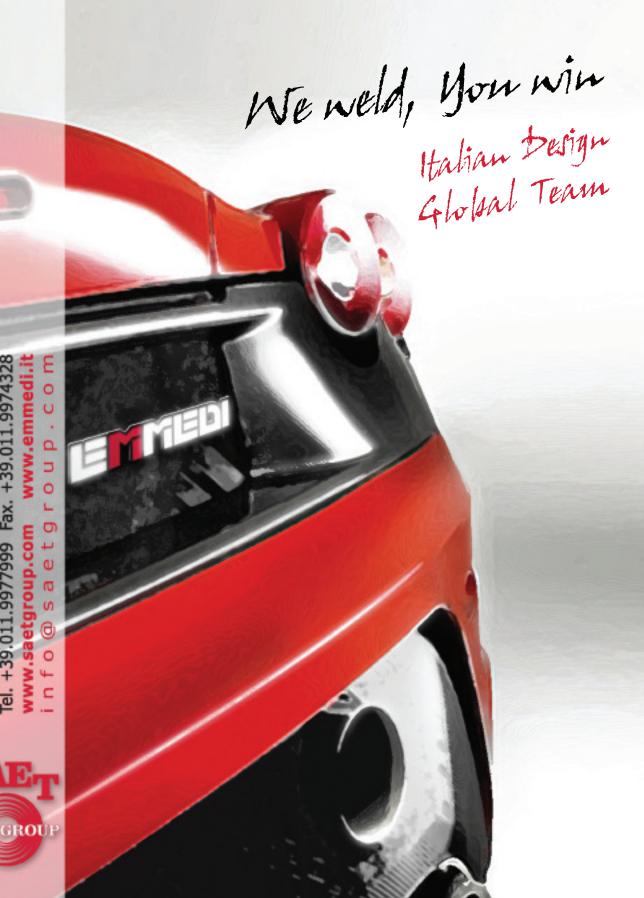
Website: www.inductotherm-hwt.co.uk





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# New heating and cooling technologies in pipe thermoforming processes

The socket thermoforming processes of plastic pipes use several different heating, forming and cooling techniques. Heating with short-wave infrared heating elements. IR-SW ovens, combined with new and efficient cooling systems with internal refrigerating cycle (Sica patent), are a new technical concept for socketing machines.

The systems are used in socketing machines for both PVC-U and PP or HDPE pipes, and are adapted and optimised according to the specific processing technologies necessary for the different materials. Their combination has been installed recently in Sica machines. The new systems can also be applied on BA/ CA socketing machines already installed in existing extrusion lines. Advantages include the reduction of the number of heating stations while maintaining the same production capacity, resulting in a smaller socketing machine, simplified operating management, and better operator accessibility. It is claimed that, in this way, a single-oven socketing machine can attain output equal to or higher than those of traditional double-oven socketing machines.

IR-SW ovens introduce constructive solutions, a particular layout of the heating elements and logic to control and optimally distribute the radiated heat on the pipe. The advantage of heating time reduction with IR-SW ovens is especially apparent with medium and thick walled pipes.

The IR-SW ovens offer low energy consumption, versatility and high adaptability to pipes with different diameter and wallthickness, and low and simple maintenance. Operation is not influenced by initial pipe temperature. The ovens allow reliable control of pipe heating quality, resulting in lower product waste.

The installation of IR-SW ovens on belling machines can bring important advantages, reducing not only heating time but also socket forming and cooling times. In order to attain these operating conditions, Sica developed and patented a fluid treatment system for socket forming and cooling inside the forming mould. The new Sica process enhances the reutilisation of compressed air for forming with an additional thermodynamic treatment performed directly on the forming compressed air with a special refrigerating cycle integrated in the socket forming system. In order to further increase the system's refrigerating capacity, it can

be equipped with controlled water sprav.

New Sica socketing machine models are also available to process compact, smooth wall or multi-layer PVC-U pipes. These models are available in different sizes. up to maximum diameters of 250, 400, and 500mm.

The Unibell 1 model is configured with one IR-SW oven, and Unibell 2

is equipped with two IR-SW ovens. The machines form sockets with internally calibrated ring seat, by means of mechanical mandrel or Rieber cycle, and are equipped with a quick-change belling tools system.

The new systems can also be used in socketing machines for smooth polyolefin pipes, in particular for multilayer pipes for outdoor sewer or indoor soundproofing sewer. The Everbell H range is available in different models, according to the pipe maximum diameter: 200, 315, 500 and 630mm.

The machines are equipped with two heating stations: the first has an IR-SW oven, the second a standard contact oven. In this



Sica's Unibell socketing machine

way, the IR-SW oven reduces heating times. while the contact oven renders uniform the thermal condition and stabilises the material temperature with little variability (±1°C). The machines are equipped with a single socket forming-cooling unit. The forming cycle is PSP, a Sica patented system that allows internal socket calibration. The forming process is enhanced during cooling thanks to an internal refrigerating cycle system.

Sica SpA - Italy Fax: +39 0544 81340 Email: info@sica-italy.com Website: www.sica-italy.com



# Dry ice cleaning technology

Ice Edge offers a unique industrial cleaning service that uses dry ice instead of water. The product is environmentally friendly, non-abrasive and, as it takes less time than normal pressure washer cleaning, it cuts down on 'tool time'.

The dry ice cleaning process uses pellets that are made through a process of taking liquid carbon dioxide (CO<sub>2</sub>) and expanding it to produce a snow like substance. The pellets are then propelled by a compressed

air gun and upon impact the dry ice creates a micro-thermal shock (caused by the extreme cold temperature of -79°C), which breaks the bond between the coating and the substrate.

The high pressure air stream removes the dirt from the surface, while the dry ice pellets vaporise.

Ice Edge – UK

Website: www.icedge.4mediadesign.co.uk

# **Cold bending specialist**

EUROTUBI Europa Srl has operated in the field of tube cold bending for more than 50 years. With constant attention to technical innovations and investment in machinery and equipment, Eurotubi can meet all market requests with flexibility, to satisfy large and small orders.

Particular attention is dedicated to increase knowledge in the area of heat exchanger manufacture. Eurotubi Europa offers services including heat treatment of bends with total protection against oxidation by inert gas (internal/external surface protection), which allows the elimination of the usual pickling and passivation; air pressure test or hydrotest on straight tubes

or bent pipe; computerised management of the entire work flow, from the shipment of the raw material, to the delivery of the worked product; and packing in custom racks, created using the company's own software.

Eurotubi Europa's core business is Eurotubi Pressfitting, a complete system of pipes and fittings, made of stainless steel and carbon steel, to create water facilities and gas facilities with pressfitting technology.

Eurotubi Europa Srl – Italy Email: info@eurotubieuropa.it Website: www.eurotubieuropa.it

Eurotubi's Pressfitting system



# Battery modelling expert to unveil coupled Li-ion simulation tool

CD-ADAPCO, a provider of engineering simulation tools for fluid dynamics and heat transfer, has announced a collaboration with Battery Design LLC, a provider of battery modelling software, with the aim of delivering a coupled simulation capability in early 2010.

The collaboration will add a simulation capability to CD-adapco's flagship STAR-CCM+ simulation tool, providing the automotive industry with a tool to enable the study of interaction between a cell or battery and its automotive environment. Initial applications will focus on the critical thermal management issues that have a direct influence on both battery temperature and safety.

Robert Spotnitz, president of Battery Design LLC, delivered a presentation and participated in a round table discussion at the STAR Global Transportation Forum in Detroit in December 2009, on the theme of 'Alternative Transportation and Electric Vehicle Technology Advancements'.

Mr Spotnitz commented, "We are delighted to be working with CD-adapco. Extending Battery Design's models into a full 3D environment will further enhance our understanding of installation effects and the behaviour of large-scale battery systems. The collaboration between CD-adapco and Battery Design will deliver an analysis tool that will accelerate product development and support vehicle programmes across the globe."

Richard Johns, CD-adapco's automotive director, commented, "The rapid growth in the electric vehicle market and the need for a powerful analysis capability has resulted in the partnership with Battery Design and the development of a tool for fully coupled simulation from the cell to the pack and installation levels, which will be released in STAR-CCM+ in early 2010. We have also given considerable attention to developing an engineering process that will allow our customers to perform simulations based on data that is realistically available to them from Li-ion cell producers. We have had huge interest from our automotive customers and we anticipate this analysis tool will enable them to bring electric vehicles to the market faster and with more confidence."

**CD-adapco** – USA Fax: +1 631 549 2654

Email: info@us.cd-adapco.com Website: www.cd-adapco.com

# Stainless steel processing innovation: from rough sanding to mirror polish

FEIN has launched a new stainless steel range encompassing power tools and accessory sets for machining stainless steel. The angle grinder WSG 14-70 E, sanding polisher WPO 14-25 E and eight stainless steel sets are suited to typical applications in industry and manual trades.

