

# Tube Products

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## INTERNATIONAL

The World of Tube & Pipe Products, Materials & Ancillaries

October 2009

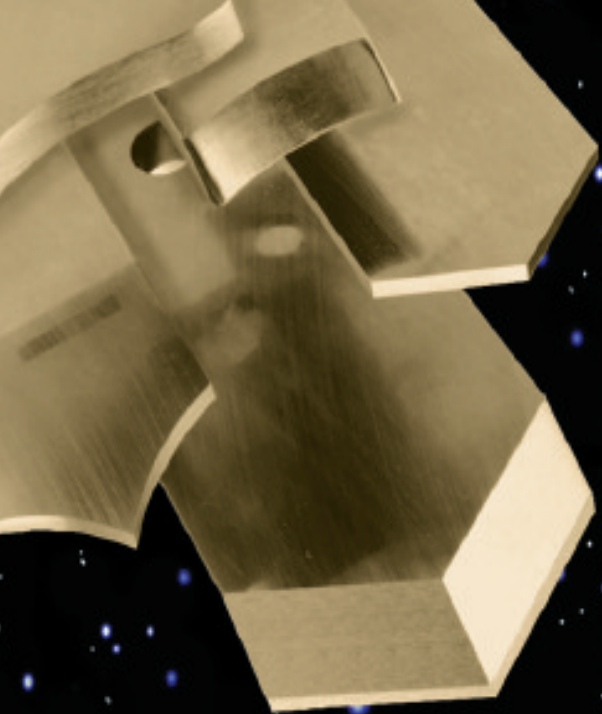


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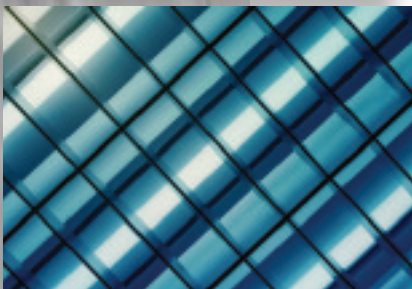
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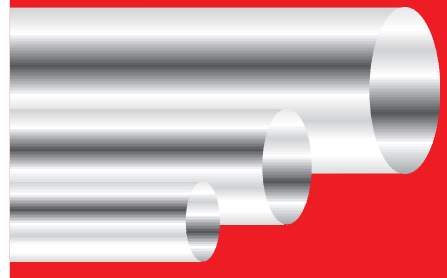
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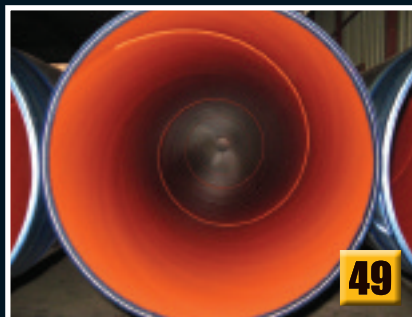
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October 2009

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# TubeProducts

INTERNATIONAL

The World of Tube & Pipe Products, Materials & Ancillaries



## The super model



The graceful Guangzhou Tower, nicknamed the 'super model' due to its sleek, feminine lines, is set to be the tallest TV tower in the world, as well as one of the highest freestanding structures ever built (see picture below). And surely it is also one of the most attractive and innovative uses of tubes ever devised.

For, when you break the giant tower down to its core elements, it's simply a concrete core surrounded with a sleek lattice of tubes that are shaped into columns and strengthening rings and diagonals. These were supplied to site in 8m to 12m lengths and the ring pieces in 3m to 6m lengths with the components weighing 25 to 30 tons. And, refreshingly, none of these elements are hidden away, as they so often are. This skeletal tube structure is a key part of the structure's aesthetic appeal.

In fact, even the hyperboloid structure itself is designed in the form of a twisted and gently tapering tube. The outer steel-framed structure consists of 24 columns with concrete in-fill and a series of 46 oval-shaped rings of different sizes and single-direction diagonals throughout the structure. More than 40,000 tons of structural steel tube (including the mast) will be used in total.

As you can imagine, the designers faced some pretty unique challenges from the start. Using steel externally with a concrete core was fraught with difficulties due to the materials' different properties, especially when you take into account shrinkage, temperature effects and long-term deformation and differential shortening.

The main load carrying elements of the structure are its steel pipes, which taper as they twist and climb up the building. These are 1.8m in diameter at the bottom, reducing to 800mm at the top. The horizontal rings of steel attached inside the columns keep these in the right position and help balance the forces created by the fact that they effectively slope. Diagonal members then give the structure added rigidity.

The complex geometry of the tower was, the architects Mark Hemel and Barbara Kuit say, partly possible due to advanced parametric associative software, which is capable of generating geometrical and structural models based on a set of variable parameters and link the geometrical data to the analytical and drafting software.

All these problems, however, were overcome and the tower should be completed by the end of 2009.

It is probably most apt to describe the tower as a work of public art with a secondary purpose – the description of humble TV tower does it a disservice. It is both beautiful and functional and will serve as a fitting monument to 21<sup>st</sup> century advances in tube manufacture and design innovation.

**Rory McBride**  
Editor



## events calendar

### 2009

**October**  
5-10

**EMO Milano 2009**  
International Exhibition  
[www.emo-milan.com](http://www.emo-milan.com)

**October**  
6-8

**Tubotech 2009**  
International Exhibition  
[www.cipanet.com.br](http://www.cipanet.com.br)

**October**  
13-15

**Tube Southeast Asia 2009**  
International Exhibition  
[www.tube-southeastasia.com](http://www.tube-southeastasia.com)

**November**  
2-3

**Pipe & Tube Istanbul 09**  
ITA Conference  
[www.itatube.org](http://www.itatube.org)

**November**  
15-18

**Fabtech 2009**  
International Exhibition  
[www.sme.org/fabtech](http://www.sme.org/fabtech)

### 2010

**February**  
10-12

**Tube India 2010**  
International Exhibition  
[www.tube-india.com](http://www.tube-india.com)

**March**  
4-7

**Boru 2010**  
International Exhibition  
[www.borufuari.com](http://www.borufuari.com)

**April**  
12-16

**Tube Düsseldorf 2010**  
International Exhibition  
[www.tube.de](http://www.tube.de)

**May**  
24-27

**Tube Russia 2010**  
International Exhibition  
[www.metallurgy-tube-russia.com](http://www.metallurgy-tube-russia.com)

**September**  
21-24

**Tube China 2010**  
International Exhibition  
[www.tube-china.net](http://www.tube-china.net)

### 2011

**January**  
8-11

**Tekno / Tube Arabia 2011**  
International Exhibition  
[www.tekno7.info](http://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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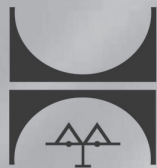
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**STAINLESS STEEL WORLD 2009**

**Maastricht (Netherland)**

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# business & market **news**

*Drain Center's new product guide is now available for download*

## **Drain Center launches product guide**

DRAIN Center, Wolseley's specialist supplier of above and below ground drainage products, has introduced a new and improved product guide. The guide includes new product sections for the civil and utilities sectors, and all items are in colour-coded sections, clearly categorised by supplier.

The 225-page guide features newly expanded product ranges in above and below ground drainage, including a wider range of rainwater harvesting systems and the new Marley Waterloc 250 in the Stormwater Management section. This reflects the growing demand for these systems in light of legislation such as The Code for Sustainable Homes, which sets ambitious targets for water efficiency standards in new-build housing.

Daniel Cheung, Drain Center marketing manager, commented: "Throughout the newly designed guide we have included helpful profiles on key suppliers and their product ranges in order to provide as much information to our customers as possible and to help them select the most suitable product for their requirements."

The free Drainage Product Guide is available from all Drain Center branches, and is also available for download from the Drain Center website.

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

**Drain Center** – UK  
www.draincenter.co.uk

## **Simona considers closure of plant**

THERMOPLASTIC products manufacturer Simona AG is considering closing its Würdinghausen production facility due to significant losses incurred by the plant. The decision will affect 84 members of staff responsible for producing pressed sheets, profiles and finished parts at the facility.

The product range manufactured at the Würdinghausen plant would be integrated into existing Simona sites. Management is in negotiations with the trade union concerning drawing up a redundancy and retraining plan.

**Simona AG** – Germany  
mail@simona.de  
www.simona.de



## RathGibson enters important phase of financial restructuring

RATHGIBSON and its domestic affiliates have announced that they have begun reorganisation proceedings under Chapter 11 of the United States Bankruptcy Code in the United States Bankruptcy Court for the District of Delaware.

In connection with the filing, RathGibson also has filed a proposed plan of reorganisation that provides for holders of allowed general unsecured creditors to be unimpaired and paid in full on undisputed amounts owed prior to the bankruptcy filing. The plan has the unanimous support of the company's prepetition secured lender, boards of directors, and the management leadership of the company, as well as certain key noteholders. The plan, if consummated, will result in significantly reducing the company's debt burden. The Chapter 11 filing marks an important step in RathGibson's ongoing efforts to position the company for long-term success.

"The current management team inherited a significant debt load that cannot be sustained, particularly in these challenging financial markets," said Mike Schwartz, president and CEO of RathGibson. "As a result, we must take action to position the company for the future. No one should be confused about what a bankruptcy process means for RathGibson. Following a record year of performance in 2008 for RathGibson and the industry, we are experiencing demand levels reduced by 50%. This reduction in demand combined with our leveraged position necessitates this action. We will emerge from this process stronger than ever."

Mr Schwartz emphasised that the Chapter 11 filing should have no impact on day-to-day operations. "We have, subject to bankruptcy court approval, which we expect to obtain, secured 'debtor-in-possession' financing which will provide the company with sufficient liquidity to continue normal operations during this transition period. Our brand, our products, our quality systems and our people remain strong. This process is strictly a financial restructuring of our debt. We are fully committed to ensuring that our valued customers

and channel partners are not affected by this restructuring process. During this period, we will work even more closely with our customers, channel partners, vendors, suppliers and employees to deliver the same level of

service they expect and deserve from RathGibson. I remain thankful for the steadfast support of our employees and other stakeholders throughout this entire process, and I am confident in our ability to expand and pursue new opportunities for the RathGibson brand."

**RathGibson – USA**  
www.rathgibson.com

## New opportunities in the chemical and petrochemical markets

WITH a newly opened office in Buenos Aires, Argentina, RathGibson, a manufacturer of welded, welded and drawn, and seamless stainless steel, nickel, and titanium tubing, has found new prospects with chemical and petrochemical companies in the countries of Brazil, Mexico, Argentina, and the rest of Central and South America.

"While we have always supported consumers in Central and South America, the opening of our Buenos Aires office has led to affiliations with new channel partners and customers that we would not have gained otherwise," said Andrew Yeghnazar, vice-president – international sales and business development. "RathGibson continues to put the needs of our customers first with our commitment to provide real solutions in a timely manner. RathGibson's empowered associates are able to make decisions based upon their firsthand experience of local industrial requirements."

A main manufacturing segment in Central and South America is chemical and petrochemical processing. The chemical sector in Brazil is the ninth largest in the world. Brazil's petrochemical companies have been undergoing a restructuring to streamline effectiveness and increase efficiencies. Mexico's chemical industry is still experiencing growth, while its government is encouraging private investment in petrochemical processing. Argentina's petrochemical production has been increasing, while Argentina's chemical industry accounts for 5% of gross domestic product (GDP). All these countries represent opportunities upon which the RathGibson Buenos Aires office will expand.



Chemical and petrochemical companies chose RathGibson for their tubing in various alloys, including stainless steel 304L and 316L, duplex stainless steel Duplex 2205, Lean Duplex 2102, Lean Duplex Nitronic 19D, Lean Duplex 2003, Lean Duplex 2304, Super Duplex 2304, and Super Duplex 2507, titanium, and nickel.

RathGibson tubing is suited to challenging applications such as u bend, heat exchangers, steam condensers, desalination, feedwater heaters, instrumentation, pressure coils, steel boilers and super heaters.

**RathGibson – USA**  
www.rathgibson.com



THE 11th CHINA (GUANGZHOU) INT'L TUBE & PIPE INDUSTRY EXHIBITION

# INVITATION



Date: June 23-26, 2010

Venue: China Import and Export Fair Pazhou Complex  
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## New centre of excellence

POLYPIPE, a UK manufacturer of plastic piping systems for the residential, commercial and infrastructure sectors, has opened a new centre of excellence dedicated to plastic piping technology and related product areas.

Located at the company's Aylesford facility in Kent, the centre combines purpose-built showroom areas with practical training facilities, live product demonstration zones and seminar facilities that cover all aspects of Polypipe's product portfolio. These range from plastic drainage and waste piping products for domestic applications to underfloor heating, stormwater management systems and rainwater harvesting technology.

"Despite the current economic conditions we feel that it is vitally important that Polypipe is seen to support the industry it serves in this type of practical manner and the centre is proof of our philosophy in action," commented Paul Rice, Polypipe's group business development director. "The wealth of technical expertise and industry knowledge that we possess as a business has provided the foundations for the creation of the centre. It is the result of the great emphasis we place on building long-term, partnership-based relationships with our customers and we hope that they will view the centre as a unique and valuable resource which they can use and gain maximum benefit from."

**Polypipe – UK**  
commercialenquiries@polypipe.com  
www.polypipe.com



*Polypipe's new centre of excellence*

## Valve World Expo in Düsseldorf

THE official registration deadline is not until February 2010 but with 18 months to go to the Düsseldorf premiere of the Valve World Expo (30 November to 2 December 2010), 9,500m<sup>2</sup> of exhibition space have already been sold.

Exhibitors can post information on their machinery and products at: [www.valveworldexpo.com](http://www.valveworldexpo.com). Exact hall positions can also be viewed by clicking on the name of the company.

Thousands of visitors are expected from the exhibiting European countries as well as many from overseas countries including Korea, Taiwan, China and India, which are traditionally strong visitor nations. Trade visitors are also set to travel to Düsseldorf from the USA and Central and South America.

**Messe Düsseldorf GmbH** – Germany  
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## Tomlinson Hall hosts open day

BRITISH pump manufacturer and distributor Tomlinson Hall & Co Ltd commemorated its 90<sup>th</sup> birthday with an industry open day and river cruise.

The company was established in 1919 as a general engineering company, and now specialises in pumps, power transmission and engineering supplies with an international distribution network. The company was a finalist in

the 2008 Pump Industry Awards in the Distributor of the Year category.

The open day, attended by over 70 delegates, included exhibitions by some of the industry's top pump manufacturers, including Crane ChemPharma Flow Solutions, Alfa Laval, ITT, Lowara, Grundfos, Sterling SPP and Alldos. Delegates were provided with an opportunity to learn about Tomlinson



Hall's history and service, and were also given a demonstration of the company's Liquivac<sup>®</sup>, a fast, self-priming liquid ring vacuum pump, with twin start helical rotor capable of pumping fine solids, liquid, air and foams. After the open day guests were treated to an evening cruise on the River Tees, which included refreshments and entertainment.

Sales director Colin Simpson commented, "As it is Tomlinson Hall's 90<sup>th</sup> year in business we wanted to do something that we could share with our colleagues and fellow businessmen. The open day provided an ideal solution, mixing both business and pleasure. The open day was attended by a variety of end users, manufacturers and specifiers from a range of industries including land reclamation, pharmaceutical, brewery and distillation, sewerage, remediation, marine and nuclear."

**Tomlinson Hall & Co Ltd – UK**  
[www.tomlinson-hall.co.uk](http://www.tomlinson-hall.co.uk)

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E-mail: [export@mail.bothwell.com.tw](mailto:export@mail.bothwell.com.tw)

## New 710mm water pipe

RADIUS Systems has been selected to supply 710mm dark blue PE for a prestigious new water supply main near Reading, UK – a 7km scheme for Thames Water.

Contractor Murphy Group selected PE over ductile iron due to its expertise in this field. The installation was in a high water table area, close to a water course, and running across fields in some sections, so long lengths of butt-fused PE proved advantageous. The installation is part of Thames Water's ongoing investment in its water network.

**Radius Systems Ltd – UK**  
[sales@radius-systems.co.uk](mailto:sales@radius-systems.co.uk)  
[www.radius-systems.com](http://www.radius-systems.com)



## Tube 2010: promising figures for show and new sectors

THE tube and pipe manufacturing and processing industries are defying the tough economic times, and Messe Düsseldorf GmbH continues to report good space sales for the Tube 2010 event.

Tube registered just under 32,000m<sup>2</sup> of exhibition space by the time the registration deadline expired – promising interim results since the organisers expect to receive numerous registrations by late summer. Tube will occupy exhibition Halls 1 to 7.0. Ranging from current manufacturing technologies to the deployment of new materials, every two years Tube as the international meeting point for the tube and pipe industry provides a complete overview of the innovations in these sectors.

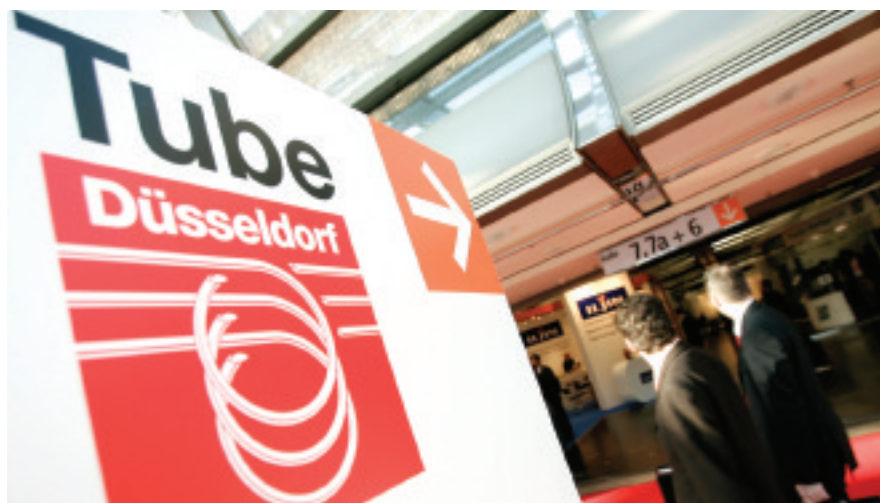
Following the April deadline for registrations for wire 2010 and Tube 2010, wire has already sold approximately 40,000m<sup>2</sup> of net exhibition space. 70%

of existing exhibitors have reserved larger stands for 2010. Machinery, plant and equipment used for producing and processing wire and cable will be presented in Halls 9 to 12, 15 and 17. Leading manufacturers, vendors and upstream suppliers from all over the world will attend the Tube Düsseldorf

exhibition, 12-16 April 2010, to exhibit information on the latest manufacturing technologies.

The 2010 event will particularly showcase the fields of plastic pipes and tubes, profile sections and section technology, plus the entire area of OCTG technology.

**Messe Düsseldorf GmbH** – Germany  
info@messe-duesseldorf.de  
www.tube.de



### United Stars Industries

## Plant Closed - Complete Tube Forming Facility

### Live and Webcast Auction

**Sale Date:** Tuesday, October 27, 2009 at 10:00 AM CDT

**Location:** 1546 & 1543 Henry Avenue, Beloit, Wisconsin 53511

**Inspection:** Monday, October 26, 2009 from 10:00 AM to 4:00 PM CDT

#### Assets include:

(3) Yoder Model M2 1/2 3" Diameter Tube Mill Lines; Turk & Heller Model WU20 2-1/2" Diameter Tube Line; (3) Yoder Model M1 – 1/2 Tube Mill Lines; Yoder W20P 4" Diameter TIG Weld Tube Mill; Delta 60" Slitting Line, With Over \$400,000 of Upgrades; Huge Machine and Fab Shop, Including: Mills, Lathes, Surface Grinders, Brakes, Shears, Plate Bending Rolls, Drill Presses, Band Saws & Optical Comparators; Tremendous Quantities of Tooling, Parts, Spares, Plant Support & Maintenance Equipment

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*Progress Through Co-operation*

## Wolseley opens 'super branch'

PIPE Center, Wolseley's specialist supplier of commercial and industrial heating plant and pipe systems, has relocated its Slough branch – one of its highest performing branches – to a new 30,000ft<sup>2</sup> purpose-built site, because it had outgrown its former location.

