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INTERNATIONAL

The World of Tube & Pipe Products, Materials & Ancillaries

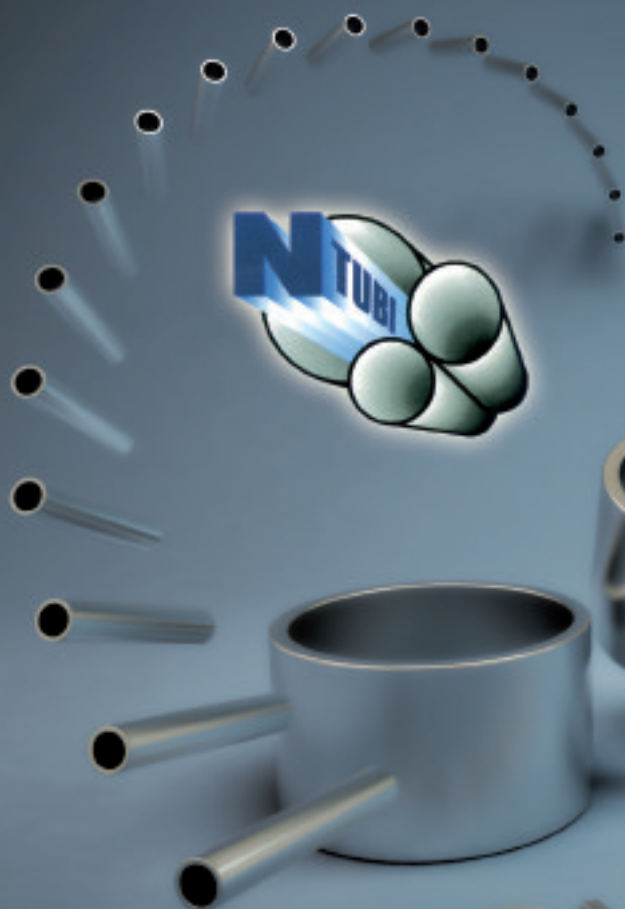
July 2009

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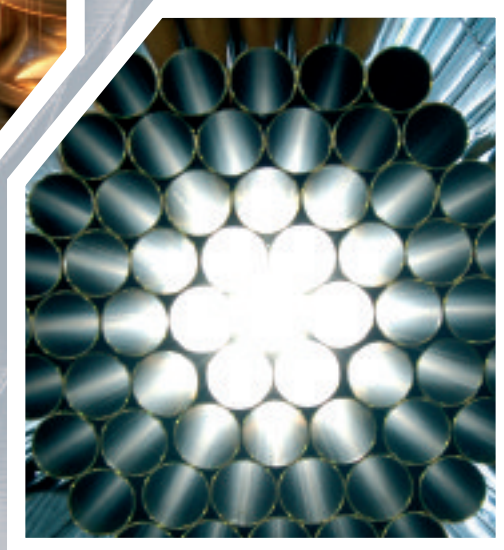
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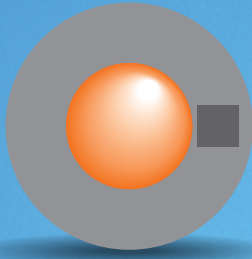
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July 2009

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Tube Products INTERNATIONAL

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All eyes to Bangkok



Tube Southeast ASIA 2009 will take place for the second time at the BITEC centre in Bangkok in October. Despite the current global recession woes, Thailand is actually a hive of investment in its infrastructure and extensions to its Suvarnabhumi airport. This makes the show a very attractive date in the industry diary for exhibitors and visitors alike.

In this issue of the magazine we show the extent of international exhibitor participation at this event.

Also in this issue we include features on two very important sectors of our industry — the first dedicated to the manufacturers and suppliers of fittings, flanges & connectors (metals, plastics & composite) and the second to companies involved with the handling of tubular materials.

Our next issue, published in October 2009, will be focussing on 'Profile Materials for tube making' as well as reporting on new technology in 'Extruded Tube'. If your company is involved in either of these sectors then we invite you to send in editorial and pictures for inclusion. This service is free of charge and more information about submitting editorial is available on our website: www.read-tpi.com

We shall also be covering the 2009 FABTECH International & AWS Welding Show, Chicago, 15-18 November. Again, if your company is exhibiting tubular products at this event, we invite you to send us information on what you will be displaying.

We look forward to reporting about Tube Southeast ASIA 2009 exhibition to you at a later date, but in the meantime, please continue to utilize our free editorial service. There really is no better time to take advantage of this cost-free marketing opportunity, ensuring your company remains well-placed to take advantage of the market when demand returns.

Paul Hogg
Editor

events calendar

2009

October
5-10

EMO Milano 2009
International Exhibition
www.emo-milan.com

October
6-8

Tubotech 2009
International Exhibition
www.cipanel.com.br

October
13-15

Tube Southeast Asia 2009
International Exhibition
www.tube-southeastasia.com

November
2-3

Pipe & Tube Istanbul 09
ITA Conference
www.itatube.org

November
15-18

Fabtech 2009
International Exhibition
www.sme.org/fabtech

2010

February
10-12

Tube India 2010
International Exhibition
www.tube-india.com

March
4-7

Boru 2010
International Exhibition
www.borufuari.com

April
12-16

Tube Düsseldorf 2010
International Exhibition
www.tube.de

May
24-27

Tube Russia 2010
International Exhibition
www.metallurgy-tube-russia.com

September
21-24

Tube China 2010
International Exhibition
www.tube-china.net

2011

January
8-11

Tekno / Tube Arabia 2011
International Exhibition
www.tekno7.info

For further information on any of the above events please contact INTRAS Limited UK office (address and contact details on page 4)

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business & market news

▲ Mike Beebe inaugurates Welspun's new plant

Welspun commissions US manufacturing facility

Welspun Gujarat Stahl Rohren Ltd (WGSRL), a major line pipe producer, has formally announced the commissioning of its first manufacturing facility outside of India, in Little Rock, Arkansas, USA.

Adjacent to the Little Rock Port, the spiral pipe and coating facility has an annual capacity of 350,000 tons.

One of the largest industrial initiatives in the state of Arkansas, the facility employs over 300 people, mostly from the local community.

Arkansas Governor Mike Beebe, guest of honour Consul General of India Sanjiv Arora, Little Rock mayor Mark Stodola and chairman and managing director of the Welspun Group BK Goenka, along with 600 invited customers and guests, participated in the grand opening of the facility.

Mr Beebe commented, "This state-of-the art facility is a prime example of what global investment is doing for Arkansas. We thank Welspun for helping to create the economic growth we need

in our state, and we continue working everyday to bring more companies and jobs to Arkansas from all corners of the world. On behalf of our state, I wish Welspun a long and successful tenure in their Little Rock facility."

WGSRL is part of the Welspun Group. The company commenced activity in 1995 and has supplied pipes for prestigious projects including the world's deepest pipeline project in the Gulf of Mexico. The company has a total capacity of 1.45 million metric ton/year, and offers line pipes from ½" to 100".

Welspun – India
www.welspun.com



▼ (from left) BK Goenka (CMD Welspun), Mike Beebe (Governor, State of Arkansas), Mrs Beebe, Mark Stodala (mayor, Little Rock) and Sanjiv Arora (Consul General of India)

Pre-insulated pipe producer reports results

Logstor is a manufacturer of pre-insulated pipes for the energy-efficient transportation of gases and liquids for district heating and cooling, oil and gas, solar, marine and industrial purposes. The company provides products that contribute to reductions in CO₂ emissions and improved energy efficiency, and has delivered more than 150,000km of pre-insulated pipes to date.

Logstor continued its growth and development plans in 2008 in Europe and abroad. Turnover grew by 3% to DKK 2.4 billion during the year, with EBITDA of DKK 286 million. The results demonstrate that, despite the challenging economic environment and investment climate, Logstor continues to see a growing demand for its environmental and energy saving product solutions.

Preben Tolstrup, CEO of Logstor, commented, "2008 has been a challenging year for the Logstor Group. We have presented a result reflecting the difficult situation of the present market and we have had to deal with very volatile raw material prices and fluctuations in exchange rates, which have had a negative impact on our results. In order to better meet the difficult market situation we made various structural adjustments to the Group in October 2008.

"We have experienced an increased confidence in that district heating and district cooling energy distribution solutions will greatly contribute to an improvement of global energy efficiency and consequently in a reduction of CO₂ emissions. The EU directive for renewable energy, which was adopted in December under the presidency of France, specifically emphasised district energy as an important contributor in EU's ambitious CO₂ reduction target for 2020. We are convinced that the future energy efficiency initiatives and programmes in Europe and around the world will have a very positive impact on our sales.

"As the Middle East is adopting district cooling as its primary technological solution to improve energy efficiency, we believe that Logstor, via its current investment in Dubai, will secure a favourable position in that particular

region as well. Another step in our geographic expansion in 2008 was the opening of an office in Russia in order to position the company for the expected high market growth following the market entries by western energy and utility companies into the power and heat supply sector, where a large privatisation process was completed in the middle of 2008."

The Group's two other divisions – Oil & Gas and Industry & Marine – delivered solid results for 2008, albeit experiencing significant demand swings and changes over the year.

The two divisions are prepared for difficult market conditions in 2009 and have increased their product development as well as intensified customer focus.

Logstor A/S – Denmark
logstor@logstor.com
www.logstor.com

Fabtech International & AWS Welding Show

The FABTECH International and AWS Welding Show, including METALFORM, will be held at McCormick Place, Chicago, 15-18 November.

35,000 visitors are expected to converge in both the North and South Halls of McCormick Place, and this year's combined event brings over 900 exhibits, industry innovators, and hundreds of live equipment demonstrations among pavilions dedicated to forming and fabricating, stamping, welding, tube and



photo courtesy of
Chicago Visitor Bureau

pipe, lasers and thermal spray.

◀ Brisk business at the previous Fabtech event

Attendees can also take advantage of a unified educational curriculum during the 2009 event, featuring a variety of technical seminars, conferences and professional programmes. From metal forming, fabricating, tube and pipe and welding technology to economic, operation and management issues, the programming at the event has been coordinated to provide the latest and most up-to-date information needed to successfully operate in every aspect of the industry.

Three days of free special event programming will feature keynote presentations and drill down sessions covering topics ranging from workforce development, diversifying operations, financing/credit and tax incentives to opportunities in the wind, solar and oil and gas supply chain.

Additional show information, including a list of exhibitors, education programme schedule, special events and more can be found at the event's website, where visitors can also save \$50 by registering in advance.

Fabricators & Manufacturers Association International – USA
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business & market news

Contract for Tata Mundra Project

Exhibition Centre from 12 to 18 April 2010.

Tata Mundra, USA, is a manufacturer of stainless steel and other metal products. The company's Indian branch office has secured a major contract for India's first 600 megawatt power plant.

The company's Indian branch office has secured a major contract for India's first 600 megawatt power plant. The power plant will be built near the city of Mundra, in the state of Gujarat, India.

At Tata Mundra, the company's director for business development, Middle East and India, commented: "Our commitment to the region has resulted in several orders from clients and we are excited to welcome the additional business in the area and are proud to contribute to the development."

Developed by Coastal Gujarat Power Limited, the Tata Mundra Project will provide power to over 10 million citizens in the state of Gujarat, Rajasthan, Maharashtra, Punjab and Haryana. The plant, an answer to the country's energy shortage, will contribute to India's domestic growth and economic development.

The project will create India's first private power plant to use supercritical technology. The term 'supercritical' refers to the state of water when it cannot be easily defined as a liquid or a gas. It is actually a supercritical state, the efficiency of energy generation is increased while emissions are greatly decreased.

Tata Mundra supplies products to various industries such as chemical, pharmaceutical, general machinery, energy – oil and gas, food, beverage, medical, biotechnology and general commercial.

Tata Mundra - USA
www.tatamundra.com

A look ahead to Tube 2010

All applications connected to wires and cables, wire and cable machinery and machinery for the wire and cable industry will be held in halls 15 to 17 in the exhibition centre from 12 to 18 April 2010. The event will be held in the exhibition centre from 12 to 18 April 2010. The event will be held in the exhibition centre from 12 to 18 April 2010.

Fittings

Seamless supply of stainless steel butt weld fittings

Stock Services is a new organization that aims to be an integral part of the supply chain of support for stainless steel fittings. The company is a specialist in the supply of stainless steel fittings to its customers.

A large investment has been made in stainless steel butt weld fittings to help clients achieve their aims.

To achieve the service levels and competitive product prices demanded by the distribution industry, and to offer seamless supply for its clients, Stock Services has made considerable investment in the latest technology, including expertise and international procurement.

The UK, based in Birmingham is also supported by the manufacturer.

Flow-stopping a 630mm gas main

UPLUS, the field installation team from Fluid Systems (Germany) GmbH, working in partnership with Fluorotec Services, has successfully worked out what is believed to be a world first in stopping a damaged 630mm polyethylene city gas main.

The project involved an extensive Fluorotec installation for 2017 21' pipe diameter gas main. When part of the pipe was damaged by a mechanical accident, the team was called in.

Supplies downstream were contained, and work was carried out using an injection and repair technique developed by Fluorotec and using technology developed by Fluid Systems.

Traditionally, this technique had been supported by 300mm pipe diameters, so

products & developments

Increased nozzle life for plasma cutting systems

Hagermann's Centrifugal brand engineers and manufacturers advanced plasma and laser cutting consumables. The product line includes consumables that can deliver increased value to users of most cutting systems, and from most cutting systems.

All Centrifugal products are engineered and manufactured to exacting standards and incorporate the latest technological advances that help to reduce operating costs, while increasing increased cut speed and quality.

The company has launched new technology to benefit owners of Hagermann's plasma cutting systems. Operators of Hagermann's PlasmaCut 800 and 200, as well as the PlasmaCut 1000, 1200, 1500, and 1800, can now purchase nozzles that are claimed to help them to keep an optimal cutting speed. The nozzle life is increased, and operating costs reduced, through the use of patent pending Centrifugal technology and patented Centrifugal technology.

Centrifugal's Centrifugal technology was developed using advanced modelling software that enabled engineers to closely study heat distribution within the nozzle, as well as the cutting process. Centrifugal engineers then worked to design a nozzle that would form the cutting front in the thinnest areas of the nozzle. The end result is more saved for customers, because the nozzle has a longer and less long.

Flow Control technology is combined with Centrifugal's patented SiluShield technology to further increase nozzle life. To create SiluShield, Centrifugal's materials and a combination of silver and copper to increase electrode life.

"The increased life span of the Centrifugal nozzle will help cutting owners save money since advanced Centrifugal technology has been used in our new consumable," commented Owen Laska, sales leader for Hagermann's Centrifugal brand.

Hagermann designs and manufactures advanced plasma cutting systems for use in a variety of industries, both in manufacturing, manufacturing, and industrial repair. The products include hand-held and mechanical plasma systems and consumables, as well as CNC, manual and light systems.

Hagermann - The Hagermanns
www.hagermann.com

Stainless steel and nickel alloy tubes

Founded in 1974, Italian company Tecnor SpA, is a specialist in the manufacture of stainless and nickel alloy tubes. With advanced technology, the company has two production units, most of which are located in a single factory area in 77020.

The company produces standard precision tubes, both in hot and cold form, using the TIG welding process. The company offers a modern, well-equipped department for tube cutting and all the standard of pipe measuring, all at low rates in length, controlled by laser.

Tecnor can adhere to a range of dimensional tolerances, with a standard length range of 0.5 to 20m and standard diameters of 10, 20, 30mm and 40mm. The company's products are produced using stainless steel, aluminium and galvanized by laser cutting.

ISO 9001:2001 accredited by Intras, the company has been certified by Intras for the production range of 0.5 to 20m and diameters of 10, 20, 30mm and 40mm.

Tecnor SpA - Italy
www.technor.it



Pipe demand forecast

Despite a weak current construction environment, pipe demand is expected to turn around and grow 2% annually to 11.1 billion ft in 2013. Stimulants include renewed activity in the construction sector, the growing obsolescence of sewer and drainage systems, and the need to upgrade municipal water systems.

Plastic pipe will advance at the fastest pace. Construction and energy markets will provide the best market opportunities, together accounting for nearly two-thirds of total pipe use in 2013. These and other trends are presented in Plastic & Competitive Pipe, a new study from The Freedonia Group, Inc, a Cleveland-based industry research firm.

Demand for plastic pipe will advance 2.3% yearly to 5 billion ft in 2013, creating demand for 9.2 billion pounds of resin. Polyvinyl chloride (PVC) pipe will remain dominant and be driven by improved joining technologies and resins such as molecularly oriented PVC.

High density polyethylene pipe will exhibit the fastest plastic pipe growth based on opportunities in potable water and corrugated drain and sewer applications.

Demand for reinforced thermosets and acrylonitrile-butadiene-styrene resins will expand at a below average pace due to mature markets and more specialised applications.

Copper pipe demand is forecast to grow 1.9% annually through 2013, paced by opportunities in service and distribution pipe. Demand for steel pipe will grow at a slow pace through 2013, with above average growth anticipated in gas and oil pipe.

Aluminium pipe demand advances will result from opportunities in motor vehicle and refrigeration equipment uses. Demand for concrete pipe will rebound and expand 2% per year through 2013 to 180 million ft, driven by drain and storm sewer applications. More favourable raw material pricing will also contribute to pipe growth.

Structural, mechanical and miscellaneous uses, led by refrigeration tubing,

will remain the leading pipe market through 2013, followed by potable water and conduit. Refrigeration tubing advances will be driven by rebounding refrigeration equipment shipments, with further gains threatened by continued declines in commercial refrigeration manufacturing.

Potable water pipe demand will expand as the building construction market recovers. Conduit demand will also

experience renewed growth after ten years of declines. Fastest growth is anticipated for drain pipe in light of renewed construction activity and needs to renovate obsolete and overloaded pipe networks.

Plastic & Competitive Pipe (published 04/2009, 314 pages) is available for \$4,800 from The Freedonia Group, Inc.

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Five star hotel to use multilayer piping systems

The Radisson Port Elizabeth, the first five-star hotel in Port Elizabeth, South Africa, will utilise the Rifeng Multilayer Piping System for all plumbing applications. The Radisson, with 173 luxury suites, will be operated by the Rezidor Hotel Group.