The machining of stainless steel is a growing market for locksmiths, steel and tank construction, machine building, shipbuilding and the construction of commercial kitchens. Various machines and tools are usually required to achieve the surface quality required. Fein has worked closely with users to develop power tools and accessories for metalworking. The stainless steel sets are coordinated to the power tool used, the application and the result required, and can be combined on a modular basis.

The angle grinder WSG 14-70 E and the FEIN sanding polisher WPO 14-25 E are characterised by robustness, performance, handling and safety. Users can choose from two stainless steel sets, while there are six sanding polisher sets for grinding, satinfinishing and polishing. Fein's pipe sanders and straight grinders and GRIT belt grinders round off the stainless steel range.

Stainless steel surfaces are ground smoothly, satin-finished or polished to a mirror finish. For work involving the machining of surfaces Fein provides angle grinders and sanding polishers with electronically adjustable speed. When combined with one of the standard stainless steel sets and one of the four specialisation sets, they produce optimum surface results. Fein application solutions are used when dirt needs to be effectively removed, material needs to be coarsely ground or rough welding seams, scratches or tarnishing need removing. The company can also supply accessory sets for satin-finishes, preparing for polishing and polishing to mirror finish levels.

Tools have to be perfectly matched to the surface in order to grind welded seams on pipes and profiles without damaging the neighbouring surfaces. Pipe bends, such as those found in the construction of railings, can be economically satinfinished and polished to a high gloss finish using Fein's solutions, without having to be disassembled.

Fein stainless steel sets designed to be combined with the Fein angle grinders, sanding polishers and pipe sanders can be used when machining straight pipes and profiles. The GRIT by Fein brand produces modular belt grinders for volume production work in manual trades and industry. If combined with different grinding belts, they can produce individual grinding patterns.

Fein Industrial Power Tools UK Ltd - UK

Email: sales@fein-uk.co.uk Website: www.fein-uk.co.uk

# Technology for advanced vacuum furnace applications

SCHMETZ, a member of the holding group MTH with six internationally operating units in four countries, produces technology in various fields of vacuum furnace applications for heat treatment, hardening, tempering, sintering, high-temperature brazing and 'sub-zero' treatment of special steels.

The company is known as a partner for modern industrial furnaces, with systems such as \*2R\* and \*2x2R\* (reversal of the cooling gas stream from multiple directions), the \*FUTUR\* system (dual heating system with convection and radiation in only one furnace for heating up and tempering with convection), and the \*2PLUS\* system



(additional heating chamber to double the cooling speed). Schmetz also recently developed the modular system \*COOL PLUS\* (integrated 'sub-zero' system) and the \*eSS\* energy saving system.

Vacuum-technical advice as well as support and assistance for the integration of the company's units into the end-users' production and the adaptation to the buildings at site are all within the scope of

Upon request the company can supply the complete layout and commissioning of services such as gas and water, as well as the installation of a completely automatic loading and charging system for unmanned operations.

The centrally located service ensures continuous availability of plants, and company's service engineers provide assistance via the most modern communication links, or provide support with their service-work at the user's site.

Schmetz GmbH - Germany Fax: +49 2373 686 200 Email: info@schmetz.de Website: www.schmetz.de





# The world's largest exhibition for the tube and pipe industries

A preview of Tube 2010 could be composed exclusively of confident assertions. The first-ranking show in the tube and pipe industry will attract leading exhibitors – over a thousand of them – from around the globe. On display in the spacious halls of the Düsseldorf Trade Fair Centre will be the most advanced machinery and equipment anywhere for every tube-related purpose, large and small. More than 70,000 visitors will arrive in Düsseldorf with high expectations, which will be met and exceeded. They will leave Düsseldorf primed as never before to profit from the opportunities that lie ahead for their sector. By any objective criteria that might be applied, time at Tube 2010 will be time well spent.

But it could also be confidently declared that other expectations – just as important, if less easily quantified – will be abundantly fulfilled by Tube 2010. Call these the imponderables. They include the exhilaration of exchanging information with like-minded professionals; the gratification that comes of testing a problem against a host of cutting-edge solutions until an answer – the answer – is found; the awareness of being on the frontier of knowledge of a vital industry.

These, too, are Tube. Ask anyone who has attended a previous edition of the show. You will find this visitor in the tens of thousands in the Rhineland in April – back at Düsseldorf for the refresher course. They wouldn't miss it for the world.

www.tube.de





# 10-12 February 2010

# The 4<sup>th</sup> All-Indian Exhibition and Conference for the Tube and Pipe Industries



THE location of this fourth All-Indian Exhibition and Conference is especially fitting. Mumbai, having caught its thermal after World War II, grew quickly and never stopped growing. Now India's commercial centre and nexus of world trade, as well as its banking and finance capital, the city generates 5% of India's GDP (gross domestic product) and accounts for 25% of industrial output.

In its broader context, as well, Tube India reflects its host country – in both its traditional and its progressive elements. An ancient civilization and a dynamic modern economy, India is uniquely positioned to offer hospitality to a mature industrial sector that even so must face new challenges with every sunrise.





Three of these specialities are grouped at the end of the production cycle: significantly, the point closest to the shipping bay.

Material handling equipment is concerned with bar and billet, shapes and stock sizes, tube and pipe. Weighing, measuring, and packaging equipment deal with payload. Flawlessly executed, they ensure that producer and customer alike receive the full value of the brawnier processes of fabrication.

The corollary here is, of course, that want of care in any of these specialities subtracts value. Having to repeat a procedure even once is unacceptable, as much so in weighing, measuring, and packaging as in handling.

In prevailing market conditions, time is not only money. It is also productivity, competitiveness, repeat business, and much else besides – a point very well understood by the equipment suppliers reviewed in this section.

Photo: Goudsmit Magnetic Systems BV

#### Magnetic lifting technology

TRANSPORTER® magnetic end-of-arm tooling from Industrial Magnetics, Inc (IMI), USA, magnetically transfers metal blanks, stampings and parts in automated station-to-station, press-to-press transfer or robotic pick-and-place applications, among others.

The Transporter family is engineered with powerful rare earth magnets that positively hold the part during transfer, even during unexpected loss of shop air, and greatly reduces chances for slipping and shifting of parts due to mill oil coatings, dust, dirt, rust or weld splatter.

The Original Transporter is designed for use on heavier gauge, non-flexing parts, and uses a single burst of shop air to actuate the magnet on and off; it is available in three standard sizes with holding capacities up to 670lb.

The Transporter LP allows for minimal die clearance and can be easily installed to existing air connections on tooling booms or robotic face plates. Transporter LP magnets are designed to directly replace vacuum cups

with only minor tooling adjustments. Suitable for applications in the appliance, automotive, and office furniture industries, as well as numerous other material handling applications, the Transporter LP is a next-generation sheet handling technology. It only requires a short, single burst of shop air to quickly release parts, and is available in three standard sizes, with the strongest unit holding up to 162lb.

Included in the LP line is the TPLP50, a 5", low profile Transporter that is suitable for lifting thin sheets. It is also available with



a destacking option that features a special magnetic circuit, designed to destack metal sheets as thin at 0.03" (22 gauge).

The latest addition to the Transporter family is the Transporter MV (MagVac) end-of-arm tooling from IMI, combining vacuum and magnet technology to lift and hold all shapes and types of steel in stamping, blanking, and press-to-press transfer applications. The Transporter MV is suitable for facilities with mixed-use metals, where the magnet can be used in conjunction with the vacuum for ferrous parts, and the vacuum can work on non-ferrous materials, eliminating downtime for tooling changes. The product is available in six standard sizes.

Each Transporter product provides options for pick-up points on stamped, perforated and odd-shaped parts, with a reduction over vacuum and suction cups in shop air costs. All Transporters offer accurate placement on the die and quick cycle times for increased production. Each is million-cycle-tested for endurance, and incorporates a fail-safe feature that, in the event of air loss, prevents the magnet from releasing ferrous parts. IMI specialises in custom designs, providing Transporter products for coil lifting, banded material handling and other challenging applications.

Industrial Magnetics, Inc – USA Fax: +1 231 582 0622 Email: imi@magnetics.com Website: www.magnetics.com

#### Handling line for hot-rolled tubes up to 340mm OD

PRESTAR, Czech Republic, has delivered a new automation line for Interpipe, Ukraine. The line is designed to transport and handle hot-rolled tubes within the OD range 168 to 340mm, and lengths up to 15m.

The automated line provides the transport between individual technological operations at the non-destructive testing of tubes. The control system, on the basis of tube quality evaluation (surface quality, wall thickness and inherent defects), evaluates the further transportation of tubes.

Tubes designed for surface defect repair are sent to three independent storage points. The operator controls the supply of individual tubes to the position of abrasion, tube rotation and displacement of tubes after abrasion. Via bypass the repaired tubes are frequently sent to non-destructive testing. The good tubes, after their ends are automatically cut off, are sent by the operator to the next treatment, and from the control board orders the tubes to be placed into prepared single or double bags.

Prestar is focused on the construction and production of transport lines for tubes, together with equipment for their treatment, such as conveyers, straightening machines, saws, grinding machines, pointing and bevelling units, packing machines and separating units. The equipment and automated production lines are designed according to the users' requirements, and

are optimised according to the production line productivity.