The new facility at Yeovil Road, Slough Trading Estate, also features a Climate Center trade counter with dedicated sales assistance, offering customers convenient access to both businesses under one roof.

Tony Morris, managing director of Wolseley's commercial and industrial division, commented: "The facility is well placed to serve major projects in the capital and across the region."

Slough manager Eamonn Phelan added: "The new site is fantastic and far better suited to our needs, being more than three times the size of our former location. We look forward to using it as a showcase, to bring in new customers and win new business."

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

## Tube China 2010 in Shanghai

THE 4th All China-International Tube and Pipe Industry Trade Fair (Tube China 2010), jointly organised by Metallurgical Council of the China Council for the Promotion of International Trade and Messe Düsseldorf China Ltd, will be held at Shanghai New International Expo Centre (SNIEC), 21-24 September 2010.

The event has witnessed continuous growth of its exhibition area, exhibitors, booths and international section. wire and Tube China 2008 attracted wide attention from the industry, with 1,098 companies from 30 countries and regions occupying five exhibition halls, and featuring a total exhibition area of 57,500m<sup>2</sup>. The event attracted more than 30,000 trade visitors from around the world.

Based on the success of previous show, wire and Tube China 2010 will assist industry in the fight against the economic downturn, by providing the best platform to showcase latest products, business communication and investment decisions.

**Messe Düsseldorf China Ltd – China**  
tube@mdc.com.cn  
www.tubechina.net

## Steel Express move premises

STEEL Express, a UK steel supplier and stockholder, has announced that it is moving to larger premises in Wolverhampton.

Mark Nicholls, the company's managing director, said: "This will enable us to continue to service customers around the UK with a 48-hour delivery service on bars and cut pieces." The move will also provide the company with the ability to saw, bend and fabricate steel, all under one roof. As a result, the company has also taken on an additional sales person for non-ferrous sales.

Steel Express delivers stock nationally on its own fleet of dedicated vehicles. The company offers a cutting service from 5mm to 850mm diameter. Services include flame cutting (up to 300mm in most specs); shearing (up to 20mm in mild steel aluminium and stainless steel); plasma cutting (up to 100mm in stainless steel); and lumsden grinding (up to 2,500mm x 2,000mm). A fabrication and drilling service is also available.

**Steel Express – UK**  
sales@steelexpress.co.uk  
www.steelexpress.co.uk

## Italian ambassador to Ukraine visits Interpipe Steel

STEEL pipe maker Interpipe welcomed Pietro Giovanni Donnici, the ambassador of Italy to Ukraine, to review the progress of the construction of Interpipe's electric steel plant, Interpipe Steel. The new plant, which will provide the company with self-sufficiency in steel, is being built in cooperation with Italian company Danieli at Interpipe's base in Dnepropetrovsk.

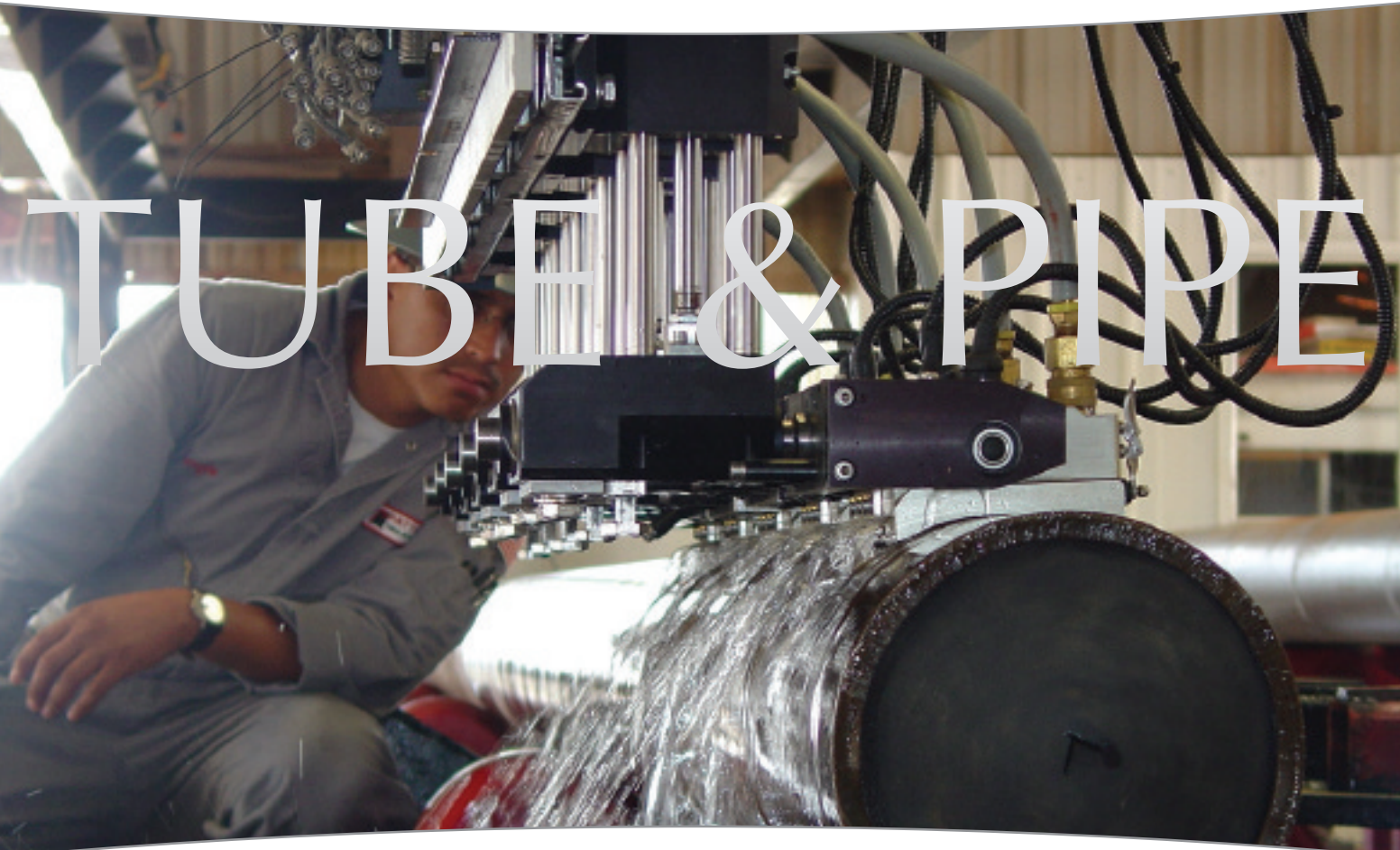
Mr Donnici said: "I have heard much about the important role of the Interpipe company in the Ukrainian economy, something that has been recognised by the Danieli Company. That's why it's fascinating for me to see the results of the collaboration of these two companies – indeed, the size and scale of the construction is amazing."

Gennadiy Esaulov, director of Interpipe Steel, mentioned the professionalism of the specialists from the Danieli Company that are involved in the project: "The electric steel plant, Interpipe Steel, is a unique project for Ukrainian metallurgy and we are pleased with the development of the work under Danieli. Construction at the site is painstaking but making good progress."

Interpipe has also appointed Denis Solomin as director for oil and gas sales. He will supervise and manage the company's sales of pipe used in the important oil and gas industry. Before joining Interpipe, Mr Solomin held executive positions at the LUKOIL oil and gas company and worked in its foreign offices in Romania and Bulgaria, as well as at Nafta Belgium. Mr Solomin graduated from the Gubkina oil and gas academy, Russia, at the faculty of development of oil and gas fields.

**Interpipe – Ukraine**  
press-office@interpipe.biz  
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## CRC-Evans acquires Global Pipelines

CRC-EVANS Pipeline International has acquired a majority interest in UK-based Global Pipelines, and the two companies will work together to provide start-to-finish managed services for the spoolbase and offshore sectors.

Global Pipelines was formed in 2007 as a division of Global Resources, providing specialised welding services. The company's management team, led by managing director Ben MacKay, is experienced in the offshore oil and gas industry, with capabilities encompassing spoolbases, and conventional laybarge, j-lay, s-lay, and reel-lay managed services.

"Global Pipelines is a natural fit for our business," said Brian Laing, president

and chief operating officer of CRC-Evans Pipeline Equipment & Automatic Welding Group. "We can support their significant experience with our leading technology, and that will prove to be a powerful combination for our customers."

Four divisions of CRC-Evans will offer particular technology and expertise to Global Pipelines: CRC-Evans Engineered Systems (which deals with furnishing pipe handling equipment); CRC-Evans Inspection Group (advanced testing technologies); PIH Joint Coating Services (leading-edge coating systems); and CRC-Evans Automatic Welding (automated pipeline welding).



▲ CRC-Evans and Global Pipelines will provide services for spoolbase and offshore sectors

**CRC-Evans Pipeline International – USA**  
sales@crc-evans.com  
www.crc-evans.com

**Global Pipelines – UK**  
www.globalpipelines.co.uk

## Settlement in patent infringement

HYPERTHERM, a specialist in plasma arc metal cutting technology, has announced a favourable settlement in a patent infringement lawsuit against the American Torch Tip Corporation (ATTC).

Exact terms are undisclosed, however, the settlement includes a cash payment from ATTC to Hypertherm, and an agreement that ATTC will stop producing the parts at issue in the lawsuit. In addition, ATTC has agreed to destroy key parts in its inventory for Hypertherm's HyPerformance HPR systems.

"Hypertherm devotes an enormous amount of resources to the development

of technologically advanced plasma cutting systems and consumables," commented Evan Smith, Hypertherm's vice president and general manager. "We believe that our innovations deliver unique advantages and superior productivity and profitability for Hypertherm's customers. As such, we are very protective of our inventions and will use whatever legal means necessary to ensure that our patents are not violated."

Hypertherm filed suit against ATTC in 2005 for infringing four patented technologies. Those patents covered Hypertherm technology designed to deliver faster cut speeds, longer consumable life, improved cut quality,

better torch cooling, and cross-free performance to customers using genuine Hypertherm consumables. The Hypertherm patents cover more than 30 consumable parts for approximately 20 Hypertherm systems. Terms of the settlement prohibit ATTC from continuing to manufacture these parts.

Hypertherm designs and manufactures advanced plasma cutting systems for use in a variety of industries such as shipbuilding, manufacturing, and automotive repair. Its product line includes handheld and mechanised plasma systems and consumables, as well as CNC motion and height controls.

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

## Redesigned website for small diameter tube manufacturer

GREENVILLE Tube, a manufacturer of small diameter stainless steel and nickel alloy seamless and welded and drawn tubing delivered with short lead times, has launched a redesigned website. The site has undergone significant information and design changes to allow visitors to find the data they need quickly and easily. The website contains information on products, technical guidelines to be used in design, and quality tests performed.

Greenville Tube offers fast delivery of small diameter tubing that is available in stainless steel, duplex stainless steel, super austenitic stainless steel, and nickel alloys. The company's tubing is used for various applications in the chemical and petrochemical industries, shipping, dental, medical, machined parts, fabricated parts, food, heat exchangers, heater tubes, fuel line and engine parts. Parent company RathGibson is a manufacturer of custom engineered stainless steel, nickel, and titanium tubing for diverse industries such as chemical, petrochemical, power generation, oil and gas, food, beverage, pharmaceutical, biopharmaceutical, medical, biotechnology and general commercial.

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



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## Two subsea contracts for oil fields

TECHNIP has been awarded two lump sum contracts by Anadarko Petroleum Corporation as unit operator for the Caesar/Tonga oil field development in the Gulf of Mexico. This field is located 190 miles (300km) from New Orleans in water depths of around 5,100ft (1,500m). It will be tied back to the Constitution Spar platform, which was designed and fabricated by Technip in 2004/05.

The first contract covers the design and supply of the components for four pipe-in-pipe flowlines and the installation of

these flowlines, representing a total of 27 miles (43km). It also includes the design, fabrication and installation of eight pipeline end terminations (PLETs). This development will use the pipe-in-pipe technology, which provides insulation and flow assurance for effective production in deep and ultra-deep water.

Technip's operating centre in Houston, Texas will execute this contract. The pipe-in-pipe flowlines will be welded and assembled at the group's spoolbase located in Mobile, Alabama, and offshore

installation will be carried out with the Deep Blue, Technip's deepwater pipelay vessel.

The second contract covers the project management, engineering and fabrication of two control umbilicals and their termination hardware. This contract, which is scheduled to be completed in the third quarter of 2010, will be executed by Duco, Technip's wholly owned subsidiary in Houston, Texas. The umbilicals will be manufactured at the group's plant in Channelview, Texas.

**Technip – France**  
www.technip.com

## China Steel Tube Expo 2009

The 2nd China Steel Tube Expo 2009 will take place 14-16 October. The first expo, held in 2007, attracted over 14,216 trade visitors, including 1,016 overseas visitors from 32 countries and regions.

The event hosted over 200 exhibitors from more than 10 countries and regions, with an exhibition area of over 15,000m<sup>2</sup>.

A promotional campaign aimed at end-users, decision-makers, importing

and exporting companies, designers, engineers and technicians will be launched before the opening of the show, and a series of activities and conferences will be held, organised by the government and industrial associations concerned.

The event will feature exhibits in the following categories: raw materials, steel tubes, pipes and accessories; stainless steel tubes; anti-oxidation products; PVC tubes and accessories; PVC tube processing machinery (extruders); steel tube and pipe manufacturing machinery; rebuilt and reconditioned machinery; burying machines for pipe-lines; process technology tools and auxiliaries; measuring and control technology; test

engineering; agents, consultants and publications.

**Shanghai Shenshi Exhibition Service Co, Ltd – China**  
shanghai1984@126.com  
www.gangguan-expo.com



▲ The exhibition will be held in Shanghai

## Norres Schlauchtechnik moves to new premises

GERMAN hose manufacturer Norres has taken residence in its new home: the refurbished Plant II on the 'Am Stadthafen 12-18 site' in Gelsenkirchen.

Plant II offers a new, central warehouse, covering approximately 25,000m<sup>2</sup> of floor space, features state-of-the-art logistics technology and houses nearly one million metres of hose and one million component parts, and provides a 24-hour delivery service. The company's investment in new production equipment and technologies has resulted in an expanded manufacturing facility that is more modern, streamlined and faster. More production lines can be dedicated to customised solutions.

All business units – from product development through production to sales – are now united under one roof at the new headquarters. Burkhard Mollen, proprietor and managing director, commented, "The move will shorten the distances between individual departments and speed up the exchange of information to the benefit of our clients. We are now better placed than ever to respond quickly and flexibly to customer requirements."

Norres manufactures industrial hoses for use in the automotive, pharmaceutical, food and chemical sectors, as well as in agriculture and mechanical engineering. The hoses are used to transport gaseous, liquid, solid, pasty and free-flowing media.

**Norres Schlauchtechnik GmbH & Co KG – Germany**  
info@norres.de • www.norres.com



The new Norres plant



## MECSPE Trade fair

MECSPE, the international exhibition for specialised mechanics organised by Senaf, will take place 25-27 March 2010, at Italy's Fiere di Parma (Parma Fairground).

The Marketing Centre in Milan has also conducted research on a sample of 348 Italian companies in the mechanics and sub-supply division. The survey, while indicating doubts about turnover and orders, also revealed the first signs of optimism: the occupational expectations of the division show that more than the half of the Italian 'firm captains' (63%) expect to maintain a stable workforce in the first semester of 2009.

62% of the sample indicated that an increase in insolvencies or a delay in payments were among their main concerns. 47% of respondents named as a critical factor the reduction in investments for machines, followed by the difficulty of credit access (35%).

According to the survey, export could be a launch pad to cope with the difficulties of the world economy. According to the results, in 2008 24% of the companies in Italian mechanics and sub-supply sold abroad, and 5% of these realised more than 50% of turnover outside national borders. In particular, the respondents stated that they mainly exported in central Europe (67%), northern Europe (35%) and the Mediterranean/North Africa areas (25%).

MECSPE will feature six trades: MECSPE (specialised mechanics), Eurostampi and Plastix Expo (mould and moulding), Subfornitura (manufacturing on behalf of a third party), Motek Italy (automation, robotics and power transmission), and Control Italy (metrology and quality).

The event will host more than one thousand exhibiting companies, representing fifteen countries, in 42,000m<sup>2</sup> of exhibiting area, with 19 Working Isles, five Excellence Squares, 40 meetings and miniconferences, 26 Theme Squares and Avenues, and 36 associations and boards that actively support the exhibition.

**Senaf Srl** – Italy  
 info@senaf.it  
 www.senaf.it  
 www.mecspe.com

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# products & developments

*TransCanada Pipelines Buffalo Creek West is being built under extreme conditions*

## New dip-transfer arc process used in pipeline construction for first time

RMS Welding Systems, Canada, specialises in welding pipeline joints. In the field, the company uses technology from Fronius, including, in an industry 'first', the dip-transfer arc process CMT (cold metal transfer).

The long, hard Canadian winter is ideal for pipeline builders, with the ground frozen solid. Arctic temperatures of down to below  $-40^{\circ}\text{C}$  are common, and the landscape is dominated by frozen rivers and lakes. In the midst of this remote, hostile environment, TransCanada Pipelines is extending its infrastructure, laying pipelines into the ground to secure gas supplies within Canada and the USA.

One such contract section is the 54km-long Buffalo Creek West project. OJ Pipelines is responsible for getting this section of the pipeline built smoothly and on time. The job of laying the 24m-long steel pipes, each weighing several tons, can only be carried out when the ground is frozen. RMS Welding Systems is a subsidiary of OJ Pipelines, and specialises in pipe welding processes. RMS has also been contracted to carry out the welding work on the pipe segments of the TransCanada pipeline in Buffalo Creek.

Welding the 24m joints together into a 54km pipeline takes place in three stages. First, the main crew completes the bulk of the welds. For this portion of the project, OJ utilised the RMS MOWII system, a mechanised orbital dual head welding machine. RMS worked closely with Fronius during the development of this machine, and uses custom built TransPuls Synergic 3200 Pipe machines VR7000 wire feeders as their prime welding power supplies.

Second, a crew completes short sections of pipe such as steep hills, road sections, prefabricated fittings and other welds. Finally, the tie in crew welds the loose ends left for access and expansion, and the lowered-in sections of pipe. For this application, the jointing specialists of RMS used the CMT process, marking its worldwide debut in the pipeline construction field.

Pipeline tie ins are typically made using cellulose electrodes, a process that inherently creates a weld containing a high amount of absorbed hydrogen, leading to increased chance of hydrogen induced cracking. In order to ensure no hydrogen cracking has taken place, the welds do not undergo non-destructive testing until 24 hours after completion.

This 24-hour hold poses a problem for the pipeline contractor, as the ditch must remain open, and its integrity assured for 24 hours. To avoid this delay, pipeline contractors have sought low hydrogen welding techniques for tie ins that allow the completed weld to be inspected immediately. On the Buffalo Creek West project, CMT was used on a trial basis to complete the tie in root welding pass.

Using CMT instead of rod electrodes brings advantages, especially in terms of time. CMT-welded root passes mean there are fewer hydrogen inclusions in the girth weld, thereby eliminating the 24 hour wait to conduct final inspection. CMT also enables superior gap bridgeability and an extremely stable arc, even when welding is being performed from both sides simultaneously.

A further advantage of using CMT is the consistently uniform shape of the root from the inside. In the 12-clock and 6-clock positions, the root is always uniform – despite the fact that few parameter changes are needed. After welding the root, RMS completes the welds using an automated flux-core process.

**Fronius** – Austria  
contact@fronius.com  
www.fronius.com

**RMS Welding Systems** – Canada  
www.rmsweldingsystems.com





## Flowmeter certified for use in potentially explosive areas

THE Yokogawa Rotameter RAMC flowmeter has been certified for use in areas with a risk of gas explosions and dust explosions. The instrument is now provided with Ex certificates that are valid in Europe, America, Australia, China and other countries.