The hotel will feature services such as a swimming pool, wellness centre and gym, restaurant and bar, eight conference and meeting rooms and a business centre. The Radisson is a R320 million (US\$32 million) project initiated by the Eastern Cape-based Auspex Property Group.

Auspex developers insisted that the hotel should fall under the green zone, using solar energy. Because of its advantages over other polymer and metal piping systems, Rifeng Multilayer

Piping System was selected for the project.

Water networks in buildings have a significant impact on the comfort of people. As non-corrosive materials, polymers enjoy advantages over metal pipes in corrosion prevention.

This is of specific concern when water quality is not always appropriate for metal pipes, eg low pH value. The physical and mechanical characteristics of PEX (cross-linked polyethylene)/AL/PEX make Rifeng Multilayer Piping System suitable for both hot and cold applications in high-end hotels like the Radisson.

Rifeng Enterprise Co Ltd – China
overseas@rifeng.com
www.rifeng.com

Mechanical tubing production commences at US facility

Prolamsa USA has begun production of mechanical tubing at its first US manufacturing facility, located in Laredo, Texas. The facility, which will produce mechanical tubing from ½" to 2½", also includes a cut-to-length line.

In addition to manufacturing mechanical tubing, the Laredo facility will stock both mechanical and structural steel (HSS) tubing.

A second facility in Laredo will stock metal building shapes and components, such as C- and Z-purlins, angles and channels, and slit red primed coils.

"These facilities will enable us to provide our US customers faster deliveries, quicker turnaround times and JIT stocking programmes," commented Jean-Marie Diederichs, general manager of Prolamsa USA.

Mr Diederichs also explained that delivery from Prolamsa's Escobedo plant in Mexico was sometimes delayed at the border: *"The US manufacturing location will eliminate that problem."*

"Even though the economy is struggling right now, there isn't a better time to invest in the US," Mr Diederichs added. *"If we invest in new facilities and train our new US workers now, we'll be ready to participate in the rebound and future growth of our economy."*

Prolamsa USA was started in 1996 to handle the marketing and sales activities in the United States and Canada for its parent company Prolamsa, a privately owned concern that has manufacturing facilities in Mexico.

Prolamsa produces a wide range of high-quality mechanical and structural tubing; UV coated, galvanised and primed tubular products; metal building components and shapes; and parts and components.

Prolamsa – USA
sales@prolamsausa.com
www.prolamsausa.com

Prospects are good for EMO 2009

The organisers of this year's EMO Milano are reporting 1,250 confirmed exhibitors for the October show, with enquiries still arriving from those companies who, due to the economic situation, have delayed making a decision on exhibiting. If the figures are slightly below expectations, the calibre of exhibitors is not and the range of exhibitors will be as wide and comprehensive as usual, with all sectors represented.

Commissioner general of EMO Milano, Pier Luigi Stregarava, said to expect *"a decidedly international EMO, with over 70% of participating companies representing 31 countries."*

EMO Milano 2009, running 5-10 October, will take place within the new fieramilano exhibition area. Located just outside the city, the exhibition complex has its own underground station and is easily and directly accessed from main motorways.



▲ A roof of the fieramilano exhibition area, designed by Massimiliano Fuksas

EFIM SpA – Italy
info@emo-milan.com • www.emo-milan.com

Extensive modernisation for seamless pipe manufacturer

Producer of thick-walled seamless pipes, Valcovna Trub TZ, AS, Czech Republic, has commissioned the most extensive investment in its history.

The company has put into operation a modernised main production line – the Big Mannesmann. The reconstruction and modernisation cost 700 million Czech koruna.

“The main asset, besides increasing the amount of our overall production, is improvement of the pipes’ surface quality and their accuracy,” commented Jaroslav Sarovsky, MBA, director of the company.

During the last year, the company produced more than 79kT of pipes. After the investment, the capacity will reach a level of 123kT p/a.

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Resistance of PVC pipes against disinfectants

Plastic Pipes XIV Conference, an international conference for plastic pipes, took place in Budapest, Hungary, at the end of September 2008.

During the conference, Joël Fumire, a pipes and fittings expert from SolVin, under the banner of PVC4Pipes, gave a presentation on the chemical resistance of PVC pipes against disinfectants, compared with traditional materials.

The presentation can be viewed online at:
www.solvinpvc.com/solvinservices/newshp/0,,67318-2-0,00.htm

SolVin SA – Belgium
www.solvinpvc.com

The company uses the Mannesmann technology to produce a wide portfolio, with outer diameters from 60.3 to 406.4mm and wall thicknesses from 6.3 to 65mm, made of carbon as well as alloy steel.

A large part of the production programme is 9⁵/₈" to 13³/₈" casing and 6⁵/₈" to 16" line pipe, applicable

in oil and gas exploitation and in geological prospecting, in grades J/K55, N80, L80 and P110.

The final destination for the products are, in addition to the domestic market, most European countries and some of the states of North Africa, the Near and Middle East, Asia and the American continent. Share of export represents around 70%.

Valcovna Trub TZ, AS –
Czech Republic
info@vtz.cz • www.tube.cz

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E-mail: box@mail.bothwell.com.tw <http://www.bothwell.com.tw>
E-mail: export@mail.bothwell.com.tw

New Buenos Aires office for RathGibson

RathGibson, a manufacturer of welded, welded and drawn, and seamless stainless steel, nickel, and titanium tubing, has opened an office in Buenos Aires, Argentina.

Led by Cristian Rohde, the new office will serve both Central and South America.

As director of business development for Central and South America Mr Rohde, who is fluent in English, German, Portuguese, and Spanish, will concentrate on providing high quality products and services to RathGibson's customers, and will report directly to Andrew Yeghnazar, vice president of international sales and business development.

"An office in Buenos Aires opens many avenues of communication and opportunities for RathGibson and our customers in that region," said Mr Yeghnazar. "Based upon his extensive background, Cristian is an ideal addition to the RathGibson family."



▲ RathGibson's new Buenos Aires office is led by Cristian Rohde

The new office represents RathGibson's first venture into Central and South America. The South American steel industry has undergone a transformation during the last twenty years.

Businesses are evolving from being segmented and state-controlled into efficient, well-organised companies with significant private and independent ownership.

The Buenos Aires office joins RathGibson's other international offices in Australia, Austria, Bahrain, China, India, Singapore and South Korea in providing local real-time support to its global customers.

RathGibson – USA
www.rathgibson.com

Van Leeuwen reports good results

The Van Leeuwen Pipe and Tube Group has reported ending 2008 with a good result. Turnover increased by 6% to €789 million (2007: €748 million). A net result of €35.2 million was achieved (2007: €49.7 million).

The operating result amounted to €45.1 million for 2008 (2007: €64.8 million), and the tax burden was 25%, compared to 26% last year.

2008 was characterised by extremes. Until the summer there was excellent demand in various markets and sectors. The sales in all product groups – seamless and welded pipes and tubes in both carbon steel and stainless steel – increased, and logistical capacity was fully utilised. Material prices rose sharply, and the availability of some products became a problem.

In the last months of the year it became clear that the Van Leeuwen Pipe and Tube Group was facing rapidly deteriorating market conditions.

Virtually all sectors saw a significant decline in demand, especially in machine building, transport and trailer building, construction and steel construction.

The oil and gas sector was cautious with investments. The construction of power plants around the world did not show much slowdown.

The prices of seamless pipes stabilised, while the prices for welded pipes and

Casing pipes for the Syrian Petroleum Company

Steel pipe and railway wheel producer Interpipe has completed the delivery of casing pipes to the Syrian Petroleum Company (SPC). Interpipe delivered casing pipes amounting to 12,700 tonnes, including 5,600 tonnes of pipes with the UPJ (Ukrainian Premium Joint) connection. Casing pipes are used for the casing of oil and gas wells.

Interpipe developed the highly hermetic Ukrainian Premium Joint for use in the construction of horizontal and directional oil and gas wells, and for the development of oil and gas fields in difficult geological conditions.

Rostyslav Chudnovsky, sales director of oil and gas pipes at Interpipe commented, *"Interpipe is delighted to complete delivery of casing pipes to the Syrian Petroleum Company – the largest national company in Syria. Since 2006 Interpipe has worked successfully with SPC and intends to develop a long-term strategic partnership."*

The specification and service performances of Interpipe's UPJ meet international standards used in global oil and gas production. Joint packing 'metal-metal' coupled with trapezoidal buttress thread provides highly hermetic joints as well as durability and firmness for ultimate joint strength.

Interpipe – Ukraine
press-office@interpipe.biz
www.interpipe.biz

stainless steel pipe products showed a strongly declining pattern.

In 2008, the Van Leeuwen Pipe and Tube Group made continued investments in its network of offices and warehouses. In the Middle East, teams were reinforced and the company's logistical infrastructure expanded with stock locations in Dubai in the United Arab Emirates and in Qatar.

In the UK, Thailand and Canada, offices were renovated and expanded. In Australia investments were made in Brisbane, Adelaide and Sydney.

In a large number of warehouses investments took place in cutting capacity and new machines for material treatments.

At central locations stocks for relatively new products like duplex and super duplex were built up. Its optimised European inventory management and storage systems ensured that the Van Leeuwen Pipe and Tube Group was able to offer tailor-made concepts.

The company expects that 2009 will be a lean year on the demand side with uncertainty about price developments.

Turnover and net result will consequently decline in 2009 after five years of growth and record results.

The company wants to retain its core competencies and leading market positions, and reinforce them by focusing on the areas such as purchasing, sales, distribution, and logistics.

Van Leeuwen Pipe and Tube Group BV – The Netherlands
www.vanleeuwen.com

Pipework and components for power plant upgrade

Pipe Center, part of Wolseley UK, has supplied speciality pipework and components worth around £100,000 for upgrading work on ScottishPower's Cockenzie power station.

The 1,200MW coal-fired plant, located eight miles from Edinburgh on the Forth Estuary, has been generating electricity since 1968. ScottishPower is investing in work to extend the plant's operational life, and improve efficiency and environmental performance.

The work involved upgrading the pipework used for conveying the pulverised fuel used to power the station.

Pipe Center supplied couplings for use with 26" diameter pipework used to carry the material within the plant.

Pipe Center is a preferred supplier for ScottishPower, supplying pipes, valves and related components for the company's two major Scottish plants. The order was managed by Eddie Houston, account executive at Pipe Center's Glasgow branch.

Mr Houston commented, "We have a strong working relationship with ScottishPower, and provide back-up, components and materials for ongoing maintenance and upgrades. Power companies understandably attach great importance to ensuring that plant operates efficiently – as it is an essential pre-requisite of the industry."

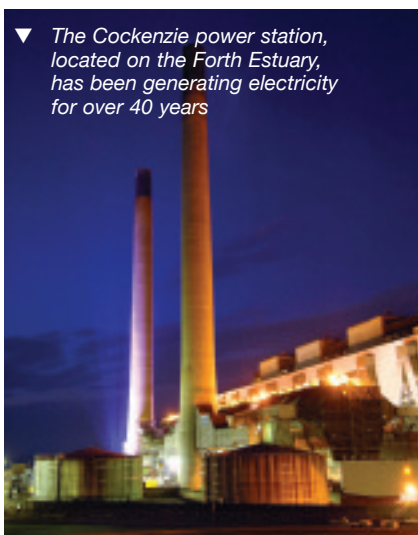
The Cockenzie project involved supply of 16" and 26" pipework, Viking Johnson 16" flange adapters drilled to 15" table D, and 16" plate flanges, machined by Flanges Ltd. Velan piping King assemblies for use in the plant's turbine steam trap were also supplied.

Cockenzie is one of Scotland's largest power stations and plays a vital role in guaranteeing the security of electricity supplies across the country.

The station, which celebrated its 40th anniversary in 2008, has a coal store capacity of around 900,000 tonnes, and the full site covers some 93 hectares.

Wolseley – UK
customerservices@wolseley.co.uk
www.wolseley.co.uk

Pipe Center – UK
www.pipecenter.co.uk



▼ The Cockenzie power station, located on the Forth Estuary, has been generating electricity for over 40 years

FLANGES

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Website: www.plumbingchina.com E-mail: kjx@plumbingchina.com

Hypertherm adds sales support in Benelux area

Hypertherm, a specialist in plasma arc metal cutting technology, has added Rudi Schoukens to its growing European sales team. In his new role, Mr Schoukens will manage Hypertherm's distribution network in Belgium, the Netherlands and Luxembourg. His primary focus will be to work with the company's channel partners to build sales of Hypertherm's manual system product line.

"Hypertherm is committed to helping our partners build sales and provide their customers with the most reliable and versatile plasma cutting systems available," commented Magnus Olsson, Hypertherm's regional distribution sales manager for northwest Europe. "Adding

Rudi to our European team will enable Hypertherm to strongly support our partners in the Benelux area. This will include helping them better understand plasma technology in general and the benefits of Hypertherm plasma in particular."

Mr Schoukens, who will be based in Brussels, Belgium, has an engineering degree in electro-mechanics and in business administration. In addition to Dutch, he speaks English, French and German.

Hypertherm Europe BV –
The Netherlands
customer.service@hypertherm.com
www.hypertherm.com

Two Gulf of Mexico contracts awarded

Technip has been awarded by Bluewater Industries two lumpsum contracts for the Telemark and Clipper Corridor field developments in the Gulf of Mexico. ATP Oil & Gas Corporation is 100 per cent owner and operator of the Telemark field, and 55 per cent owner and operator of the Clipper Corridor field. Bluewater Industries is managing the two projects.

The first contract is for the Telemark field. This field is located in Atwater Valley Block 63, at a water depth of 4,450ft (1,357m) and is being tied back to the ATP Titan platform. The contract covers: the design and manufacture of one high pressure flexible riser, approximately 2 miles (3km) long; engineering for the installation and welding of one oil and gas production flowline, approximately 13 miles (21km) long; installation of the flowline and associated riser with an option to install an umbilical; fabrication and installation of subsea structures and a jumper; and pre-commissioning.

The second contract is for the Clipper Corridor field. This field is located in Green Canyon Block 299, at a water depth of 3,460ft (1,055m) and is tied back to the Front Runner platform. It covers: design and manufacture of two high pressure flexible risers, each approximately 1.5 miles (2.4km) long; engineering for the installation and welding of one pipe-in-pipe oil production flowline and one gas line, each approximately 15.5 miles (25km) long; installation of the flowlines, risers, and umbilical; fabrication and installation of four subsea structures and associated jumpers, flying leads; and pre-commissioning.

Technip's operating centre in Houston, Texas, will execute these contracts. The risers will be fabricated in Le Trait, France, one of the Group's flexible pipe plants. The flowlines will be welded at the Group's spoolbase located in Mobile, Alabama. Offshore installation is scheduled for late 2009/early 2010 for the Telemark project and for the second quarter of 2010 for the Clipper Corridor project, using the *Deep Blue*, Technip's deepwater pipelay vessel. The *Deep Pioneer*, Technip's deepwater construction vessel, will also participate in the Telemark project.

Technip – France
www.technip.com

Sandvik appoints UK market manager

Sandvik Materials Technology in the UK has announced the appointment of Haydn Eagle as market manager, tubular products.



▲ Haydn Eagle, UK market manager, tubular products (left), with Peter Rose, Sandvik EMEA sales manager, standard products

Mr Eagle was formerly global product manager, oil & gas, based at the company's headquarters in Sandviken, Sweden, where he worked closely with major oil and gas companies worldwide. Prior to this he was technical sales manager in the UK for three years.

The experience gained from working at the Sandvik mill, combined with many years' sales and marketing experience, will benefit Mr Eagle's new role. His detailed knowledge of production and his close involvement with both the R&D process and product development will now be focused in the UK market, for the benefit of UK customers.

Mr Eagle takes over responsibilities from Peter Rose who has become Sandvik EMEA (Europe, Middle East & Africa) sales manager, standard products. Mr Rose brings his extensive experience to the important role of developing and growing the company's distributor business and sales of standard products throughout the EMEA region.

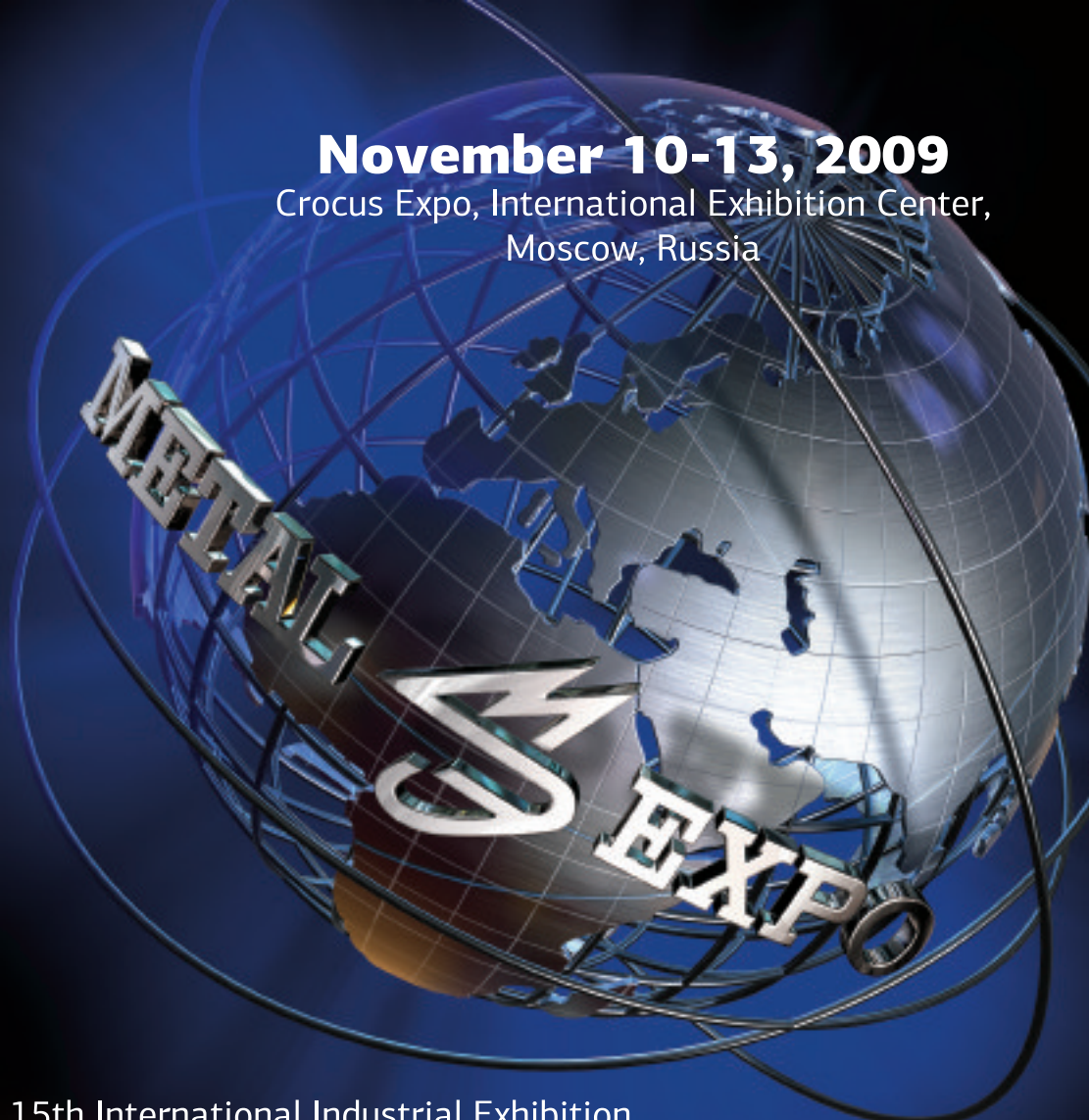
Sandvik Materials Technology – UK
sales.smtuk@sandvik.com
www.smt.sandvik.com/uk



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Amitech installs GRP pipes in Barcelona port

Amitech Industrial Spain, part of the Amiantit Group, specialising in fluid management, has obtained a new contract for supplying and assembling the water mains pipelines of the combined cycle power plant at the port of Barcelona.