Prestar sro – Czech Republic Fax: +420 553 759 721 Email: prestar@prestar.cz Website: www.prestar.cz

Prestar produces transport lines for tubes



#### Hoist designed for safe lifting

AT 25 tonnes safe working load, the ZX88 is the largest model in Street Crane's ZX6-8 range. The unit follows the same design principles as other hoists in the series, with unitary construction, open plan design and standardisation of components. This ensures easy customisation to meet different end-user lifting needs.

The new hoist is suitable for applications in basic metal production, metal and glass stockholding, general engineering, fabrication, machine building, automotive and aerospace industries. Advanced vibration analysis during development

and intensive accelerated life testing have enabled Street Crane to produce a range of hoists that promise improved performance reliability and endurance.

Launched in spring 2008 after an intensive £1.5mn three-year development programme, more than 500 ZX6-8 hoists have been shipped. Street Crane is continuing to develop the hoist range. Based on the same design and engineering principles of the ZX6-8, the ZX10 is well advanced. This will take the capacity of the modular hoists to 50 tonnes SWL.

Street Crane also produces and offers

UK engineering industries the custom built VX Hoist – a heavy duty lifting model for use in arduous and extreme conditions, available in capacities up to 200 tonnes SWL.



www.streetcrane.co.uk

#### New concept positioner for welding

ROTOLIFT, from Sideros Engineering, is a hydraulic positioner and handler used for welding and assembly operations. The ergonomic machine has the capability to perform workpiece lifting and lowering, in addition to inclination and rotation.

The workpiece is securely fixed on the horizontal rotary table and handled according to the operator's needs. The machine is designed to improve operator performance and efficiency, and to improve safety conditions. Sideros Engineering claims that production costs can be reduced by 60%, with a consequent production increase.

Two versions of the machine are available, one with totally oleodynamic movement, and one with oleodynamic lifting and inclination and electromechanical rotation. Models are available catering to a range of loading capacity requirements. On request, the machine can be supplied with a bronze 600 or 1,500W rotary mass.

Sideros Engineering Srl – Italy Email: estero@siderosonline.com Website: www.siderosonline.com





#### Improving storage capacity and efficiency

ATLET Limited, UK, has assisted Doré Metal Services in improving its storage capacity and efficiency. The specialist nonferrous metal supplier selected Atlet Forte UFS four way reach trucks because they supported a new way of working with higher storage density.

Doré Metal Services is a privately owned company that supplies a wide range of non-ferrous and special metal extrusions including aluminium, brass and stainless steel to distributors and engineering businesses throughout the UK. The business has been growing steadily in recent years, and warehousing was spread across a number of sites in old-fashioned buildings. The company recognised that this was inefficient and decided to consolidate its operations into a new 3,000m² (32,000ft²) distribution warehouse.

The new building presented an ideal opportunity to optimise handling and storage processes. The company had been using a variety of racking types in its existing buildings and wanted to configure the new warehouse with a combination of cantilever and 'A' frame racking that offered a flexible and efficient way of storing extrusions, tubes, bars and billets up to six metres in length. Handling had been undertaken by conventional counterbalance trucks in the previous operation.

Doré recognised that this would not be practical in the new warehouse because of the racking density and aisle widths required to achieve the maximum storage capacity. A number of potential lift trucks suppliers, including Atlet, were ask to provide proposals based on overall requirement.

"We had a good idea of what wanted to do and the choice came down to side loader or four way reach trucks." commented

Doré managing director Mike Lane. "We soon realised that a side loader didn't have the flexibility we needed, but the four way reach truck was able to do everything we wanted."

Atlet proposed its Forte UFS four way reach truck that can be driven forwards, backwards and sideways because all three wheels can swivel. This makes it manoeuvrable in a confined warehouse environment and suitable for handling long loads in different types of racking.

Atlet recognised that its proposals represented a radical change for Doré, and brought in a project manager to advise and consult on the overall design of the warehouse. This included the configuration of the racking and the aisle widths to ensure the maximum storage capacity and efficiency from the available cube space.

"Aisle widths are critical because we wanted to get more in the warehouse but with flexibility and potential for future growth," said Mr Lane. "This was a sizeable investment and we needed to maximise what we do safely."

Doré's original plan had been to have a series of aisles running along the whole length of the building. However Atlet suggested the inclusion of a transit aisle running across the middle of the warehouse, as this would reduce the average distance the truck would move to complete each handling task.

The aisle reduced overall storage capacity but this was more than offset by improvements in efficiency and productivity. The transit aisle also formed a convenient boundary between the cantilever racking at one end of the warehouse and the 'A' frame racking at the other.

Doré Metal Services has grown by more than 28% since the move to the new warehouse, based on top and bottom line figures.

Around two thirds of the business involves supplying other stockists with highly diverse products. The remaining third comes from direct sales to customers such as engineers and OEMs who require speciality nonferrous extrusions.

This growth has been achieved by increasing overall efficiency without adding to the number of different lines stocked. Throughput has been improved and the overall stock weight is around 15% higher than before, thanks to the increased storage capacity on the new site.

Atlet Limited – UK Fax: +44 1844 219220 Email: sales@atlet.co.uk Website: www.atlet.co.uk

# Protection for components during handling

STOCKCAP pipe and flange protection caps and plugs are available for threaded and non-threaded applications. The range includes threaded caps and plugs (BSP/NPT and JIC/UNF), flange covers, flexible vinyl caps and plugs, and non-threaded caps and tapered plugs. This variety of styles means Stockcap can offer protection products for pipes from 1.6 to 170mm in diameter and flanges in sizes from 22 to 340mm.

The company can also recommend the best material choice particular applications. For low-cost, short-term applications Stockcap has a large range of polyethylene styles. If the application is permanent or involved long-term protection, a range of stock or custom vinyl materials is available

to meet exact storage, shipping or processing requirements.

Stockcap also produces Netguard – a low-cost way to reduce damage to precision components during shipping, handling or storage. Netguard slips snugly over the product to prevent breakage, scratching, dents, nicks

and abrasions, and stretches to hug any surface with a non-slip grip, making it suitable for cylindrical or irregular-shaped parts. Because of its elasticity, one size fits a variety of diameters.

An alternative to paper, cardboard or polystyrene, Netguard will protect valuable components, as well as products with machined, polished, plated, coated



or threaded exterior surfaces. It is also non-conductive, UV resistant and will not deteriorate when in contact with solvents, oils or rust inhibitors.

#### Stockcap (Sinclair & Rush Pty Limited)

- Australia

www.read-tpt.com

Email: info@sinclair-rush.com.au Website: www.sinclair-rush.com



ENGINEERING

# TUBEMILLS



#### **OLIMPIA 80 s.r.l. Engineering**

#### Best practice in handling plastic pipes

RADIUS Systems has helped the Plastic Pipes Industry Forum produce a DVD outlining best practice in handling plastic pipes.

The 12-minute DVD, entitled 'Putting Safe Practice to Work', contains a foreword by Carol Grainger, workplace transport programme manager at the Health & Safety Executive (HSE), and is an example of many suppliers within the chain collaborating to help to compile common guidelines for safe practice. The DVD is intended to provide clear, easy-to-follow guidelines for those working with plastic pipes and coils, including safe loading, transport, storage and unloading procedures.

Gary Wain, transport and SUPER scheme manager at Radius Systems, said the company was actively promoting safe procedures, and had already presented at two sell-out events in conjunction with the HSE's 'Safety, Health Awareness Days' with audiences of 100 people at each. Mr Wain was also due to speak about Radius Systems' 'best practice' experience at the National Exhibition Centre in May, on behalf of the Royal Society for the Prevention of Accidents (RoSPA).

The safety DVD is available to anyone involved in the handling or transportation of plastic pipes, or other industries wishing to use a collaborative approach to safe operations.

As Mr Wain concluded, "Being able to sit around a table with our competitors, customers and hauliers openly discussing safety issues and new ideas was a real breath of fresh air and has to be the way forward to achieve our common goal of injury reduction."

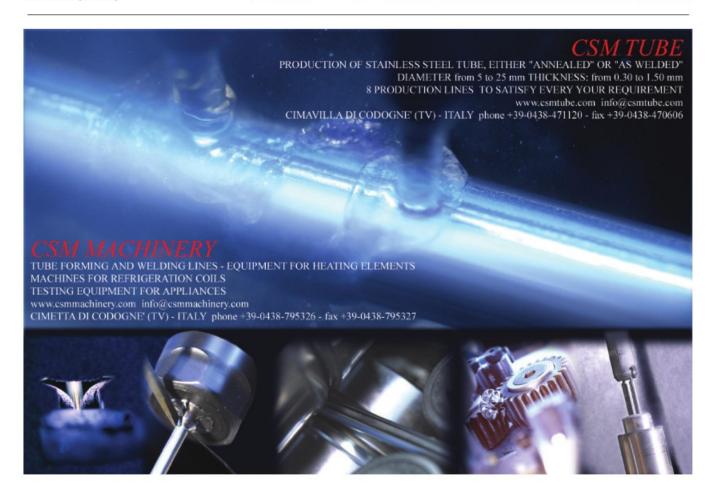
Copies of the DVD may be obtained from vicky.melbourne@radius-systems.co.uk

#### Radius Systems Limited – UK Email: sales@radius-systems co.ul

Email: sales@radius-systems.co.uk Website: www.radius-systems.co.uk

The 'Putting Safe Practice to Work' DVD provides guidelines on safe handling procedures









#### Path to leak-free instrumentation systems unveiled at Offshore show





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#### Remote monitoring services

KONECRANES is a group of lifting busiesses, serving manufacturing and process industries, shipyards, ports and terminals. The group provides lifting solutions and services for lifting equipment and machine tools.