The explosion protection for dust zones is available for instruments with the 'd' type flameproof protection in a robust aluminium housing with the marking II 1D Ex tD A20 IP67 T1...T6 or II 2D Ex tD A21 IP67 T1...T6. For type 'i' intrinsic safety protection with the marking II 2G Ex ia IIC T6 or II 2G Ex ia IIB/IIC T4, the Rotameter RAMC is equipped with a stainless steel housing.



▲ Yokogawa's Rotameter RAMC flowmeter is certified for use in potentially explosive areas

The Rotameter range has been in use in many areas of industry for 100 years, and includes designs with glass, plastic and metal measuring tubes. Units are available with mechanical displays and with additional components including transducers and limit switches.

The FMEDA (failure modes, effects and diagnostic analysis) assessment of the design, carried out by test house exida, permits operation of the RAMC even in safety-relevant systems that have to comply with the requirements for Safety Integrity Level SIL1 or SIL2.

The emphasis on safety in these Yokogawa products reflects the fact that, in all areas of industry, the explosion of combustible dusts presents a risk that is often underestimated. According to estimates by Munich Re, there is a dust explosion in Europe every day. A particular risk potential exists in the fact that even materials that otherwise are considered non-combustible can undergo explosion-like combustion when they are present in the form of a dust-air mixture.

**Yokogawa UK Ltd** – UK  
[info@yokogawa.co.uk](mailto:info@yokogawa.co.uk)  
[www.yokogawa.co.uk](http://www.yokogawa.co.uk)

## High-speed smart seam finding system

SERVO-ROBOT, Canada, has introduced the SF/D-H seam finding system with on-board colour video camera for process programming and monitoring.

Welding robots are often under-utilised because of their inability to produce quality welds when parts and tooling vary more than the welding process can handle. The new SF/D-H is the latest in Servo-Robot's line of smart seam finding systems with on-board process control. Its design allows it to be mounted directly under the robot flange, making it very compact.

The systems reduce the cycle time by increasing the search speed compared to touch sensing. They can find joints on thin sheets or butt joints down to 0.6mm, and can be used on any metallic parts. They provide high precision (0.05mm resolution) and 1,000Hz sensing frequency.

**Servo-Robot Inc** – Canada  
[sales@servorobot.com](mailto:sales@servorobot.com)  
[www.servorobot.com](http://www.servorobot.com)

## Brochure introduces range of cast iron rainwater and gutter systems

SAINT-GOBAIN PAM UK, a supplier of cast iron rainwater and gutter systems, has launched a new brochure featuring its Classical range of rainwater pipes and guttering systems, designed and developed using the latest pipe manufacturing technology, and in accordance with BS 460.

The Classical range incorporates the benefits of cast iron over other materials like plastic, giving it the strength to withstand high winds, heavy snow, and vandalism. Cast iron is a sustainable material, as the manufacturing process uses 97% recycled material and the product is, in turn, 100% recyclable.

The manufacturing technology used to produce circular Classical rainwater downpipes centrifugally spins the pipe, ensuring consistent section dimensions, unlike the traditional sand cast method, which is prone to produce pipe with

'thick' and 'thin' spots making the pipe inherently weaker.

The standard Classical range is supplied with a water-based primer coat, ready for on-site painting to match any colour scheme. Alternatively, the rainwater and gutter system can be supplied with the finished 'Classical Plus' coating, ready for immediate installation.

Classical Express is a true half round gutter profile with increased flow rates, and is connected using unique jointing clips that can be easily installed in any weather. Express is available with either the water based primer coat or the Classical Plus finish.

The Classical range offers eight gutter profiles: four half round profiles (half round, deep round, beaded half round, and the Classical Express true half round profile), three decorative profiles (Notts, Ogee and Moulded No 46), and



▲ Saint-Gobain PAM's Classical range brochure

the square profile Box gutter. There are also two rainwater downpipe systems available: round or rectangular.

**Saint-Gobain PAM – UK**  
sales.uk.pipelines@saint-gobain.com  
www.saint-gobain-pam.co.uk

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THREAD TYPE :  
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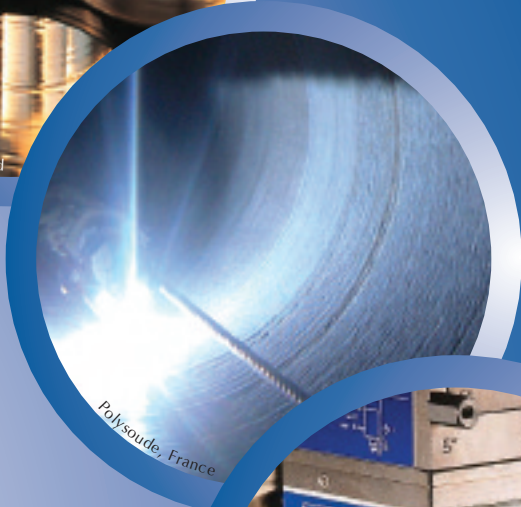
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# Ultrasonic clean rinse tanks remove weld discolouration

GUYSON International's range of industrial quality Kerry ultrasonic tanks provides speedy cleaning for welded metal joints on a variety of materials, including aluminium and copper. This is particularly important where the raw metal material is being used without paint or other coating to mask any discolouration on the components.

Weld discolouration on soft metal components has previously been difficult to remove at speed. Too aggressive mechanical cleaning could leave scratches in soft surfaces. Acids often had to be tailored to each specific material, so multiple baths were needed, and now many of these methods are becoming outmoded under increasingly stringent health and safety legislations. Time-consuming manual labour was often the only effective solution.

Ultrasonic cleaning is brought about by the introduction of high-frequency sound waves (usually between 20-80kHz) into a liquid by transducers attached to the bottom of the tank. The resulting action is called cavitation. Cavitation is created by high and low pressure areas produced in the solution as the sound waves pass through it. In low-pressure areas, microscopic 'bubbles' form. The pressure rises rapidly as the next sound wave passes through the solution, violently imploding the millions of tiny bubbles and creating a highly effective 'scrubbing' action on any immersed component surface. At the standard 38kHz, this happens 38,000 times per second.

Pulsatron KS and UCR tanks allow the user to pre-set exact cleaning times and temperatures, ensuring consistent levels of cleanliness from batch to batch and providing an affordable way to improve cleaning quality. All functions are controlled by a simple four-button membrane keypad. An LCD panel displays the temperature and time set by the user, the time elapsed since the start of the cleaning process.

Each unit works within operating temperatures from 20 to 80°C, which can be set in 1° increments, allowing the optimum temperature to be selected for a particular combination of component material, cleaning solution and contaminant. Sonics time may be set in the range 0.1 to 99.9 minutes in 0.1 minute increments.

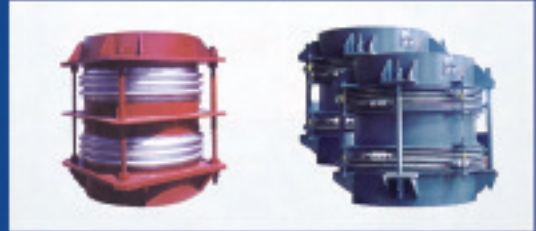
KS ultrasonic tanks and UCR ultrasonic clean and rinse systems are available in a range of sizes: standard KS tanks up to 248 litre capacity, and UCRs up to 117 litres. Guyson offers a free component trial service with no obligation to buy.

**Guyson International Ltd** – UK  
 info@guyson.co.uk  
 www.guyson.co.uk



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E-MAIL: hblongrun@yahoo.cn



## Rotating, clamping and tilting in the pipe construction industry

KISTLER pipe rotators are used for clamping, rotating, and tilting pipes in manual and automatic welding, mainly in the field of pipe construction (prefabrication or assembly on site). The 'U' range features three machines: U150 (20 to 200mm diameter pipe), U500 (20 to 400mm diameter) and U1000 (25 to 800mm diameter).

The pipe rotators with clamping roller system (patented) have advantages over traditional devices. They can be used for pipes with elbows, tee pieces, or other offset loads. A wide range of pipes can be clamped. The infinitely variable rotary speed is not affected by the size of a pipe because of its separate drive unit. Centring is quick and precise, and clamping does not require a chuck or clamping shoe.

Pipe can be clamped at its centre of gravity, and tilting moments and supports



▲ The Kistler U150 pipe rotator

are unnecessary in most cases. It is possible to centre two pipes with the same diameter, and various combinations are possible, eg clamping and driving of a main spindle.

Standard pipe rotators are designed to rotate work pieces 360° (forward/stop/reverse with variable speed control) and forward and backward tilt from horizontal. Rotation and tilting may be performed independently or simultaneously.

The tilting section consists of the drive and roller box, holding column, clamping arm, and pressure roller. Manual vertical height adjustment of the clamping roller system is included as standard on all units. Optional extras include directional footpedals and diablo pipe supports.

The Kistler U range pipe manipulators are sold exclusively in the UK by YPH Ltd, and are sold with a 12-month manufacturer warranty.

**YPH Welding Supplies – UK**  
sales@yphltd.co.uk  
www.yphltd.co.uk

## 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:**

SMLS steel pipe(SS,CS), Welded steel pipe (ERW,EFW)

We can produce the special fittings according to customer's drawing.



### ZHEJIANG FEITING PIPE CO.,LTD.

Zhejiang add:No.1366 Binjiang Road Economic Development Zone Ruian Zhejiang China

Tel: +86-577-65607592 Fax:+86-577-65600817

P.C:325200

E-mail:trade@chinafeiting.com

### SHANGHAI FEITING PIPE MANUFACTURE CO.,LTD.

Shanghai add:NO.85 Shande Road Jinshan District Shanghai China

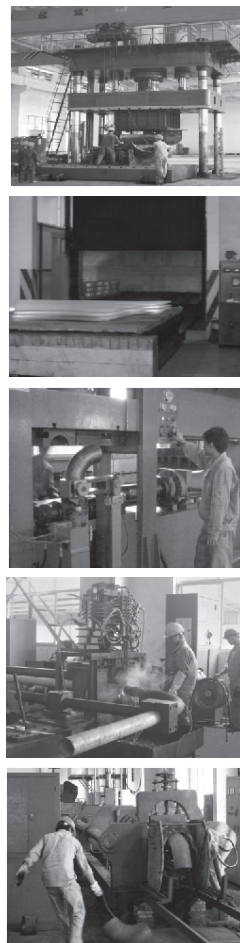
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E-mail:tradesh@chinafeiting.com

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## Glass rods for mass production

SCHOTT is an international technology group that develops special materials, components and systems. The company's main areas of focus are the household appliances industry, pharmaceuticals, solar energy, electronics, optics and the automotive industry.

The company supplies fire-polished glass rods, made of specialised glass, that can be less than 1mm in thickness and up to 1,000mm long, for efficient manufacturing of small lenses. By offering low Tg glasses and optical materials in new shapes, Schott supports miniaturisation in optical applications.

In addition, developments aimed at being able to provide conical rods, prisms, tubes and right angle designs, as well as standardised round rods, are already underway.

The products that are now being offered include rods made of optical glasses, such as LASF 35, which has an extremely high index of refraction ( $n_d=2.02204$ ;  $v_d=29.06$ ), as well as low Tg glasses that are suited to precision moulding processes. Other glasses are available upon request.

The length of the rods enables higher yields, while the smaller diameter results in less loss of material during manufacturing of smaller components. Schott states that the fire-polished surface of the rod is suitable for a variety of applications, and the new

dimensions of the rod ensure easy processing and reduced processing time.

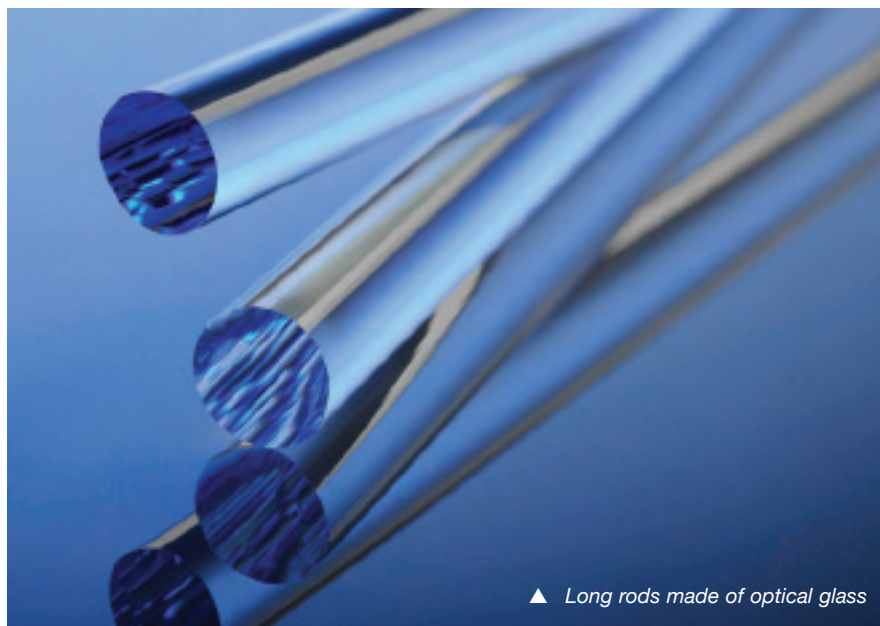
Schott has also expanded its portfolio of low Tg glasses that have low transformation temperatures. These can be precisely shaped at temperatures of below 550°C and thus enable mass production of extremely small optical components in an efficient manner.

In addition to the established P and N glasses, the following glass types now successfully qualify for use in precision moulding: N-KZFS2, N-KZFS4, N-KZFS5, N-KZFS8,

N-LAF33, N-LASF46B and SF57. The glass type N-LASF46A has also been further developed. The N-LASF46B type ( $n_d = 1.90366$ ;  $v_d = 31.32$ ) is available with improved transmission inside the blue spectral range.

The listed glass types N-KZFS4, N-KZFS5 and N-KZFS8 belong to the special short flint glasses that Schott offers, which are mainly characterised by a profound deviation of the partial dispersion from the normal line. They feature high transmission within the blue-violet spectral range combined with a low fluorescence at an excitation wavelength of 365nm.

**Schott AG** – Germany  
info@schott.com • www.schott.com



▲ Long rods made of optical glass

## A partner for exacting surface finish requirements

DESIGN Factory works in cooperation with architects, designers and customers, to provide polishing/finishing services for stainless steel. In addition to mirror-polished sheets, Design Factory processes a large number of tube forms in industry polished, super mirror polished (No 8) and high-

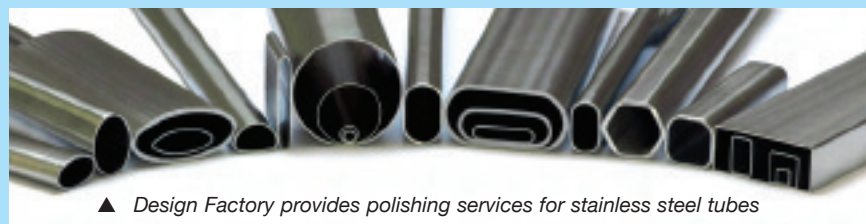
gloss/super mirror polished – YQ (yacht quality). The tubes are not just finely ground, but for the purpose of decoration, automatically finished to the super mirror polish.

The company is large enough to provide the necessary security for large

projects, yet flexible enough to adjust to individual customer circumstances.

Design Factory can process tubes from 600 to 6,300mm in length. For round tubes, outside diameters range from 6 to 800mm; for square, rectangular, oval, elliptical and other tubes, from 10x10 to 800x800mm. Wall thicknesses range from 0.8 to 20mm, and the maximum component weight is 800kg.

**Design Factory GmbH** – Germany  
info@designfactory-cmb.de  
www.designfactory-cmb.com



▲ Design Factory provides polishing services for stainless steel tubes

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## Saw and belling machine for PP multilayer pipe line

THE TRS/C/Sy 250 sawing machine features recent plant solutions and technical solutions that have been introduced to fit the increased production capacity of modern extrusion lines. The saw has cutting tools inside the planetary group (rotor) and has a mechanical system to control the position of the cutting tools on the external pipe wall around the cutting area.

The cutting unit has two cutting arms each with a different cutting tool: one is a special Sica design milling cutter for chamfering the pipe (which has been modelled based on the particular shredding characteristic of the material), and the other is for the final swarfless cut of the pipe.

This solution allows a clean chamfer and cut without any chips inside or outside the pipe. TRS/C/Sy 250 processes pipes from 32 to 250mm diameter. For pipes up to 12mm wall thickness it can cut and chamfer, while pipes up to 40mm can only be cut.

Everbell/H 315 PSP is an automatic belling machine for shaping O-ring sockets for PP and HDPE pipes for indoor draining and sewage applications (which can also be used for PVC-U pipes). The machine can socket solid wall pipes or multilayer pipes from DN 50 to DN 315 with pipe lengths from 0.5m to 6m plus socket. The H version of the machine features heating and cooling systems that reduce thermoforming time.

The first heating station, instead of the traditional contact oven, has an oven with lamps to emit IR shortwaves. The cooling station uses an exclusive Sica-patented convective cooling system with a cooling fluid that goes through an internal refrigerating system.

The forming stage uses a patented Sica PSP system (Permanent Socket Profile), which produces an O-ring socket with an internal dimensionally calibrated surface and a stable shape.

**Sica SpA** – Italy  
info@sica-italy.com  
www.sica-italy.com



▲ Sica's Everbell/H 315 PSP automatic belling machine



HEBEI WENLONG  
PIPELINE EQUIPMENTS CO. LTD



### PRODUCT RANGE:

ELBOWS-LR SR 45° 90°  
RETURN BENDS-LR SR 180°  
TEES-STRAIGHT & REDUCING  
REDUCERS-CON & ECCENTRIC  
END CAPS

SEAMLESS FITTINGS DIMENSIONS: 1/2"-40"  
SEAM WELDING FITTINGS DIMENSIONS: 26"-96"  
WALL THICKNESS AREA: 2mm TO 120mm

### MATERIALS:

A234-WPB, WPC, WP1, WP5, WP9, WP11, WP12, WP22, WP9L  
A860-WPHY42, WPHY52, WPHY60, WPHY65, WPHY70, WPHY80  
A420-WPL3, WPL6, WPL9, WPL8  
A403-WP304, WP304L, WP304H, WP316, WP316L, WP316H

### STANDARD:

ANSI B16.9, ANSI B16.28, MSS-SP-75  
DIN2605-1, 2605-2, DIN2615-1, DIN2615-2  
DIN2616-1, DIN2616-2  
EN10253-1, EN10253-2



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Business email: [wenlong@hbtenghao.com](mailto:wenlong@hbtenghao.com)

Address: NO. 85 Wuliyao Industrial Zone, Yanshan

County, Cangzhou City of Hebei Province, China

## Potable water project in Czech Republic nears completion

THE Bilina potable water project in the Czech Republic was partially implemented in 1998, and included the installation of around 1km of Hobas CC-GRP WaterLine® DN 500, SN 10000, PN 16. One of the reasons CC-GRP was chosen over steel and cast iron was that it is non-conductive and therefore corrosion resistant,

regarding the magnetic field created by a nearby railway track. Satisfied with the performance of the Hobas pipeline, the client again opted for the company's CC-GRP pipe for the Zelenice-Bilina extension project, launched in 2004.

The extension project was co-financed by the EU programme ISPA, and

involved the reconstruction of part of the existing DN 600 potable water main running along the same railway track and from the highway to the river Bilina. A total of 5.7km of Hobas CC-GRP WaterLine systems DN 500, PN 16, SN 10000 were used for the project, which was completed in 2006.

Between Libesice u Zelenic and the Ledvice power plant, the line passes beneath roads, along the river Bilina, beneath a camping site, a public pool, a sports ground, gardens and green space, before finally reaching the wall of the trained river. From there, the original steel pipe on suspensions was preserved and the protective pipe around it was exchanged for Hobas pipes.