A total of €500 million will be invested in this 850MW installation, which is

due to start operating in the summer of 2010. Installation of the glass-fibre reinforced plastic (GRP) pipes in the combined cycle plant will take a total of 10 months, whilst construction work as a whole will last 38 months.

Amitech supplies Flowtite glass-fibre reinforced plastic pipes and accessories, with diameters ranging between DN500

▼ *Amitech will supply and assemble the water mains pipelines of the combined cycle power plant at the port of Barcelona*



and DN2000mm. The Flowtite pipes, with nominal pressure of PN6 and stiffness SN5000, will be installed underground using the laminated joint system.

The project is owned by Gas Natural, while General Electric is the lead contractor in a consortium with the temporary joint venture, CTCC Puerto de Barcelona, formed by Técnicas Reunidas and Duro Felguera.

The Saudi Arabian Amiantit Company (SAAC) was established in 1968 as a limited liability company, and was converted into a joint stock company in 1994. The prime activity of the company is to market its piping products and technologies and to initiate and manage new municipal and industrial projects. The Amiantit Group includes companies that manufacture various kinds of pipes, joints, fittings, tanks, rubber products and related accessories. Other activities include transfer technology, water project consultancy and management around the world.

Amiantit (SAAC) – Saudi Arabia
info@amiantit.com
www.amiantit.com

Amitech Spain SA – Spain
info@amitech.es
www.amitech.es

Investment in environmental protection projects

Interpipe has announced that in 2008 the steel pipe and wheels company invested US\$730,000 on projects aimed at protecting the environment and the efficient use of natural resources. Interpipe NTZ, an Interpipe mill producing steel pipes, conducted several projects aimed at improving the ecological condition of the Dnepropetrovsk region. At the open-hearth plant, an electro-pulse system has been installed, which sends electrodes through an electrostatic cleaner. During the past year, the operating efficiency of electrostatic cleaners has been measured systematically, and the level of refinement has been raised from 86% to 97%, reducing the impact on the environment.

A project to reduce waste discharge into the river Dnepr has also been carried out. This project will help to reduce diversion flow and discharge water by 650m³/h. Interpipe considers its work in this area to constitute a core part of its CSR policy. Oleg Kuzmin, director for corporate affairs at Interpipe, commented, *“Interpipe always seeks to follow the highest global practices in relation to the protection of the environment. On a yearly basis, Interpipe assesses and continuously updates its policies in the area of environmental protection according to an environmental review of the company’s production activities. These environmental reviews assess the company’s impact on air quality, water and waste management. The system of ecological management used by Interpipe is certificated according to the EN ISO 14001 standard.”*

Interpipe – Ukraine
press-office@interpipe.biz • www.interpipe.biz

Asiawater 2010 Expo & Forum

Asiawater 2010, the 6th Asiawater Expo & Forum will be held in Kuala Lumpur, Malaysia, 6-8 April 2010.

The Asian trade show for the water and wastewater industry is organised by AMB Exhibitions Sdn Bhd in cooperation with Merebo Messe Marketing. Merebo will organise the ‘Europe & North America Pavilion’, dedicated to companies, associations, chambers and trade press of both continents.

The show will take place in a space of 10,000m² in the Kuala Lumpur Convention Centre. 550 exhibitors from 32 countries and more than 9,200 trade visitors attended the last Asiawater, in 2008.

Merebo Messe Marketing – Germany
contact@merebo.com
www.asiawater.merebo.com

Osborn wins Queen's Award for Enterprise

Osborn Metals Limited is now proudly flying the Queen's Award flag, to celebrate the recognition of the group's sustained performance.

The group, which has plants in the UK and France employing over 150 people, exports over 70% of its production to thirty countries around the world.

The Osborn Steel Extrusions plant in Bradford, UK, produces complex

extruded near net shapes in steel and titanium, and is claimed to be the only plant of its type in the UK, and one of only a handful worldwide.

Hot extrusion allows the manufacture of complex shapes with the minimum

use of material, and reduces the machining costs of customers with applications in industries as varied as aerospace, power generation, petro-chemical industries and specialist vehicles.

◀ *Osborn's hot extrusion process allows the manufacture of complex shapes with the minimum use of material*



Osborn has extrusions on leading civil aircraft, including the state-of-the-art Boeing 787 and Airbus A350. Osborn Metals Ltd was formed in 2001, and has enjoyed solid growth based on its core businesses. Osborn Metals in France has two plants producing cold drawn steel profiles and precision cold drawn tubing with applications across all sectors.

Osborn Metals Ltd – UK
extrusion@osbornmetals.com
www.osbornmetals.com

Economic cooperation

Invitalia, a national agency for investment and enterprise development, and SIDCO, the Saudi-Italian society for the development, know-how and service exchange to attract foreign investments, have signed a memorandum of understanding for new economic cooperation between the two countries.

In 2008, economic relations between Italy and Saudi Arabia increased by 17%. The Saudi government announced a plan of public investment of €95 billion, with 1.3 million new jobs and the construction of six new cities. In a period of economic changes and international crises, the Riyadh agreement offers new perspectives and opportunities for the Italian market and economy, and will also support an exchange of information between companies interested in investing in Italy to boost a positive exchange and a growing working cooperation.

One of the largest Italian investments is for a steel mill company with plants of more than €400 million, designed and built by Danieli Group for the production of steel tubes for the oil and gas industry, both for ARAMCO (the Saudi governing body for energy) and for other market areas.

Invitalia – Italy
www.invitalia.it

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Tube and fittings supply alliance

Motion and control technologies specialist Parker Hannifin has introduced a new supply service aimed at users of fluid instrumentation. Complete packages of tube fittings and tubing can now be purchased via a single order, thanks to an alliance with Sandvik Materials Technology.

In addition to simplifying purchasing, the volume of Parker's business means that it has been able to secure Sandvik tubing at competitive rates without compromising quality.

A further advantage of the new service relates to product quality control, ensuring fluid instrumentation tubing components have genuine integrity, and perform to specification – vital for plants processing harsh media or in corrosive environments. This quality control

begins with an audit trail for the raw materials. Sandvik melts its own steel to ensure quality control from the point of steel melting, right through to the finished product. This level of attention to detail extends throughout the design and manufacturing chain up to and including verification of performance by independent third-party test houses.

Parker Hannifin's alliance with Sandvik covers seamless instrumentation tubing in 316/316L stainless steel, plus a range of the most commonly used exotic alloys, including 304/304L, 6Mo, 321, SAF 2507, 625, 825 and Hastelloy C276.

In addition to serving the mainstream market for stainless steel tubing, Sandvik is known as a pioneer of engineered materials for dealing with

the exceptionally harsh pressure and corrosion-prone conditions faced by users in the offshore oil and gas industry.

Parker Hannifin's range of threadless tube fittings includes not only twin-ferrule compression types – which feature the corrosion-resistant Supercase ferrule technology – but three further fitting innovations to allow users to make tubing connections faster, smarter, cleaner and safer. The company's latest innovation, Phastite, delivers compression-style assembly to high pressure connections up to 20,000 PSI, providing an alternative to welded and cone-and-thread connections.

Parker Instrumentation Products Division – USA

ipdsales@parker.com
www.parker.com

Parker Instrumentation Products Division, Europe – UK

ipd@parker.com
www.parker.com

RathGibson appoints sales VP

RathGibson, a manufacturer of welded, welded and drawn, and seamless stainless steel, nickel, and titanium tubing, has appointed Kirk Thorne to the position of vice president – sales and marketing.

Before joining RathGibson, Mr Thorne worked for Lennox International. While at Lennox, Mr Thorne's career included positions as vice president of sales and marketing for Allied Air Enterprises, vice president and general manager for Lennox Hearth Products, general manager for Lennox-Benelux, and director of global business development for Lennox Global Limited.

In his twenty five years of experience in industry, Mr Thorne has initiated growth strategies, developed and executed product and brand initiatives, consolidated product lines, increased efficiencies, as well as improved value for the customer.



▲ Kirk Thorne, RathGibson's new vice president, sales and marketing

"RathGibson is unique in the tubing industry," commented Mr Thorne. "We have diversified into such dynamic segments as subsea umbilical tubing, light wall titanium, and U-bend tubing. Different alloys for applications in solar power, geothermal energy, and desalination have been added to our product portfolio. In the past few years, RathGibson has dramatically expanded into new markets and consistently upgraded equipment, processes, and quality systems. I look forward to continuing these initiatives that have well-positioned RathGibson for the future."

RathGibson – USA
www.rathgibson.com

Awards ceremony to showcase innovation in recycling

Valpak, a UK provider of producer responsibility and recycling solutions, will host its 8th annual awards ceremony on 24 September. The Valpak Awards 2009 acknowledge excellence and innovation within the field of recycling and waste management, and new award categories have been introduced this year to recognise forward thinking in the area of carbon reduction, education and resource management.

Entry is open to a number of organisations and individuals, from retailers, reprocessors and local authorities, to young innovators under the age of 18. This year's ceremony will be held at Shakespeare's Globe, London. The evening will commence with a drinks reception, followed by a three-course dinner.

Valpak – UK
ellie.williams@valpak.co.uk
www.valpak.co.uk

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Photo – GPS PE Pipe Systems – UK – see page 26

Tube, pipe and section mills

The flexible production of a wide range of longitudinally welded square and rectangular profiles is possible using the same set of tool rolls with the FCF system.

Not only can plant productivity be increased, but less steel strip is required to produce the products. FCF technology from Siemens VAI has been installed in profile mills in Spain and Austria.

The downtime of tube mills for roll-tool changes and other operational interruptions means lost production time. This inflexibility increases costs and reduces profit. Producers must be able to supply a wide range of products on a just-in-time basis and reduce their product stock.

VAI Seuthe, part of the Siemens VAI Group, has introduced FCF (Flexible Cold Forming) technology – a flexible forming, welding and sizing system for the production of cold-rolled and longitudinally welded square and rectangular profiles.

The technology is distinguished by the use of the same set of tools for the production of a complete product size range without the need for forming- and sizing-tool changes. FCF fulfils all of the standard requirements of tolerance, corner radii and product surface quality.

Because no tool changes are necessary, the standstill times for product-dimensional changes are reduced and overall productivity is increased.

Product-size changes are automatically carried out by means of central adjustment drives, which are activated by computer control. Adjustments in the forming and sizing section are carried out within minutes and tool settings, as well as other key operational parameters, are visualised by digital displays.

The essential difference between FCF forming and conventional forming systems with single forming stands is the arrangement of the tool rolls. Contrary to conventional forming stands, which are characterised by the opposite arrangement of the tools on a common shaft, the tool rolls in the FCF system are alternately mounted on the left and right cantilever shafts of the forming blocks.

The left and the right strip edges are subsequently bent as they pass the individual tool rolls. Final bending and adjustment of a C profile to a profile ready for longitudinal welding is carried out by the top rolls.

Welding operations can be performed using high frequency-, tungsten inert gas- or laser-welding systems. The

strip edges to be welded are squeezed with the use of two side rolls and two inclined top rolls, universally applicable for several product dimensions. Welding in the FCF line is performed centrally along the mill centreline.

Following welding of the profiles, final calibration of the square and rectangular sections is carried out in the FCF sizing section. The same set of universal tool rolls is used for the calibration of the final section dimensions and corner radii as well as for product-size changes.

By applying universal tools for the production of the complete range of line products, time-consuming tool changes are effectively eliminated.

With the application of hard-metal tools, considerably reduced wear and longer tool lifetimes can be achieved.

The direct forming concept employed in the FCF system allows the required steel-strip width to be reduced by 2-6%, compared with the conventional production of squares starting with a round mother tube. This is explained by a thickening of the steel at the corners during shaping from round to square.

VAI Seuthe GmbH – Germany
info@siemens-seuthe.com
www.siemens-seuthe.com

Pressure pipes for hydro power

Voest Alpine Eisenbahn GmbH (VAEE) is a major producer of rails and turnouts, and with 700 employees is also one of the largest employers in Zeltweg, Austria. The company's high demands on electricity combined with the current high energy prices prompted the company's management to look for a more attractive power source.

A hydro power station was erected on company property, in cooperation with an existing small power plant of the company Penz at the estuary of the rivers Pöls and Mur. A total of 3km pressure pipe DN 2400 were installed for the project. The 31m head was calculated to produce a flow rate of 12m³ per second. This required pipe material with high safety standards, and guaranteed leak tightness. Hobas CC-GRP pipe systems met these requirements.

Since October 2008, Hobas Pipe Austria has been delivering the CC-GRP pressure pipe systems, including FW couplings, to the new power plant Penz VAEE. The pipeline is installed in three phases, leading from the power plant Penz to the estuary of the rivers Pöls and Mur and finally to the power house on VAEE property.

The pressure line first runs through farmland, and an adjacent housing area is bypassed along the river. The Hobas pipes needed to be installed beneath the river's groundwater level. Despite the depth, the pipe bedding was completely dry due to dense soil, which resulted in fast and cost efficient installation.

The first phase, from the intake works Penz in Aichdorf to the Pöls Bridge, was initiated in October 2008, and was scheduled for completion in March.

▼ *Hobas pressure pipes DN 2400 were installed at the estuary of the rivers Pöls and Mur*



Between March and June 2009 and for the second construction phase, pipes were scheduled to be laid from a railway bridge to the power house. The third phase is planned to run from June to September 2009, when the lines will finally meet between the railway bridge and the Pöls Bridge.

The two planned Kaplan spiral turbines have an average output of 12.9 million kWh pa, which corresponds to the electricity needs of 6,000 families of four. Because VAEE currently needs 8 million kWh, the excess can be delivered to the public network once the plant is completed.

The new power source will also allow VAEE's production process to be optimised. Since the method to heat the rails with gas in order to shape them proved to be dissatisfactory, they will in future be heated by induction (with electricity), which will assure 100% process safety.



▲ *The first phase, from the intake works Penz in Aichdorf to the Pöls Bridge*

This independent power supply also contributes to a positive CO₂ balance for the company. The power plant is built according to strict environmental regulations. For instance, a residual of 1,500 l water per second and up to 2,900 during the cold months is ensured, and lies well above the requirements. With this, the plant has the largest amount of residual water in Styria, which benefits the environment and fish population.

Hobas Engineering GmbH – Austria
info@hobas.com
www.hobas.com

Stainless steel seamless pipes in a wide range of grades

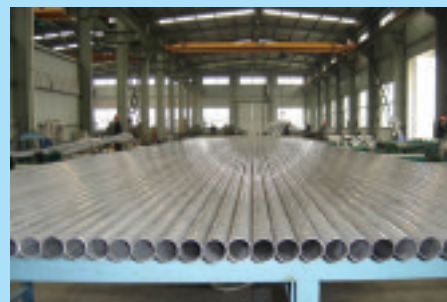
Huzhou Fengtai Stainless Steel Pipes Co, Ltd is a manufacturer of stainless steel pipes and tubes, specifically for small stainless steel tubes.

Material grades include austenitic TP304, TP304L, TP316L, TP316Ti, TP310S, TP317L, TP347H, TP321, 800H, 904L, 2205, S31803, S32205, S32304, S32750 and S32760.

Diameters range from 6 to 323mm, and wall thicknesses are from 0.5 to 50mm. The products are manufactured strictly according to GB, ASTM, ASME, JIS and DIN standards. Special materials and specifications can be supplied under negotiation. The company's range of products includes boiler tubing, heat exchanger tubing, fluid transport pipe/tubing, ferritic stainless steel pipe, austenitic stainless steel pipe, corrosion-resisting pipe/tubing, heat-resisting alloy pipe/tubing and U-tubing.

Fengtai also has the National Manufacturing License of Special Equipment (Pressured Pipe/Tube), PED 97/23/EC certificate by TUV and work approval of AD2000. Fengtai has successfully exported its products to European, Middle East, American, Indian, Korean and Japanese markets.

Huzhou Fengtai Stainless Steel Pipes Co, Ltd – China
info@fengtaipipe.com • www.fengtaipipe.com



▲ *Fengtai manufactures products according to GB, ASTM, ASME, JIS and DIN standards*

Hoses with increased flexibility

Coreflex™ Series U-Cor hose from Swagelok Company, USA, is designed to maximise hoop strength, minimise force-to-bend, and resist kinking. With a silicone and stainless steel reinforced, smooth-bore PFA core, the hoses offer increased flexibility, allowing easy installation and short offset orientations, and additional use in applications that promote drainability and flow. A stainless steel reinforcement encapsulated within the silicone jacket enhances the hose pressure rating.