Konecranes offers real-time remote monitoring services to capture critical production and crane usage data on demanding process cranes. Reliability and productivity services with remote monitoring can help to maximise uptime, increase safety, optimise performance, and achieve the highest lifecycle value of equipment. Remote monitoring allows for more accurate and in-depth analysis of crane usage that helps to reveal issues outside standard maintenance checklists, including emerging deficiencies in processes, capacity, usage and overall operating efficiency.

The company's remote monitoring packages include reliability-based monitoring for more efficient troubleshooting and a more proactive productivity, and a performance-based monitoring solution that ensures the highest level of crane availability with Global Technical Support (GTS).

With more than 350,000 cranes under service contracts worldwide, Konecranes is able to apply its knowledge and resources to develop solutions that improve crane reliability and performance. The Konecranes remote monitoring system sends around-the-clock crane usage data via advanced

connections to Konecranes GTS centres located in the USA, Finland and China. The main fixed connection and a secondary wireless connection (ie 3G, GPRS or satellite), attached to the crane, transfer information through a secure VPN on a redundant w24 router. In addition, some processed data can be integrated with the customer's IT system.

As maintenance issues arise, customers and service technicians can troubleshoot more efficiently with faster response times and resolutions. Maintenance services can be performed based on the actual usage data of cranes. Reliability monitoring tracks usage trends, including unsafe or improper crane usage, which might not be detected during standard, periodic maintenance inspections. Downtime can be minimised or prevented using the fault histories generated through remote monitoring to predict emerging technical and mechanical problems. Optional improvement reports are also available for planning predictive maintenance. The advanced productivity remote monitoring services provide realtime data that is monitored online by skilled engineers to enable higher crane availability, optimal Overall Equipment Efficiency (OEE), informed lifecycle planning and continual customer process improvement.

Konecranes engineers use state-of-theart technology and software at the GTS centres to locate and predict maintenance needs and other critical issues, including production-related process problems. Recommended improvements can be put into action within the same work shift, if appropriate. Problems can also be proactively identified using a simple, graphic interface that is available online. In order to help determine the customer's competitive position, productivity and performance-based monitoring also benchmarks actual crane OEE performance with the customer's other cranes or with industry standards.

Optional productivity and performance-based services are available, including production and working cycle analysis. The historic and predictive production and working cycle analyses gained from remote monitoring services can be used to optimise production processes and achieve the highest lifecycle value of the equipment. With increased production efficiency, a more competitive pricing strategy can be offered. Remote monitoring services also offer optional remote support for start-up and commissioning phases.

Konecranes Service Ltd – UK Email: james.bow@konecranes.com Website: www.konecranes-uk.com

# Electric multi-directional sideloader for optimising storage capacity

HUBTEX GmbH & Co KG is the manufacturer of customised industrial trucks, sideloaders and special devices for heavy and bulky goods. The company's equipment is used by manufacturing and commercial enterprises in the narrowest aisles for efficient material flow and movement of goods. The vehicles are precisely adjusted to the conditions of the company or the warehouse, but are also designed for flexible and multi-functional applications.

The company's electric multi-directional sideloaders are manoeuvrable and space-saving industrial trucks. Featuring multi-directional steering, the trucks can drive in all directions from a standing position.

In comparison to four way sideloaders, diagonal drive is also possible, which is an advantage during the loading and unloading of trucks. Another advantage is the lateral transport of the load. Narrow gates and aisles can be passed through without any

problems, and the distance between the storage rack rows can be minimised. Space for additional storage rack rows is created, optimising storage capacity.

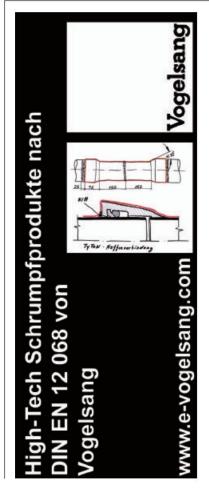
The quiet, low-emission electric drive is not only suitable for indoor use in halls, but also for combined indoor and outdoor use. For this purpose, Hubtex adapts the tyre equipment to the range of application. Vulkollan is mainly applied for indoor use in halls provided with a good industrial floor.

Industrial trucks for use in combined indoor and outdoor applications are equipped with elastic tyres. The two-part articulated frame compensates for uneven floor surfaces and prolongs the service life of the device components.

#### **Hubtex Maschinenbau GmbH & Co KG**

- Germany

Email: info@hubtex.com Website: www.hubtex.com



#### Effective clamping devices for accurate fit-up

THE Sumner® Ultra Clamp is a fast and accurate fit-up clamp that can be used for pipe-to-pipe, pipe-to-fitting, and pipe-to-flange. Three model sizes accommodate pipes from 1" to 12" in diameter.

The clamps are very lightweight and have a rugged and durable frame, while stainless steel alignment screws at all contact points hold fittings in place and allow for fine adjustment. Smooth roller clamping action enables positive gripping and the operating handle repositions for close work. Fit-up settings can be maintained for repeat fit-ups.

The company also supplies the Fold-A-Jack, which is a handy folding jack for

professional welders and contractors. The Fold-A-Jack has up to a 2,500lb (900kg) capacity and features folding legs made from 1" square tubing and an adjustment screw made from heavy wall tubing.

In the folded position, the legs are much less susceptible to damage and occupy only one third of the space taken up by a non-folding jack.

The new carrying handle is a user-friendly addition that facilitates easy transport and handling.

For safety, the Fold-A-Jack features both a quick-action lockwasher and the patented Fall Guard protection.

Standard features include a 1½" (38mm) Acme fine adjustment thread, a large convenient adjustment handle, and a set screw that locks jack head to the stand during transportation and provides a double margin of safety.

Five head styles are available including standard vee, ball transfer, steel wheel, rubber wheel, and bar stock. Vee and steel wheel heads also available in stainless steel.

Sumner Manufacturing Company Inc –

Website: www.sumner.com

#### Eddy current inspection of tubes and pipes

THE new Zet@Premium eddy current instrument from Contrôle Mesure Systèmes (CMS) has an array of technical features for bar, tube and wire testing. Equipped with different kind of probes, the Zet@Premium is able to detect any kind of defect located on metallic products, to meet quality standards such as API, ASTM, DIN and GOST.

Among the smallest instruments in its range, it offers a simple Windows-based interface, available in languages including English, French, Chinese, Russian, Turkish.

Portuguese and Italian. Its wide and bright colour screen and the panel keyboard and mouse allow use in rough environments.

Remote Control Assistance, installed on Zet@premium, allows specialists from CMS head office (via an Internet connection) to modify and adjust settings, upgrade software and save parameters.

The accuracy of the electronics, used with relevant probes chosen from the CMS catalogue, allow applications such as fine tube testing, looking for 10 micron cracks,

to hot rolling mill production with speeds up to 110m/s. CMS instruments are sold and supported worldwide through a network of qualified CMS partners. The company offers a complete range of accessories and customised testing systems according to customer specifications.

Contrôle Mesure Systèmes – France Fax: +33 3 8594 1415

Email: contactcms@cmseddyscan.com Website: www.cmseddyscan.com

#### Vacuum lifting for increased safety and efficiency

VACUWORX International, an expert in vacuum lifting, has a solution to meet the demands of contractors and manufacturers who are faced with increasing demands

for safer and more efficient job sites. The company's products are used in many industries, including field applications, manufacturing facilities and storage facilities.



Vacuworx lifters can be attached to a number of carriers, such as excavators, wheel or track type loaders, cranes, pipelayers and forklifts. They are designed to operate with a material specific pad assembly that can accommodate many types of material, such as steel pipe, plastic pipe, concrete pipe, flat steel plate, concrete slab, steel tanks and coated pipe. The lifting pads utilise a special seal material to protect the coating from damage while providing a secure and safe lift.

Aclosed frequency wireless remote control system provides the equipment operator with the ability to manoeuvre the material being lifted from the host machine with precision and with no additional personnel required. A number of additional fail-safe features are also incorporated, including visual and audible low vacuum alarms, and a reserve vacuum tank.

Models are available with capacities from 3 tons to over 20 tons.

