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October 2008



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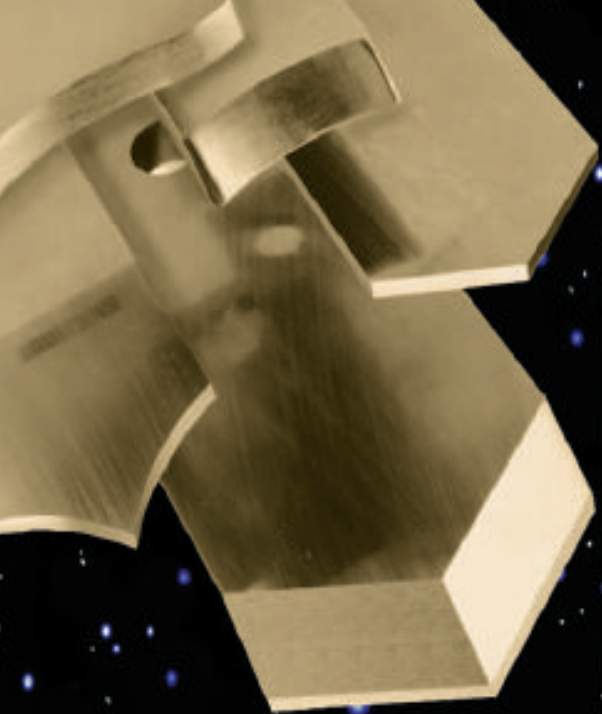
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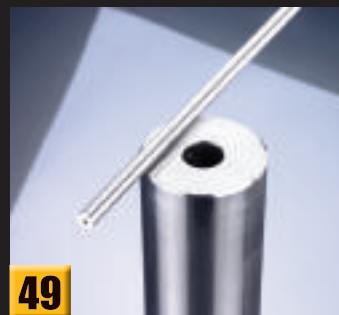
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October 2008

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Tube Products

INTERNATIONAL

The World of Tube & Pipe Products, Materials & Ancillaries



Another year over . . .



No sooner have the Olympic Games said farewell to Beijing, but our focus in the tube and pipe industry now turns to Shanghai. As I write this column, the team at Intras Ltd are gearing up for what is set to be the most successful wire & Tube China exhibition held so far. We included a preview on this prestigious event in our last issue and aim to report on the success of the show in our forthcoming January edition.

This issue however will focus on two important fields of tube and pipe production: fabricated tube products – built for long life and hard service, as well as being objects of great beauty; and small-diameter, high-precision tubes that are of such critical use in our lives, particularly in the medical sector.

We have also included a sneak preview of the upcoming FABTECH & AWS Welding Show to be held in Las Vegas this month. In this section you can view a selection of the tube and pipe exhibits at this key North American event.

Be sure to order your copy of our upcoming January 2009 issue in which we will be featuring products for water and gas, construction and building (including HSS) and also reporting on the Tube Arabia 2009 exhibition, Dubai (10-13 January). If your company is involved in any of these fields of technology or is exhibiting at Tube Arabia 2009, then we invite you to send us some editorial and pictures to be included in our January issue – free of charge. More information can be found on our website at www.read-tpi.com

As the end of this year draws rapidly to a close (as it tends to in the publishing industry!) may I take this early opportunity to wish you a successful remainder of 2008 and a very happy new year!

Paul Hogg
Editor

events calendar

2008

**October
6-8**

Fabtech 2008
International Exhibition
www.sme.org/fabtech

2009

**January
10-13**

Tube Arabia 2009
International Exhibition
www.alfajer.net

**March
5-8**

Boru 2009
International Exhibition
www.boru.com.tr

**May
12-15**

Tube Russia 2009
International Exhibition
www.metallurgy-tube-russia.com

**June
17-19**

Tubes & Fittings Ukraine
International Exhibition
www.tube-ukraine.com

**October
6-8**

Tubotech 2009
International Exhibition
www.cipanet.com.br

**October
13-15**

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

**November
15-18**

Fabtech 2009
International Exhibition
www.sme.org/fabtech

2010

**April
12-16**

Tube Düsseldorf 2010
International Exhibition
www.tube.de

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

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business & market news

Photo – Muller Europe Ltd

Argentinian gasline contract

Socotherm Americas SA, the Argentinean subsidiary of Socotherm SpA, Italy, an expert in the field of pipe coating and insulation for the transport of oil, has been awarded a contract for the offshore project Segundo Cruce del Estrecho de Magallanes, one of the most important gaslines in Argentina.