A smooth-bore PFA core provides a chemically inert, non-aging, non-stick surface. U-Cor hose is non-absorbent and will not impart taste or odour, is easy to clean, and features ultra-low extractibles. The hose can be autoclaved and sterilised in accordance with system cleaning requirements.

The PFA core tube is reinforced with a silicone layer bonded directly to the core and braid layer, using a process that removes the need for glues and

avoids contaminating the system with leachables. The braid layer is a 300 series stainless steel braid, which enhances the pressure rating. Protecting the entire construction is a non-contaminating silicone cover for purity, personnel protection, and insulation from internal system fluid temperature extremes.

The addition of the Coreflex series of hose products expands the Swagelok offering of PFA/PTFE hoses. All bendable sections of Coreflex series hose feature true nominal inner diameter (ID) for improved flow rates.

Hoses in the Coreflex series include: SBI smooth-bore, insulating PTFE hose; S-Cor smooth-bore, silicone covered PTFE hose; C-Con convoluted-bore PTFE hose; and two smooth-bore

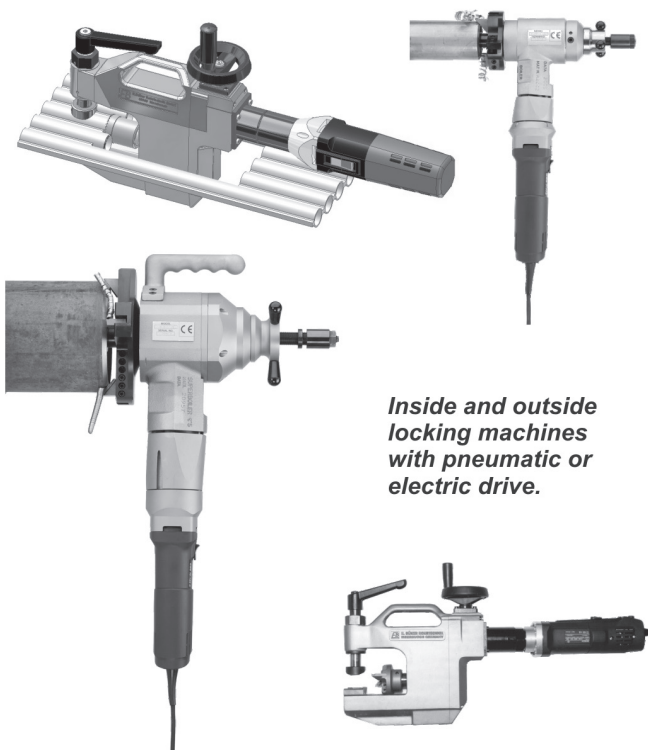


▲ Swagelok's U-Cor hose features a silicone and stainless steel reinforced, smooth-bore PFA core

PTFE hoses, B-Cor and BX-Cor, which features an additional fibreglass braid for added hoop strength. Hose products are available as components or as complete assemblies.

Swagelok Company – USA
www.swagelok.com

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Zibo Wel-Fit Metal Products Co Ltd

Product Range

Elbows – LR SR 45 90
Return Bends – LR SR 180
Tees – Straight & Reducing
Reducers – Con & Eccentric
Stub Ends – MSS TYPE-A& B
Stub Ends – ASME Long
End Caps
Sch5S – XXS
1/2" ~60", 3/4"X1/2" ~ 60"X36"

Specifications

ASME B16.9
ASTM A403 304/L 316/L 321 347
ASTM A234 WPB P11 P22 P5 P9
ASTM A420 WPL6
ASTM A815 S32205 S32750
JIS B2311 2312 2313
DIN 2605 2615 2616 2617
EN 10253-1



Inspections

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Impact, Hydrostatic Test
Spectro-analysis

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PE below-ground barrier pipes score on sustainability

Polyethylene barrier pipe systems will have an increasing influence on the way the UK treats contaminated land for brownfield developments. Their ability to deliver clean, untainted drinking water and offer relatively high sustainability is well suited to growing reclamation technologies that treat contamination on-site.

The latest market analysis predicts that excavation and removal will remain the most common approach to contaminated land remediation for the next five years. However, the market for other remediation methods is expected to grow by 37% over the same period, marking the rise of techniques that are more environmentally responsible than 'dig and dump'.

A landfill tax for contaminated land waste, if imposed, could swing the balance of costs away from removal and in favour of on-site remediation.

Contractors will then find it easier to promote the environmental advantages of containment techniques, which, by treating land in situ, cut out transportation costs and prepare the area for development more quickly than soil removal.

Any residual risk of tainting to drinking water supplies can be avoided in treated (or untreated) land by installing protected water pipes.

The two systems dominating this market are (a) polyethylene barrier pipe, such as the GPS PE Pipe Systems' Protecta-Line, which incorporates an impermeable aluminium barrier layer within the polyethylene, and (b) wrapped metal pipes. The only UK industry standard for potable water pipe systems in contaminated land is WIS 4-32-19, which defines performance characteristics and specifies contaminant protection limits for the polyethylene barrier pipe and compatible fittings. The GPS Protecta-Line system gives the peace of mind of complying with this standard.

Although PE barrier pipes were previously only available in sizes up to 180mm, the Protecta-Line range now extends to 355mm, adding choice where previously there was only wrapped metallic pipe. In terms of energy efficiency, carbon footprint and the whole-life costs



▲ Protecta-Line incorporates an impermeable aluminium barrier layer within the polyethylene

of owning a pipe system, PE offers advantages.

Even considering the fossil fuel used as raw material, PE systems are less demanding of energy and resources than metallic equivalents. Being light in weight and available coiled or straight, PE pipes are easy to transport and install. In many instances, trenchless installation technologies, such as slip lining, can be used to reduce disruption to traffic and infrastructure.

Freedom from corrosion ensures good hydraulic characteristics, minimising water losses and pumping costs over the lifetime of the system.

At the end of its useful service life a PE barrier pipe system can be recycled using approximately a third of the energy required to rework metal pipes.

Comparative calculations show that using a polyethylene pipe system reduces typical installed costs by as much as 70% and whole life costs by at least 45%.

When these benefits are considered alongside the advantages of containment techniques over dig and dump, the combination weighs heavily in favour of adopting a more sustainable approach to brownfield development.

Information supplied by Richard Graty, marketing manager, GPS PE Pipe Systems

GPS PE Pipe Systems – UK
richard.graty@gpsuk.com
www.gpsuk.com



▲ Products from the Protecta-Line range from GPS PE Pipe Systems

Pipe systems with powder coating

Jacob Rohrsysteme is a manufacturer of pipe systems based on a modular concept, specialising in dust extraction, exhaust air and bulk goods handling.

The company's pipe systems range in diameter from 60 to 800mm, or larger for customised production, in 1-3mm wall thickness. Steel pipes are primed, galvanised or stainless steel.

Main customers are in the food industry, the tobacco industry, the chemical, pharmaceutical and plastics industries, automobile manufacturing, concentrated feed plants, the chip industry, machine construction or in the paper and building materials industries.

Jacob has a new, state-of-the-art powder-coating system. The plant is almost completely automated and ensures not only a faultless external coating, but also a continuously even internal coating. The even internal coating is achieved by inserting mobile lances into the pipe components.

At the same time, an innovative new type of powder is employed. The new powder is electrically conductive and complies with the strictest of requirements regarding contact with foodstuffs. All of the materials used meet the food-grade requirements of the Food and Drug Administration, the US regulatory authority responsible for food safety.

The pipework system is secured against electrostatic charging by the combination of the manufacturer's easy-to-install pull-ring connections and conductive U-shaped seals. It can therefore be used safely for ATEX applications. Earthing cables and earthing lugs are no longer needed. No additional or expensive installations or welding work is required for retrofitting existing systems.

Although the new powder-coating material is more expensive than the previous materials, Jacob intends to keep the current catalogue prices for its modular pipework system stable and unchanged throughout 2009.

Jacob Rohrsysteme – Germany
t.meinsen@jacob-rohre.de
www.jacob-rohre.de

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Pickling tanks from Arvind Anticor

Arvind Anticor Limited is a manufacturer and exporter of acid pickling tanks made from polypropylene thermoplastic. The company's acid pickling tanks are custom designed according to size and weight of load such as pipes, tube, wire coils, bars, rods and structural steel.

Anticor PP tanks are used for pickling, degreasing, electro-plating, rinsing,

fluxing, anodising, passivation, pre- and post-treatment and metal surface treatment.

The tanks are constructed from polypropylene thermoplastic, a material that is highly corrosion resistant.

In addition, the tanks are housed in a steel structure frame for mechanical reinforcement, covered with fibreglass.

The tanks are housed in steel frames for mechanical reinforcement, and covered with fibreglass. They are designed and engineered on the 'Rita' tank building software module.

Design and fabrication of the PP tanks are geared towards maximising the benefits of advanced material over conventional alternatives such as brick lining and fibreglass lining. Benefits include cost saving, impact resistance, corrosion resistance, mobility, light weight, leak proofing, environment-friendly, fume free, increased longevity and zero maintenance.

Anticor tanks are designed, manufactured and tested according to German Welding Association DVS 2205 for safety and longevity. The tanks are manufactured with certified life of chemical resistance. Anticor's facilities are equipped with butt fusion welding, hot gas extrusion welding technology and hydro-thermo radius forming technology.

In addition to butt fusion technology, Anticor has developed radius instead of a right angle corner at the bottom of tank. This effectively reduces the weld joint at the corner welded radius, thus providing sound mechanical strength. Anticor weld joints are tested as per German Welding Association DVS 2203.

The company's tank fabrication technology offers better performance, higher efficiency, higher productivity, lower rejection, zero failure and an environmentally friendly atmosphere. Welding quality is confirmed by a 3-point bend test, and a specimen seam is subjected to a test of tensile and impact resistance properties. Leakage testing is carried out prior to dispatch by hydro, vacuum and spark test.

Anticor pickling tanks are supplied with accessories such as nozzles, heating/cooling coils, integral suction ducting for fume exhaust, integral slope for drain, lifting arrangement, and top lid cover.

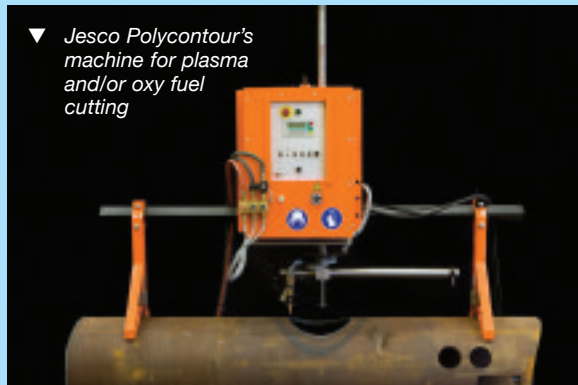
Arvind Anticor Limited – India
info@picklingplant.com
www.picklingplant.com

CNC cutting machines

Jesco Polycontour is a manufacturer of analogue pipe cutting machines, including the ARB range which is used in the silo, boiler and shipbuilding industries.

In order to meet the demands of the market, the company has improved the range, with the ARB 1500 Digital.

The machine is suitable for 'one run' cutting of round holes with welding seam preparation. This makes the holes straight, suitable for connections of nozzles and tubulars. The machine can also be used to cut tubulars, and for the profiling of pipe ends.



▼ Jesco Polycontour's machine for plasma and/or oxy fuel cutting

The ARB 1500-D is controlled by means of a Siemens S-7 PLC. Programming of the cutting parameters, necessary for the cut, can be performed via the operator panel.

The machine is provided with encoders that ensure precision and repeatability. The ARB 1500-D is

equipped as standard for the oxy fuel cutting process, but can optionally be equipped for plasma cutting.

The sturdy prismatic pedestal provides a stable mounting on pipes. By removing the pedestal, the machine can be mounted to a manipulator, making the machine even easier to move.

The machine can cut pipes with diameters in the range 100-10,000mm, and with wall thickness from 5 to 150mm. The diameter of the hole/branch while plasma cutting is 100-1,500/2,500mm, and while oxy/gas cutting is 50-1,500/2,500mm.

The machine features a machine housing with prismatic pedestals and spirit level; a 2-axis PLC control integrated in the machine housing; a spindle with removable centring point; and a torch arm, machine torch and gas/oxygen distribution block.

Jesco Polycontour – Netherlands
info@jesco.nl • www.jesco.nl



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Boiler pipe preparation

Orbitalum Tools GmbH (formerly Georg Fischer Rohrverbindungstechnik) is a specialist in the area of orbital metal pipe cutting and facing technology.

The company's new, faster BRB 4 Auto with pneumatic clamping, is suitable for continuous production.

The BRB 4 series was developed for boiler applications with the lowest space availability, to make precise welding preparations possible using optimal torque, together with low weight.

The machines are constructed modularly. Five different machine kits are available for selection as auto, pneumatic and electric variants, depending upon the field of application.

Only very limited space is available between welded boiler pipes; the compact body design of BRB machines optimised for the application makes possible optimal operations in every position available to the operator.



▲ BRB 4 with accessories



▼ Boiler pipe processing with BRB 4

While processing boiler pipes, the ability to change quickly from one pipe to another is required.

With the patented Quick-Tool-Change (QTC) from Orbitalum Tools, the user is able to change tools quickly and easily.

The integrated multifunctional tool has two to four cutting edges and a high-performance

surface coating that prevents wear and tear.

Pipe-ends made from unalloyed, low alloy and high alloy steels, with a high percentage of chromium and nickel, can be processed quickly and precisely.

Orbitalum Tools GmbH
– Germany
tools@orbitalum.com
www.orbitalum.com

Feiting Pipe Co., Ltd.



Established in 1996, Zhejiang Feiting Pipe Co., Ltd. is a professional manufacturer specializing in producing stainless steel and carbon steel (alloy, low temperature & common carbon steel) fittings and flanges with rich technical resources, advanced equipments, high-quality products and satisfactory services.

Production details below:

BW Fitting :

Elbow(45°, 90°, 180°, 1D~10D), Tee, Reducer, Cap, Lateral, True"Y", Stub end, etc.
Dimension: 1/2" ~104" W. T:4mm ~ 80mm

Steel Flange :

WN flange, SO flange, LJ flange, SW flange, BL flange, Tongue face flange, Loose plate flange, Loose hubbed flange, Orifice flange, Reducing flange, Threaded flange.
Dimension: 1/2" ~ 60" Pressure Rate: 150Lb ~ 2500Lb

Forging Fitting :

SW elbow(45°, 90°), Threaded elbow, Weldolet, Coupling, Plug, Nipple, Union.
Dimension: 1/2" ~ 3" Pressure Rate: 3000Lb~9000Lb

Bend :

Seamless Bend(45°, 90°, 180°, 3D~10D), Welded Bend (ERW, EFW).
Dimension: 8"~ 48" W.T:4mm~40mm

Pipe:

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The bridge challenge

The use of steel for modern bridges has grown significantly over the last twenty years, with engineers recognising the benefits and versatility that steel offers as a construction material. Steve Whitfield, technical manager at Corus Tubes, considers how the steel industry is leading the way when it comes to the design and construction of footbridges.

Modern steel bridges benefit from the latest improvements in automated fabrication and construction techniques to provide economic solutions to meet the demands of safety, rapid construction, aesthetic appearance and minimal maintenance.

One recent project to realise the benefits that structural steel offers is a new £5 million footbridge in North Lanarkshire, Scotland. Delivered on behalf of Transport Scotland, the new bridge spans the M8 motorway, replacing an existing footbridge that was originally built in 1965. Located on one of the busiest stretches of road in

Scotland, the new footbridge forms an essential element in the upgrading of the transport hub now operating on the site.

Bridges are significant structures that have the power to add or detract from the landscape. Specifying steel at the conceptual stage of the design is one way in which designers can ensure that their architectural aspirations are realised. It is an incredibly strong material that can be easily shaped, which gives the advantage of being able to significantly improve the aesthetic appearance of the structure, as all of the main structural members can form smooth curves throughout its entire length.

The new bridge features a ►
helical truss design



2,000 types of welded and seamless steel tubes

Shenyang Dongyang Special Section Tube Co, Ltd is a joint venture company founded in 1991. The company is mainly engaged in producing more than 2,000 kinds of welded and seamless structure steel tubes with compound sections, such as square, rectangle, ellipse, semicircle, arch, sector, triangle, hexagon and octagon.



▲ *Products from Shenyang Dongyang Special Section Tube Co*

Materials used include carbon steel and stainless steel, and other alloyed material. The company passed quality system certification of ISO9001:2000 in 2002. The company's products can be produced according to national and international standards including Chinese GB, JIS, DIN, EN and ASTM. The products are widely used in the manufacture of vehicles, bridges, municipal engineering construction, and in the chemical, petroleum, food, energy, electricity, aviation and aerospace industries.

Products include hot-finished and high strength steel tube according to EN10210 and EN10219. The highest yield strength can reach 690MPa (100 KSI). The company also possesses equipment for curving, straightening, cutting and polishing, for further processing of the steel tubes.

Shenyang Dongyang Special Section Tube Co, Ltd – China
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An initial study was undertaken to look at different options for the proposed structure at Harthill. Having considered and evaluated several different design options for the new 90-metre bridge, the recommended solution incorporated a helical truss design, similar to that used on the Greenside Place link bridge in Edinburgh.

Presenting many benefits when it comes to bridge design, a helical truss is composed of steel members connected at their ends by hinged pin connections to form a stable configuration. The open framework results in elements being primarily in tension or compression, creating a very light but stiff form of construction. In addition, a helical truss is perfect for footbridge construction as it minimises the effective construction depth and the length of approach embankments.

Custom-designed and factory-manufactured, the bridge offers a high quality solution that can easily be delivered to site for instant installation, and, in the instance of the M8 footbridge, an aesthetically impressive final structure.

The impressive structure at Harthill took full advantage of the aesthetic properties

and qualities of structural hollow steel sections, both in its delivery and its long-term performance. Twelve circular hollow sections supplied by Corus Tubes wind around the outside of the structure to create the signature corkscrew-like appearance, with the slender lines of the curved steel tubes and the neat welded joints ensuring the sharp lines of the structure's design could be achieved. The elliptical structure provides an enclosed crossing, which is fully glazed with polycarbonate panels, ensuring a safe and comfortable environment for pedestrians and cyclists using the bridge.