Vacuworx International – USA Fax: +1 918 259 3055 Website: www.vacuworx.com



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#### Vacuum pipe lifters and coil hooks

SCHOENBECK GmbH & Co KG has introduced additional models in its vacuum pipe lifting range, including the ELiTE 12 and 16TE (tonnage/electrical) vacuum pipe lifter models and the ELiTE LiTE power pack concept.

The ELiTE 12TE vacuum pipe lifter is electrically powered by the user's main power supply (380V/420V, 50 or 60Hz). Supplied with either a SWL of 12,000 or 16,000kg (26,500lb/35,200lb) units, both can be delivered with a central single or two outer double hook eyes for tower/ gantry crane applications. The power is transported to an electrical motor, which in turn drives a vacuum pump. This model is available with radio remote control or hard wired cable remote; both can be operated from the ground floor or cabin positions.

In the event of a factory power failure/ power tripping, the machine has sufficient warning power to operate for an additional 8-12 hours. A power pack is loaded prior or during normal lifting operations, and is activated automatically on demand.

Standard warning sirens/flash lights are incorporated, as are safety valves and -40°C solenoids for extreme cold working environments and pre start-of-work system checks. European standards ASME B30.20-22, Australian standards AS 4991, 4024 and the AS/NZS 4268 are reached or exceeded.

Schoenbeck also now manufactures C hooks for steel coils with SWLs of 10,000kg to 40,000kg (22,000lb to 88,000lb). The standard model is delivered with a crane eye (size according to requirement), while alternative models can be equipped with a power swivel/rotor. The products are manufactured according to all relevant CE standards.

Schoenbeck GmbH & Co KG – Germany Fax: +49 5721 81433

Email: info@schoenbeck-maschinen.de Website: www.schoenbeck-maschinen.de

#### Safe material handling in a confined area

TODAY'S market requires every company to ensure that the in-plant material flow, storekeeping and movement of goods are organised economically. As many companies continue to experience considerable pressure on prices and lead times, the ergonomic planning of in-plant material flow can lead to an immediate reduction in costs.

Stierli Bieger AG has developed a new and unique roll-out material storage system based on intensive onsite research with a number of existing customers. The main advantages of the Stierli Bieger system are the improvement in utilisation of floor space, tidy and compact storage within the factory, and fast and safe material handling.

In addition, downtimes of production machinery can be minimised, and safe working practice within the customer's company can be considerably improved. By using this system, the company claims to avoid the usual risks associated with the stacking and storage of stock materials.

The number of arms, width clearance, single or double construction can be individually selected. The arms can be removed easily and safely by hand. The

synchronised system developed by Stierli Bieger AG guarantees parallel running of the arms with a loading capacity of up to 1,500kg/arm.

The arms are equipped with maintenancefree grooved ball bearings. Additional sheet metal channels or wood supports can prevent damage.

Stierli Bieger is the manufacturer of rollout racks, devices for welding and dressing, and horizontal bending machines.

Stierli Bieger AG – Switzerland Website: www.stierli-bieger.com

#### Demagnetising with auto transport systems

GOUDSMIT Magnetic Systems BV has expanded its range of demagnetisation systems with a demagnetisation unit with automatic transport system. This combination provides a compact and reliable set that saves time during demagnetisation.

product evenly through the tunnel, ensuring

The transport system conveys the



an optimal demagnetisation effect. The speed and the height of the conveyor is adjustable to the operational situation, and the combined system is secure and energy

The unit is made of non-magnetic stainless steel, which leaves the demagnetisation effect undisturbed.

The transport systems can be fitted with start/stop photocells, a conveyor or rollers (with or without drive).

If required, tunnels are available in standard designs or made to customer specification.

The standard versions are compact, and can be placed between other production machinery or in sequence in a production

Goudsmit Magnetic Systems BV -

The Netherlands

Fax: +31 040 2217325

Email: systems@goudsmit-magnetics.nl Website: www.goudsmit-magnetics.nl

# AUTOMATIC BENDING UNITS FOR TUBES AND POLES



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# Special report: The future of the global tube and pipe industry put under the microscope

Dr Sc (Techn), Professor Yuriy Gulyaev (OJSC "Interpipe NTZ", Ukraine) and Nataliya Koryaka, International Tube Association Representative in CIS countries discuss the problems facing the modern day tube and pipe industry and some of the potential solutions



THE present-day steel pipe and tube production facilities are situated round the world in 60 countries (32 countries have seamless tube production facilities) and possessed by more than 500 pipe and tube producing companies having around 1,000 production floors. Possible potential of annual production of steel pipes and tubes is about 110 million tons (about 35 million tons of seamless tubes). In 2007, total world production of steel pipes and tubes reached a record volume of 89 million tons (27 million tons and 62 million tons of seamless and welded pipes and tubes respectively). At the same time, seamless tubes amounted to more than 40% of the gross national product of industrially developed countries.

Globally, pipes and tubes find an ever growing use that defines the technological standing of a majority of economic complexes of an utmost importance, such as fuel and energy complex, machine-building industry, housing and communal services, agriculture, etc. At that, about 90% of the manufactured tubular products are used for production needs (making machines, apparatus and mechanisms, well-boring, building pipelines and various structures) and the rest of the pipes and tubes are used in repair and operation fields.

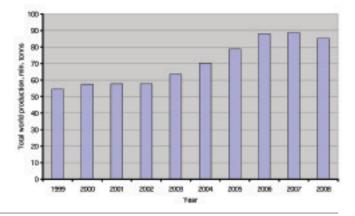
The years of 1999 to 2007 had witnessed a constant growth of steel pipe and tube production.

#### Urgent problems facing the industry

Traditionally, the pipe and tube industry is considered to be a separate branch of ferrous metallurgy producing the most technologically complicated goods. At present, there are numerous illustrations of transition of the pipe and tube branch to a qualitatively

new stage of development featuring a tendency to the promotion of "self-dependent specialisation" in the development of large pipe and tube enterprises. This trend is assisted by a number of factors of which determining ones are as follows:

- a) growth of requirements to pipe and tube quality arising from toughening of their service conditions and requirements of longterm fail-safety that is substantially determined by the quality of the initial material;
- b) disparateness of technical and economic interests of steel producers who are interested above all in the growth of metal production and shipped tonnages and the interests of the pipe and tube producers who need starting materials having special quality characteristics and require comparatively limited metal supply lots.



The above factors predetermine the present-day trends of creation of separate specialised process chains within the pipe and tube producing companies: from metal smelting to finished tube production.

Analysis of world trends of tubular goods consumption in the previous 7-10 years has shown that the main field of application of steel pipes (more than 50% of the total production volume) is construction of various pipelines. Welded large diameter pipes, welded and seamless oil line pipes, water and gas line pipes and general purpose seamless tubes are widely used in pipeline construction. Around 20% of the world steel tube turnover accounts for threaded oil country tubular goods (OCTG). About 30% of the produced tubes are used in the machine building industry as halffinished goods that undergo a more or less complex processing in making parts, assemblies and machinery components.

The most urgent problems facing the pipe and tube producers are as follows:

- a) improvement of strength and plastic properties of the tube material through the use of low-alloy and alloy steel grades:
- b) improvement of dimensional accuracy and quality of pipes and tubes through installation of new equipment, introduction of progressive manufacturing processes and automated control systems, perfection of quality control methods;
- c) application of progressive types of thermal treatment;
- d) mastering the production of new economical product types ensuring metal savings through augmentation of structural strength, service reliability and durability.

The steady rise of hydrocarbon fuel prices and the key role of pipeline transportation systems in the supply of energy resources predetermine the task of providing power engineering industry with high-tech tubular goods. Production of welded large diameter oil and gas line pipes is dynamically advancing along with the pipeline transport development featuring the following trends:

- a) boosting pipeline throughput and working pressures up to 25 MPa (gas pipelines) and 14 MPa (oil pipelines);
- b) rapid advancement of underwater pipeline construction;
- c) expansion of construction of pipelines in seismic, permafrost and marshland areas;
- d) toughening requirements to reliability of pipelines as crucial strategic units of national safety;
- e) wide spread mechanisation of construction works requiring tougher pipe dimensional accuracy and maximum reduction of number of the end joints welded in field conditions.

The present-day trends of development of the pipeline transport and ever toughening requirements to its reliability pose new problems before the pipe and tube producers from the point of view of changes in their product grades and making more precise pipe and tube specifications. The most urgent problems are as follows:

- a) organisation of production of thick-walled (up to 36-52mm), pipes to be used in construction of pipelines operated at high working pressures (up to 25 MPa);
- b) guaranteeing pipe metal strength of up to K65 (X80) at present and up to K80-K100 (X100-X120) in the nearest future as it is determined by the growth of steel intensity in the pipe
- c) upgrading requirements to base and weld metal ductility;
- d) toughening (1.5-3 times) requirements to the pipe end and body roundness;
- e) organisation of production of long (up to 18m and longer) pipes with no girth joints;
- expansion of the production of lined pipes for underwater pipelines.
- In the field of production small and medium diameter welded pipes, the most urgent problems are as follows:

- a) upgrading strength characteristics (up to X80), increasing wall thickness (up to 22mm) and toughening requirements to quality and impact toughness of weld seams in oil and gas line pipes:
- b) expansion of production of corrosion-resistant pipes and pipes suitable for operation in low-temperature (up to -60°C) operating conditions:
- c) increasing share of shaped pipes within the production volumes of electric welding mills (up to 50-60%) including large size (up to 400 x 400mm) shaped pipes with wall thickness of 14-16mm;
- d) application of new technologies and equipment ensuring higher (up to 10-15m/min) speeds of argon-arc or laser welding, weld seam plugging, thermal treatment in a protective atmosphere, NDT of stainless steel pipes in the mill line.