The line continues through green space, roads and the train station, and ends in a shaft. The section between the station and another shaft, which also connects to the Chlum water reservoir, was reconstructed in 1999, and reconstruction works could be taken up from that point, ending at Ledvice power plant.

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



Almost 6km of Hobas WaterLine DN 500, PN 16 were used for the extension of the potable water main along the river Bilina

## Swagelok expands temperature measurement devices range

SWAGELOK has launched new bimetal thermometers and thermowells for general industry, to expand its temperature measurement devices line, which includes thermometers and thermowells for sanitary applications.

The dampened-movement bimetal thermometers operate in measurement ranges from -70° to 540°C (-100° to 1,000°F) and are available in adjustable-angle, centre-back, and lower-back mount process connections. Each Swagelok thermometer is factory calibrated, and the products feature external reset for field calibration.

“Our customers depend on Swagelok products to provide high integrity measurement and tighter process control of their systems,” commented Bill Menz, market manager for process instrumentation. “The addition of

thermometers and thermowells for general industry is a natural complement to our existing product line.”

The dampened-movement bimetal thermometers are accurate to ±1% of



▲ Swagelok's bimetal thermometers

full scale in accordance with ASME B40.200, and are actuated by a sensitive bimetal helix coil. Silicone-free gel in the thermometer stem dampens vibration effects.

Swagelok thermowells for general industry are designed to protect the thermometers from contact with viscous, pressurised, corrosive, or abrasive process fluids. They also enable removal of thermometers for replacement or service without affecting the process or system. The thermowells feature standard 304 stainless steel constructions, and 316 stainless steel upon request. The product is available in straight, reduced, and tapered shaft designs. Instrument connections include ½" female NPSM straight and female G1/2B connections. Process connections include flange, sanitary clamp, threaded, and weld socket in ½" to 2" sizes. Thermowells for sanitary applications are 3-A compliant.

**Swagelok Company – USA**  
www.swagelok.com



## Fifty years on, and Konecranes UK is still growing strongly



▲ The Konecranes UK factory in 1959

MAY 1959 saw the official opening of the new East Kilbride factory of JH Carruthers, now Konecranes UK. At that time, the company manufactured pumps and cranes, but by 1967 pumps were discontinued. Over 400 people were employed in manufacturing up to 100 overhead cranes a year, but today, modern computer aided techniques in design and manufacturing mean that fewer people are required to maintain

higher levels of production. However, the company has been increasing both its capacity and its employee numbers over the past decade, with an average of 100 people involved in supplying over 300 cranes a year to the UK and overseas markets.

From 1996 to 2007, 25% of the factory space was used for warehousing. The decision was taken to reclaim the space

to enable further modernisation and expansion to take place. The investment has been considerable. Managing director Gordon Adie has been the driving force behind the expansion since he took the job in 1992.

Mr Adie, whose father also worked for the firm before him, not only has responsibility for Konecranes UK's operations, but within the Konecranes global group he coordinates many of the worldwide manufacturing and sales facilities. Speaking of the company's continuing success and growth since it moved to East Kilbride 50 years ago, Mr Adie said, "Our markets are varied by sector and geography.

"We have been fortunate and I think astute enough to keep abreast of our customers' needs and flexible in our ability to tailor our crane models to suit. Konecranes is also an innovative group and we enjoy cutting edge technologies producing very beneficial components for sector demands."

"Obviously not all sectors are always buoyant, for example the automotive market at present," Mr Adie continued, "but others are growing, like the power and waste to energy areas, and we are winning orders both here in the UK and overseas."

**Konecranes – UK**  
gordon.adie@konecranes.com  
www.konecranes-uk.com

## Dedicated steel service centre

POLARPUTKI Oy provides mechanical engineering, shipbuilding, power and steel industries with high-quality steel products and JIT (just in time) deliveries.

The company has four sales offices, a head office in Helsinki, and a steel service centre in Vantaa. Polarputki Oy is owned by ThyssenKrupp Services AG, Germany, and Heléns Rör AB, Sweden.

The company supplies seamless steel tubes (hot rolled tubes, cold drawn tubes and boiler tubes), welded steel tubes and fittings, stainless and acid-resistant steel tubes (long products), engineering steel bars (round and

forged bars), hollow bars, hydraulic products (hydraulic and pneumatic line pipes, cylinder tubes, piston rods and bars), and solid fuels. Customers include manufacturing companies, component suppliers, industrial subcontractors, and installation businesses.

Polarputki Oy keeps a wide range of material in stock at its warehouse in Vantaa, 16km from Helsinki. This allows the company to serve customers very quickly, and to consistently meet delivery commitments.

In 2006 the company completed the enlargement of its steel service centre, and now offers cut-to-size services, professional advice,



▲ Polarputki Oy maintains stock of a wide range of material

quality control, logistics and stock management.

**Polarputki Oy – Finland**  
export@polarputki.fi  
www.polarputki.fi

## Copper alloys used to create tubes with a smooth surface

AMPCO Metal provides high-technology alloys for demanding applications. The company's comprehensive range of high-performance aluminium bronze alloys for pressings, tube bending, deep drawing, rolling and profiling applications are readily available.

When producing stainless steel tubes from strip, it is possible that the tube surface can adhere to the roll surface,

(so called 'cold welding' or 'galling'). As the roll turns, such cold welding causes damage to the surface of the stainless steel tube, resulting in higher rejection rates and lower productivity. Additionally, when working with a semi-circular forming roll in order to obtain a tube out of a flat stainless steel strip, any differences in tangential speeds along the surface of the tube will induce sliding between the forming roll and the

stainless steel sheet. Because of the potential cold welding effect caused by this difference in speed on the forming rolls, the rolls must be made from a material with excellent sliding characteristics, in order to obtain a perfect surface on the tubes.

Ampco Metal's patented alloy Ampco® 25 offers multiple advantages, including the extended life of forming rolls and the quality of the finish to the stainless steel tubes it produces. Ampco 25 alloy requires no further heat-treatment or expensive coatings to give these results.

Ampco 25 rolls are also used on the same production lines at the tube welding station, when producing mild steel tubes. The non-magnetic properties of Ampco 25 rolls at these welding stations provides another advantage, avoiding over-heating of the pressure rolls, due to induction from the high-frequency welding loop.

For bending stainless steel or other tubular exhaust pipe materials, the family of Ampco 18, Ampco 21 and Ampco M4 alloys provide benefits for product quality and prolonged life of the production tooling. Ampco M4 used as mandrel and wiper dies in tube bending have been proven to last longer than commercial aluminium bronzes. Ampco M4 mandrels do not need hardening or expensive coatings, and the advantages for wiper dies are no galling or scratching, so no corrosion starting point.

**Ampco Metal SA** – Switzerland  
[info@ampcometal.com](mailto:info@ampcometal.com)  
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## HONGDA STEEL TUBE

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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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## Pressure jacking pipes for sewers

THE municipality of Groningen in the Netherlands has extended its existing sewer main, sized DN 1000 and DN 1200.

The gravity sewer main could not cope with high flow rates, for example those occurring during heavy rainfall. To prevent sewage from overflowing and polluting the environment, the authorities decided to convert it into a closed pressure system. With this, and its extension by 2.4km Hobas CC-GRP sewer systems, a capacity of 3,000m<sup>3</sup>/h could be achieved, allowing the line to easily cope with future needs as well as the connection of a further village.

Since the line crosses a busy part of the town of Groningen, Hobas proposed the use of CC-GRP pressure pipe systems, which can be installed by open as well as trenchless construction. As Hobas GRP pressure pipes can be jacked, local engineers placing an order for the company's CC-GRP, worth €1,222,000 for the complete line. This included five jacking sections with Hobas CC-GRP jacking pipes DN 1000 to 1500 and pressure pipes PN 6, DN 1000 and 1600 m DN 1200, as well as flanges, elbows, reducers and tees with stainless steel locked joints.

Several obstacles along the pipe route, such as roads and a channel, were overcome by microtunnelling. Due to the requirements of the road authorities, two jacking sections running beneath the highway were realised with cover pipes, which were delivered by Hobas Benelux, and the Hobas CC-GRP pressure pipes were consequently inserted. The largest,

with an outer diameter of 1,500mm, was positioned beneath highway A7.

The three other microtunnelling sections were implemented using CC-GRP pressure jacking pipes PN 6 and flush FWC couplings. These ran beneath a gas pipeline, several streets and a navigable channel, where the installation was conducted in 12m depth. A 275m long section with CC-GRP pressure jacking pipes of 1,280mm outer diameter was jacked in a curve radius of 1,300m. The contractor installed an intermediate station that is required for jacking with over 4,000kN. However, due to the smooth and non-absorbing outer surface of Hobas pipes the maximal jacking force did not exceed 1,800kN, and the intermediate station was never in operation.

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



▲ The Hobas flush couplings used for jacking are leak tight and facilitate assembly



▲ Several obstacles along the pipe route, such as roads and a channel, were overcome by microtunnelling

## Rehabilitation of potable water pipes

THE shortage of clean drinking water is a worldwide problem. It is claimed that more than 55% of drinking water never reaches the home, due to leaking and run-down supply pipes. This situation can be solved at low expense, without digging and without large investment in costly equipment.

Tube-In, from MultiLining Products, is a complete system for the rehabilitation of potable water pipes and pressure pipes. Pipes are reconditioned by pulling an armoured polyethylene

hose through the leaking water pipe, extending the life of the pipe.

Tube-In has a wall thickness of 2-3mm and is constructed of a polyethylene inside layer, a strong armour layer and an outside layer of polyethylene. This construction gives a very strong pipe with a clean and smooth inner surface.

Tube-In fits most pipe dimensions and may be installed in lengths up to 500m (1,640ft). It can be used in pipes with a pressure up to 20 bar (280 psi), and

accurately follows the shape of the old pipe, even through bends.

The system is installed by using simple and inexpensive equipment. The pipe is first cleaned to remove any deposits, either with a steel scraper or a Polly-Pig, a cylinder shaped plug that is pressed through the pipe several times by means of water or air. Tube-In is then pulled through the old pipe, and when water pressure is restored, Tube-In will inflate and take the shape of the host pipe.

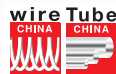
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[SchreiberG@messe-duesseldorf.de](mailto:SchreiberG@messe-duesseldorf.de)  
[www.messe-duesseldorf.de](http://www.messe-duesseldorf.de)

  
Messe  
Düsseldorf



## Dual pneumatic spooling unit

MID-SOUTH Control Line, a RathGibson company, is a specialist in control line tubing and well completion accessories, and offers products and services for the oil and gas industry. The company's products include welded and seamless coil and instrumentation tubing, encapsulated control line and well completion products.

The company's Dual Pneumatic Spooling Unit allows users to run two different fluids at different pressures simultaneously, with complete control and safety. The unit's pneumatic mechanism uses air that is then exhausted into the atmosphere for environmentally friendly operation. Overload and fire hazards are decreased, and the unit life is increased. Easy control of the unit increases its safety.

"Our customers expressed the need to feed two control lines downhole simultaneously," said Rick Lore, the company's president. "We answered with the Dual Pneumatic Spooling

Unit, which can be used offshore and onshore."

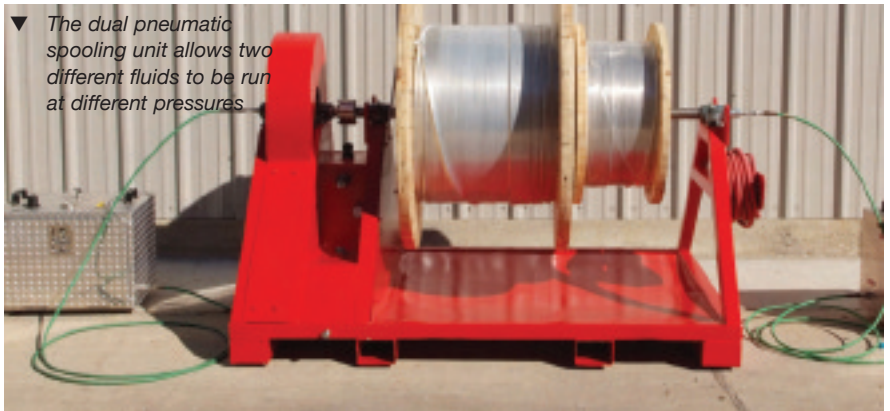
The Dual Pneumatic Spooling Unit is ready to accommodate control lines of various sizes, as well as spools of various weights.

The unit is available for short and long term rental, as well as for purchase. Pumps for use with the Dual Pneumatic Spooling Unit are offered separately.

RathGibson is a manufacturer of highly engineered stainless steel, nickel, and titanium tubing for diverse industries such as chemical, petrochemical, power generation, oil and gas, food, beverage, pharmaceutical, biopharmaceutical, medical, biotechnology and general commercial.

**RathGibson – USA**  
www.rathgibson.com

**Mid-South Control Line – USA**  
gplaisance@controlline.com  
www.controlline.com



▼ The dual pneumatic spooling unit allows two different fluids to be run at different pressures

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**Wenzhou Chisin Valve Co.,Ltd**  
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## Acoustic piping system helps keep new development quiet

POLYPIPE Terrain's Acoustic dB12 piping system has been implemented in the new Saxton residential development in Leeds, UK. The dB12 pipes and fittings have been used to create soil and waste systems that provide a high degree of acoustic insulation and prevent noise transmission within the new Urban Splash development. The development involves the complete refurbishment of two tower blocks that

previously provided accommodation for housing authority tenants.

The prevention of noise transmission between the new apartments demanded an acoustically insulated piping system that would provide reliable and effective performance.

Terrain Acoustic dB12 was specified by mechanical engineers RAD

Mechanical Services Ltd. "We have used Terrain's PVC above-ground soil and waste system on a large number of developments in the past and it has always provided excellent performance," commented RAD's Mark Radcliffe. "We were naturally keen to see if the Acoustic dB12 system which was launched recently could meet our specifications and perform to the same high standards, which it has. Polypipe Terrain worked with us to overcome some initial technical issues, and once work started we found the Acoustic dB12 system to be both quick and easy to install."

The pipes and fittings in the Terrain Acoustic dB12 range allow the creation of soil and waste piping systems in multi-occupancy buildings such as hotels, apartments, hospitals and schools, where minimal noise transmission is a key requirement. The three-layer construction allows the pipes and fittings to provide acoustic performance that surpasses the requirements of Building Regulations Part E, and to also meet Class B1 fire protection standards.

A wide variety of components, pipes and fittings are available, providing flexibility in system design and allowing an acoustically insulated drainage system to be created for virtually any application.

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

▼ The Saxton residential development is the first Urban Splash development to feature Terrain Acoustic dB12



## Mild steel tubes

ZENITH Birla (India) Limited is an ERW/HFIW welded mild steel tube manufacturer. The company's production activities commenced in 1962.

The company operates two production lines, both from German manufacturers, in addition to two galvanising plants and pipe threading equipment. All production activities are fully automated and flow mainly through conveyors. The company's welding process is based on high frequency induction welding.

Products are exported to various countries, mainly to the USA, Canada, the Middle East, and African and European countries. 60% of production goes to overseas markets, with the balance

going to domestic markets (industrial and government/PSU sectors).

The company's products are widely used in applications such as sprinkler systems for fire fighting, water well casing, water services (domestic and irrigation), scaffolding, mechanical tubing, the automobile sector, line pipe applications for oil and gas transmission, rigid metal conduit, and hollow sections for structural and automobile sectors.

Production ranges from 15 to 200mm nominal bore (round pipe and sections), in thicknesses from 2 to 8.5mm, and in lengths from 6 to 13m. Ends are square cut, bevelled or threaded and coupled.

**Zenith Birla (India) Limited** – India  
spsarode@zenithsteelpipes.com  
www.zenithsteelpipes.com

## Seamless and stainless steel tubes

KWK Steel manufactures and exports seamless carbon and stainless steel tube products.

Its main products are seamless steel tubes in the OD range 5 to 820mm, with thickness from 0.5 to 80mm. Manufacturing processes include cold rolling, hot rolling and hot expanding.

It can supply products that conform to a range of ASTM, DIN and EN standards.

**KWK Steel Co, Ltd** – China  
culture007@gmail.com



## Missing link for tubular profiles

TEKLA and HGG have cooperated to define and develop an integrated solution for modelling and manufacturing tubular steel structures. This includes:

- A range of components in Tekla Structures software to cover the needs for modelling tubular structures; the new component types are offshore saddle and offshore chamfer, saddle and hole, chamfer and slotted hole.
- Integrated export of complete manufacturing information from the model directly to 3D tube profiling production.
- XML format-based industry standard for transferring data that is open for any tube profiling machine company or design software supplier.
- Visualisation module for 3D representations of cutting shapes.

The new software solution covers all 3D tubular profiles, from design and detailing to automatic fabrication. This

has not been an integral part of any main design program, and required separate manual data input and editing. Tekla's Building Information Modeling (BIM) concept provides benefits to those involved in tubular steel construction.

All information can be managed and kept up-to-date in the BIM model, so all data can be extracted from one source. No manual input or editing is needed.

HGG's Management Information System ProCAM adds to the concept industry-specific tools (for example, can rotation for the offshore industry), integral production management (such as return signals confirming processing), and planning. The new solution is available with Tekla Structures 15.0, which was released to market in the spring.

**HGG Profiling Equipment BV –**

The Netherlands

info@hgg.nl

www.hgg.nl

## New concept positioner

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.

Two versions of the machine are available, one with oleodynamic movement, and one with oleodynamic lifting and inclination and electromechanical rotation. The machine can be supplied with a bronze 600 or 1,500W rotary mass.