All the steel components were subject to a rigorous testing regime, first by Corus Tubes during manufacture of the steel sections at its Corby mill, then by SH Structures.

SH Structures, used to working on complex tubular steelwork, pre-fabricated the sections at the company's facility. As well as reducing the amount of work that actually took place on-site, off-site fabrication of the sections in the closed factory environment meant work was unhindered by prevailing bad weather conditions that might have otherwise caused delays on the exposed site.

The relatively low weight of the structural steel components enabled sections to be easily transported to the site, where the only work required was the welding of the splices to create the complete 90-metre span.

Tim Burton of SH Structures commented, "The complex design and fabrication of the bridge meant that the footbridge components needed to be carefully pieced together – an intricate process that was facilitated by the unique properties of steel which allowed it to be easily bent and shaped. This enabled it to be designed to a range of shapes that were easy to construct,

▼ The bridge was lifted into place in one night



essentially giving the architect greater design scope. In addition, the off-site fabrication associated with steel ensured that delivery of the project incurred minimal disruption on the locality through road closures – which in itself created significant economic and health and safety benefits."

Raynesway Construction carried out the complex operation to install the main superstructure section of the footbridge using one of the UK's largest cranes, complete with a 90-metre job and 600 tonnes of superlift counterweight.

The crane itself took a week to assemble, having been delivered to site

in 45 separate loads. However, once erected it was able to lift the 230 tonne superstructure element of the footbridge into position using a single operation that commenced at 8.30pm.

Once the new bridge was successfully located and secured into the support structure, the lifting slings attaching the bridge to the crane were removed and the motorway was re-opened at 3am the following morning – some three hours earlier than planned – ensuring that closure of the motorway was limited to one evening.

Corus Tubes – UK
www.corustubes.co.uk

LOOKING FOR REGIONAL AGENCIES IN WORLDWIDE

HONGDA STEEL TUBE

Guangzhou Hongda Steel Tube Co., Ltd. is a professional manufacturer of seamless carbon steel tube and seamless stainless steel tube. The main products include:

Seamless carbon steel tube:
ASTM A53/ A106/API 5L GR.B; ASTM A179; ASTM A192; ASTM A519 SAE1010, SAE1020, SAE1035, SAE1045; SAE52100; API 5CT J55/N80; ASTM A333 GR.6; ASTM A210 GR.A1; ASTM A213 T11, T12, T22; DIN1629 ST37.0, ST52.3; DIN17175 ST35.8 GR.I; DIN2391 ST37.4; JIS G3461 STB340; etc.

O.D.: 19.05mm-325mm,
W.T.:1.65mm-25mm

Seamless stainless steel tube:
ASTM A312/312M, ASTM A213/213M, ASTM A269, JIS G3459, JIS G3463, DIN17456, DIN 17458, EN 10216-5 etc, with material: TP304/304L, TP316/316L, TP321, 321H, 310S, 316Ti, 317/317L,347H, 1.4301, 1.4306, 1.4541, 1.4401,1.4404, etc.

O.D.: 4mm-325mm,
W.T.: 0.5mm-25mm

Guangzhou Hongda Steel Tube Co. Ltd.

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Hoses to comply with new food regulations

Hose manufacturer Norres, Germany, has already implemented the latest amending Directive 2007/19/EC of EU Directive 2002/72/EC. As of May 2009, plastic materials and articles that could come into contact with food must be produced in all member states with virtually no phthalate softeners. All food hoses and hose systems supplied by Norres have been officially approved by an independent testing laboratory, and the hose meets the requirements laid down in the directive.

The tendency of softeners to migrate into food has been demonstrated in

numerous studies (for instance, by the German Federal Institute for Risk Assessment). This migration can be attributable to agricultural processes as well as to production, processing, storage, packaging and transport. If phthalates migrate, the product may be modified and/or the health of the consumer endangered.

However, there are several other reasons why softeners are considered undesirable. Material embrittlement due to migration can result in premature failure and additional safety problems.



▲ Connect safety clamp system 230 with connectors

Softeners can also be problematic in case of fire, leading to high clean-up costs. Disposal problems can also arise in certain areas.

Hoses and hose systems destined for food applications that meet the requirements of the EU directive are permitted to be marked with the glass/fork symbol – the EU's official food logo – following comprehensive tests by an independent laboratory to verify their conformity with the directive's requirements.

The fact that the complete hose is always tested as a finished product – rather than separate tests for its individual components – is important. Since March 2007, all softener-free hoses have been identified with a special 'Free of softener' icon to help Norres customers find the type that best meets their specification.

Norres has a broad portfolio of connection technology that includes special food-quality products, such as the Connect Safety Clamp System 230. In the past, most free-flowing solids had to be loaded into and unloaded from silo vehicles using rubber hoses, due to the lack of a suitable connection system.

These hose types are heavier, less flexible and less resistant to abrasion than their modern polyurethane counterparts, and they do not permit the process to be observed. The Norres Schlauchtechnik R&D department has developed a system that allows a plastic spiral hose to be combined with a safety clamp system with clamp shells.

The Connect Safety Clamp System 230 is free of softeners, and was initially intended for the Airduc® PUR 356 MHF reinforced – a food-quality hose that is FDA-compliant and bears the glass/fork symbol.

High-strength, low-weight composite tubes



▲ Comat's FilaWin tubes

Comat Composite Materials GmbH specialises in the production of high-tech fibre-reinforced composite products. Based upon experience in composite materials and advanced technology, the company manufactures custom-made parts ranging from prototype solutions to high quantity manufacturing.

The company produces components with thermoset and thermoplastic matrix materials. The high-performance components are customer-specifically manufactured in either filament winding, RTM (resin transfer moulding) process or pultrusion – tailored according to the requirements of the components/customers.

FilaWin® products are mainly filament wound tubes for mechanical engineering (for example light-weight, smooth running rollers, shafts, pressure tubes and vessels; tension rods/compression struts), for aerospace or navy applications, as well as RTM components with complex geometries. Epoxy resin is used due to its excellent mechanical properties and chemical resistance.

The DExWin® product range (with thermoplastic matrix) are mainly applied in the automotive sector. The Comat development of a continuous production of fibre-reinforced thermoplastic tubes and profiles has been awarded several innovation prizes.

Comat is certified in accordance with DIN EN ISO 9001:2000 and Pressure Equipment Directive 97/23/EC, and is a member of the Kunststoffnetzwerk Rheinland-Pfalz (Plastic network Rhineland-Palatinate).

Comat Composite Materials GmbH – Germany
info@comat.de • www.comat.de

The pre-assembled hose system can be supplied in two different stainless steel versions and is suitable for applications in the food industry. The Connect Safety Clamp System 230 can be assembled quickly and is suitable for reuse. Many popular coupling and connection solutions, such as Kamlok, Storz or tank truck couplings, can be connected to the Safety Clamp System quickly, easily and securely.

The recently launched Connect Safety Clamp System 231 for heavy and super-heavy, externally corrugated spiral hoses is also free of softeners. This system is offered in two stainless steel qualities and is therefore universally suited for food industry applications. It features a special, threaded sealing insert that is adapted to the outer hose contour and fitted between the hose and the shell. The connection formed when the shells are clamped is said to be remarkably tight and consequently explosion proof. The clamp shells are suitable for reuse.

The system is designed with a form-locking groove and a form-locking bar. The resulting high tensile strength ensures

that the adapter is securely held in the spiral hose even under considerable pressure. The hose's metallic insert is exposed and contacted with the adapter when the system is assembled. Clamping the shells creates a secure connection capable of electrostatic discharge. The shells are made of aluminium, which means they can be assembled simply and fast. The polyurethane employed for the sealing insert is food-quality and complies with the regulations of the American Food and Drug Administration (FDA 21 CFR 177.2600 and 178.20) plus the equivalent European Directives (2002/72/EC and 2007/19/EC).

Popular coupling and connection solutions, such as milk tube, aseptic, TRI-Clamp, Kamlok, Storz or tank truck couplings and fixed or loose flanges,

▼ Connect safety clamp system 231



can be connected quickly, easily and securely. The batch number, article number and manufacturer's name are printed on the hose to help users keep a check on the recommended maintenance intervals and avoid confusion or delays when ordering spare parts.

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Progress Through Co-operation

Fittings, Flanges & Connectors

Photo – Burak Boru – Turkey – see page 38

Fittings, Flanges and Connectors

In these specialties, fit is everything. A tube performs not as a unit but as an element in an assembly. For the integrity and utility of the tubing system, the connections must be of the same high quality as the pieces joined.

Whatever the assembly method, tubular joints are expected to be strong, leakproof, corrosion-resistant; robust to whatever extremes of temperature, abrasion, and vibration may present in the environments in which the jointed structure will see out its life in service.

This is a tall order for small components. But fittings, flanges, and connectors have been satisfying outside expectations for as long as lengths of tubing have been fitted together. That is to say, for as long as systems for the transport of water and fuel have facilitated life in community.

The seasoned professionals who supply precision-milled fittings and couplings come out of a tradition of craftsmanship which enables the producers of tube and pipe to serve these high purposes.

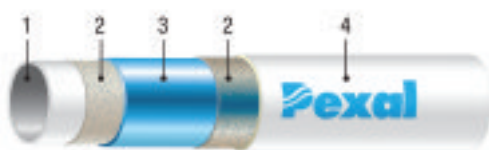
PE-X and aluminium fittings

Valsir produces advanced systems for soil and waste and for heating and potable water. Its systems include a complete range of polypropylene pipes and fittings with quick-fit joints and high-density polyethylene electrofusion pipes and fittings; a broad range of in-wall and exposed cisterns (50 models); the modern Silere system, a range of pipes and fittings manufactured using sound absorbing material; the Pexal multi-layer pipe system and fittings; a wide selection of traps and specific equipment; and the new floor heating system and Silvestro, a design suite for plumbing and heating systems.

Valsir multi-layer pipe can be used both for heating and potable water with the corresponding fittings made of a special brass alloy. The range of products covers diameters from 14 to 75mm. The plastic material used for the internal and external layers is crosslinked polyethylene PE-X, while the intermediate layer is in aluminium. The aluminium layer is formed around the PE-X layer and is butt-welded with a continuous longitudinal weld. This feature makes the pipe easy to shape: once bent, it maintains the given configuration. The pipe guarantees protection against oxidation in the internal layer of PE-X.

With the Pexal system, one pipe is used for numerous applications: systems for drinking water distribution, heating and cooling systems at high and low temperatures and for the distribution of compressed air. The system provides an elevated degree of hygiene, and the maximum operating temperature is 95°C.

▼ The construction of Pexal pipe



1. INTERNAL LAYER
Pipe in crosslinked polyethylene PE-Xb (crosslinked with silanes).

2. BINDING LAYERS
Two layers bind the intermediate metal pipe with the internal and external layers in crosslinked polyethylene.

3. INTERMEDIATE LAYER
Pipe in aluminium alloy butt-welded lengthwise.

4. EXTERNAL LAYER
Pipe in crosslinked polyethylene PE-Xb (crosslinked with silanes). Colour RAL 9003 (white).

Flanges and fittings

Zhejiang Feiting Pipe Co, Ltd specialises in the production of pipe flanges and fittings of stainless steel, alloy, low temperature carbon steel and common carbon steel. The company has an annual output of 12,000 tons of various material pipe fittings and 4,000 tons of flanges.



▲ A selection of products from Zhejiang Feiting Pipe Co

Feiting products include butt-welding pipe fittings, forging pipe fittings, forging flanges manufactured strictly according to the standards of ASME/ANSI, MSS, API, DIN, BS, JIS and GB, as well as to customers' technical drawings. The company's products are applied to industries such as petroleum, petrochemical, natural gas, fertiliser, chemical, chemical processing of coal, electric power, nuclear industry, shipbuilding, papermaking, city fuel gas networks and building.

Zhejiang Feiting Pipe Co, Ltd – China
sales@chinafeiting.com • www.chinafeiting.com

Valsir produces three types of fittings. With crimp fittings, the seal is created by deforming the pipe around the insert of the fitting itself, by means of a crimping operation. With compression fittings, the seal is guaranteed by screwing that causes the progressive compression of the pipe, generating the seal of the connection. The third type is PPSU fittings, made from an innovative 'technopolymer'.

Pexal Easy is an advanced system of fittings made of polyphenylsulfone (PPSU), with advanced mechanical characteristics such as tensile strength and modulus of elasticity. The total passage ensures an optimum flow since the internal diameter of the fitting in PPSU is the same as the internal diameter of the Pexal pipe.

Even in presence of thermal movements, the cone-shaped socket of the pipe supplies a high resistance to loosening. The installation is made safe by the anti-loosening system. An innovative blocking system of the nut on the fitting guarantees the definitive connection with the pipe. The system has a high resistance to corrosion, even with extremely concentrated and hot acids. The combination of the multilayer pipe and the PPSU fittings forms a totally resistant system to chemical agents.

Valsir SpA – Italy
valsir@valsir.it
www.valsir.it



▲ Pexal Easy fittings

Compression sleeves and fittings

Polymer specialist Rehau has launched a new generation of its tried and tested Rautitan installation system. Thanks to numerous innovations, the system will cover not only the application areas of drinking water and heater connection but also gas and sprinkler systems.

The Rautitan PX polymer material fittings and compression sleeves, which Rehau has used to optimise the compression sleeve connecting technology, are the core of the new generation. Despite their low weight,

the PPSU (polyphenylsulphone) fittings are robust and able to withstand many different loads.

The large internal diameter gives the fitting optimum hydraulic properties. The appearance of corrosion, such as occurs with metals, is eliminated. PPSU has no tendency towards encrustation and is completely harmless in terms of hygiene.

Unlike the classic Rautitan brass compression sleeves, the polymer



▲ Rautitan PX compression sleeves and fittings

models can be put on from both sides. The elasticity of the material means that only low clamping forces are required.

The stainless steel (Rautitan SX), brass (Rautitan MX) and red brass (Rautitan RX) fittings are also produced with the polymer compression sleeve for the applications of drinking water and heater connection.



▲ In the hardness test: Rautitan PX compression sleeve stretch test

Rautitan PX compression sleeves are made of PVDF (polyvinylidene fluoride) and the fittings of PPSU. The qualities of both high performance plastics have been proved, for example, in aircraft construction and in clean room production.

The materials stand out for their notched impact strengths, chemical and heat aging resistance. Rautitan PX elements are particularly light and can be processed safely even at extreme temperatures down to -10°C.

Rautitan PX compression sleeve hardness tests have proved the loading capacity of the polymer system elements. At the lower processing temperature of -10°C, the compression sleeve is expanded. In this, the material absorbs a stretch that is in excess of the forces actually in effect from the compression.

Rehau AG + Co – Germany
tanja.nuernberger@rehau.com
www.rehau.com

Seamless steel pipe fittings and flanges

Unifit Boru Baglanti, Turkey, is a manufacturer and wholesaler of seamless steel pipe fittings and flanges. Sister company Burak Boru, a seamless carbon steel stockist, supplies all of Unifit's product ranges.



▲ Products from Unifit

All Unifit products are manufactured in accordance with directive PED/97/23/EC – Annex I, Chapter 4.3. The company is carrying out modernisation works at its factory, and with new incoming machines, production capacity is expected to double to 600 tons per month.

In addition to being established in its domestic market, Unifit Fittings currently exports to Europe and the Middle East. Goods are delivered using standard Euro-pallets.

Burak Boru supports many industrial sectors, including automotive, HVAC installations, construction, and naval architecture, with 25 years' experience in the steel sector. All materials supplied are tested in the manufacturing factory and are certificated according to EN, DIN, ASTM, API and GOST standards.

Unifit Fittings – Turkey
info@unifit.com.tr • www.unifit.com.tr

Burak Boru – Turkey
info@burakboru.com • www.burakboru.com

Fittings from India Butt-welding fittings

Rajendra Stainless Co (RSC) is a manufacturer, exporter, stockist and supplier of stainless steel flanges, fittings, connectors, pipes, tubes and all kinds of ferrous and non-ferrous metals.

The company's products are used in applications in industries such as paper, textile, sugar, dairy, cement, engineering, petroleum, chemicals, power, offshore, onshore and nuclear industries.

RSC has dedicated sources, expertise and full technical knowledge to supply products to clients' requirements. The company deals in stainless steel, duplex and super duplex, and stocks a large amount of material from both domestic and foreign manufacturers. The company also has partners in various countries around the world. RSC uses the latest available technology to meet requirements in quality and value.

RSC – India
info@rajendrastainless.com
www.rajendrastainless.com

Erne Fittings is a manufacturer and supplier of butt-welding fittings such as elbows, tees and reducers from 1/2" to 40" (21.3 to 1,016mm) external diameter, and wall-thicknesses up to 50mm, made of alloyed, unalloyed, stainless steels and exotic materials.

Production takes place in the company's four plants in Austria, Germany and Saudi Arabia, where special demands for short production times are accommodated.

The company offers a high degree of product availability, and is able to deliver on urgent demands.

Erne offers services on the basis of individual, customised system solutions, and the company understands the applications and technical

challenges of its project partners. Its products are used worldwide, in power stations, oil and gas fields, pipelines, refineries, chemical plants, ships and other areas of industry.

Erne Fittings GmbH – Austria
office@ernefittings.com
www.ernefittings.com

▼ Products from Erne Fittings



HANDRAIL FITTINGS



MATERIAL :
SS304 / SS316

TO FIT TUBE OD :
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42.4 / 48.3 / 50.8 (mm)

SURFACE FINISH :
MIRROR / SATIN

150LB SCREWED FITTINGS

MATERIAL :
SS304 / SS316

END TYPE :
THREAD END
SOCKET WELD END

THREAD TYPE :
BSP / BSPT / NPT
DIN 2999 / DIN 259



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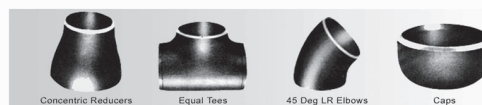
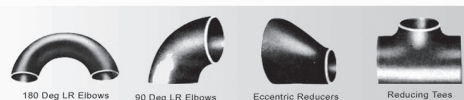
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E-mail:norpico_ljijing@163.com Group E-mail:norpico@163.com

GRP fittings

Fittings and connection parts have always been a critical issue for pipe manufacturers, for various reasons. In most cases custom designed fittings are needed due to the pipeline route and project specifications. This increases the need for qualified labour involvement in production, which in return results in higher manufacturing costs.