At present, pipe and tube producers strive for the provision of their customers with pipes and tubes complete with fittings. In this connection, inclusion of specialised facilities for the production of connection fittings into the existing production facilities is of current importance for large pipe and tube producers.

As before, choice of optimum tool designs and forming regimes is relevant for the pipe and tube producers. Differentiated (depending on steel grades, elongation, billet and tube dimensions) approach to the choice of tool (rolls, dies, etc) design parameters, temperature and deformation (rolling, drawing, extrusion, etc) speed can substantially improve product quality and cut energy consumption. Solution of these problems requires, first of all, a further improvement of analysis methods and perfection of experimental investigation of the pipe and tube production processes.

A rather urgent problem of efficient functioning of economy is making longer life and higher reliability of pipes and tubes by application of protective coatings. In the first place, it pertains to municipal economy and heat-and-power engineering where the tube service life gets shorter steadily because of ever growing media (both transported and surrounding) aggressivity resulting in great losses of energy resources and metal products and a considerable growth of pipeline repair, erection and laying costs. To cope with these problems, protective coatings are applied on the inside and outside surface of pipes. Beside having 5-7 times longer service life, pipes with such coatings ensure a radical reduction of heat loss (up to 80-90%), pollutant emissions (up to 80%), and pipeline laying and maintenance costs (up to 40%). It is evident that the share of pipes with various protective coatings will steadily grow in the nearest future.

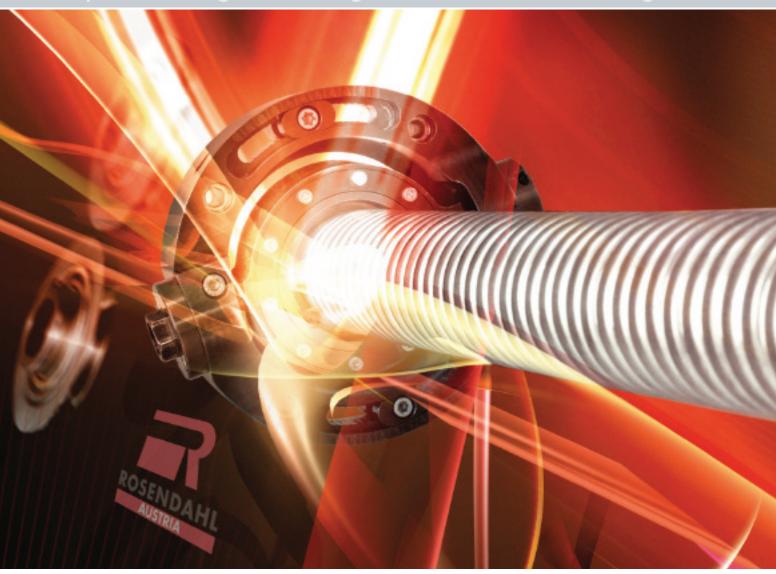
It is obvious that the above-mentioned technical aspects of development of the pipe and tube industry cannot be fully realised without taking into account a positive experience gained in institutional base reorganisation. Analysis of main trends of development during last 25-30 years of the world largest pipe and tube works having production structure that was formed during many decades and acquired "natural market stability" shows a pronounced tendency to expansion of the product and service range within one concern (consortium or industrial group). It makes the processes of intensive marketing and diversification rather urgent.

#### Perfection of processes

It is usual in the world practice that tubes and hollow sections are produced in a great variety of sizes, manufacturing methods, steel and alloy grades. Perfection of processes is an essential reserve of raising efficiency of pipe and tube production.

Various hot rolling methods remain the most widely used methods of making seamless steel tubes. A decisive contribution to the development of manufacture of seamless steel tubes was made

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by Max and Reinhard Mannesmann brothers who patented (in 1885) their method of cross helical piercing of solid billets into shells. Later, in 1891, the first process of making seamless tubes was patented. The process consisted of two sequential hot working steps: piercing of a solid billet into a thick-walled shell and rolling the shell into a final tube in a pilgrim mill. Eventually, new hot tube rolling processes were developed accounting for destination, size and properties of the seamless tube materials. They have gradually and substantially replaced the initially used method of pilgrim rolling.

The more than a hundred year long history of development of technology of seamless tube production can be conditionally divided into four stages:

- 1. From the middle of 1880s to the mid 1930s, six basic processes of rolling shells into seamless tubes were developed: pilgrim rolling; longitudinal plug rolling in Stiefel plug mill; mandrel drawing of shells through a system of rings in Erhard push bench; longitudinal full-floating mandrel rolling in Fassel and Kellog multi-stand (7 and more stands) and tube rolling mills; helical floating-mandrel rolling in a three-roll Assel mill and helical disk reeling in a Diescher mill. By the end of 1930s, rolling schemes using plug and pilgrim mills were used most widely. Small quantities of tubes were produced using push benches and Assel and Diescher mills and continuous mandrel rolling was not actually used. Cast and forged ingots or rolled billets were used as a starting material in the tube manufacture.
- 2. In the period from the mid 1940s to the mid 1980s, hot tube working processes were strongly perfected. First of all, it should be mentioned that a third hot working step was introduced into virtually all known processes: sink rolling in sizing or stretch-reducing mills. Just due to the use of sink rolling as a final hot working step, continuous full-floating mandrel longitudinal rolling mills with 7 to 9 stands received a wide-spread use. Beginning in the 1960s, due to the development of new lubricants, hot extrusion methods became commercially used in the production of tubes from hardly-deformed alloy steels and alloys. By the middle of the 1980s, continuous mills with retained and semi-floating mandrels won recognition. At the same time, a process of making tubes at push benches by drawing tubes through a roller cartridge instead of rings was developed. Continuously cast round ingots were then used as a starting material
- 3. During the last 15 to 20 years of the 20th century, the following technologies became commercially used:
- a) elongation of hollow shells by helical rolling in 3-roll planetary mills:
- b) reeling shells in modernised Assel mills with adjusted feed angles and Diescher mills (in various variants, including rolling with discs and driven skew rolls, so-called Accu-Roll process);
- c) continuous longitudinal retained mandrel rolling in two-roll stands (MPM mills);
- d) elongation of shells in push benches with roller cartridges where press piercing of solid billets into shells was replaced with helical piercing in mills with tapered rolls (CPE process).
- 4. At the beginning of the 21st century, because of toughening of customer requirements to the product and service quality and globalisation and aggravation of international competition, the majority of hot-rolled tube producers faced the problem of modernisation of existing equipment and building new production lines.

From a large number of ideas of improvement of technologies and equipment for making hot-worked seamless tubes, it is worth mentioning the idea of orientation of mass production planning predominantly toward the technologies using continuous MPM mills with two-roll stands and continuous FQM and PQF mills with three-roll stands as the main reeling units. It is supported by a successful experience of operation of about 20 MPM mills built at the end of the 20th century and commissioning of MPM, PQF and FQM units in

China, Belarus, Japan, Russia and Kazakhstan in the last years. At present, installation of continuous mills at a number of tube works in Saudi Arabia, China, Ukraine and other countries is carried out or planned. It should be pointed out that MPM mills were initially equipped with press piercing mills but the modern continuous mills use skew roll piercing mills with tapered rolls and guide discs. Taking into consideration the fact that two or three billet sizes are rolled at a same piercing mill, the future design of the roll piercing mills will possibly provide for their operation both with guide discs (in piercing small diameter billets) and shoes (when switching to piercing large diameter billets). At the same time, mills with horizontal roll arrangement should be preferred because shoe installation is much easier in this case.

Of all promising innovations in the field of manufacture of hot-rolled tubes that can be used in production conditions in the near future, shell rolling in a stretch-reducing mill (CPS process) should be distinguished as the most promising process. The CPS process is a two-stage process where there is no second, main forming operation, ie there is no mandrel tube rolling mill. Billets are subjected to helical piercing at elongation ratios up to 12 in a mill with a vertical arrangement of tapered rolls. The pierced billet is fed directly into a stretch-reducing (sizing) mill. Advantages of this process consist in that due to absence of a mandrel tube rolling mill, the main equipment list is reduced and consequently investments get smaller. Such technology can be used above all in the production of conventional tubes.