The contract, for a value of around €10 million, relates to the 3-layer HD polyethylene external anticorrosion coating (Plastikote®) and concrete weight coating (Concretkote®) of approximately 37km of 42" pipes for the Dicha Gasline (37.3km length) connecting Tierra del Fuego to the continent, and allowing the transportation of further 20 million m³/day gas to increase the production of the national gas distribution network.

Steel pipes will be manufactured in Brazil by Tenaris-Confab, and coating works will be performed by the Socotherm Brazil plant in Pindamonhangaba (SP).

"This project is of vital importance for Argentina," commented Zeno Soave, chairman and CEO of the group, *"since the natural gas availability will grow at least of 20% in the short term. Pipes will be laid offshore Magellan Strait between two lands (Cabo Virgenes and Tierra del Fuego Island) crossed by difficult waters. For this reason it represents also a huge*

challenge where the best technological resources will be employed."

During the company's general meeting, the chairman illustrated the energy market perspectives for the Socotherm Group. Despite the climate of macro-economic uncertainty, the expected growth in economic activities, particularly in large economies like China and India, will result in an increase of energy demand and relating infrastructures, with positive perspectives for the group over the next few years.

Socotherm offers many types of pipe coating, including external and internal anti-corrosion, concrete weighting and thermal insulation. The group specialises in thermal insulation for the deep water sector (oil extraction from great depths), offering state-of-the-art technological solutions with high added value.

Socotherm is also active in the design, production and sale of coatings and insulation plants for piping and district heating, in the sector of special thermal insulation for LPG tanker ships and in the maintenance of road surfaces with ecologically compatible technology.

Socotherm SpA – Italy
socotherm.corp@socotherm.com
www.socotherm.com

New anti-corrosive coating line for oil and gas pipes

Steel pipe and railway wheels producer Interpipe, Ukraine, has announced the opening of a new production line at the Interpipe NMPP mill. The new line gives the company the capacity to produce pipes with an external anti-corrosive 3-layer coating for both seamless and welded pipes up to 530mm for oil and gas transportation. Total investment in the project has reached US\$8.5 million.

The new equipment was supplied by Dutch company Selmers Technology BV, a global supplier of pipe blasting and coating plants and pipe logistics.

The line's production capacity is 400m² per hour, which is claimed to be the maximum line capacity for this type of pipe in Ukraine. The mill can currently produce pipes with an anti-corrosive 3-layer coating according to standards DSTU 4219-2003, DIN 30670, GOST R, API 5L and ASTM.

Aleksey Slyusarev, director of production and investments at Interpipe, commented, *"The issue of quality is a top priority for pipes used in oil and gas transportation. Interpipe's investment in new production facilities confirms its commitment both to quality and to serving our customers' needs. Pipes from the new line will meet the highest requirements in terms of reliability and life-span."*

In 2007 Interpipe produced 62% of its pipes for the oil and gas industry, 35% for industrial applications and approximately 3% for mechanical engineering. The company's production assets are based at three Ukrainian mills in the Dnepropetrovsk region.

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

Tube processing seminars in South Africa

AddisonMckee, a tube bending and end-forming technology specialist, has co-hosted a series of tube processing-related seminars with machine tools business, Retecon/Vite Machinery (Pty) Ltd, South Africa. Laser cutting specialists, Trumpf GmbH & Co KG also participated.

The three seminars were scheduled to take place at the end of July, in Durban, Port Elizabeth and Johannesburg. For its part in the seminars, AddisonMckee focused on tube bending, end-forming processes, applications and machinery, and associated tooling.

"South Africa is rapidly showing its credentials as an up-and-coming

provider of high-quality tubular components, especially for the automotive vehicle exhaust sector," commented Christian Rogiers, AddisonMckee's director of global marketing. *"It therefore seemed only appropriate to both champion and help stage a series of events focused on bringing even higher levels of understanding regarding the tube bending process and achieving greater heights of tubular component manufacturing excellence."*

AddisonMckee designs, manufactures and supplies tube bending and end forming technologies for increasingly complex automotive, aviation, truck and shipbuilding requirements. The

company also offers muffler and catalytic converter assembly solutions, hydraulic press machinery, tube inspection systems, plant automation and complete workcell integration.

A whole range of tooling and accessory options are also provided, as are comprehensive maintenance and service contracts, training and education programmes and financial services.

AddisonMckee is also able to offer machine rebuilds, refurbishment, upgrades and trade-ins.