▲ Superlit's GRP pipes and fittings can be designed according to the characteristics of the fluid to be transferred

From an engineering stand point, direction, volume and flow rate change of fluid in pipelines create forces and pressures to be taken into consideration while designing fittings and connection parts. Handling and transportation of fittings are more difficult than for pipes, due to their mass and custom design shapes.

Superlit GRP fittings are composite products designed to resolve most of these issues. A major advantage of composite materials is the possibility to structurally design pipes and fittings according to the characteristics of the fluid to be transferred, without the need for an additional protection layer.

Superlit GRP fittings are produced from pipe pieces attached to each other with glass fibre and polyester resin by hand lamination (hand lay-up) technique. Since the pipes and fittings are made of exactly same material, engineering of the fluid flow is relatively easy. In some other pipe materials, such as concrete or cement pipes using steel fittings, a change of material in the pipeline creates complex problems for design engineers.

Fittings are the pipeline sections most exposed to water hammer resulting from a change in the flow speed with increasing or decreasing sectional diameter. This is not considered an issue with Superlit GRP fittings, since the pipes and fittings can absorb up to 40% of sudden pressure changes, making them more resistant to water hammer.

The weight of Superlit GRP pipes and fittings are a quarter that of steel pipes and a tenth that of concrete pipes, making handling and transportation easier. GRP fittings can be delivered in pieces (eg branches of a tee part can be delivered separately), and pieces can be mounted on-site. The mounting process does not require complex tools, and materials can easily be cut or modified and mounted to each other by hand lamination technique.

Hand lamination does not necessarily have to be performed by Superlit site teams, as the company provides theoretical and operational technical training programmes at 'Superlit Academy' for customers and infrastructure contractor teams. This training programme provides 'hands-on' lamination training in actual jobsite conditions, where candidates are trained in the cutting, modifying, mounting and lamination of pipe pieces for fitting mounting or crack (damage) fixing.

Superlit Boru San AŞ – Turkey
bsirin@superlit.com • www.superlit.com

Vitrified clay pipe and fittings

Steinzeug/Keramo specialises in the production and development of vitrified clay pipes and fittings. Three production units in Hasselt (Belgium), Cologne and Bad Schmiedeberg (both in Germany) manufacture sewerage products for sewer systems and industrial applications. The company offers a complete range of pipes and fittings in diameters from DN 100 to 1,400mm. Along with the traditional pipes and fittings with spigot and socket joints, micro-tunnelling pipes, inliner pipes, drainage pipes, inspection manholes and cladding sheets are all part of the product range.

Vitrified clay is a material that arises after firing high quality clay in controlled circumstances at a temperature of around 1,200°C. In contrast to many other materials used in the sewerage industry, vitrified clay is chemically and mechanically resistant and ensures a long lifespan. Steinzeug/Keramo's main markets are found in Europe, the Middle East, the Far East and Oceania. Sales are conducted locally either via a network of permanent staff or via local market partners.

Keramo Steinzeug nv – Belgium
info@keramo-steinzeug.be
www.steinzeug-keramo.com

PPR, PVC & HDPE fittings

ZMC, China, specialises in the manufacture of multi-layer composite pipes and pipe fittings. The company's products are widely used in Europe, Russia, the Middle East and South America. The company can supply overlap and butt-welded composite pipe, including PEX-AL-PEX, PERT-AL-PERT, PPR-AL-PPR, PEX-B and PE-RT.

ZMC also supplies PP-R pipes, PE-RT pipes, PB pipes, PE-X pipes and PVC hose, in addition to fittings such as elbows, tees, reducers and flanges from PPR, PVC and HDPE.

ZMC – China
zhejiangdavid@hotmail.com



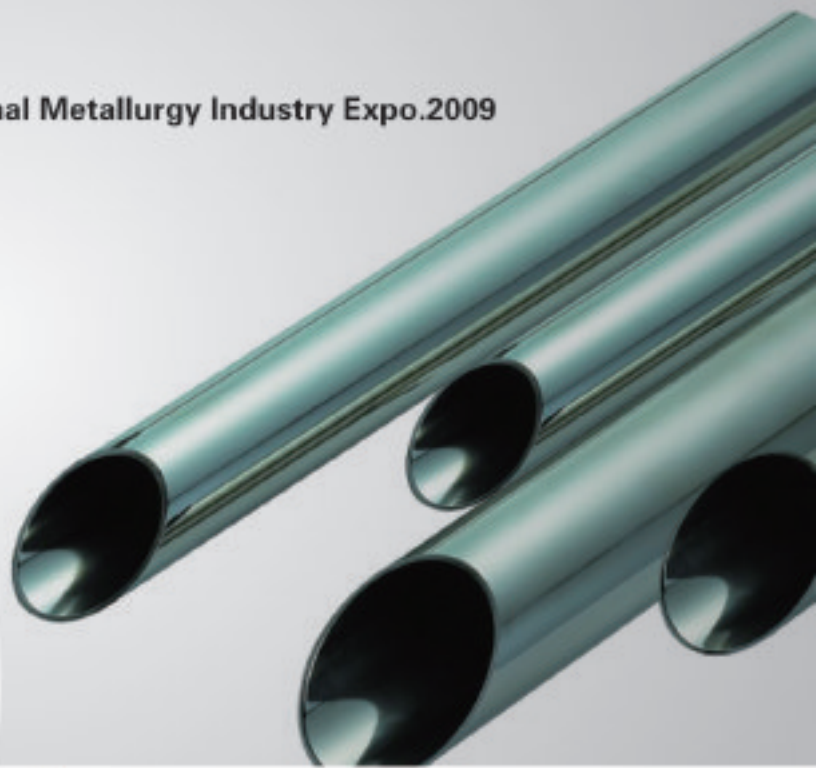
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Expanded range of hoses and hose fittings

Exmar GmbH manufactures a range of hoses and hose fittings for hydraulic lines, Teflon hoses with stainless steel jacketing and thin-walled plastic hoses. Popular applications are in the hydraulic industry, which has stringent requirements in terms of operational safety, long service life and higher burst strength.

The company's products are mainly found in equipment and plant construction, the pharmaceutical industry, paper and plastics processing as well as control and measurement technology. "In the course of expanding our assortment of hose fittings we have added more standard sizes to our product mix," commented Beate Rausch-Bremser, product manager at

Exmar. "We also have a number of new connection versions on offer within the product series."

The new fittings and press sockets for stainless steel unions are suitable for pressing unpeeled hoses and are capable of withstanding the high pressures that peeled hoses are subjected to. The increased safety was enabled by design improvements and newly developed press sockets. Unpeeled hoses can also be used in the high-pressure ranges that were previously reserved for peeled hoses. The product mix now includes a hose connector that consists of the ESA hose adaptor and the compatible SÜM union nut, specially suited for thin-walled, flexible plastic hoses. This Exmar product is of particular relevance

to the pharmaceutical industry, paper and plastics processing, varnishing industry and in measurement and control technology. The hose fitting fits with 24° inner cones and is designed for an operating pressure of 20 bar. The hose adaptor contains a pre-assembled O-ring made of FPM, allowing connection to thin-walled and flexible plastic hoses in equipment and plant construction. SÜM and ESA are available in the dimension sizes 6, 8, 10, 12 and 15mm in the L series, as per DIN 2353.

The new products are manufactured from stainless steel 1.4571 and comply with demanding quality standards. They can be supplied within 24 hours, and material certification according to EN 10204 is issued on request.

Exmar GmbH – Germany
beate.rausch-bremser@exmar.de
www.exmar.de

Expanded trap and WC connector range

Polypipe Terrain, UK, a provider of 'all-round drainage solutions', has launched a new range of traps and WC pan connectors.

The move allows a wider range of domestic and commercial projects to benefit from the use of the company's Kitemarked products.

The products are UK-manufactured to BS 3943 standards, and have been designed to provide ease of installation and to deliver reliable, leak-resistant performance. The new range offers 40 different polypropylene traps options in 32mm and 40mm sizes. These include a wide variety of bottle, P-trap, S-trap and running trap units in various anti-siphon, adjustable telescopic, resealing, swivel, bath and shower configurations. 30 different pan connectors are also featured in the range, including variable degree connectors, offset units that can accommodate angles of



▲ Polypipe Terrain has launched a new range of traps and WC pan connectors

up to 30°, plus straight, swan-neck and 90° fin seal bends.

"Our customers have been asking us for a wide range of traps and connectors and these new products provide a strong response," commented Polypipe Terrain product manager, Mark Hampshire. "Our advanced manufacturing methods have allowed us to include many different product options in the range and that now allows our customers to source everything they require from one supplier." The new range is complemented by new packaging, and is supported by the comprehensive training and product demonstration service that Polypipe Terrain provides from its recently launched 'Centre of Excellence' facility at Aylesford in Kent.

Polypipe Terrain – UK
commercialenquiries@polypipe.com • www.polypipe.com

PVC pipe fittings and swimming pool equipment

Tekimsan is a producer of swimming pool equipment and PVC pipe fittings, under the Pina patented brand. Pina brand products are used in pools, spas and fountains in more than 43 different countries.



▲ A range of Pina fittings

The product range includes valves, fittings, pipes, elbows, tees, reducers, sockets, unions, adaptors, nipples, hose adaptors, flanges, crosses, saddles, PVC cement, pipe clips and 6 bar, 10 bar, 16 bar and 25 bar pressure PVC pipes. All Pina PVC pipes and fittings comply with DIN #8063 standards.

Tekimsan Ltd Sti / Pina Water Products
– Turkey
info@tekimsan.com.tr
www.tekimsan.com.tr

Parker gains approval for valves

Following a recent audit by approvals agency TÜV Mannheim Süd, the Instrumentation Products Division of Parker Hannifin has won TA-Luft approval for a broad range of its manifolds, valves and flanged products.

This approval, which largely mirrors the new ISO 15848 standard, helps designers comply with the most stringent fugitive emission limitations, to maximise the integrity of processing systems.

According to Parker's Project Manager, Walter Kummer, "Companies are under growing pressure to limit the environmental impact of their industrial processes. Many of the world's leading chemical and petrochemical processing companies are based in Germany and are already specifying the use of TA-Luft approved components in their installations, to help implement 'zero emissions' and safety design goals. The availability of these products from Parker will provide process system designers

with a key competitive advantage – in both domestic and world export markets."

Parker's flanged manifold valve products and manifolds for instrument hook-ups are already available in ISO 15848 compliant versions.

Independent third-party verification of the products' design and performance testing phases – an obligatory part of the approval process – was provided by Lloyd's Register.

Following the audit by TÜV Mannheim Süd, which looked at Parker's design, test equipment and production test procedures, the company is now able to demonstrate both ISO 15848 class A and TA-Luft approval.

In order to meet these latest rigorous environmental standards, Parker has taken its high-quality Monoflange and Pro-Bloc flange-ended double block and bleed manifolds – which were

already designed for minimal leakage paths – and effectively re-engineered their integral needle and ball valves.

The new valves employ a combination of complementary sealing methods, using high performance elastomeric O-rings to provide enduring resistance to leaks over repeated actuations, combined with traditional graphite packaging rings for fire-safe performance.

The first products that will be made available in TA-Luft versions are Parker's Pro-Bloc, Monoflange, and Hi-Pro double block and bleed manifolds, and the H-Series valves and manifolds.

As standard, products are supplied with integral Parker A-Lok compression tube fitting ends, for high integrity connections to process tubing.

Parker Instrumentation Products Division, Europe – UK

ipd@parker.com
www.parker.com

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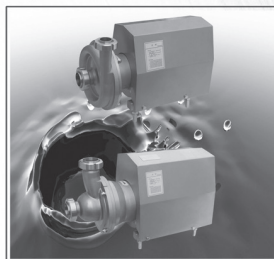
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Tel: +86-577-88863526 88863527 Fax: +86-577-88863528
Http://www.chisin.cn E-mail: chisinfei@gmail.com chisinfei@hotmail.com

Advanced pipe couplings

Dhatec has been working on an R&D programme for the past five years, focussing on how to keep line pipes in optimal condition during and after manufacturing.

During each segment of the logistic trail, there is a risk of damaging both the pipe and its coating layer. As a result of the R&D programme, present problems are isolated and professional solutions are found. In many cases these new solutions do not only safeguard the quality of the pipe and coating, but also improve the process itself in terms of efficiency and safety.

One of the new developments is the Premium Pipe Coupling. A coupling lines up pipes and protects the bevelled pipe-end during external coating. This allows coating plants to achieve the optimal end quality of the coating application and enhances stability and efficiency of the coating process.

During research on the issues that pipe coating companies worldwide are dealing with, it became clear that there was a need for a professional coupling. Line pipes are seldom straight or exactly round. Many coating plants deal with



▲ Dhatec's Task Environment, the logistic process of a line pipe

stability problems during the process or air seals underneath the coating layer as a result of radial pipe movement. Even severe variations in FBE coating thickness occur because the distance from the pipe to the spraying nozzle in the coating cabin varies due to pipe movements.

Each coating process is different and experience and fine-tuning are needed to achieve the best results. However, in many cases results can be improved if the right coupling is applied. By connecting pipes with a coupling, the distance between the coating cabin and the first pipe supporting roll afterwards can be increased. Directly after the cabin, the freshly applied coating is still weak due

to the high temperature. Each time the pipe weld, spirally or longitudinally, of the rotating pipe hits the first support roll, the coating can dent or damage. By increasing the distance, the coating is allowed to cool down more before hitting the first support roll, avoiding loss in quality.



▲ The Standard Coupling during coating

Stainless steel fittings and flanges from Malaysia and China



▲ Fittings from Steel-Tech Industry Co

Steel-Tech Industry Co is a manufacturer and exporter of a wide range of stainless steel products for fittings, valves, flanges, tubes and pipes for a variety of industry applications. The products are used in industries such as petroleum, chemical, machinery, electric power, pharmacy, papermaking, palm oil, automobile, oil and gas, and food processing.

The company has two manufacturing plants, located in Malaysia and China, and has been certified by DQS ISO9001:2008. The company's continuous product development and production quality control is exercised by its technical control department, which strictly controls raw material selection, production and inspection.

Steel-Tech Industry Co, Ltd – Malaysia
stind@pd.jaring.my • www.stindustry.com

Secondly, by using a coupling, radial movement of pipes when the weld hits the support roll, is reduced. An equally spread coating application free of air voids is ensured. Normally this is achieved by lowering the line speed, but a coupling also solves the problem and production can run at full capacity.

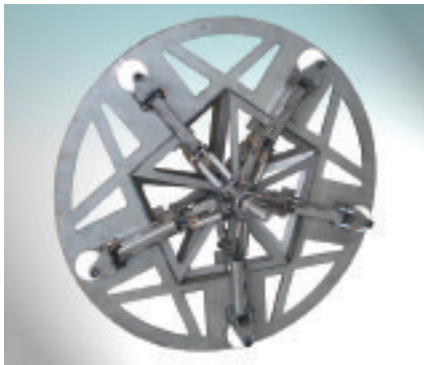
Dhatec has developed three main models: Standard Coupling, Advanced Coupling and Premium Coupling. The basic demands for the design were: reducing radial pipe movements to almost zero; strong, shock-resistant construction; adjustable for a wide wall thickness range; bridge thermal expansion of the pipe in an induction oven (220°C); small contact surface with the pipe, to minimise heat loss; room for cooling water to flow through the pipe; and fast and easy application or removal.

An important feature is that the coupling is placed in only one pipe-end. This

means that the coupling has a clamping side and a centring side. When two pipes run together, the upcoming pipe-end is automatically caught and lined up by conical centring rolls.

The Standard Coupling has a three-point clamping system that consists of two fixed support feet and one adjustable clamping foot. The adjustable foot bridges thermal expansion and ensures strong clamping inside the pipe. In tests and later experience the Standard Model performed well with smaller diameters up to Ø 30" and under normal circumstances.

The following circumstances demand better performance of the coupling: large diameters (higher pipe-weights); thin wall thicknesses (risk of deformation); oval pipes; curved pipes; worn out or uneven support rolls; high velocities of rotation; and high friction forces between pipes.



▲ Premium Coupling with movable centring rolls

To improve performance in these harsher circumstances, the Advanced Coupling was developed. This coupling has a five point clamping system instead of three, and all five clamping feet move simultaneously. This ensures perfect centring, stronger clamping and less deformation of the pipe. For an even stronger fixing inside the pipe-end, the clamping feet can be covered with a heat isolating material that also increases the friction factor between the clamping feet and the pipe surface.

On the centring side of the Advanced Coupling, there is a pre-centring ring with extra rolls that take the first blows when the pipes are running towards each other. Because of the extra ring the construction of the coupling is much stronger and the extra rolls can handle larger radial movements of the pipes.



▲ Advanced Coupling inside a pipe-end

Technically the Advanced Coupling performs well, but there is one disadvantage. For different wall thicknesses the clamping side can be adjusted very easily, but on the centring side the rolls need to be exchanged or re-positioned. This is not only time consuming, but there is also an extra risk of human error. The wrong rolls can be mounted on the coupling, or rolls can be mounted in the wrong position. To solve this issue the Premium Coupling was developed. This coupling is equipped with a new clamping system that centres both the clamping side and the centring side of the coupling at the same time. When force is applied on the central screw, five clamping feet and centring rolls automatically expand and force themselves against the inner pipe wall.

The Premium Coupling can clamp on only 25mm of pipe surface, taking into account the cutback of an internal flowcoat. The coupling combines all advantages in one solution and is the

▼ Centring and clamping side of a Premium Coupling



result of experience with many different coating processes worldwide.

Dhatec BV – The Netherlands
info@dhatec.nl
www.dhatec.nl

Grooved Everywhere

SHANGHAI RECOMB PIPING SYSTEM CO., LTD.

Add: No.270, Yixian Rd.,
 Shanghai 200434 china
 Tel: 0086-21-65606108
 Fax: 0086-21-65366725
 Website: www.recomb.com.cn
 E-mail: sales@recomb.com.cn

Pump protection

It is recognised that centrifugal process pumps do not perform well at flows away from their best efficiency point. They begin to show signs of distress as soon as 20 to 35% of their best efficiency flow point are reached. This leads to problems ranging from operational difficulties with unusual noise and vibration, to frequent repair outages, to total wrecks.