At the present-day requirements to quality and dimensional accuracy of the final products, the processes of sizing or stretch reducing tubes as the final steps of the hot working process have a paramount importance. Continuous sink rolling, as the final production step in the majority of rolling patterns, determines quality of finished hot rolled tubes to a great extent. Based on the trends of development of the process of continuous sink rolling, it can be predicted that in the near future this process will be grounded on the idea of using three-roll stands. Stands must have individual drives ensuring flexible adjustment of roll rpm both in the course of rolling individual tubes (to reduce the length of thick ends) and from tube to tube rolling (to compensate for wall thickness variation in the mother tubes coming from the mandrel mill). Beside the roll rpm, roll pass shape plays an important role in ensuring quality of OD and ID surface of the sized (especially, stretch-reduced) tubes, and so the tool preparation stations should be equipped with modern machines for individual machining of the roll grooves.

The continuous sink tube rolling process is usually carried out in mills in which roll pass of each subsequent stand is turned at angle  $\frac{\pi}{n}$  (where n is the number of rolls in the stand) relative to the preceding stand roll pass. It is not inconceivable that this concept will be revised in the near future basing on the theoretical evidence worked out at State Scientific Research Tube Institute and Dnepropetrovsk Metallurgical Institute (Ukraine) as long ago as the 1980s. The calculations have shown that a substantially lower level of cross-sectional wall thickness variation can be achieved when using a mill which has two stand groups and the stands in each group are turned at a traditional angle  $\frac{\pi}{n}$  but with the stand groups turned at angle  $\frac{\pi}{2n}$  relative to each other. For the first time, this idea was realised in production conditions by designers of EZTM JSC (Russia) at their mill installed at Dnepropetrovsk Tube Works (Ukraine) in 2008.

In the improvement of the tube making processes, equipping process lines and individual units with computer-aided control systems is of especial urgency at present. Practically all modern tube rolling installations are already furnished or being furnished with the means of objective control of main process and product parameters. CARTA (Computer Aided Rolling Technology Application) process control

system developed by SMS Meer has become a widely known and applied system. The system task consists of ensuring a high level of product yield and quality in the tube manufacture. Smaller diameter and wall thickness variations result in metal saving and cost reduction both in the course of production and during subsequent tube processing.

At present, the problem of application of on-line tube dimension control systems is of high urgency. Obviously, practically all processing units will be furnished with systems for measuring tube wall thickness and diameter in the near future. Multichannel sensors measuring linear dimensions and allowing not only recording of the mean wall thickness variation during the tube travel along the process line but also determining the character of cross-sectional wall thickness variation will be given preference despite their relatively high price.

Successful development of a number of base branches of economy depends on the achievements in the field of production of cold-worked tubes.

A special place in the pipe and tube industry is taken by cold tube rolling and drawing processes. Application of cold working methods ensures higher dimensional accuracy in tubes, improvement of surface quality, structure and properties of the tube material and expansion of the tubular product range. Manufacture of high-quality cold worked tubes is a multicyclic process including machining and chemical preparation of mother tube surfaces, rolling and/or drawing, thermal and chemical treatment and a number of other process steps.

The method of cold pilger rolling invented by Newbert (USA) in 1927 as alternative to drawing of low-plastic materials has eventually become a basic method in making tubes of major metals and alloys. The main advantages of this method are its high mobility, considerable reductions (up to 70-85% per pass while the highest achievable reduction in drawing does not exceed 30-40% without intermediate annealing), and comparatively small in-process metal loss.

In the 1930s, cold tube rolling was only used in Germany, USSR and USA. At present, this method is used in all industrially developed countries. The method of warm pilger rolling invented in the 1960s has made it possible to achieve much higher reductions as compared with the cold rolling due to a lower resistance to deformation and a higher plasticity of a number of metals at temperatures around 350°C. At present, this method is used in Russia, Ukraine, Italy, Sweden and Japan.

The further development of cold (warm) rolling technology is of rather high importance and it first of all should be directed to improvement of the tube quality, raising of mill productivity and reliability, through increase in reduction per deformation cycle through a maximum utilisation of metal plasticity reserves. At the same time, the most important task is getting lower production costs to increase competitiveness of cold-rolled tubes. Cold rolling perfection proceeds in two directions:

- a) bettering manufacturing techniques including working out of optimum rolling schedules, application of the warm rolling process, and improvement of roll and tool designs;
- b) improvement of equipment to raise mill output and prolong life of mill assemblies and components.

Cold drawing is a very old and universal method of metal forming. Drawing was first used around 3000 to 4000 BC in working non-ferrous metals. The drawing process was first industrially used in USA in 1886 for cold working of steel tubes (in production of bicycles). At present, 0.2 to 765mm diameter tubes of steel and alloys are manufactured with various wall thicknesses (smallest achieved wall thickness in capillary tubes is 0.015mm).

The largest cold drawn tube producers are countries with the most highly developed ferrous metallurgy (USA, Japan, China, Germany, England, South Korea, France, Russia and Ukraine), whose share in the world production of these products comes to 70%. The tube drawing process in England, USA and Japan is at a higher stage of

development than the cold rolling process. In Russia and Ukraine, cold drawn tubes are mostly produced using sink drawing method and fixed plug drawing method. In England, the basic method of making cold worked tubes is floating mandrel drawing. Unlike other countries, floating plug drawing is prevailing In USA. Bull-block drawing of small size tubes is widely used in Germany, USA, England and a number of other countries.

At the present stage, development of the drawing processes is aimed at the growth of cost effectiveness and intensification of speed parameters. It can be achieved by decreasing the process cycle number and enhancing quality of the produced tubes using the following measures:

- a) increase in total deformation (between thermal treatment operations) and deformation per pass;
- b) use of multiple continuous drawing simultaneously in several dies;
- c) increase in the number of simultaneously worked tubes (from 2 to 10) in straight drawbenches;
- d) use of liquid lubricants sublimating during thermal treatment and lubricants and coatings sustaining several drawing passes.

It can be presumed with a great likelihood that fundamentally new manufacturing processes will find their commercial application (or will be used on a larger scale than today):

- a) warm drawing;
- b) core drawing;
- c) drawing combined with expanding;
- d) drawing with tube twisting;
- e) drawing with hydrodynamic feed of lubricant to the deformation zone:
- f) drawing with ultrasonic tool oscillation;
- g) back-pull drawing;
- h) rotary drawing (rotary swaging combined with drawing) in various versions.

To realise new manufacturing processes, it is necessary to develop efficient designs of drawing mills and tools and build new or reconstruct existing shops and equipment. Such activities are under way in USA, Germany, Japan, Russia and other countries.

The growing demand for thin-walled stepped tubes, tubes with a variable wall thickness and longitudinally variable cross-sectional shape, bimetal and multilayer tubes will require application of new methods and processes of cold drawing in mills of special designs in the coming years.

Taking into consideration toughening requirements to the product quality, still wider use of processes of thermal treatment of tubes in a protective atmosphere can be expected.

Commercial use of welded tubes as mother tubes for their subsequent cold processing is a rather promising trend of development of the drawing technology. This assertion is confirmed by the fact that electric welded tubes subjected to working at deformation ratios of 30-40% meet requirements to seamless tubes but they cost 10-30% lower compared to the seamless tubes of the same size.

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# How does the Bauschinger effect change the physical strength of welded steel pipe?

By Lew Warren, P. Eng. Consultant, Warren Consulting Inc.

ALL flat steel products, plates and plates in coil form (skelp), have a neutral axis regardless of their thickness. This neutral axis may not be discernible, even with an acid etch, until the flat material is formed into a circular shape (see figure 1).

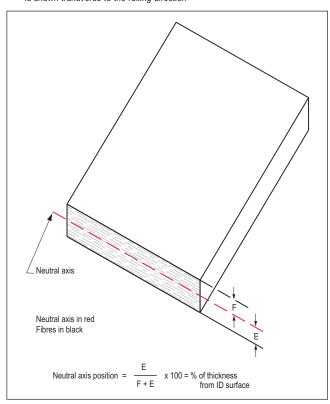
When these steel products are formed into a round shaper, such as tube and pipe, a phenomenon occurs that causes a change in the physical properties from the flat profile of the incoming material as compared to the rounded profile of the finished product.

This chance occurs with the following pipe forming equipment:

- 1. U press and O press type forming
- 2. Continuous roll forming, ERW type pipe manufacturing
- 3. Pyramid type roll forming
- 4. Helical profile (spiral) type forming
- 5. Progressive forming and folding process
- 6. Circumferential sizing and or expansion
- 7. Making round pipe specimen flat for physical testing

Physical properties change in these forming operations is caused by the Bauschinger effect.

Figure 1: Flat steel through its thickness in the direction of rolling. Neutral axis is shown transverse to the rolling direction



To explain the Bauschinger effect in simple terms, it can be defined as the phenomenon by which plastic deformation increases the yield strength in the direction of plastic flow, tensile, and decreases the yield strength in the opposite direction, compression. Figure 2 is a visual illustration of this statement.

This is where the importance of the neutral axis comes to our attention and this article deals only with the neutral axis transverse to the rolling direction of the hot mill and not the neutral axis parallel to the hot mill rolling direction.

The neutral axis will be visible, after an acid etch, when the flat material is formed into a round tube or pipe.