AddisonMckee – USA
crogiers@addisonmckee.com
www.addisonmckee.com

Integration of Mid-South Control Line

RathGibson, a manufacturer of welded, welded and drawn, and seamless stainless steel, nickel, and titanium tubing, has completed the integration of Mid-South Control Line as a division of RathGibson. Based in Marrero, Louisiana, Mid-South Control Line is a leader in control line and well completion accessories.

"The union of RathGibson and Mid-South Control Line allows our customers in the oil and gas industry to enjoy numerous benefits," said Dave Pudelsky, vice president, strategic marketing. *"We have worked hard to preserve Mid-South's unique identity while incorporating all the advantages that RathGibson's experience, industry presence, and technological advances can offer."*

Mid-South's website, brochure, and technical literature have all been updated to fit RathGibson's corporate standard allowing customers to access information and technical data with ease.

Another benefit of the unification between Mid-South and RathGibson is shortened lead times. Mid-South offers control lines in 316L, Duplex, Super Austenitic 825 and Nickel 625 alloys. The recently completed expansion of Mid-South's warehouse, which added an additional 15,000ft², has been instrumental in improving the flow of product through the facility. Mid-South serves as a stocking location for well completion tubing and accessories for customers operating in the Gulf of Mexico, as well as around the world.

Together with RathGibson, Mid-South has accelerated efforts to reach customers in regions such as the Middle East, Africa, South America, and Asia, including China. By offering technical support, regional service, high-quality products, and short lead times, Mid-South Control Line has become renowned its for well completion control line tubing and accessories.

RathGibson supplies highly engineered stainless steel, nickel, and titanium tubing to 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
www.controlline.com



▲ Mid-South Control Line is now a division of RathGibson

Applus+ acquires US non-destructive testing group

Applus+, one of the ten largest certification companies and the top Spanish multinational in that area, has announced its acquisition of JanX Integrity Group, USA, a non-destructive testing and inspection specialist. JanX will be integrated into Applus RTD, strengthening its strategic position and increasing its service offering in the US.

This is the second acquisition since The Carlyle Group and a consortium led by Caixa Catalunya took over the majority of the company last November. At the start of 2008, Applus+ bought MBI, a UK non-destructive testing leader.

JanX is primarily focused on the on-shore pipeline markets, offering x-ray based testing, pipeline integrity services, project management and consultancy services. John Newland, founder and director of JanX, will continue to manage the operations of the company and will become part of the Applus RTD senior management team in the US. JanX's client base includes pipeline operators, refineries and chemical plants. The company's headquarters are located in Parma, Michigan, with 14 supporting offices throughout the US.

Rob van Doorn, director of Applus RTD commented on the strategic importance of the acquisition. *"The accumulation of pipeline work in the US has led customers to look for vendors that can provide high-level services and the capability to complete big projects. Applus RTD has a strong reputation in the US offshore markets and the Canadian land-based market, where we are already market leader. The incorporation of a well-established local company, such as JanX, will allow us to increase our client base, responding in a positive way to their demands."*

Applus+ carries out certification activities and global technological services, including inspection, calibration, testing, approval, technical assistance, training, technology transfer, management, optimisation, engineering and R&D. The company serves more than 25 industries, including agribusiness, automotive, construction, transportation, energy, the environment and telecommunications.

Applus+ – Spain
info@appluscorp.com
www.applus.com

Felss Burger appoints new managing director

Dr-Ing Burghard Schneider has been appointed as manager director of tube forming technology company Felss Burger GmbH, Germany. Dr Schneider will develop the company's technology leadership and expand its international activities from USA to Asia.

Dr Schneider previously headed Schott HiCotec, producing high vacuum coating machinery, and the active components division of Optovance Inc, USA.

Felss Burger GmbH, part of the Felss-Group, develops and manufactures automated, highly flexible customised production systems, with a focus on forming, autofrettage, assembly and mounting processes of tubular parts. The company's machinery and production systems are used in the production of tube, hose, plate, strip steel and wire parts such as brake and cooling pipes, common-rail-systems, seating and structuring elements, windshield wipers and belt pretensioners.

Felss Burger GmbH – Germany
info@felss-burger.com
www.felss-burger.com

Easier-to-install pipeline solution wins major project

PAM Natural ductile iron pipe, innovative protection and improved mechanical anchorage together with cost savings, technical performance and ease of installation proved the winning combination for Saint-Gobain Pipelines (SGPL) when it secured an £8m Wing Pipeline contract with Anglian Water Services.