When pumping fluids near their boiling point, the situation gets worse. The minimum continuous safe flow is a problem, as is the 'gassing up' of the pumps due to insufficient venting. The result is dry running, which in turn can lead to wreckage and considerable other plant damage. These problems occur mainly during start-up and pump restart, and are well known to operating personnel of liquid petroleum gas plants and tankage pump stations. Schroeder Valves, a specialist in protecting pump fittings, has developed a valve that puts an end to gassing up. The SMV multifunctional valve has a gas outlet

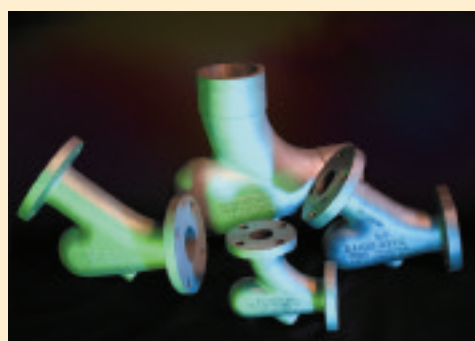
pipe for media with a low boiling point. It ensures automatic gas venting when the pumps are not in operation. In addition, the drive and motor capacity can be significantly lower, which in turn has a positive effect on energy consumption and system costs.

Automatic venting makes a meaningful contribution to pump protection in addition to minimum volume control and the return function in the main pumping volume. The SMV multifunctional valve is well suited to systems that pump liquids at a temperature close to their boiling point, for pumping two-phase mixtures, for pumping gaseous media and for pumps equipped with gas injection with the aid of modern sealing systems or similar devices. Canned motor pumps and magnetic pumps protect the multifunctional valve against running dry.

Schroeder Valves – Germany
info@schroeder-valves.com
www.schroeder-valves.com

Elbow with deflection zone

HammerTek Corporation's Smart Elbow® for pneumatic and slurry conveying systems is designed to virtually eliminate elbow wear, product degradation, plugging, surging, cross-contamination, noise and turbulence.



▲ Smart Elbows from HammerTek Corporation

The Smart Elbow is claimed to be the only elbow on the market to convey by creating a true deflection zone.

Other elbows on the market are impact elbows. An impact elbow causes material to change direction in one of two ways: either by filling a 'pocket' or area so that conveyed material impacts the filled pocket, or the conveyed material impacts the elbow and pipe walls. As well

as causing elbow wear, this impact results in friction, which is responsible for product degradation such as streamers, angel hair and fines.

Due to its design, the Smart Elbow changes direction by forming a slowly rotating, self-renewing ball of material and air that creates a gentle deflection zone, eliminating the impact zone, and thereby eliminating elbow wear, friction, and product degradation. An online video library, case studies, and dimensions are available on HammerTek's website.

HammerTek Corporation – USA
elbows@hammertek.com • www.hammertek.com

Flanges in stainless and carbon steel

Schwer Fittings produces a wide range of SAE flange combinations in various sizes. All items are available in standard series 3000 PSI / ISO 6162-1 (SAE J518 Code 61) and in the Heavy series 6000 PSI / ISO 6162-2 (SAE J518 Code 62).

Schwer Fittings stocks the flanges in two grades: stainless steel AISI 316TI and carbon steel zinc plated chrome VI free. As standard, the flanges are supplied with FKM seals 85/90 shore for stainless steel and NBR seals 90 shore for steel.

Counter flanges are standard without O-Ring and with female threads. The flanges are forged and of high tensile strength. SAE flanges are used in areas where strong vibration, high-pressure peaks and mechanical stress are found, in industries such as offshore, shipbuilding, hydraulic, petrochemical and paper machines. SAE flanges with welding ends are offered as butt-weld or socket weld.

Schwer Fittings GmbH – Germany
info@schwer.com
www.schwer.com

Fittings for polyethylene pipe

Redman Fittings Ltd has developed a range of fittings for a variety of standard and specialist polyethylene pipes in the 63 to 250mm outside diameter range.

Based on a concept originating from UMIST, the company developed a patented high-integrity and easily fitted jointing system, initially targeted at polyethylene service pipes for water and gas. During development, the fittings were approved to WIS 4-24-01 as a type 1 load resistant joint for use with PE 80 & 100 SDR 11 & 17 pipes. Approval also included barrier pipes in the 63 to 180mm outside diameter range.

The wider use of barrier polyethylene pipes for brown field water applications provides a natural application for the

WRAS-approved Redman fitting, as barrier integrity is preserved in the joint area. Joints are rated for cold water at 16 bar, and the range of fittings includes elbows, couplers, flange adaptors, reducers, tees, flanged tees, repair joints and duck foot bends.

Specialist applications include jointing of polyester reinforced polyethylene hose used in pipe lining, low SDR (thick wall) high pressure pipes and externally reinforced polyethylene pipes for oil, gas and chemical applications.

The fittings consist of an epoxy coated mild steel outer casing with an internal coaxial copper membrane, plus a polymeric coated (Rilsan) mild steel (stainless steel optional) insert. The joint is made by a purpose-designed hand pump used to inject a non-toxic biodegradable fluid through a nipple into the cavity between the mild steel outer and the copper inner. At 260 bar the copper insert is permanently deformed, forcing the PE pipe onto the insert, forming an end load resistant joint. Once the joint is made, the pressure may be released. For high pressure

applications the fluid may be replaced by a setting resin to resist long-term back pressure and relaxation of the copper membrane.

The fabricated nature of the fittings allows flexibility of design and production for variants of the standard range and for bespoke applications.

Redman Fittings Limited – UK
enquiries@redmanfittings.com
www.redmanfittings.com

Flange products from Korea

ST&H Corporation is an ISO 9001, CE/PED, CRN (Canada) and SABS certified manufacturer. All of the company's products are manufactured in compliance with the requirements of JIS, ANSI, DIN, BS and special requests.

The company's production range includes sizes from 1/2" to 72" (15 to 1,800mm), in materials such as A105,



▲ ST&H Corporation manufactures flanges up to 72"

A105N, A350 LF2, A694 F series, A182 F304/304L and F316/316L. Production capacity is 1,500 metric ton/month.

ST&H Corp – South Korea
stcorn@kornet.net
www.stnhcorp.com

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Spiral pipes API 5L
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www.steeltube.info e-mail: daicoke@hotmail.com

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STAND N° V-84



Perfection comes from experience.

Friulana Flange has been an important presence on the world market for the production of flanges and special processes to design for the petrochemical, thermal hydraulics, naval, building and mechanical engineering industries for more than twenty-five years. Our high-level skills and reliability have made us key contacts for major companies worldwide. In the ongoing pursuit of the best production standards, Friulana Flange has obtained SINCERT CSICERT to demonstrate the quality of each item produced.

THE LATEST IN FRIULANA FLANGE'S RANGE OF PRODUCTION IS THE COMPACT FLANGE IN COMPLIANCE WITH NORSOK Loos

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Via Andreuzza, 25/3 33030 Buia (Ud)
Tel. +39 0432963440 Fax +39 0432963171 www.friulanaflange.it

Miniature manifold mount style pressure regulators

Beswick Engineering has launched manifold mount versions of its miniature pressure regulators. These models include the PRDB8 high accuracy, single stage pressure regulator, PRD28 two-stage pressure regulator, and the PRDHF8 high flow regulator.

The PRDB8 regulator is a manifold mount version of Beswick's PRDB pressure regulator with a patent-pending valve mechanism designed to provide high precision/high reliability at low flows and at low set pressures. It controls output pressures from 0 to 30 psig and is particularly suited to regulating pressures as low as 0.5 psig.

The PRDB8 connects via a 10-32 UNF threaded port. Its maximum supply pressure is 500 psig and it weighs

approximately 25g in stainless steel. The PRD28 two-stage manifold regulator can also accurately reduce high-pressure inputs (up to 500 psig) down to 0 to 20 psig.

It is designed to regulate pressures as low as 0.5 psig, and exhibits minimal droop and rise even with wide swings in inlet pressure and flow.

The regulator is suited to applications such as regulating fuel gas pressures from storage tanks, where the inlet pressure decays significantly over time. The PRDB28 connects via a 5/16-24 UNF threaded port and weighs approximately 52g in brass.

The PRDHF8 regulator is used in applications that require higher flows

than those supplied by the PRDB pressure regulator. It controls output pressures from 0 to 30 psig and is designed to regulate pressures as low as 0.5 psig. Maximum inlet supply pressure is 500 psig. The PRDHF8 connects via a 5/16-24 UNF threaded port and weighs approximately 52g in brass and stainless steel.

Typical applications for these pressure regulators include hydrogen fuel cells, medical equipment, instrumentation, laboratory equipment, ink jet print engines and semiconductor manufacturing equipment. The PRDB8, PRD28 and PRDHF8 have patents pending.

Beswick Engineering Co, Inc – USA
besales@beswick.com
www.beswick.com

Aluminium flanges

Fonderia Fazzini has produced aluminium flanges for 40 years. The company's range includes loose flanges for collars for steel pipes according to EN-DIN-ANSI standards PN6, PN10, PN16, 150LB; blind flanges PN 10/16; loose flanges for PE/PVC plastic pipes UNI-DIN PN10/16; and special flanges according to customers' drawing.



▲ Fonderia Fazzini's Lite flanges

The company's patented Lite flanges feature an exclusive truncated cone shape, allowing them to be 30% lighter than current aluminium flanges.

Loose aluminium flanges are an interesting alternative to those made from other materials, and they benefit from the characteristics of aluminium, including light weight, hardness, corrosion resistance and cost efficiency.

Fonderia Fazzini Srl – Italy
info@fonderiafazzini.it
www.fonderiafazzini.it

Metal pipe fittings

Jiangyin Tianning Metal Pipe Fitting Co Ltd, founded in 1990, specialises in the manufacture of straight and reducing tees, 90° and 45° elbows, concentric and eccentric reducers, caps, crosses, stub ends, flanges and forged fittings, according to ASME, ANSI, MSS, JIS, DIN, GB, SH and HG.



▲ Pipe fittings from Jiangyin Tianning

The products range in size from 1/2" to 64", in thicknesses from SCH5S to SCHXXS. The products have been supplied to major projects for domestic and international markets, and are used in oil and gas, power plant, chemical, metallurgy, electricity, ship-building, paper making and water supply industries.

The company's strict inspection policy covers every aspect of the production process, from purchasing of raw material to delivery of products. The company has obtained ISO9001:2000 quality management system certification, PED 97/23/EC, AD2000-Merkblatt/W0 certifications under TÜV approval, and has become a supplier member of Sinopec Materials Source Market and National Petroleum Corporation Materials Source Market.

Jiangyin Tianning Metal Pipe Fitting Co Ltd – China
sales@nfjsgj.com • www.nfjsgj.com

Copper fittings for air con and refrigeration

Howhi Air Conditioners Made Co specialises in the manufacture of copper fittings, designed to meet standards ASME B16.22, AS3688 and EN1254.



▲ A selection of copper fittings from Howhi

The company is dedicated to the development, production and sale of copper fittings, brass fittings and other accessories for air conditioning and refrigeration equipment, water piping projects and other industrial piping systems. Products have been sold to Canada, America, Australia, Spain, Mexico, Japan, Taiwan, Singapore, India and Egypt.

Zhuji City Howhi Air Conditioners Made Co Ltd – China
howhi02@gmail.com
www.howhi.en.alibaba.com

Butt-welding steel fittings

The core business of Zeleziarne Podbrezova is the production and further processing of steel.

The company's wide range of products includes continuously cast blooms, hot formed seamless steel tubes, precision cold drawn seamless steel tubes, cold sized precision welded tubes, butt-welding pipe fittings, longitudinally welded steel tubes of large diameters and tube semi-products.

The company has the advantage of its own modern steel mill, which is capable of providing the necessary raw materials to produce seamless steel tubes for

Ball valve completes piping system

AGRU, Austria, is a manufacturer of piping systems, including the Agruline range. To meet growing demands for uniform PE-pipeline systems, the company's supply programme has been expanded by the PE 100 ball valve.



▲ Ball valves from AGRU

The patented PE 100 ball valve with its simple control mechanism is an innovative solution for gas, water and sewage applications, and has a number of advantages in comparison to existing valve systems. The construction of the ball valve is based on a reinforced inner cage, which ensures safety and pressure resistance. It is fully coated with PE 100 material and has a positive fit connection without welding seams. The heavy duty and redundant sealing-system and three-way centring mechanism of the ball ensure operational reliability.

The range covers outside diameters from 32 to 225mm. The AGRU ball valve withstands high operating pressures (16 bar for water, 10 bar for gas) and features a heavy-duty monobloc construction. Benefits include easy installation due to lightweight construction and the application of all common welding technologies, corrosion resistance, and an integrated gearbox that enables smooth opening and closing.

AGRU Kunststofftechnik GmbH – Austria
office@agru.at • www.agru.at

last-minute orders. Some of these tubes are further processed using either hot or cold forming techniques to make butt-welding steel fittings.

Zelezarne Podbrezova's butt-welding steel fittings are made according to standards EN 10235-1,2; DIN 2605-1,2; BS 1965-1; NF A 49-186; ČSN STN 42 5760; ASTM, ASME-ANSI B16.9/A 234, A 420; and ISO 3419.

Uses include elbows for pipelines use in the power and chemical industry for high and low temperatures, elbows for general use, and elbows for industrial and main lines.

Butt-welding elbows type 3D, shape 90° and 180° are produced from seamless tubes using hot forming technology.

Tube products are delivered either directly from the manufacturer or through subsidiaries.

Železiarne Podbrezová as – Slovak Republic
admin@zelpo.sk
www.steeltube.sk

Ukrainian pipeline components

Research and Production Corporation Trubostal Ltd manufactures components for pipelines of low-, middle- and high pressure, applied in the transportation of water, pulp, oil and gas, steam and hot water, and chemically aggressive substances. Seamless fittings are available in ODs from 20 to 630mm; welded fittings in dimensions up to 1,420mm. Wall thicknesses range from 2 to 100mm. The company's products include elbows (seamless, welded, stamped and welded, 30°, 45°, 60°, 90°, 135°, 150° or 180°); bends; reducers (concentric/eccentric, extruded, stamped and welded, welded, turned); tees (extruded, stamped and welded, welded, turned); angle joints (turned); and flanges (stamped and turned). Enamelled and galvanised elbows can also be supplied.

R&PC Trubostal – Ukraine
trubostal@trubostal.com.ua
www.trubostal.com.ua



Materials Handling

Photo – Radius Systems Limited – UK – see page 52

Materials Handling

A taxonomy of materials handling equipment created by Professor Michael G Kay of North Carolina State University identifies five major MHE categories: transport equipment (conveyors, cranes, industrial trucks); positioning equipment (for placement for subsequent handling, machining, transport, or storage); unit load formation equipment (for restriction of materials so that they maintain integrity while being handled); storage equipment (for holding or buffering materials over a period of time); and identification and control equipment (for collection and communication of the information necessary to coordinate materials flow within a facility and between the facility and its suppliers and customers).

While very fully developed, the classifications were intended only to “provide information about the most common types of equipment to students unfamiliar with materials handling terminology.” For those who might wish to try matching wits with the students, here are a few excerpts from an examination paper:

- *What is the principal difference between a pallet jack and a pallet truck?*
- *Describe one advantage and one disadvantage of using a slipsheet as opposed to a pallet to support a unit load.*
- *What type of industrial truck is not used for transport of materials?*
- *Explain why, as compared to a pallet jack or counterbalanced lift truck, a walkie stacker is likely to be the more economical and/or technically feasible choice for infrequent, short-distance movement of pallets from loading dock to pallet racks.*
- *List five different types of bulk handling conveyors.*

Not to worry; the answers will not be collected.

Fortunately — from long experience, informed by a deep respect for the complexity of materials handling — the people whose products and services are reviewed in this section of Tube Products INTERNATIONAL know the subject-matter very well.

Remote monitoring services

Konecranes is a group of lifting businesses, 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 real-time 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-the-art 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
james.bow@konecranes.com
www.konecranes-uk.com

Hoist 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.



▲ The ZX88 hoist has a lifting capacity of 25 tonnes safe working load

Launched in spring 2008 after an intensive £1.5 million 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, with a launch planned in 2009. 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.

Street Crane Company – UK
admin@streetcrane.co.uk • www.streetcrane.co.uk

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 on-site 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 maintenance-free grooved ball bearings. Additional sheet metal channels or wood supports can prevent damage.

Stierli Bieger is a manufacturer of roll-out racks, devices for welding and dressing, and horizontal bending machines.

Stierli Bieger AG – Switzerland
www.stierli-bieger.com

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 'Putting Safe Practice to Work' DVD provides guidelines on safe handling procedures

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
sales@radius-systems.co.uk • www.radius-systems.co.uk

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 – USA
www.sumner.com

Electric multi-directional sideloader for optimising storage capacity

Hubtex GmbH & Co KG is a 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
info@hubtex.com
www.hubtex.com

Seuthe Tube Welding and Section Lines



As an international plant engineering and manufacturing company we provide you with expertise that is backed by our extensive experience and our product solutions to ensure an optimum utilization of your production process. In everything we do, we have one thing in mind: to help you best to achieve your goals.

Call us + 49 2372 506 0 or info@siemens-seuthe.com

Metals Technologies



Rare earth magnetic welding angles

Industrial Magnetics, Inc (IMI) provides permanent magnet and electromagnetic 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. The on/off adjustable welding angle has a versatile design with magnetic bases that rotate on its frame for virtually unlimited

welding angles. 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 when the magnet is turned off. 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, or allow the user to reverse the magnets for welding inside or outside angles. The device holds on flat or pipe and has a locking knob for added safety.

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

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
estero@siderosonline.com
www.siderosonline.com

RFID 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

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



▲ Stockcap's pipe and flange range covers threaded and non-threaded applications

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 involves 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.



▲ Netguard is available in a range of bright colours to assist in size identification

Stockcap (Sinclair & Rush Pty Limited) – Australia
info@sinclair-rush.com.au • www.sinclair-rush.com

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 surfaces, 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 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
 contact@confidex.fi
 www.confidex.fi

On/off magnetic tube and pipe lifter

The new Magnetic Tube Lifter from Industrial Magnetics, Inc is designed to assist in stacking, destacking, loading and unloading for a variety of steel tube and pipe applications. The Magnetic Tube Lifter incorporates several powerful, rare earth permanent magnets, which can move many round, square or custom shaped tubes at once, reducing cycle times in tube handling applications.