**Sideros Engineering Srl – Italy**

estero@siderosonline.com

www.siderosonline.com

## Tube Products INTERNATIONAL

### Forthcoming features

#### January 2010

- Copper Tube (HVAC & other applications)
- Extruded Tube and Pipe Products
- Tube Düsseldorf 2010

#### April 2010

- Small Diameter, High Precision Tubes
- Coated Pipes & Tubes (internal & external coatings)
- Fittings and Flanges

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## PLUMBING MANUFACTURING

Standard: ANSI, DIN, BS

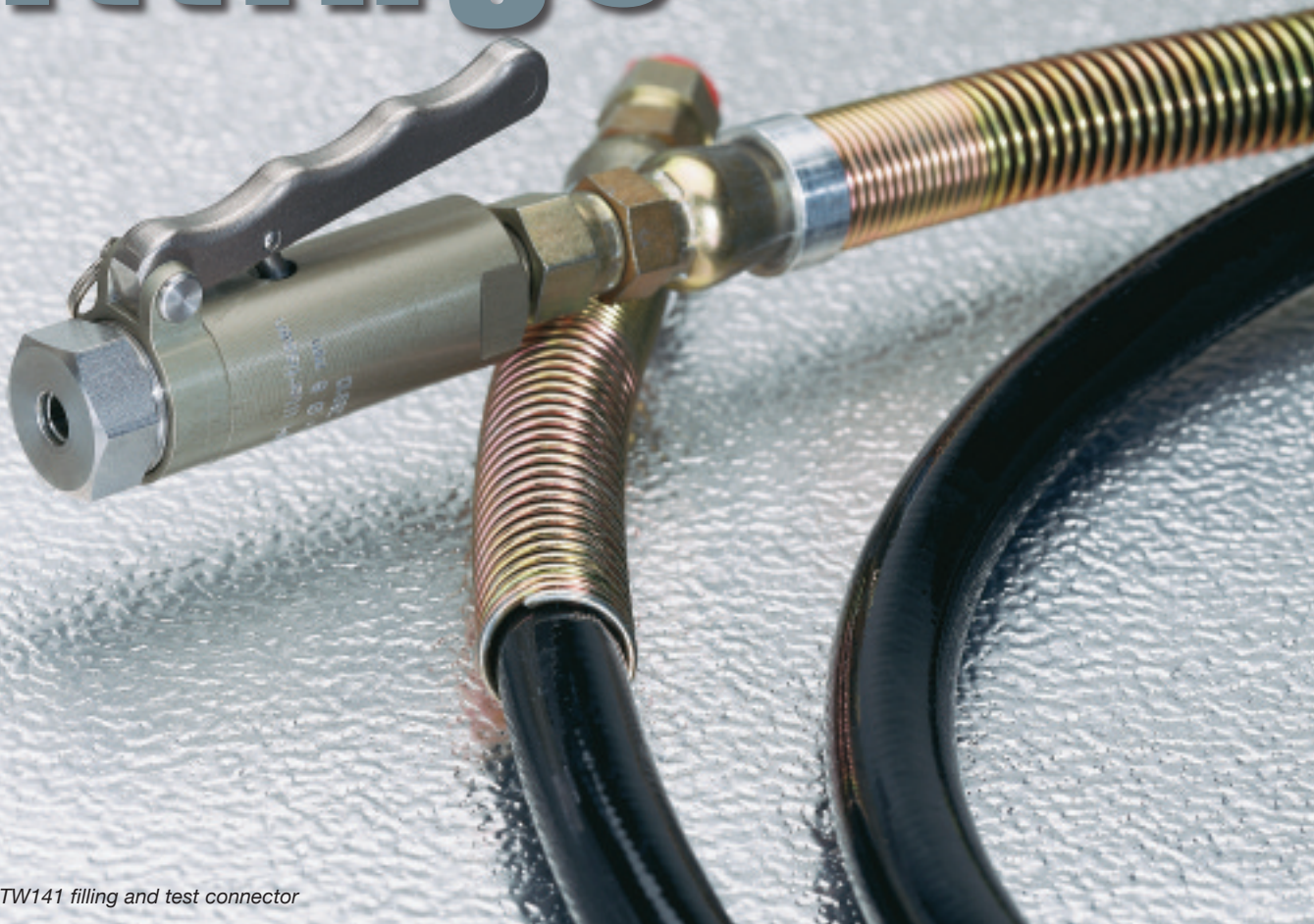
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Malleable Iron Pipe Fittings  
Conduit Elbows/Nipples

ISO 9001:2000, Nsf61-4, AB1953



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18B-602, YiAnJiaYuan, 100089, China  
Tel:(8610)68461288, Fax:(8610)68468522  
E-mail:info@bbp.cn Http://www.bbp.cn

# Fittings



▲ WEH's TW141 filling and test connector

## Quick and efficient filling and testing of closed cooling systems

WEH GmbH offers a range of test connectors that enable pressure- and function-tight connections in seconds. The product line includes quick connectors for pressure, function and leak testing. The company can supply connectors for any connection configuration, ie internal or external threads, straight tubes or bores, with collars or beads.

The company has developed a connector for function and leak testing as well as filling of closed cooling systems. Type TW141 can be connected easily to straight tubes, without screwing. For difficult to access tubes, eg heat exchangers, an extended version of type TW141 is available.

For automated testing, for example on production of tubes or heat exchangers, TW141 is indispensable. Tubes with an external diameter of 3.5-22mm can be

tested easily from vacuum up to 100 bar. The connector features easy, single-handed, push to connect operation without requiring adjustment. The lever actuation eliminates twisting threaded connectors and turning toggle actuated connectors, which means that lateral forces that might cause the tube to bend when connecting are not generated. After having established the pressure tight connection, the test medium can be supplied and filling, function or leak testing can start.

WEH offers adaptors for different media inlets. Additionally, a retaining plate, which can be used for all body sizes, is available. WEH manufactures a complete range of quick connectors as well as customer-tailored solutions.

**WEH GmbH** – Germany  
webinfo@weh.com  
www.weh.com



▲ TW141 is designed to eliminate lateral forces when connecting to straight tubes



## Clean break, low pressure couplings

NEW, robust, clean break, low pressure couplings in the CT series by Walther-Präzision are designed for multi-purpose use in chemical and fluid technology, hydraulics, machine and systems engineering, process engineering as well as medical and food applications.

Manufactured from top-quality materials (stainless steel), the CT series is suited to aggressive and toxic substances, in the pressure range from vacuum to 64 bar.

The clean break technology of the CT series enables the user to connect and disconnect the non-drip, non-squirting coupling safely and quickly, optimising environmental and user safety.

Further characteristic features are minimal pressure drops and high flow rates due to a flow-enhanced design. Power loss caused by friction is minimised and the energy demand is reduced.



◀ CT series couplings from Walther-Präzision

Quick connection and separation times require only low coupling forces, with a safe and simple one-hand operation through the integrated automatic lock. The coupling can be safely connected even under residual pressure.

“The way we planned the CT series, the coupling can even be used for demanding applications without any modifications,” explained Dipl.-Ing Dirk Heinrich, head of development at Walther-Präzision. “We even developed and successfully introduced an advanced thermal insulation for the CT series that protects the user and we

also developed a purpose-built valve technology for special applications, eg for high temperature applications.”

The clean break couplings are manufactured as standard from stainless steel and come with an ATEX approval. With its nominal sizes 5, 7, 9, 12 and 19mm, the new series complements the company’s range of couplers, whose larger nominal sizes cover 25 to 100mm.

**Walther-Präzision Carl Kurt Walther GmbH & Co KG** – Germany  
info@walther-praezision.de  
www.walther-praezision.de

## SAE flanges

SCHWER Fittings supplies 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 stocks the flanges in both 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 occur, in industries such as offshore, shipbuilding, hydraulic, petrochemical and paper machines.

Schwer Fittings SAE flanges with welding ends are offered as butt weld or socket weld.

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

▼ Schwer Fittings is a supplier of SAE flanges



## Rapid delivery of seals

JOHN Crane, a provider of engineered products and services for the major process industries, including oil and gas, power, chemical, pharmaceutical, and other general industries, has launched a next-day delivery service within the UK for its standard range of mechanical cartridge seals. The new service covers standard size seals constructed from standard materials.

"This new service reflects the fact that we understand our customers' need to access the products they require both quickly and easily," explained John Crane UK general manager, Colin Ure. "Any seals covered by our new service that are ordered before 2.30pm will be delivered to the customer the following working day, helping them minimise downtime and keep their processes operating at maximum efficiency."

Among the seals covered by the new service are John Crane's 4600 Series of single and double O-ring cartridge seals, which are suitable for water and wastewater, pulp and paper and



▲ John Crane mechanical cartridge seals are now available with a next-day delivery service within the UK

power generation applications. The compact and easy-to-install 4610 single seal is suitable for a variety of general duty applications, and the 4620 dual cartridge model meets key industry pump standards.

Standard seals in the company's 5600 Series Universal Cartridge Seal Family

are also available using this new service. Suitable for chemical, petrochemical and pharmaceutical applications, the modular construction of the 5610 single O-ring seal and 5620 dual O-ring seal ensures components are easily interchangeable between different models. This allows one seal family to be used throughout a plant, reducing downtime, maintenance requirements and stockholding costs.

The new system can also be used to access John Crane's FFET range of cartridge seals. Designed to reduce installation time and errors, these compact seals will fit all ANSI and DIN stuffing boxes, and offer a practical upgrade from packings.

Their robust construction makes them suitable for applications involving chemicals, oil, water and abrasive liquids, especially those involving top-entry mixers where the liquid product may not provide continuous cooling and lubrication of the seal faces.

**John Crane – UK**  
enquiries@johncrane.co.uk  
www.johncrane.co.uk

## Torsionally soft alternative to all-metal couplings that limits vibration

LARGE compressor units, such as those used by companies in the oil and gas industry, are normally driven by powerful electric engines, which are connected to the compressor units by means of all-metal couplings. The drawback of this design is that harmful vibrations induced by the piston compressor, caused by high torsional stiffness and weak damping characteristics of

the couplings, are transmitted to the drive unit. This results in damage to the coupling and high loads for the bearing units, which may even cause a breakdown of the complete system.

The Centax-SEC flexible coupling system from Centa offers a torsionally soft alternative to standard all-metal couplings. The flexible couplings shift

harmful resonances to subcritical ranges, ensuring fail-safe operation of the compressor system. With only minimum impact on the system, the couplings even equalise misalignments caused by installation and operation.

The principle of a modular design coupling system is based on one or more highly flexible Centax rubber elements made of natural rubber or silicone supplied in different ranges of shore-hardness.

Combined with a membrane coupling, a link or a bolt coupling, and a wide array of flanges and hubs, the couplings achieve flexibility in all directions, and provide adaptability with regard to design and construction, with a manageable torsional stiffness. The torques cover a range from 2.5 to 650 kNm.

Type-approved by renowned classification societies, the couplings are designed in consultation with the customer to meet API standards.

**Centa – Germany**  
info@centa.de  
www.centa.info



▲ The Centax-SEC flexible coupling system offers an alternative to all-metal couplings



## Valves and controls distributor

TYCO Flow Control, part of Tyco International Ltd, is a manufacturer and marketer of valves and controls, water and environmental systems, and thermal control solutions to industries including energy, power, water, mining, chemical, food and beverage, and construction.

Tyco Valves & Controls Italia's sales and distribution operation has earned OHSAS 18001 and ISO 9001 certification, after an in-depth evaluation of the company's quality and health and safety management systems through SGS.

While Tyco Valves & Controls Italia's production facilities already possessed the most up-to-date certifications, the sales and distribution arm – which stocks, assembles, delivers and services the complete range of Tyco products – was determined to show its commitment to quality and health and safety in the assembly, distribution and sale of all brands within Tyco products portfolio.

Commenting on the news, operations manager Adriano Marziali said, "This demonstrates the whole organisation's commitment to improving our management systems. The implementation of OHSAS 18001 and ISO 9001 shows we are ideally placed to meet the requirements of major industrial end users, EPCs and other customers, but it is also helping us to drive continued improvement into our business."

**Tyco Flow Control – USA**  
www.tycoflowcontrol.com

**Tyco Valves and Controls Italia – Italy**  
www.tycovalves.com

## Single-stage diaphragm high flow pressure regulators

BESWICK Engineering has launched an ultra-miniature single-stage diaphragm pressure regulator designed to provide greater flow than the Beswick PRD series regulators. The high flow regulator is offered in a 10-32 ported version (PRDHF) and a manifold mount version (PRDHF8).



The PRDHF high flow regulator is claimed to set an industry standard for miniaturisation. It is suitable for gas and pneumatic pressure regulation applications and is particularly useful when space and weight are critical. The PRDHF weighs approximately 35g in brass and stainless steel and about 18.2g in aluminium. The non-relieving high flow regulator controls output pressures from 0 to 30 psig and is suited to low pressure regulation such as ½ psig. Maximum inlet supply pressure is 500 psig. Both the inlet and outlet ports are tapped 10-32 UNF.

The PRDH8 manifold mount version has similar features to the PRDHF, but weighs 52g in brass and stainless steel; the inlet is a 5/16-24 UNF external thread and outlet port is through a 0.094" diameter hole at the base of the regulator body.

Applications include hydrogen fuel cells, medical equipment, instruments, laboratory equipment, ink jet print engines, and semiconductor manufacturing equipment. Beswick has applied for patent protection on the pressure regulator.

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

# FLANGES

SHANDONG FLYING CASTING & FORGING CO., LTD. (Qingdao, China)  
Tel: +86-532-85061468 / 85065950 Fax: +86-532-85062336  
Website: www.plumbingchina.com E-mail: kjx@plumbingchina.com

## Hoopster retaining rings launched

SMALLEY Steel Ring Company, manufacturer and developer of Spirolox® retaining rings, snap rings and wave springs, has introduced Hoopster retaining rings. Hoopster rings are designed to fit into shallower grooves than regular snap rings or retaining rings.

The Hoopster's low profile, precision circularity and small radial size allow it to be an unobtrusive component in an assembly. Hoopster retaining rings are suitable for light to heavy loads, particularly for thin wall tubes. An additional advantage of the Hoopster is its potential for high thrust capacity. The low radial profile will not twist or deform under load as with conventional retaining rings.

Hoopster retaining rings are easily installed without special tools. Standard sizes are stocked from 3/8" to 3" and offered in carbon and 302 stainless

steel. Specials can be made with No-Tooling-Charges™.

Smalley offers thousands of standard configurations, does not charge for tooling of non-standard sizes, and in most cases can provide special orders

in as little as one to two weeks. The company meets international standards including ISO 9001, ISO/TS16949, AS9100 and ISO 14001.

**Smalley Steel Ring Company – USA**  
info@smalley.com • www.smalley.com

▼ *Smalley's new Hoopster retaining rings*



## Barrier pipe service connection directly from a ductile iron main

GPS PE Pipe Systems has added an additional live ferrule off-take to its Protecta-Line® range of barrier pipe and fittings, allowing branch connections from ferrous water pipes to be made quickly and safely.

The WRAS-approved ferrule answers water industry calls for a simple way to provide Protecta-Line service

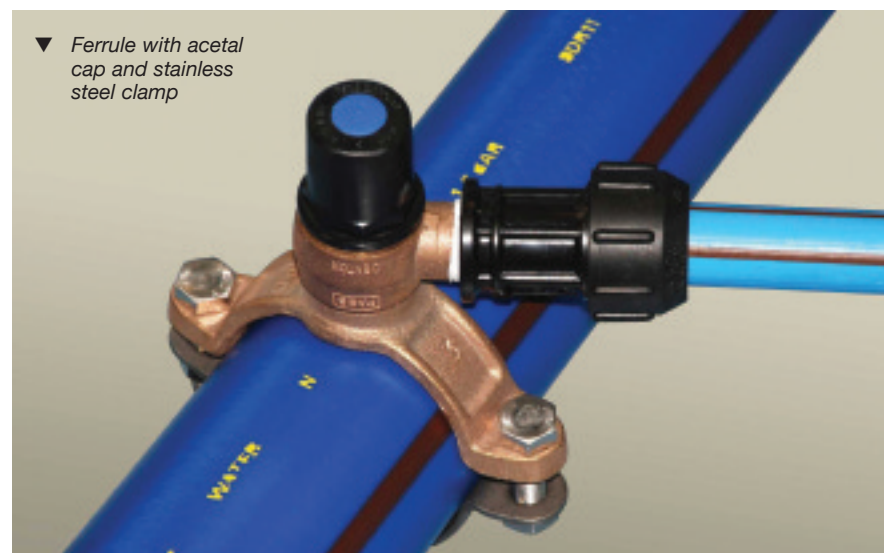
connections, directly from a ductile iron main, to developments on brownfield land. As the gunmetal ferrule can be installed while the main is at normal working pressure, no disruption to the supply is necessary when adding a connection. Compliant with WIS 4-22-02, the ferrule provides a solution for connecting a 25mm Protecta-Line service to live ferrous mains pipes.

Fitting the live ferrule off-take is straightforward, using a normal under-pressure drilling machine. A hole is drilled and tapped to accept the ferrule's 3/4" BSPT gunmetal stem and plug. The drill can then be removed and the off-take banjo fitted, complete with a dedicated Protecta-Line mechanical compression end connector to accept the 25mm Protecta-Line service pipe. With all joints securely made, the plug is rotated to open the flow to the service pipe.

This new fitting complements the equivalent self-tapping ferrule off-takes for connection to Protecta-Line mains pipe sizes 63mm to 355mm, which were recently introduced by GPS PE Pipe Systems. Featuring the same banjo component and designed to minimise head-loss, these ferrules include a stainless steel saddle clamp for additional security. Both ferrule types provide protection against the ingress of contaminants.

The Protecta-Line barrier pipe system has full BSI Kitemarked status to WIS 4-32-19, a water industry standard for the transport of drinking water through contaminated land.

**GPS PE Pipe Systems – UK**  
enquiries@gpsuk.com  
www.gpsuk.com





## Flanges and fittings from Euroflansch

EUROFLANSCH manufactures flanges and fittings for wholesalers and large consumers. Products include small- and large-size flanges, special parts, fittings and elbows, made from carbon, alloy and stainless steels.

The company's quality manager is part of the team of developers of EN1092-1 Norm, and is also a member of the standardisation committee for pipings and steam-boiler-plants. Euroflansch is certified acc DIN EN ISO 9001:2000, approved as material manufacturer acc to AD 2000-W0, and has implemented and applies QA System acc to PED 97/23/EC, having approval CRN 0B12002.5ADD1 for flanges B16.5.

**Euroflansch GmbH** – Germany  
info@euroflansch.com  
www.euroflansch.com

## Two-phase sealing sockets for use with cable protection pipes

VOGELANG, Germany, has developed a special joining element for the pressure tight joining of plastic cable protection pipes.

The factory-installed Vogelsang special two-phase sealing ring without support ring allows a problem-free change of the profile sealing ring, in case of possible damage.

The inserted lip has the function of a wiper, in order to wipe off the surplus of lubricant, required for the joining of the pipes.

It also functions as a compression lip, to prevent the sealing ring from being pushed out after inserting the pipe extremity into the supporting device.

The sealing socket ensures tightness and high working safety due to the multiple sealing element. The special design of the top of the lip prevents the penetration of foreign bodies like sand

between sealing surface and profile sealing ring.

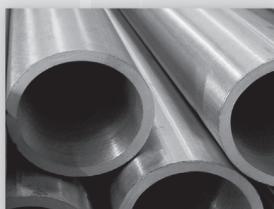
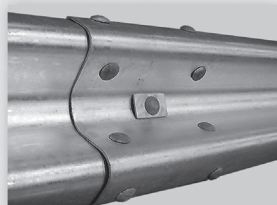
Due to the improved construction of the profile sealing ring, only low insertion force is required for the joining of the cable protection pipes.

For PVC-U cable protection pipes, the Vogelsang sealing socket system with factory installed special two-phase sealing ring meets the requirements of DIN 16873/75 – PVC-U cable protection pipes; for PE-HD cable protection pipes it meets the requirements of DIN 16876 (pressure tight up to 0.5 bar), and for PP cable protection pipes, DIN V 16878.

The system also meets the requirements of the Deutsche Telekom standard.

**Dipl -Ing Dr E Vogelsang GmbH & Co KG** – Germany  
info@vogelsang-kunststoffe.de  
www.vogelsang-plastics.com

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## Zibo Wel-Fit Metal Products Co Ltd

### Product Range

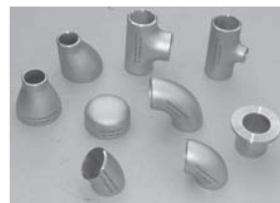
Elbows – LR SR 45 90  
Return Bends – LR SR 180  
Tees – Straight & Reducing  
Reducers – Con & Eccentric  
Stub Ends – MSS TYPE-A& B  
Stub Ends – ASME Long  
End Caps  
Sch5S – XXS  
1/2" ~60", 3/4"X1/2" ~ 60"X36"

### 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



CRN



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Impact, Hydrostatic Test  
Spectro-analysis

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No 18, Lushan Road, Linzi,  
Zibo, P.R.China Zip 255418  
e-mail: info@wel-fit.com

## Medium-pressure ball valve delivers sealing up to 15,000 psig

THE Swagelok® FKB series medium-pressure ball valve, designed for improved cycle life in the field, provides a leak-tight seal for applications up to 15,000 psig (1,034 bar).

The trunnion-style ball valve features Swagelok's patent-pending direct load design, which delivers a consistent seal across a full range of pressures.

Innovative stem and end connection seals prevent shell leakage and provide robust cycle life even in severe conditions. The introduction of this ball valve expands the company's line of medium-pressure products, including gaugeable tube and adapter fittings and seamless tubing, which satisfy the higher working pressure requirements of the oil and gas industry.

Swagelok medium-pressure ball valves deliver reliable and repeatable operation to meet the performance requirements of common offshore applications, such as topside wellhead control panels, chemical injection panels, well workover panels and control systems. A bottom-loaded stem design eliminates system blowout for enhanced operator safety. Maintaining the integrity of the valve seal is critical for applications where positive shut off is required.