Figure 2 illustrates the flat steel after being formed into a pipe with the neutral axis still very near to mid wall and the direction of forces above and below the axis. Fibres above the axis, ID surface, are in compression and fibres below the axis, OD surface, are in tension.

In reality the transverse neutral axis does not remain at mid wall when flat plate is cold bent in a direction transverse to the hot mill rolling direction. The compressive force on the fibres above the axis (inside surface) tends to displace the axis more to the area below (outside surface). This amount of displacement is generally minimal.

In the study of Strength of Materials 101 we learned the meaning and usage of the terms Elastic and Plastic as related to a relative ductile, polycrystalline material; such as steel. An elastic material is one that returns to its original shape when the applied load is removed. A plastically deformed material, such as steel, does not return to its original shape when the applied load is removed; there remains a degree of deformation within the fibres.

The Bauschinger effect is more troublesome under the following three conditions:

- A. Final round size of the product is relatively small
- B. The product material has a heavy thickness
- C. The product material is high strength

The author has been in the welded steel tube and pipe industry for over fifty years. He realised that there may be one individual in any pipe manufacturing facility which produces line pipe, by any of the forming processes listed above, that is knowledgeable of the Bauschinger effect on their forming method.

This individual may not have recorded data as to the percentage of physical properties change in their finished product as compared to the strength level of the incoming material. Still this person is aware that most of the line pipe producers will beef-up their ordered chemistry to offset the strength level change due to the Bauschinger effect.

This procedure has certainly been successful in the past while the specification for line pipe, as per API 5L did not restrict the upper limits for yield and tensile values of the finished API product.

Now that the American Petroleum Institute (API) has written into the specification of 5L-Line Pipe for two product specification levels (PSLs), PSL-1 and PSL-2 the pipe manufacturers cannot exceed the upper limit for yield and tensile values of the finished product for the PSL-2 product.

So, is now the time for line pipe manufacturers to develop data, by certain testing procedures, to establish the amount of physical properties change of the incoming material during their manufacturing processes?

If these opening statements have sparked an interest to examine the amount of physical properties change the Bauschinger effect has on welded steel tube and pipe the following extensive testing procedures are listed as one way to arrive at the answer to the question, "does the Bauschinger effect change the total physical strength of the tube/pipe produced" in my plant?

#### **Testing procedures**

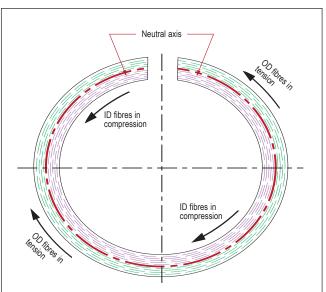
The testing protocol listed here was designed and used for continuous roll forming, ERW welded type manufactured product.

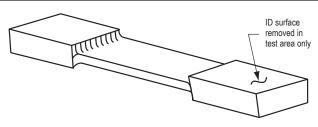
A similar testing programme was performed on U-ing and O-ing formed, submerged arc welded product. An expanding operation is used on this product to greatly reduce the stresses induced during forming and welding. The testing procedures as listed herein are of little value on the finished product of this type.

The author is not aware of a published article dealing with the Bauschinger effect on helical formed-spiral welded pipe.

Obtain four (4) standard tensile test specimen rings from finished

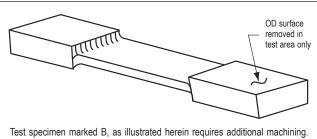
Figure 2: A visual illustration of the forces on the internal fibres of flat steel skelp and the location of the neutral axis when flat skelp is formed into round pipe





Test specimen marked A, as illustrated herein requires additional machining. This additional machining will remove 50% of the ID surface of the pipe body thus retaining 50% of the OD fibres of the pipe body for physical testing

#### Figure 3



This additional machining will remove 50% of the OD surface of the pipe body thus retaining 50% of the ID fibres of the pipe body for physical testing

#### Figure 4

pipe, all from the same heat and if possible from the same coil. Also obtain two (2) tensile test specimens from the flat skelp, approximately 15 to 20 feet from either end of the coil and near the centre of the width of the coil.

Of the flat specimens one is to be taken from the transverse direction of the hot mill rolling direction and market 1T, and the other flat specimen is to be taken parallel to the hot mill rolling direction and mark it 2L. Mark each of the four (4) pipe ring specimens 3A, 4B, 5C and 6D.

Open three (3) of the pipe ring specimens, marked 3A, 4B and 5C, by cutting through the welded area. The area to be tested will be opposite the welded area. Pipe ring specimen marked 6D will be tested in a ring expansion testing device as per ASTM A370, A2.3. This test will determine yield strength only of the finished product. The yield strength results from this test will be greater than the yield strength results from testing specimen 5C.

All remaining specimen to be machined, 1T, 2L, 3A, 4B, 5C will be machined as per ASTM A370 for standard tensile testing specimens. See Figure 5.

After specimen marked 3A has been machined as per above machine off 50% of the pipe inside surface in the testing area only, as per Figure 3, to preserve the neutral axis area represented by the OD surface.

For specimen marked 4B machine off 50% of the pipe outside surface in the testing area only, as per Figure 4 to preserve the neutral axis area represented by the ID surface.

After machining the two reduced thickness specimens and along with the three (3) full thickness specimens, 1T, 2L and 5C, perform a standard tensile test as per ASTM A370, recording the ultimate

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strength, yield strength and elongation for all specimens in the appropriate places of Table 1.

So now we have the recorded results of the two (2) special tests and the three (3) full thickness tests, how are the results of these tests to be evaluated so as to be meaningful and useful?

A bronze plaque on the wall of my office reads like this: "One test is worth a thousand experts opinions".

This is true, if you have collaborating data to compare the results of this one test with so that the results of the one test are both meaningful and useful.

For the test results data from the two (2) special half thickness specimens and the standard tensile test from the finished pipe ring specimen to be useful we must collect additional data to compare them with.

This additional data will be obtained from the incoming material, specimens marked 5E and 6F and specimens marked 1A, 2B and 3C and from the tensile test obtained from the flat skelp in the transverse direction, taken from the same heat, to determine the ultimate strength, yield strength and elongation.

#### **Evaluation of Test Results**

In Table 1 record the following:

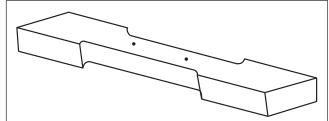
- a. In column 1 record the test results of specimen No. 1T
- b. In column 3 record the test results of specimen No. 3A
- c. In column 4 record the test results of specimen No. 4B
- d. In column 5 record the test results of specimen No. 5C
- e. In column 6 record the test results of specimen No. 6, yield results only

Mathematically compare, percentage wise, the test results of the following specimens, recording the three elements of each test results in the positive or negative column.

- a. Test specimen 1T to specimen 3A
- b. Test specimen 3A to specimen 4B

Table 1: Testing and evaluation protocol

Test No.	Specimen designation	Position test taken from	Specimen to be tested as:	Specimen to be machined:	Yield strength	Ultimate strength	Elongation	Char fro test	m
		IIOIII	testeu as:	macmineu.				+	-
1	Т	Flat coil head end	As is	Full thick tensile test					
2	L	Flat coil tail end	As is	Full thick tensile test					
3	A	Finished pipe	Cut pipe ring & flatten	Full thick tensile test					
4	В	Finished pipe	Cut pipe ring & flatten	Half thick tensile test					
5	С	Finished pipe	Cut pipe ring & flatten	Half thick tensile test					
6	D	Save pipe ring	Save pipe ring	Do not machine					



Test specimen as illustrated here are to be machined and tested according with ASTM-A370 procedures. Test rings/specimen are to be marked as following: A, B, C, D, E, F

Test specimen marked A and B require additional machining as per figures 3 and 4.

All test specimen listed here are to be punched on the flat surface within the reduced width area for measuring and recording the elongation value after fracture

#### Figure 5

- c. Test specimen 3A to specimen 5C
- d. Test specimen 3A to specimen 6D
- e. Compare test results of all three elements of specimens 3A and 4B

If the test results of specimen 1T exceeds the test results of specimen 3A this indicates the loss of physical properties in the finished product due to the manufacturing process, Bauschinger effect.

If, and when, the test results of specimen 3A exceeds the test results of specimen 1T this indicates an increases in the physical properties of the finished product. This increase is due to the manufacturing process.

If the test results of specimen 1T exceeds the test results of specimens 4B and 5C it indicates a loss of physical properties in the finished product due to the Bauschinger effect.

If the ring expansion test of specimen 6D results exceed the value of the yield strength test results from specimen 3A it indicates the yield loss when the pipe ring specimen is flattened, made straight, so as to machine a standard tensile specimen.

The test results from specimen 2L indicates the ability of the individual pipe sections to contain the longitudinal stresses imposed on the installed pipe line.

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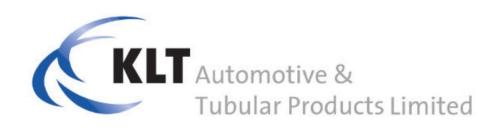
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