The design of the magnetic circuit prevents tubes from rolling or shifting during transport. In addition, the Magnetic Tube Lifter positively holds the load during transfer and only requires a short burst of shop air to release. This failsafe design requires no electricity or battery backup, and prevents the load from being dropped during a power outage or system air loss, ensuring safer working conditions.

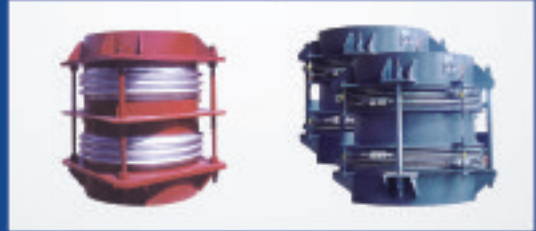
The Tube Lifter is suitable for destacking nested tubing, hydroforming, roll forming, packing, cutting or tube and pipe fabrication applications.

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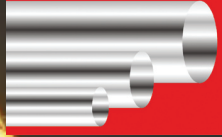
The International Tube & Pipe Trade Fair for Southeast Asia

wire and Tube Southeast ASIA, the international wire, cable, tube and pipe trade fairs, will open in Bangkok on 13 October 2009 at what could prove to be the cusp of resurgence in manufacturing and investment in Thailand.

More than 300 exhibiting companies including national groups from Austria, China, France, Germany, Italy, Taiwan, United Kingdom and USA are expected to enhance and enforce their positioning in Southeast Asia at wire and Tube Southeast ASIA.

Both trade fairs return to Bangkok at a time when capital investment is expected to start gathering pace as a consequence of a second infrastructure-focused Thai government. The last wire and Tube Southeast ASIA held in 2007 welcomed over 7,000 visitors during the three day event from approximately 60 countries. The organisers, Messe Düsseldorf ASIA, are expecting this to increase to well over 8,000 visitors for the 2009 staging.

Please turn over this page to see a list of companies that are exhibiting at wire and Tube Southeast ASIA 2009 – correct at the time of publication of this issue of Tube Products INTERNATIONAL.



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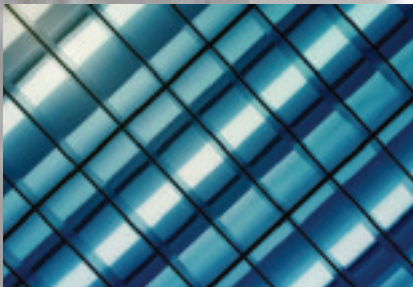
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Alliance Technology Co Ltd.....	Thailand	Minerals & Metals Review.....	India
An Chen Fa Machinery Co Ltd.....	Taiwan	Mohindra Stainless Ltd.....	India
Anand Arc Ltd.....	India	Nevatia Steel and Alloys Pvt Ltd.....	India
Anbao (Qinhuangdao) Wire & Mesh Co Ltd.....	China	Oto Mills SpA.....	Italy
Anhui Changjiang Jinggong Wire & Cable Machinery Co Ltd.....	China	Pan-Pioneer Co Ltd.....	Taiwan
Asian Industry and Information Services Pvt Ltd.....	India	Pioneer Machinery Co Ltd.....	Taiwan
Balloffet.....	France	Powermaster Engineers Pvt Ltd.....	India
Beta Lasermike.....	USA	Prasum Metals Pvt Ltd.....	India
Borouge Pte Ltd.....	Singapore	Pressure Welding Machines Ltd.....	UK
Britx Wire Rope Ind Corp.....	Taiwan	Proton Products International Ltd.....	UK
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Ceeco Bartell – Bartell Machinery Systems Llc.....	Canada	PWT Limited.....	New Zealand
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Cheng I Machinery Co Ltd.....	Taiwan	Quality Foils (India) Pvt Ltd.....	India
Chengdu Centran Industrial Co Ltd.....	China	Qunye Electrical Machinery Factory Yangzhou.....	China
Chengdu Heyi Steel Tube Industrial Co Ltd.....	China	Raajratna Metal Industries Ltd.....	India
China Fastener Info.....	China	Ratnadeep Metal and Tubes Ltd.....	India
Chyau Long Machinery Co Ltd.....	Taiwan	Rautomead Limited.....	UK
CM Tech.....	South Korea	RIK (Thailand) Co Ltd.....	Thailand
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Cotimprtrade SA.....	Switzerland	Schlatter Industries AG.....	Switzerland
Dalian Field Manufacturing Co Ltd.....	China	Shanghai Electric Cable Research Institute.....	China
Dee Tee Industrles Ltd.....	India	Shanghai Nanyang Electrical Equipment Co Ltd.....	China
DK Jones Ltd Piping Products.....	UK	Shanghai Wangxun New Material Co Ltd.....	China
DSR Wire Corp.....	South Korea	Sheng Chyeuan Enterprise Co Ltd.....	Taiwan
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Fastener Technology (M) Sdn Bhd.....	Malaysia	Solvay Padanaplast SpA.....	Italy
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Flyro Used Cable Equipment.....	Spain	Sumon Industrial (Jiashan) Co Ltd.....	China
FMS Force Measuring Systems AG.....	Switzerland	T & H Lemont.....	USA
Fontijne Grotnes BV.....	Netherlands	Taymax Wire Rope Industry Corp Co Ltd.....	Thailand
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Golden Technologies Wire & Cable Equipment Co Ltd.....	China	Thermatoool Corporation.....	USA
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Gwo Lian Machinery Industry Co Ltd.....	Taiwan	Tien Chen Diamond Industry Co Ltd.....	Taiwan
Hangzhou Sanp Machinery Co Ltd.....	China	Tien Dat Company Limited.....	Vietnam
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Hefei Smarter Import & Export Co Ltd.....	China	Toyo Millennium Co Ltd.....	Thailand
Hsiang Chuan Machinery Co Ltd.....	Taiwan	<i>Tube & Pipe Technology Magazine</i>	UK
Huestis Industrial.....	USA	<i>Tube Products INTERNATIONAL Magazine</i>	UK
India Steel Works Ltd.....	India	Upcast Oy.....	Finland
International Machtronic Co Ltd.....	Taiwan	Vega Engineering Corporation.....	Taiwan
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Jagular Industry Ltd.....	Taiwan	Wica Machinery Co Ltd.....	China
JJ Advanced Products (Thailand) Co Ltd.....	Thailand	<i>Wire & Cable ASIA Magazine</i>	UK
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Kyoudo Engineering Co Ltd.....	Japan	Yih Shen Machinery Co Ltd.....	Taiwan
Lamnea Bruk AB.....	Sweden	Zhangjiagang Sanfeng Machinery & Electric Development Co Ltd.....	China
Liwei Electrical Machines Co Ltd.....	China	Zhejiang Rongtai Electric Material Co Ltd.....	China
Locton Ltd.....	UK	Zhenxiang Copper (Thailand) Co Ltd.....	Thailand
Maillefer SA.....	Switzerland		

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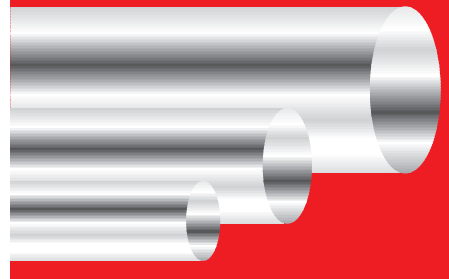
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Nickel alloys for advanced ultra-supercritical boiler service

By Gaylord Smith, Brian Baker and Lewis Shoemaker, Special Metals R&D team, Huntington, West Virginia, USA

Special Metals Corporation, part of Precision Castparts Corporation, has been developing and manufacturing nickel alloys for critical applications for over 100 years. With manufacturing facilities in the USA and UK, SMC is one of the largest global nickel alloy producers, and the range of products manufactured include forged and rolled bar, sheet, strip and plate, tube and extruded shaped sections.

Introduction

Coal-fired electric utilities worldwide are facing increasing demand for additional electrical capacity, while at the same time facing mandates to reduce plant emissions, principally CO₂, through improved efficiency or carbon capture technology. To meet these future goals will necessitate the employment of established and specifically developed austenitic nickel-base alloys that are capable of meeting these stringent demands.

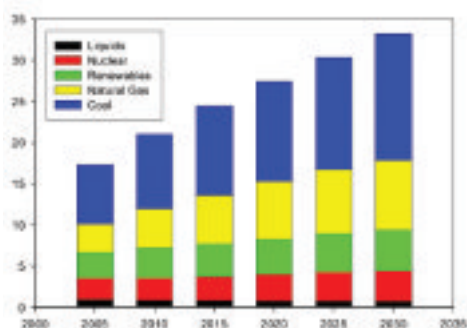
The challenge is to provide boiler alloys that provide creep strength at very high steam temperatures, 700°C (1,290°F) or higher, and steam pressures as high as 350 bar [35MPa (5.1ksi)], while at the same time providing coal-ash and steam oxidation corrosion resistance. Meeting this challenge has brought nickel-base metallurgists and aerospace superalloys into the effort. That meeting this challenge is critical due to the fact that over 40% of the electrical energy produced

worldwide is produced from coal, a percentage that is expected to remain high in the coming years, as depicted in *Figure 1*.

Historically, supercritical steam boilers have typically delivered steam to the turbine at temperatures up to 566°C (1,050°F) and pressures up to 238 bar [24.1MPa (3,500psi)] with fuel efficiency between 42 and 43% (LHV basis). Notable efforts to improve efficiency began in the late 1950s in the United States, to raise the conditions to 621°C/310 bar [1,150°F/31MPa (4.5ksi)] and in 1962 to 649°C/340 bar [1,200°F/ 34.5MPa (5ksi)]. Material issues and other problems ultimately resulted in these plants scaling back their operating conditions. For the next three decades, the best state-of-the-art supercritical boiler stood at 593°C/310 bar [1,100°F/31.5MPa (4.57ksi)]. During this period, coal-ash corrosion was minimised by the development of Incoclad® 671/800HT® that provided long term service (20+ years) in boilers fuelled with a variety of high-sulphur, low-grade coals. However, strength issues prohibited raising the steam temperature and pressure.

By the mid-to-late 1990s, utilities, their plant fabricators and certain far-sighted governments decided to make the necessary developments to achieve a 700°C (1,290°F) advanced ultra-supercritical technology for coal-fired power plants. Two notable initiatives were inaugurated in Europe: AD700 and MARKO. Then, in 2002, US DOE Vision 21, 'Material Development and Qualification Project' was started. The performance target of the European projects was established as 400-1,000MW, 700°C/350 bar [1,290°F/35.5MPa (5.1ksi)] and the goal for the DOE project became a more aggressive 760°C/ 380 bar [1,400°F/38.6MPa (5.6ksi)].

While raising steam temperature is more efficient than raising steam pressure, unfortunately raising steam temperature disqualifies even the most advanced ferritic tube steels at temperatures much above 620°C (1,150°F) due to their lack of strength and coal ash



◀ **Figure 1:** Worldwide electricity generation by type of fuel, 2005-2030

corrosion resistance. The best of the currently used austenitic solid solution alloys raises the steam temperature to 675°C (1,250°F), but steam pressure is limited to circa 30MPa (4.35ksi). Coal ash corrosion is also questionable for many of these alloys. Alloy development became necessary to meet the European superheater property requirements of both a 100,000 hours creep strength at 750°C (1,380°F)/100MPa (14.5ksi) and a coal ash corrosion resistant target of less than 2mm (0.079") metal loss in 200,000 hours.

These material property targets were made even more demanding by the US DOE project. Only an alloy with aerospace strength properties coupled with the corrosion resistance of the best of the high-nickel solid solution alloys would meet these new stringent requirements. However, success would raise plant efficiency to 50+ (LHV basis). It is estimated that this development would result in a 30% reduction of CO₂ emissions.

Advanced nickel-based high strength alloys traditionally have nickel and chromium as their foundation, with elements such as molybdenum, tungsten and cobalt added to confer additional solid solution strengthening. These alloys, such as Inconel alloy 617 and VDM's CCA617 (compositions are given in *Table 1*) are relatively easy to weld and generally lack a requirement for post fabrication heat treatment. However, for the current requirements of an advanced ultra-supercritical superheater tubing alloy, these alloys lack the creep strength and corrosion resistance for long life.

The lack of adequate corrosion resistance is possibly overcome by the application of a suitable weld overlay material such as Inconel FM 52 or FM 72. However, alloy 617 and CCA 617 are deemed suitable for AD700 header and steam transfer piping where only steam oxidation corrosion resistance is required. Headers are thick-walled extruded pipes, located, outside the boiler,



▲ **Figure 2:** Depiction of a typical header under fabrication at Mitsubishi Heavy Industries

to collect and homogenise the steam from the boiler tubes and send it through insulated transfer piping to the turbine (*Figure 2*).

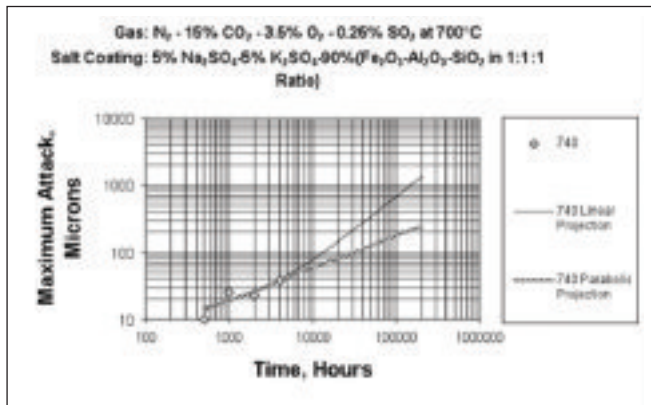
Where high temperature strength is critical, additions of aluminium, titanium and niobium, resulting in precipitation hardening, must be added. Nimonic® alloy 263 is a typical example. However, where coal ash corrosion is an additional requirement, increased levels of chromium are mandated over alloy 263 and most other nickel-base superalloys. The contribution of chromium to coal-ash corrosion resistance has been amply demonstrated in the literature.³

Inconel alloy 740

With the technical challenge of the AD 700 project requirements in mind, Special Metals Corporation was asked to develop a nickel-base alloy for the very hottest sections of the boiler, namely the superheater and reheater. Using Nimonic alloy 263 as the starting point, variations of the gamma prime hardener elements were explored to assure that the strength target of 750°C/100MPa (1,380°F/14.5ksi) and 100,000 hours

▼ **Table 1:** Nominal composition of the candidate advanced ultra-supercritical boiler alloys

Alloy	C	Ni	Cr	Mo	Co	Al	Ti	Nb	Mn	Fe	Si
617	0.08	53	22	9.7	12	1.1	0.4	-	0.08	1.2	0.05
CCA 617	0.06	55	22	8.8	11.6	1.2	0.4	-	-	0.9	0.2
263	0.05	51	20	5.9	20	0.4	2.2	-	0.35	0.3	0.06
740	0.03	Bal	25.0	0.5	20.0	0.9	1.8	2.0	0.3	0.7	0.5
FM52	0.04	62	29	-	-	0.8	0.5	1.7	-	9.0	-
FM72	0.05	56	43	-	-	-	0.6	-	0.1	0.2	0.1



▲ **Figure 3:** Coal-ash corrosion resistance for alloy 740 at 700°C (1,290°F) vs time to 4,000 hours with linear and parabolic extrapolations to 200,000 hours

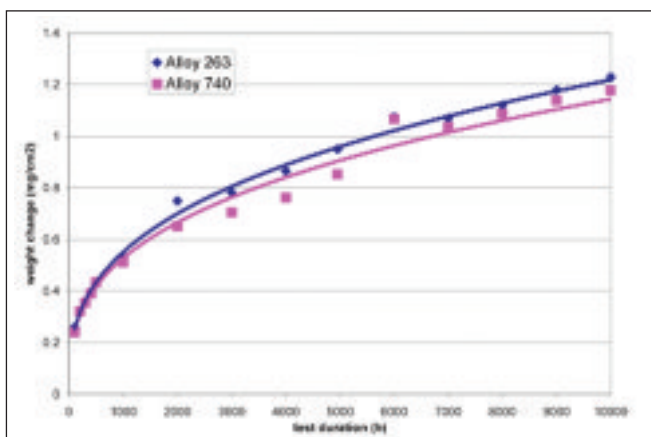
was met. This was achieved with the composition shown in *Table 1*.

To determine the corrosion resistance of Inconel alloy 740, a flue gas and coal ash composition was chosen that produces a Type II hot corrosion mode of attack when the alkali trisulfates are molten between about 600°C and 750°C (1,110°F and 1,380°F). Attack is reduced when the trisulfates are solid below 600°C (1,110°F) and above 750°C (1,380°F) as the trisulfates tend to evaporate upon formation.

Figure 3 depicts both a linear and a parabolic projection for the metal loss of Inconel alloy 740 in 200,000 hours based on data at 700°C (1,290°F) to 4,000 hours.⁶ A linear projection equates to a metal loss of about 1.3mm (0.051") and parabolic projection leads to a metal loss of about 0.25mm (0.001"), both in 200,000 hours.

Figure 4 depicts the weight change (mg/cm²) in steam oxidation at 750°C (1,380°F) for times up to 10,000 hours for alloys 740 and 263.

▼ **Figure 4:** Depiction of the weight change (mg/cm²) in steam oxidation at 750°C (1,380°F) for times to 10,000 hours



Measurement of the scale at the duration of the test revealed a surface film of about 1.2 microns for both alloys.⁷

The European AD700 project has advanced through component demonstration (phase 3) to full-scale demonstration plant status. E.On has committed to erecting a 550 MWe demonstration plant at Wilhelmshaven, Germany to be operational in 2014. A major incentive of this effort is the ability of higher efficiency of this plant (53% LHV basis) to offset the penalties that carbon capture technology might impose.

A worldwide effort to increase the efficiency of power boilers has resulted in more demanding alloy requirements within the power boiler. Thus, advanced alloys will be required to meet the rigours of this service. Nickel-base alloys can meet these challenges. Among them is newly developed Inconel alloy 740 that exhibits the properties required for advanced ultra supercritical boilers designed to operate at significantly increased temperatures and pressures.

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