The valve features low-torque actuation, eliminating the need for assist methods and accessories in manual actuation. If pneumatic actuation is required, the valves are available with ISO-5211 compliant actuators. A positionable handle provides flexibility in panel layout by reducing clearance issues with other components.

Swagelok medium-pressure ball valves feature a 0.209" (5.3mm) orifice, 316 stainless steel body construction, and reinforced PEEK seat seals. The valves are rated for temperatures from -17° to 121°C (0° to 250°F) and maintain a full pressure rating throughout the entire operating temperature range. Multiple O-ring materials are available, including nitrile, fluoroelastomer, and perfluoroelastomer. All wetted materials are compatible with most hydrocarbons.

Offered in a 2-way configuration, the valves are available with Swagelok medium-pressure tube fitting end connections, which provide single turn makeup, or makeup by torque, for reduced installation time and labour costs. As with traditional Swagelok tube fittings, the end connections employ a two ferrule design to deliver robust tube grip, leak-tight gas seal, and vibration resistance. Female NPT end connections are also available. End connections sizes are 1/4, 3/8, and 1/2".

The FKB series valve is the company's first release of three sizes for its medium-pressure product line. The Swagelok line of medium pressure products includes medium pressure fittings and seamless tubing. The 316 stainless steel fittings are available in a variety of configurations for use with medium pressure stainless steel tubing, both heavy wall annealed and cold-drawn 1/8 hard, and heavy wall SAF 2507™ super duplex tubing.

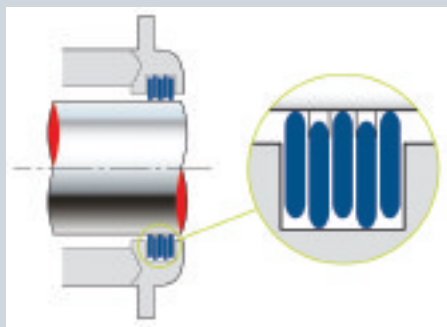
**Swagelok Company – USA**  
www.swagelok.com

## Laminar sealing rings

TFC Europe Ltd provides engineering solutions that incorporate the use of high quality fasteners and ring and spring products. As a technical based distributor, the company has thousands of fastening solutions, including one-stop-shop capability, and has been a BS/EN/ISO 9002 approved supplier since 1990.

Once a natural gas or oil well is drilled, and it has been verified that commercially viable quantities of natural gas or oil are present for extraction, the well must be completed to allow for the flow of oil, petroleum or natural gas out of the formation and up to the surface. This process includes strengthening the well hole with casing, evaluating the pressure and temperature of the formation, and then installing the proper equipment to ensure an efficient flow out of the well. This is where a choke valve controls the pressure and flow, and it is imperative that the primary scraper ring performs its function of keeping the flow regulated and free from debris.

Choke valves are the first primary valve used to control flow and pressure when oil and gas exits the well. In this position the valve is exposed to high velocities and direct impacts from material suspended in the oil, from fine sand and grit, and sizeable chunks of rock and other debris. It is one of the most arduous applications for any valve.



▲ *Laminar Rings: a metal labyrinth is created by using a set of three in-spring and two out-spring single turn rings in an alternating configuration*

Sealing is a vital element in the construction and TFC's Smalley Laminar Rings have been specified as the primary scraper ring seal used in the stem packing and stem plug arrangements. Laminar Rings are configured to create a metal labyrinth, the arrangement of which is dependent upon the severity of the environment. Manufactured in Haynes 25 Alloy L605, and with special interlocking end configurations, they provide a suitable scraper ring seal set to withstand the arduous conditions to which they are regularly subjected.

The criticality of keeping the valve clear of debris is crucial, and failure to do so can dramatically affect performance ultimately leading to a failure within the system, which if a blockage occurs can be catastrophic.

**TFC Europe Ltd – UK**  
rupfield@tfc.eu.com • www.tfc.eu.com



## Valve manufacturing in China

KINGSUN Valve Co, Ltd is valve factory established for over 14 years. The company's main products are brass/zinc valves and pipe fittings, including ball valves, bibcocks, angle valves, gate valves, stop valves, boiler drain valves, check valves, foot valves and float ball valves.

**Kingsun Valve Co, Ltd** – China  
sales@kingsunvalve.com  
www.kingsunvalve.com

## Rubber-steel flange gaskets

RUBBER-STEEL flange gaskets and adjustable wedge rings have been proven in use over many years in all areas of pipeline construction. Kroll & Ziller has 40 years of experience in solving sealing problems, and manufactures a range of flange gaskets designed to provide high efficiency, reduced operating costs and reduced fugitive emissions. The company's sealing products are used by steel mills, power plants, petrochemical, pharmaceutical industries, and gas and water companies.

Production disruptions and rejections, maintenance and repair costs must be prevented by choosing the right construction materials. The risk of possible environmental pollution must also be eliminated. The policy of Kroll & Ziller over the last 15 years has been specialisation, research and development in close collaboration with large number of customers.

The wide range of standard gaskets available for sealing flanges allows top quality standardisation. The ease of installation is attributed to the rigid steel core, even with large nominal widths and undesirable stresses.

**Kroll & Ziller GmbH & Co KG** – Germany  
info@kroll-ziller.de  
www.kroll-ziller.de

## Burn-out safety measured at up to 240 bar on non-return valve

800ES gas non-return valves from Witt, the gas safety, control, mixing and analysis equipment supplier, have been tested by BAM Federal Institute for Materials Research and Testing in Germany for burn-out safety up to 240 bar (3,481 psi) with oxygen.



The 800ES non-return valve, which can also be used with other technical gases including hydrogen, is designed for installation in a gas supply system, automatically preventing creeping or sudden reverse gas flow.

◀ Witt's 800ES non-return valve

Applications include cutting and burning equipment, pressure control stations and flammable gas supply pipelines.

The easy-to-install non-return valve is less than 70mm long with a diameter of 18mm, and has a 1/4" NPT thread. The valve is manufactured in stainless steel, which is more resistant to wear than brass, and the valve seat and O-ring used is dependent on the type of gas.

Carl Long, general manager at Witt UK commented, "The one time test by BAM helps users of this non-return valve to obtain a permit for their gas supply system. Not only does it enhance the user's safety by reducing the risk of accidents, it makes savings on costs."

**Witt Gas Techniques Limited** – UK  
witt-uk@wittgas.com  
www.wittgas.com

## Thin film innovation assists with complicated system assembly

EUROTUBI Pressfitting is a system of tubes and fittings in stainless and carbon steel, used for hydrothermosanitary installations and assembled with press-technology.

In order to make installation quick and efficient, the system's manufacturer, Eurotubi Europa, has added a thin, coloured plastic film to the external side of the o-ring seat. When the fitting is being pressed, the plastic film tears, falling off the fitting or remaining easily removable by hand.

The installer will quickly notice if any of the coloured film remains on the fittings, making it unnecessary to closely inspect each connection.

The new solution does not interfere with the assembly of the system, and permits the rapid verification of missing pressings of the fittings, and so avoids any possible leakage.

**Eurotubi Europa Srl** – Italy  
info@eurotubieuropa.it  
www.eurotubieuropa.it

▼ A selection of products from Eurotubi



# Tube and pipe Materials

▲ *Bluewater's composite cryogenic hose for LNG transfer, made with Dyneema*

## Flexible large bore cryogenic hoses for next generation offshore LNG transfer

BLUEWATER Energy Services BV has introduced a Composite Cryogenic Hose made with Dyneema® fibre, designed as a flexible large bore hose for high volume offshore LNG (liquefied natural gas) transfer. This is the first cryogenic application in which Dyneema fibre has been used.

In transferring LNG, hoses ideally need to be large-bore, durable and able to handle the sustained and potentially high loads induced by the offshore marine environment. They should also be flexible to allow operability in harsh weather conditions. Large volume fluid transfer enabled by these large-bore hoses (up to 5,000 cubic metres of LNG/hour with 16" hose) reduces the duration of the marine transfer operation and, therefore, the overall risk exposure.

This is a challenging requirement, as the low LNG temperatures along with unfavourable environment severely restrict the range of materials that can be used for hose construction. Dyneema provides exceptional strength, light weight and resistance to low temperatures, all of which meet performance needs. Bluewater's large-

bore hose construction includes a patented circular braided layer made from Dyneema, a key enabling component providing the Composite Cryogenic Hose with high axial strength, flexibility and increased pressure capacity.

Key characteristics of the Composite Cryogenic Hose are its tensile load performance, pressure capability, flexibility and bending endurance. This allows easy and controlled offshore handling and reliable operations. The hose is the result of an extensive ten-year research and development programme. DSM Dyneema and Bluewater cooperated closely for the last two years and both companies have now committed to a strategic partnership that will involve cooperation on marketing and further product innovation developments.

Jorn Boesten, segment manager offshore for DSM Dyneema commented, "This hose is another extension to the range of demanding applications where Dyneema fibre is used in harsh marine and offshore environments, ranging from LNG tanker mooring lines, deepwater installation lines to offshore

platform mooring lines and heavy duty lifting slings."

Natural gas is the most environmentally friendly fossil fuel source for energy production. LNG is considered to be the ideal means to transport stranded natural gas, found in remote offshore areas, where the traditional pipeline infrastructure cannot reach. Mining of stranded gas is not always economically or physically viable. However, the world's demand for energy is driving industry to explore new solutions and the new large bore flexible cryogenic hose will enable safer, more efficient harnessing and transportation of new gas reserves.

LNG transfer operations include the offloading from a tanker to an offshore floating storage and regasification unit (FSRU), ship-to-ship (STS) transfer of LNG from a floating production, storage and offloading (FPSO) vessel to a shuttle tanker in an exposed location, STS lightering operations and even exposed ship-to-shore LNG transfers.

**DSM Dyneema** – The Netherlands  
info.dyneema@dsm.com  
www.dyneema.com

**Bluewater Energy Services BV** – The Netherlands  
info@bluewater.com  
www.bluewater.com



## Arkema rounds out the Rilsan HT for extrusion product line

LAUNCHED in March 2009, Rilsan® HT for extrusion is claimed to be the first flexible high-temperature thermoplastic to replace metal in high-temperature applications.

Arkema has now also introduced Rilsan HT injection resins, making the range a complete polyphthalamide (PPA)-based product line suitable for all process technologies, ranging from extrusion to blown or injection moulding.

Rilsan HT resins are up to 70% bio-based and match the increasing environmental commitment of many industries.

PPA-based injection resins in automotive applications have increasingly replaced metal parts as a way to optimise costs, reduce emissions and weight, improve fuel economy and extend car life.

However, the resins have previously been difficult and costly to process when compared to aliphatic high-performance polyamides.

Rilsan HT is said to be the only PPA-based injection resin that offers processing characteristics similar to those of aliphatic high-performance polyamides.

With mould temperatures close to those of PA12 and PA11, Rilsan HT can be easily processed on standard injection-moulding equipment using conventional water-cooled temperature control. It can also be processed in injection moulds designed for PA12 and PA11 thanks to similar mould shrinkage properties.

Unlike conventional PPA-based resins, Rilsan HT has very low moisture uptake, which provides multiple benefits in manufacture and applications.

Low moisture pickup means that Rilsan HT resin is easily stored and requires no supplemental steps before processing.

Low moisture absorption makes the resin easy to process and handle, and imparts reliable uniformity to the

finished parts' properties, which avoids further downstream processing and limits waste.

Arkema claims that Rilsan HT is the only PPA-based injection resin that can be easily spin-welded with aliphatic high performance polyamides – a completely new processing feature for this material group.

This offers further component integration and addresses the enhanced safety and emission standards of pipe connections in fuel-conducting systems.

Rilsan HT injection grades – glass-fibre reinforced or formulated for conductivity – are suited to metal replacement in fuel system applications requiring low permeation, low swelling and high thermal resistance.

The suitability of the injection grade for quick-connectors and other temperature resistant parts extends to power-train components including those integrated with Rilsan HT flexible tubing.

**Arkema – France**  
[www.arkema.com](http://www.arkema.com)

## Silicon nitride ceramic for demanding components

CERADYNE'S Ceralloy® 147-31N silicon nitride exhibits a combination of mechanical, thermal and electrical properties that the company claims is not found in any other material.

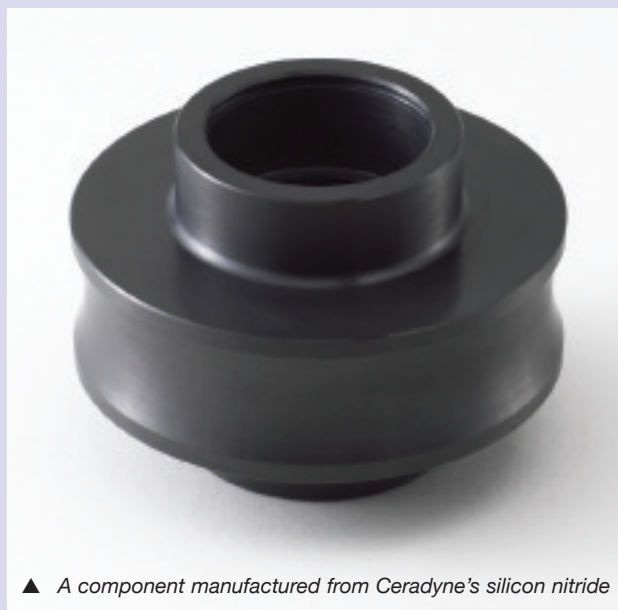
These properties include exceptional wear resistance; light weight ( $\frac{1}{3}$  the weight of tungsten carbide); superior thermal shock behaviour; electrically non-conductive; non-magnetic; and low coefficient of friction against steel.

Silicon nitride parts are said to outperform metal components by reducing part failure and consequent system down time.

Ceralloy silicon nitride components are produced in fully dedicated facilities at Ceradyne manufacturing plants in the USA and Europe, using patented compositions and processing techniques. The technology uses inexpensive, plentiful raw materials and time-tested, high volume ceramic manufacturing processes.

Ceradyne's lightweight, durable heat and erosion resistant silicon nitride is suited to applications from aerospace to automotive engines and industrial applications.

**Ceradyne, Inc – USA**  
[info@ceradyne.com](mailto:info@ceradyne.com) • [www.ceradyne.com](http://www.ceradyne.com)



▲ A component manufactured from Ceradyne's silicon nitride

## New tube materials in development

FOR energy-conducting tubes (oilfield, conduits and boiler tubes), the trend is moving towards higher-tensile alloys as preferred materials.

Pipeline producers must operate their pipelines under increasingly harsh environmental conditions and at higher pressure, in high-tensile steel grades such as X80, X100 and higher.

In addition, the trend in the large tube sector is moving towards thicker walls and increased resistance to low temperatures.

### New hot strip grades for oil and gas pipelines

Germany's largest steel producer, ThyssenKrupp Steel AG, is a manufacturer of feedstock for tube production. Since the middle of the 1980s the company has been supplying hot strips for tubes welded with longitudinal and spiral seams.

In doing so, the supplier specialised in input stock for tubes with diameters of more than 20" (508mm) and in sour-gas resistant qualities. ThyssenKrupp Steel delivers around 500,000 tons per year to tube manufacturers around the globe.

The company is also aware of the increasing demands of the input stock. Customers mainly demand

higher strengths in order to be able to transport larger oil or gas volumes at higher pressure, among other things.

While a few years ago, an operating pressure of 80 bar was standard for gas pipelines, today pipes are run at a pressure of up to 100 bar.

To keep pace with this trend, the development of higher-tensile tube steel grades with a classification of X80 for the standard grades and X70 for sour-gas resistant materials is underway.

The 'X' classification is based on the American measuring units and measures the strength in kilopond per square inch.

The approximate value for the minimum limit of elasticity in Megapascal (MPa) results from the multiplication of the X-value with a factor of seven.

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

For example, high viscosity can prevent the creation of kilometre-long tears caused by small defects exposed to the pressure in a pipeline.

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

Just under a quarter of the pipe casings supplied by ThyssenKrupp Steel are comprised of the so-called HIC (hydrogen induced cracking) grades.

It is planned to expand the strength range of these sour-gas resistant tube steel grades and offer HIC steel grades with strengths of up to X70.

If the transported oil or gas contains hydrogen sulphide, hydrogen-induced cracks can appear in the pipeline tubes. Such sour-gas wells exist in the Gulf region, as well as in Canada and Mexico.

During hydrogen induced cracking, the hydrogen sulphide connects to the water or water vapour in the oil or gas to form sulphuric acid, which attacks the tube walls.

During the corrosion process, hydrogen is produced, which diffuses into the steel and can lead to cracking. This can only be avoided by producing steel grades with a high purity level and an even texture.

HIC grade steel must be desulphurated, so it contains less than 0.0015% sulphur. In addition, calcium is injected into the liquefied material during production.

### Composite materials with customised characteristics

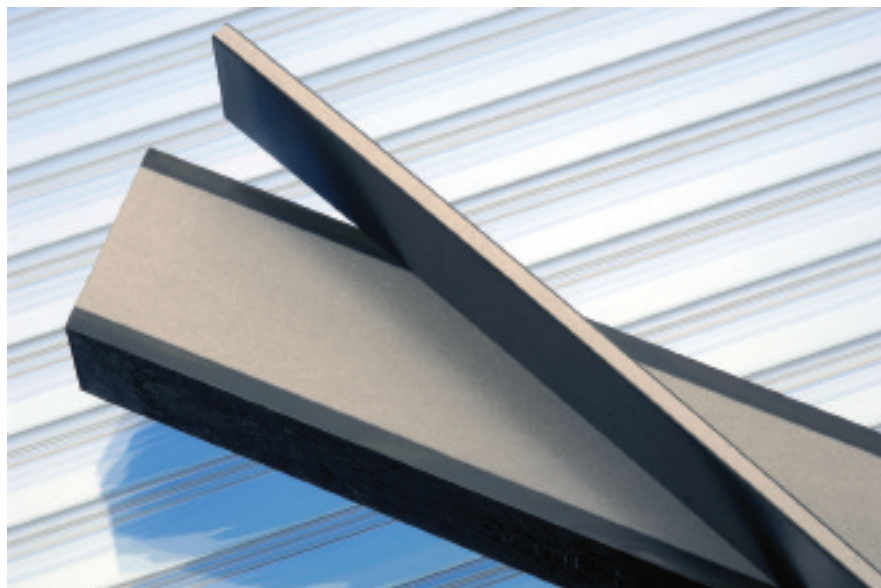
Tribond®, a product from ThyssenKrupp Steel, is described as a customised composite material off the coil. The hot-rolled material combines various, in part oppositional, characteristics in a three-layer steel strip.

The basic idea revolved around the development of a material that combines high resistance to wear and tear with good plasticity.

In the meantime, there are further developments that combine a comparatively low-cost, quality, hot rolled steel strip with a thin corrosion-resistant stainless steel surface.

Further research concerns MultiBond® products that expand the original three-layer TriBond design to five or more layers.

▼ *During the hot roll bonding process, a homogenous metalline bond at the atomic level is formed*





Hot roll bonding of various steel grades in itself is not new. However, to date it has not been used with coil material, but rather for heavy plates in the production of corresponding slabs.

The procedure creates a homogenous metalline bond at the atomic level between the individual layers in a single step.