Saint-Gobain was chosen after an intensive tender process that included proposals from suppliers of other materials, including steel. Ductile iron was the preferred material because of its durability, ease of installation, corrosion protection and commercial viability.

The objective of the project is to provide an additional 50 mega litres of potable water per day, to enable Anglian Water to meet the increase in demand over the next 20 years resulting from the significant development planned for the area between UK towns Corby and Milton Keynes.

Raw water will be drawn from Rutland Water to the Empingham Pumping Station, then pumped to the Wing Water Treatment Works 8km away. When treated, the water will be pumped to the Beanfield reservoir 15km away and then, finally, onto the Hannington Reservoir, which is a further 18km.

In addition to the pipelines, the Wing programme of work includes new pumping stations and a new water treatment works. The total value of the Wing programme is £115m, of which the pipeline project comprises £35m.

PAM Natural ductile iron pipe has been specified in diameter DN900 for 18km and DN1000 for 23km. The pipes are coated with 400gm zinc aluminium and finished with blue epoxy for the potable section and black bitumen for the raw water section.

In areas where the ground was deemed to be highly aggressive, TT coating was specified. The wider field of applications for which 400gm natural

zinc aluminium is suitable allowed the number of areas where the pipeline required the additional TT protection to be reduced from an original estimate of 12km to just 1.8km, significantly reducing both material and installation costs.

SGPL has worked with the project team consisting of Anglian Water, Mott MacDonald and contractor JN Bentley to develop a solution that delivers a quality pipeline at the lowest overall cost. One cost saving solution provided by SGPL for the Wing Pipeline Project is the recently launched Rapid Mechanical Anchor joint, designed to reduce installation costs by making the on-site anchoring of pressure pipelines quicker and easier.

The Rapid Mechanical anchor joint, which is capable of restraining an operating pressure of up to 64 bar (depending on diameter), offers a more environmentally beneficial alternative to concrete thrust blocks traditionally used to anchor pressure pipelines. Anchorage is provided by the use of a rapid mechanical anchor ring, which offered installation cost savings over traditional thrust block or Tybar type systems.

Saint-Gobain Pipelines – UK
sales.uk.pipelines@saint-gobain.com
www.saint-gobain-pipelines.co.uk

Maersk O&G to host MCE DD 2009

Quest Offshore has announced the selection of Maersk Oil & Gas as the host of MCE Deepwater Development 2009.

The 2009 event will be held at the Bella Center in Copenhagen, Denmark, 31 March to 2 April 2009. The 2007 and 2008 conferences were hosted by BP and Total respectively.

For 2009, the tradition continues with an acclaimed technical programme, coupled with 'industry best' networking opportunities that offer the attendee an experience unavailable in any other offshore event. Early estimates are that 2009 will bring 1,000+ attendees, with a completely full exhibition floor.

The venue for 2009 – Bella Center – is the largest fair and conference centre in Copenhagen, conveniently located only 10 minutes by car from Copenhagen Airport, and can be easily reached from the centre of the city.

The MCE Deepwater Development conference addresses technical issues related to engineering, development, and production of oil and gas in deep and ultra deepwater arenas around the world. As the industry confronts new challenges, the sharing of deepwater

experience will play a critical role in improving the quality, safety, and economics vital to the future of the industry.

The mission of MCEDD is to provide a focused event, based in Europe and completely dedicated to the advancement of global exploration and production.

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Indowater 2009

Indowater 2009, the fifth Indonesian water, wastewater and recycling technology event, will be held in Jakarta, Indonesia, 17-19 June 2009.

The event is organised by PT Napindo Media Ashatama in association with the Indonesian Water Supply Association. Merebo Messe Marketing, Germany, is the co-organiser for the European and North American market. Indowater 2009 will take place over 6,000m² in the Jakarta Convention Centre. 305 exhibitors from 31 countries participated in the last Indowater in 2007, which attracted 8,552 trade visitors.

The scope of exhibits will include water resource management, municipality water management, sewerage, irrigation, wastewater treatment and management, industrial water treatment, ultra pure water and bottled water production.

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Astronaut visits tube plant

Four-time shuttle astronaut and United Space Alliance COO, Dan Brandenstein, has visited Plymouth Tube Company's Trent Mill, in recognition of the AL-6XN[®] tubing provided for NASA's Constellation programme.

Mr Brandenstein also presented the Trent Mill with a Certificate of Appreciation on behalf of United Space Alliance, which is equally owned by the Boeing Company and Lockheed Martin Corporation. The certificate was presented for the contributions the

First water footprint initiative in the plastics industry

Borealis, a provider of innovative plastic solutions, and Uponor, a supplier of plumbing and heating systems, have announced at the World Water Week in Stockholm a joint initiative to pilot for the first time the concept of water footprint to the manufacturing of a plastic application.