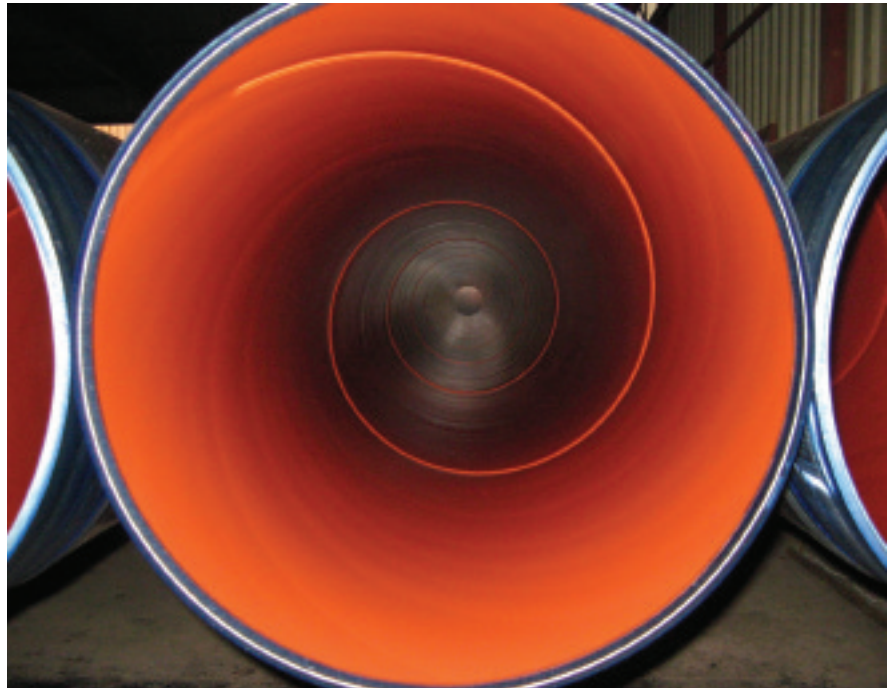
The high adhesive power of this bond can be evidenced using shear tests, among other things. As a coil material, TriBond can be processed economically, and it can be etched, cold-rolled and processed like conventional steel strips.

During production, the preliminary strips and the appropriately prepared slabs are first cleaned of any forging scales, placed on top of each other and connected with circular welds.

The welds stabilise the steel package and prevent the intrusion of furnace atmosphere between the individual layers during the heating process, which leads to the creation of forging scales.

The material bond is created when the steel package, heated to approximately

▼ *The TriBond crash element shows very symmetrical distortion after the axial crash test*



▲ *ThyssenKrupp Steel's latest developments in tube steel grades involve higher tensile materials for standard grades and HIC steel grades*

1,200°C, is pre-rolled in the roughing stand of the hot strip mill at a pressure between 2,000 to 4,000 tons.

Afterwards, the material may be rolled to hot strips of 2.5 to 7.5mm and cold strips of 0.1 to 2mm. The selected thickness ratio of the individual material layers remains stable during the entire process.

The composite material can conceivably be used in automobiles, as a crash element, for example.

During an axial crash test, a rectangular TriBond tube with the dimensions of 60mm x 60mm x 350mm and a wall thickness of 1.13mm was tested.

The C70/C15 test sample made of cold-rolled, annealed plate, which had been formed into a tube using a longitudinal laser weld, showed very even energy absorption along the path of distortion and very symmetrical distortion.

Researchers are currently working on the further exploitation of the potential of the procedure. For example, asymmetrical layer designs can be produced, where layers of varying thickness and strength enclose a core material that can be re-formed.

In addition it is possible to combine high tensile strength and good re-forming

characteristics or to connect wear-resistant materials with weldable ones.

A further project in development is Nirosta® TriBond as three-layer combination of high-grade steel with low carbon ratio with corrosion, acid and heat resistant steel grades. Possible uses in this regard are tubes with corrosion-resistant surfaces for the chemical industry as an economical alternative to stainless steel tubes.

New developments in the tube material sector are a central topic of the international trade fair, Tube 2010, which will take place at the Düsseldorf exhibition grounds from 12 to 16 April 2010. In addition, the trade fair will again present the entire range, from tube production and processing to utilisation. After a successful premiere in 2008, the sections Pipelines and OCTG Technology will again be showcased.

*Information supplied by Messe Düsseldorf GmbH*

**ThyssenKrupp Steel AG** – Germany  
info@thyssenkrupp.com  
www.thyssenkrupp.com

**Messe Düsseldorf GmbH** – Germany  
info@messe-duesseldorf.de  
www.messe-duesseldorf.de

*Photo credits: ThyssenKrupp Steel*

## Metal service centre receives Queen's Award for Enterprise

METALS UK, an international specialist metal service centre, has been honoured with the Queen's Award for Enterprise 2009, for outstanding achievement in international trade.

The Queen's Award for Enterprise is the highest honour that can be bestowed upon a British company and is the UK's top award for business performance.

Over the past three years Metals UK's export earnings have increased by 412%, as the company has strengthened its position in international markets, currently supplying over 40 countries in Europe, the Americas, the middle and Far East, India and Australia.

"We are delighted to receive our first Queen's Award," commented Robert

Whitehouse, Metals UK general manager, "Four years ago our business was purely domestic, while today business from international clients has risen to 50%.

"The markets we compete in are very aggressive and it is difficult to truly differentiate our offering from that of our competitors. We take pride in our vigilance in determining the end use and end destination of all our metal we export. Winning this award in the current economic climate is a testament to the hard work and dedication of our team and makes me extremely proud to be part of the business."

Mr Whitehouse and Ian Griffiths (company CEO) attended the formal ceremony at Buckingham Palace on 6 July, where Her Majesty the Queen presented the award.

Metals UK supplies a wide range of duplex, super duplex, nickel alloys and stainless steel to the offshore, oil and gas, chemical, nuclear and aerospace industries. The company also offers full cutting and added value processing capabilities in house, including laser, water-jet, plasma and hi-definition plasma.

**Metals UK Ltd – UK**  
[www.metalsuk.com](http://www.metalsuk.com)



▲ Metals UK staff were joined at the presentation ceremony by Ed Murphy of the Lancashire Chamber Of Commerce (back row, centre) and the Lord Lieutenant of Lancashire (front left)

## New thermoplastic composites research centre established

OFFICIALS from Boeing, Royal Ten Cate, Stork Fokker and the University of Twente have signed an agreement to establish the Thermoplastic Composites Research Centre (TPRC) at the University of Twente in The Netherlands.

Reasons for pursuing research into thermoplastic composites technologies are that they can offer cost-efficient fabrication and assembly processes and have environmental advantages.

Thermoplastics are said to be more ductile (impact resistant), and thermoplastic composites are potentially more sustainable than thermoset composites. These properties can result in shorter cycle times and more environmentally friendly processing methods.

As a result, thermoplastic materials are expected to have a major impact on the development of sustainable and cost-effective methods of production.

The concept of the consortium is to collaborate with different parties within the supply chain on thermoplastic composites.

The research centre will focus on development of thermoplastic composite technologies for a broad range of end-use markets including wind energy, oil and gas, aerospace, automotive, medical, machinery, infrastructure, sports and marine.

The centre will enable researchers and developers from all parties to work closely together on open innovations,



Photo credit: Sue Byford

▲ Boeing have worked with Royal Ten Cate, Stork Fokker and Twente University

and will also allow the sharing of research equipment.

New additional members to the TPRC consortium will be encouraged to join in the coming years, including organisations that will represent a wide range of market sectors.

**Thermoplastic Composites Research Centre – The Netherlands**  
[www.tprc.nl](http://www.tprc.nl)



## High performance plastics design and material knowledge

QUADRANT EPP has launched [www.designwithtorlon.com](http://www.designwithtorlon.com), a multimedia website that provides information to engineers, designers and machinists on the material properties and advantages of the company's machinable Torlon® PAI shapes.

In addition to standard material information such as product specifications, basic application information and downloadable documentation, the new site also features specially commissioned video elements that increase the site's appeal and usefulness for the design community.

Video segments cover topics such as saw cutting, turning, milling and fly-cutting.

Site visitors can see first hand how these processes are performed in Quadrant's Technical Centres. The processes demonstrated address many frequently asked questions about designing parts with Torlon PAI and many other advanced engineering plastics.

In addition to the video segments on material fabrication and machining procedures, Quadrant has introduced a newly commissioned series of video shorts modelled on a US talk show format that address design and performance concepts.

These segments are grouped in the site's Vodcast area and are intended



▲ The homepage of Quadrant's new interactive website

to be light-hearted, entertaining and informative.

The show can be subscribed to as an RSS feed for visitors who want to stay connected to new updates from the programme.

The primary aim of the site is to illustrate the material properties and performance advantages of Torlon PAI when compared to machinable polyimide materials. The versatile performance benefits Torlon PAI offers at elevated temperatures, ranging from 150°C to 250°C, are not always

understood in the wider materials design and engineering community.

These include excellent wear and frictional performance, exceptional strength, stiffness, and dimensional stability – all of which are described in the 'Why Torlon' section of the site.

Torlon PAI also displays high creep resistance and inherent low flammability, as well as resistance against high energy radiation (gamma- and X-rays).

Torlon PAI shapes are available in extruded, injection moulded and compression moulded grades, for a range of highly demanding applications in various industries, especially the aerospace, chemical processing, energy and semiconductors sectors.

**Quadrant Engineering Plastic Products** – Switzerland  
[contact@qplas.com](mailto:contact@qplas.com)  
[www.quadrantplastics.com](http://www.quadrantplastics.com)

▼ Quadrant's light-hearted talk show segments educate and entertain



read this magazine online:  
[www.read-tpi.com](http://www.read-tpi.com)



# FABTECH 2009

15-18 November 2009 • Chicago, USA

[www.fmafabtech.com](http://www.fmafabtech.com)

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

In its 2009 edition, the FABTECH International & AWS Welding Show — now including METALFORM — expects to welcome 35,000 attendees to examine the best that 1,000 exhibitors have to show them. But, despite its comprehensiveness, North America's largest metal forming, fabricating, and welding exposition never loses touch with its fundamental purpose: to bring the buyer and the seller together in an environment that fosters the lasting business relationships essential to them both. Accordingly, the world-class conference held concurrently with the exhibition will offer panels on a full roster of industry-pertinent business topics.



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

“I came here to see everything,” asserts one prior-year attendee, on the video now playing on the FABTECH website. And he did: thousands of live equipment demonstrations of metal forming, tube and pipe fabrication, stamping, lasers, thermal spray, welding, and every conceivable related technology. This time, there will be even more to see, of the most advanced processes and equipment on offer anywhere.

How to describe such an abundance — pavilion after pavilion of it, ably presented by people keenly alert to the privilege and responsibility of engaging the attention of a visitor to FABTECH?

Fabulous comes to mind.

**Event:** FABTECH 2009

**Date:** Sunday, 15 Nov: 11am – 4pm  
Monday, 16 Nov: 9am – 5pm  
Tuesday, 17 Nov: 9am – 5pm  
Wednesday, 18 Nov: 9am – 3pm

**Venue:** McCormick Place Trade & Exhibition Centre,  
2301 S. Lake Shore Dr.

**Phone:** +1 312 791 6300

**Email:** [information@fmafabtech.com](mailto:information@fmafabtech.com)

**Website:** [www.fmafabtech.com](http://www.fmafabtech.com)

# Tube & Pipe Pavilion Exhibitor List

3R Software Solutions.....	2031	Kent/Tesgo.....	4055
Abbey International Ltd.....	4081	Lillbacka Powerco USA Inc/Finn-Power.....	4097
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Accurex Measurement Inc.....	3080	Manchester Tool & Die Inc.....	4091
Addison Machine Eng Inc.....	4104	MiiC America Inc.....	4025
AIM Inc.....	2005	Mill Masters Inc.....	2045
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Andy J Egan Co Inc.....	4016	Officine MTM SpA.....	4070
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Eaton Leonard Tooling.....	3068	Sweed Machinery Inc.....	4067
EFD Induction Inc.....	3061	T&H Lemont.....	4061
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European Technology Center NA LLC (ETCNA).....	3043	T-Drill Industries Inc.....	4021
Fairing Industrial Inc.....	3081	Thermatool Corp.....	4001
Flowdrill Inc.....	4032	Thermo Scientific NITON Analyzers.....	4041
Foerster Instruments Inc.....	3074	Tools for Bending.....	3082
Formdrill USA Inc.....	4103	<i>Tube &amp; Pipe Technology Magazine</i> .....	3064
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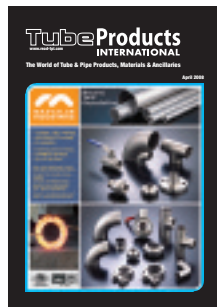
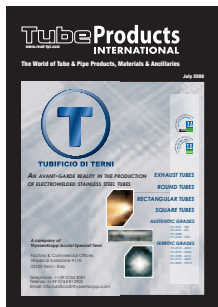
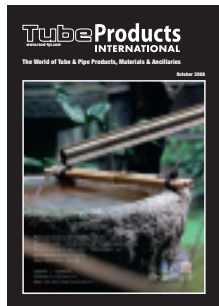
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## business & market news

### Contract for Tata Mundra Project

FebGreen, USA, a manufacturer of welded, welded and stainless steel, nickel and titanium tubing.

The company's Bharan branch office has secured a major contract in India's first CO2 transport power project.

The company was chosen by Indian engineering firm Larsen & Toubro, supply contractor, without bidding for the construction of the Tata Mundra Project.

Atkins O'Leary, the company's director for business development, Middle East and India, commented, "Our commitment to the region has resulted in increased sales and technical support for our clients partners and users. We are excited to address the exponential expansion in the area and are proud to contribute to that development."

Developed by Coastal Gasport Terminal, the Tata Mundra Project will provide power to over 16 million customers in the states 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 commercial competitiveness.

The project will create India's first power plant to use supercritical technology, the most sophisticated in the world. It will generate electricity by heating the supercritical water, the efficiency of energy generation is increased and emissions are greatly decreased.

FebGreen supplies products to a range of industries including pharmaceutical, power generation, energy - oil and gas, food, beverage, pharmaceutical, biopharmaceutical, medical, biotechnology and general commercial.

FebGreen - USA  
[www.febgreen.com](http://www.febgreen.com)

### A look ahead to Tube 2010

The international trade magazine Tube and Pipe, which is published quarterly, will showcase technological power from the sectors of wire, cable and tube processing, at Germany's Düsseldorf Exhibition Centre from 12 to 16 April 2010.

Tube 2010 will take place in halls 1 to 4, including a special area of products and services to be displayed, including tube production via processing to machining.

Exhibitors will include materials, tubes and accessories, machinery. At the Düsseldorf exhibition, visitors will be able to see the latest technology, process technology tools and auxiliary materials, measurement and control technology.

Test engineering and special areas such as mechanical engineering, measuring and control systems and computer-aided design technology on display.

The accompanying wire 2010 event will be held in halls 10 to 17 in the main hall of the exhibition centre. All products will be on display in hall 10, while part of hall 10 will be dedicated to the latest processes in spring making.

All applications connected to wire and cables, wire and cables machinery and tools will be located in halls 10 to 17.

A major topic in the area of tube trade, for the second time, after a successful debut in 2008, pipelines and OCTGs

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## Fittings

### Seamless supply stainless steel butt weld fittings

Stock Services is a new organization that aims to be the largest provider of the supply chain of support for tube fabricators, offering one-stop purchasing for 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 competitively priced products demanded by the distribution industry and other 'end users' supply to its clients, Stock Services has made considerable investments in state-of-the-art technology, machinery, equipment and international procurement.

Stock Services - UK  
[info@stockservices.co.uk](mailto:info@stockservices.co.uk)

The UK stock based in Birmingham is also supported by the manufacturer's stock, estimated at £1.6 million.

The company's website shows real-time stock, enabling clients to make purchases through the company's website.

Stock Services represents Lincol Steel Pipe Company Limited China. Both companies are approved by Lloyd Register of Shipping, with appropriate quality assurance standard ISO 9001.

All products conform to European Pressure Directive 97/23/EC.

The company's policy is to offer a seamless supply to the UK and European distribution sector, helping its customers achieve their aims.

Stock Services - UK  
[info@stockservices.co.uk](mailto:info@stockservices.co.uk)

### Flow-stopping a 630mm gas main

UPULIS, the field installation team from Russell Systems (Barnhill) Limited, working in partnership with Flowstop, have successfully carried out what it believes to be a 'world first' in installing a temporary 630mm polyethylene city centre gas main.

The project involved an extensive plan and solution for the 630mm PolyPE gas main, which was 10m long and installed in a 10m deep trench.

Supplies downstream were uninterrupted and equipped with a central valve and isolation for the gas main, developed by Radius Systems.

Traditionally, the technique had been installed in 270mm gas mains, as

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## Products & developments

### Increased nozzle life for plasma cutting systems

Hypertherm's Centrol brand engravers and manufacturers, advanced plasma and laser cutting consumables, the product has increased consumables that can deliver increased value to users of manual, automated and robotic cutting, bending and torch.

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

The company has launched new technology to benefit owners of Hypertherm's plasma cutting systems. Owners of Hypertherm's Plasma 600 and 800, as well as Hypertherm's Plasma 1000 products, can now purchase nozzles that are designed to last longer than standard Hypertherm nozzles. The nozzles are increased and operating costs reduced, through the use of advanced Centrol™ technology and patented Silux™ technology.

Centrol's Coaxial technology now generates using advanced modeling software that enables engineers to closely study heat distribution within the nozzle, as well as the cutting process. Centrol's engineers then worked to design a nozzle that would form the cooling and to the hottest area of the nozzle. The end result is money saved for customers, because the nozzle erodes cooler and lasts longer.

The Centrol technology is combined with Centrol's patented Silux™ electrode technology to further increase nozzle life. To create Silux™ electrodes, Centrol's metallurgists use a combination of silver and copper to increase electrode life.

"The increased life span of the Centrol nozzle will help Hypertherm users save money since advanced Centrol technology," commented Dan Lusk, vice president for Hypertherm's Centrol brand.

Hypertherm designs and manufactures advanced plasma cutting systems for use in a variety of industries, such as shipbuilding, manufacturing and general metal fabrication. Its product line includes handheld and mechanized plasma systems and consumables, as well as CNC, robot and night cutting.

Hypertherm - The Technocrats  
[www.hypertherm.com](http://www.hypertherm.com)

### Stainless steel and nickel alloy tubes

Founded in 1974, Italian company Tector SpA is a specialist in the manufacture of stainless steel and nickel alloy tubes. With advanced technology, the company has been producing a full range of 2205 duplex stainless steel tubes.

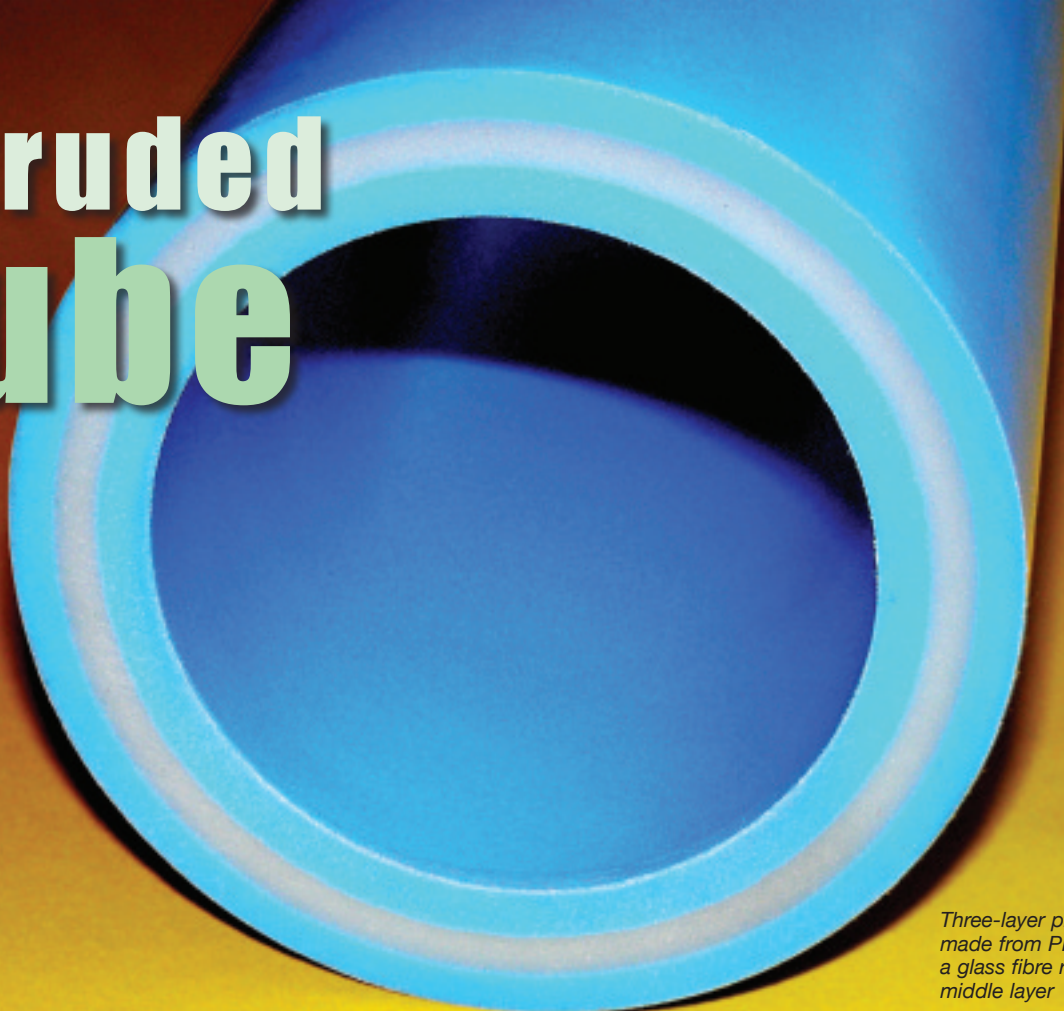
The company produces standard precision tubes, both in hot and cold forms, using the TCI welding process. The company offers a modern, well-equipped department for laser cutting and bending of tubes. Other 316L stainless steels just a few millimeters in length, completing the range.

Tector can adhere to a range of dimensional tolerances with a standard deviation system certified by IMB, for its welding system and heat treatment for the production range of 2205 duplex and steel tubes of 0.4 to 1.5mm.

Tector SpA - Italy  
[www.tector.it](http://www.tector.it)

[www.read-tpi.com](http://www.read-tpi.com)

# Extruded Tube



*Three-layer pipe  
made from PP-R with  
a glass fibre reinforced  
middle layer*

## Complete line for glass fibre reinforced three-layer PP-R pipes

THREE-layer pipes made of PP-R with a glass fibre reinforced middle layer can be used as an alternative to conventional heating and sanitary pipes for hot and cold water transport in buildings. Cincinnati Extrusion offers an engineering solution to meet the special requirements of producing such pipes.

The pipes consist of two outer PP random polymer layers and a middle layer made of PP homopolymer filled with a 10 to 20% weight component of short glass fibre. The normal distribution of layer thicknesses in the three-layer pipes varies between 25/50/25% and 33/33/33%.

The main advantage of these pipes – an increase in stability and e-module – is achieved by glass fibre reinforcement. In contrast to conventional pipes, the glass fibre content reduces the lengthwise expansion of the pipes, especially in hot water transport, and consequently lessens their deflection. This allows the installation of heating and sanitary pipes with larger intervals between fixtures.

For the production of these pipes, Cincinnati Extrusion recommends an extruder combination consisting of two Talos single-screw extruders. While the extruder for the inner and outer layers is equipped with a 30 D processing unit including a grooved feed section, the extruder for the middle layer has a length of only 25 D and a smooth processing unit with special anti-wear protection for processing PP with glass fibre content.

Both extruders feature maintenance-free AC motors and screw geometries tailored to the requirements of this application. They are also synchronised by means of a microprocessor control system.

The die, an IRIS 25-3 coex triple spiral mandrel die, is suitable for pipe diameters from 16 to 250mm and can be adapted to different layer thickness distributions.

IRIS pipe dies feature optimally designed spiral distribution channel

geometries and flow channels, and have low pressure build-up, low shearing stress and short dwell times, to ensure optimal melt distribution and narrow thickness tolerances. A special gloss heating element in the die guarantees a smooth inner pipe surface.

A special feature of the line is the downstream equipment for pipes up to 63mm in diameter. While pipes up to 32mm are normally cooled in a full bath, spray cooling is recommended for larger pipe diameters.

To cover both variants with a single downstream unit, Cincinnati has designed a variable water cooling bath that can be easily switched from spray bath cooling to full bath cooling.

Via a belt haul-off, the pipes are passed on to the cutting saw at a speed of 25m/min and finally to the tilting table.

For pipes with diameters between 32 and 250mm, the line is equipped for speeds up to 15m/min and comes with a standard spray cooling unit, a caterpillar haul-off, cutting saw and tilting table.

**Cincinnati Extrusion GmbH** – Austria  
welcome@cet-austria.com  
www.cet-austria.com



## Machinery manufacturer finds positivity at Plast

SICA, a producer of plastic pipe processing machinery, says that it has noticed signs of market recovery, having seen indications at the beginning of March.

Despite the worldwide economic crisis, the company has invested strongly in research and development. During the Plast exhibition in Milan the company presented innovative machines for cutting and socketing rigid pipes, and for coiling flexible pipes (corrugated and smooth pipes).

Despite concerns of limited participation at the exhibition, the number of registered visitors was only slightly lower than the previous Plast, and almost all companies met had projects to be discussed.

Some orders were closed during the exhibition, which raised spirits after the disappointing months of January and February.

**Sica SpA** – Italy  
info@sica-italy.com  
www.sica-italy.com

▼ Machinery from Sica

## PVDF innovation for chemical equipment

ARKEMA, a producer of polyvinylidene fluoride resins and a supplier of anti-corrosion PVDF solutions to the chemical and pharmaceutical industries, has developed new patented technology that allows Kynar® closed-cell foams to be extruded into pipes, chemical piping and stock shapes such as rods for chemical installations.

Commercial applications for Kynar foam had previously been limited to foamed jacketing for plenum-rated wire and cable. Parts made from Kynar PVDF foam retain many of the properties of the PVDF resin and are up to 30% lighter than those made from conventional Kynar resin.

“Arkema’s research group worked for over a year to improve the processability of Kynar foams before testing it outside the lab,” said Guenter Sappelt, Kynar CPI account manager for Europe. “To everyone’s delight, for some customers it took only a few hours to extrude Kynar foams with the expected lighter densities and enhanced properties.”

Initially developed to lower the cost of Kynar PVDF parts, Arkema claims that the new technology has yielded improved Kynar properties such as flexibility and easy cutting, but maintained many of the properties expected from Kynar resins, including barrier properties, and chemical and temperature resistance.

In addition to inherent low smoke and flame properties, other features of Kynar foams that make them suitable for use in harsh industrial applications include resistance to most solvents and chemicals; resistance to gamma and UV radiation; easily cut, while mechanically tough; impermeable to fuels; thermal insulating; and service temperatures from -50°C to +155°C.

**Arkema** – France  
www.arkema.com



## A new solution for production of multilayer nylon pipe

AMUT SpA, established in 1958, manufactures extrusion plants for processing thermoplastic materials.

Within the automotive industry and in respect of Euro II/V standards, as regards small nylon pipes to convey fuels or hydraulic oils, it has been necessary to introduce multilayer products (up to five layers) with barrier layers in EVOH, PBT, fluoropolymers and functional layers, such as nylon 12 conductive.

These solutions provide properties that cannot be achieved by a single layer pipe, including good flexibility impact strength and resistance to low temperatures, stress and cracking resistance, abrasion resistance, endurance strength, water absorption low factor, dimensional strength at the change of environmental humidity conditions, and permeability resistance of hydrocarbons and oils, both hydraulic and lubricating.

Single screw extruders: In order to obtain perfect control of the metric weight of the pipe and a constant distribution of the thickness in the different layers, it is necessary to use gravimetric weight control systems. In the case of fluoropolymers, the alloys used for the construction of the key-parts of the extruder are important, in particular the plasticising unit where, in order to achieve high resistance to abrasion and corrosion, some alloys with a high percentage of nickel are used to manufacture barrels and screws.

The new geometries of the grooved feeding bushes (when necessary also cooled by water), which couple to new generation plasticising screws, achieve high outputs by keeping the melt qualities unchanged and reducing the energetic consumptions (kW/kg).

Coextrusion head: Designed according to the technology of flat spirals, when

necessary it is manufactured by using materials with a very high degree of resistance to corrosion, such as Inconel or Hastelloy. Based on the particular geometry, the thickness spreading of the single layers is not so much influenced by the variation of the viscosity of the polymer in transit.

A head is also available for the production of multilayer corrugated pipes. With this model it is possible to centre the pipe wall thickness by acting on the central mandrel, by keeping the female die centred with the corrugators moulds.

New generation sizer: The reduced friction of the extruded material into the sizer, obtained thanks to recently developed technologies, has allowed a reduction in the stress on the pipe and enabled extrusion speeds of 60-70m/min, in the case of the five layers. For very small pipes, openable sizers are used to facilitate the plant starting operations.

Vacuum calibration trough: In consideration of the high calibration speed, a longer vacuum section allows

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best control of the outside geometry. Particular care has been given to the vacuum control, which can automatically change through a system linking the laser control on the pipe outside diameter with an electronic valve for vacuum adjustment into the trough, in order to keep the outside diameter constant, even at very high extrusion speeds. A thermostatic valve automatically controls the water temperature.

**Amut SpA** – Italy  
 amut@amut.it • www.amut.it

## HTI AG forms new worldwide extrusion group

IN 2008 the Theysohn Group and the Technoplast Group were incorporated by the stock quoted Austrian technology concern High Tech Industries AG.

This change of ownership was followed by a phase of evaluation of strengths and possibilities of the companies as well as analysis of customers' requirements and the global market changes of recent months.

The company started 2009 with a focus on implementing its values of partnership and reliability, and promoting its extrusion technology as an 'all in one' supplier, producing extruders, downstream, tooling, screws and barrels. The company concentrates on its core competence – PVC extrusion, with a focus on extrusion of profiles, pipes and siding.

The company operates three production sites with following focal points:  
 Korneuburg, Austria – Theysohn and Technoplast extrusion machines  
 Micheldorf, Austria – Technoplast and Topf extrusion tooling  
 Salzgitter, Germany – Theysohn screws and barrels

**Theysohn Extrusionstechnik GmbH** – Austria  
 office@ht-extrusion.com  
 www.ht-extrusion.com

## Extruder range expanded

EXTRUDER specialist Cincinnati Extrusion has expanded its Alpha standard extruder range, with the launch of the Alpha 75-25B for technical profiles, mini-diameter and corrugated pipes.

Similar to the Alpha 45 and 60 models, the new single-screw extruder offers the advantages of short lead time and high-grade technology. With an output of up to 120kg/h for polyethylene, 150kg/h for polyvinyl chloride and 180kg/h for PC/ABS blends, the extruder is suitable for a wide variety of applications.

The standard equipment package for the 75mm extruder with smooth feed bushing and a processing length of 25 D includes a screw, a control cabinet based on a relay control system (SecuRe) and a mobile, digital operator terminal.

Customers can choose between a screw geometry suitable for HDPE, PP, ABS, PS and PET, one for modified hard PVC granulate and hard PVC with filler content, and one for soft PVC

granulate (compounds with and without filler content) that can also process TPE blends.

Available options include melt pressure and melt temperature sensors, a CAN BUS interface and a UPS voltage drop protection unit.

Cincinnati Extrusion also offers a turnkey solution for customers requiring a complete line for technical profiles, which consists of an Alpha extruder, a customised profile die and the Alpha protect downstream unit. This unit includes a 6m calibration table, a belt or caterpillar haul-off for line speeds of up to 20m/min, a cut-off assembly and a tilting device. Control for the downstream unit is provided by a PLC that features six different languages, can be adjusted to user-specific requirements and is operated via a 6" touch-screen display.

**Cincinnati Extrusion GmbH** – Austria  
 welcome@cet-austria.com  
 www.cet-austria.com

▼ The new Alpha 75 from Cincinnati Extrusion



# Long-section repairs using Simona PE 100 pipes and the Close-Fit method

By Philipp Singer, Ludwig Pfeiffer Hoch- und Tiefbau, Germany, and Jürgen Allmann, Simona AG, Germany

The following article examines new developments in the field of repair of large-diameter pipes. Advances in technology, machinery and the availability of large-diameter polyethylene pipes are increasingly making it possible to treat larger lengths of pipework – a development which, with improved cost-efficiency, is pushing back the limitations to use of the Close-Fit rehabilitation method.

## Selection of the rehabilitation method

Greater Berlin is subdivided into several drainage zones. Sewers which transport water under gravity route the waste water to a total of 147 pumping plants. From there, the waste water is transported through a 1,127km-long discharge pipe network to the six sewage-treatment plants. Since the year 2000, Berlin Water Resources Authority (Berliner Wasserbetriebe BWB) has also been using Close-Fit methods with pipes made of polyethylene (PE) for repair of the piping system.

Close-Fit processes hardly reduce the hydraulic cross-section of the pipes. Particularly in the case of waste water discharge pipes, reductions in hydraulic capacity are frequently not possible owing to the rating for heavy-rain events.



▲ Figure 1: The high flexibility of Simona PE 100 pipe permits extremely tight radii

The planning specialists of the BWB always consider pending construction projects integrally. The following question is always the focus of the decision-making process: how can the required construction activity be implemented economically, with as little impairment to traffic, nearby residents and the environment as possible in the shortest possible time?

Preference is increasingly given to state-of-the-art repair methods. This was the case with a construction project implemented by German construction company Ludwig Pfeiffer in the summer of 2008. An approximately 100 year-old grey cast iron DN 1,050 pipe was repaired to prepare for a road-construction project in Berlin-Neukölln, in the District of Rudow.

The road, located in the centre of the district, is the main shopping street in the area, so operating restrictions on the shops had to be minimised. Consequently, the road was to be fully cordoned off on only one weekend, from Saturday at 8 am to Sunday at midnight.

Only two construction pits, one at the start and one at the end, were planned for the construction section, with a length of over 500m. This required a 504m-long repair section. The pipe also ran in a section with an approximately 10° angle – a special challenge for the pipe material (Figure 1).

The planners at the BWB drew up the following requirement profile for selecting the method:

- Inliner of new-pipe quality
- Maintenance of the flow capacity
- The new inliner should absorb all load influences
- Pipe material with excellent hydraulics and a particularly long service life
- Only slight impairment to traffic flow
- Short construction time
- Long repair sections
- Draw-in possible even at points where angles occur in the pipe axis
- High economy (less costly than open design)



▼ **Figure 2:** Hot-tool butt welding is used to join the two pipe trains tension-proof with one another



The swagelining process met all these requirements. A great deal of positive experience with preceding construction projects done by Ludwig Pfeiffer documents the reliability of this repair process.

**The swagelining process**

The swagelining process is a cost-effective process for the repair of discharge pipes comprising standard PE 100 pipes without permanent annulus. It is one of the reduction processes in accordance with DVGW W 320. In the case of the swagelining process a long pipe train comprising several Simona PE 100 pipes is prefabricated on the construction site. The outer diameter of the PE 100 pipe, at 1,060mm, is larger than the inside diameter of the old pipe in order to guarantee a durable Close-Fit position after installation.

The cross-section is reduced by tensile force and compressive force for the duration of pipe pull-in. The new pipe is pulled in with a pulling device on-site by a reduction tool. The pipe remains constantly subject to tensile stress during the pull-in process. Consequently, it can be interrupted at any time, eg in order to connect individual pipe trains before the pipe pull-in operation. When the final position is reached, the tensile force is reduced, thus increasing the outer diameter again. The result is a perfect Close-Fit. The new Simona PE 100 pipe tightly follows the course of the old pipe. One major advantage of this process is that time-intensive preliminary work, such as cleaning the old pipe and welding the individual pipe trains, can be carried out in parallel in the construction process.

**Preparatory measures**

Various types of preparatory work were required so that the new pipe could be easily pulled into the old pipe and so that a Close-Fit position in the old pipe was reached

after installation. One opening was made in the upper area of the old pipe both in the starting construction pit and in the destination construction pit. These openings allowed the remaining water quantity that was unable to be discharged by the existing drainage facilities to be pumped off. High-pressure cleaning was then carried out immediately, with simultaneous extraction and transportation away of the sludge residue.

The solid incrustations left behind were removed by mechanical cleaning. Calibration then provided a ‘surprise’ – unlike the specifications in all planning documents, the old pipe in the repair section was not DN 1,050, as assumed, but was only DN 1,000. In order to able to use the PE 100 pipes already on site, it was necessary to implement a more major reduction. The technical parameters were recalculated. The high flexibility of the Simona PE 100 pipe allowed the work to continue within tolerance with no interruption.

Calibration with 985mm diameter followed by a concluding camera inspection ensured that the old pipe had been adequately prepared for the pull-in operation. The counter-bearing structures required in the starting construction pit and destination construction pit were allowed for as early as digging the construction pits.



▲ **Figure 3:** The 500m long pipe train was moved without difficulty to the starting pit using lightweight equipment



▲ **Figure 4:** The complete pipe train was pulled into the existing pipe in a single pulling operation

Owing to the special local conditions it was necessary to weld the PE 100 pipes approximately 500m from the starting construction pit to form two individual pipe trains, each with a length of around 250m. These were stored temporarily on a cordoned-off parking lane of a federal highway. It was possible to weld the two pipe trains to an over 500m-long pipe and transport it on roller blocks to the starting construction pit by fully cordoning off the street, Alt-Rudow Strasse, on the day of the pipe pull-in operation (Figures 2, 3 and 4).

## Pulling in

The linkage of the pulling machine positioned in the destination construction pit which was pulled in beforehand was connected to the welded pulling head. The reduction tool reduced the pipe diameter from 1,060mm to approximately 970mm. It was therefore possible to pull the new pipe into the old pipe with no problems (Figure 5).

Regardless of the diameter, the pull-in rate was between 40 and 60m per hour, allowing the operation to comply with the tight time targets. The maximum tensile force required for deformation and pull-in, at 202 metric tons, was beneath the permitted tensile force specified by the pipe manufacturer. After the pipe train had reached its final position, the tensile force was slowly reduced to zero, increasing the outer diameter of the PE 100 pipe back to Close-Fit position.

## Technical requirements made of the pipe

Depending on requirements and field of application, Simona PE 100 pipes are manufactured in accordance with the relevant standards to DIN 8074/75 (discharge pipes in general), DIN 12201 (drinking water), DIN 1555 (gas) or DIN EN 12666 (underground pipes in



▲ **Figure 5:** A reduction tool was used to reduce the circumference of the new pipe from 1,060mm to approximately 970mm

sewage systems). These standards define graded outer diameters up to 1,600mm and wall thicknesses up to 70.6mm for smooth-walled, extruded PE 100 pipes.

The corresponding rules in pipeline construction, such as the directives of the DVS (German Association for Welding and Related Processes eV) or the regulations of the DVGW (German Gas and Water Association eV) apply to processing, installation and laying. These standards, regulations and directives define standardised dimensions, processing, installation and laying targets. Under certain circumstances, it may be necessary to manufacture dimensions at variance from these standards, for special applications such as the swagelining process.

Size d 1,060mm x 62.8mm is a good example. In this case, however, it must be remembered that the definition of the pipe dimension and the quality requirements must comply with the previously listed standards and directives, both in manufacture and in processing.

In order to pull a Simona PE 100 pipe by swagelining Close-Fit into an old pipe to be repaired, it is necessary to reduce the diameter of the PE pipe using suitable tools. In this case, the pipe diameter is deformed up to approximately 10% in the elastic zone. Polyethylene has a special characteristic in this case. Owing to the so-called 'memory effect', the pipe is restored to its original condition after pressure loading is complete, allowing a Close-Fit position. The required tensile force for pulling-in may not exceed the permitted tensile force calculated for the application in question, the material stress and the material expansion. The maximum permitted axial tensile load is specified in the DVGW Code of Practice GW 320-1 for all pipe sizes that can be used, and is between 7 and 2,363kN depending on pipe size.

## Summary

To summarise, it can be stated that the advances in technology, machinery and pipe production allow Close-Fit repair with PE 100 pipes to be reconsidered in respect of design limits and economy.

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