▲ From left: Tarmo Anttila, Uponor communication vice-president; Lorenzo Delorenzi, Borealis executive vice-president; Prof John Anthony Allan; Prof Jan Lundqvist, chair of the World Water Week Scientific Programme Committee

Co-founders of the Stockholm Water Prize (SWP), awarded this year to Prof John Anthony Allan for his work on water footprint and virtual water, Borealis and Uponor have applied the concept to assess the amount of water needed to equip a typical home with a modern plumbing and under-floor heating system.

The water footprint of a product (a commodity, good or service) is the volume of freshwater used to produce the product in the various steps of its production chain. The 'water footprint' of a product is the same as its 'virtual water content'. Typically, one cup of coffee will have required 140 litres of water for its production while one kilogram of beef will 'embed' 16m³ of water (16,000 litres). The water footprint of a business is the total volume of freshwater used directly and indirectly to run and support a business including the water use in the supply chain.

Water footprint is spearheaded by leading academics and environmental NGOs, and pilots are starting in the food and drink industry. Borealis and Uponor findings will be shared with researchers to align approaches and make validated methodologies available for other products or value chains.

The initiative will investigate water uses across the entire plastics industry value chain, from raw materials extraction to a full system installed at home. Initial findings show that a typical under-floor heating and a tap water plumbing system for a 100m² apartment using 500m of PEX pipe require some 29m³ of water from 'cradle to home'. The plastics material and pipe production account for a third of the total footprint of the system once installed.

Tarmo Anttila, Uponor communication vice-president commented, "As part of our environmental approach, Uponor is constantly developing products and processes that help people and industry save resources. Water Footprint is an excellent way of turning into action our long-term sponsorship of the Stockholm Water Prize. Understanding our footprint can be a key tool to further guide the development of more water-saving products."

Borealis – Austria
info@borealisgroup.com • www.borealisgroup.com

Uponor – Finland
www.uponor.com • www.waterfootprint.org

Trent Plant makes towards the space programme.

Acquired from Crucible in 2007, Plymouth Tube's Trent Plant produces 1/8" to 4" diameter welded and cold drawn stainless steel tubing, including nickel and high alloys, for a variety of applications. Primary products include mechanical, air cylinder, electropolished tubing and speciality tubing products such as tubing for aircraft, sanitary, pharmaceutical, high purity, and nuclear applications.

Plymouth Tube Company's AL-6XN tubing was chosen as the material for all fluid systems to be used on the new Constellation launch platform – an extremely corrosive environment. When using AL-6XN, maintenance and time spent replacing tubes due to corrosion damage is greatly reduced. AL-6XN is a superaustenitic stainless steel that has resistance to chloride pitting, crevice corrosion, and stress-corrosion cracking that is superior to that of the 300 series stainless steels.

Neuenkamp recertified

Messerfabrik Neuenkamp, part of the Dienes Group, has been recertified to DIN EN ISO 9001:2000. The achievement demonstrates the company's commitment to enhancing its process operations and performance.

The aim of ISO 9001:2000 is to continuously improve the quality management system and thus to optimise the products and services to increase customer satisfaction.

The recertification achieved proves that Neuenkamp has complied with the core processes of its quality management system.

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**Dienes Werke für Maschinenteile
GmbH & Co KG** – Germany
www.dienes.de

Plymouth Tube Company is headquartered in Chicago, with ten manufacturing plants across the US supplying the aerospace, transportation, energy, and industrial markets. Over the last five years, the company's sales revenue has more than doubled due to market share growth and strategic acquisitions.

The company is a global supplier of speciality carbon, alloy, nickel alloy, and stainless steel tubing for mechanical,

pressure, boiler, and hydraulic applications.

Steel, nickel and titanium extruded and cold drawn shapes are produced by Plymouth Engineered Shapes, while Plymouth Tube Co Chicago Processing offers coil slitting and a wide variety of speciality edging options.

Plymouth Tube Company – USA
sales@plymouth.com
www.plymouth.com

HIGH PRESSURE FITTINGS

Forged-Carbon-Alloy-Stainless Steel, Threaded and Socket Weld

PRODUCTS:

90°/45° elbow, tee, union, coupling, bushing, plug, cap, insert, pipe nipple & swage nipple . . .etc.

MATERIALS:

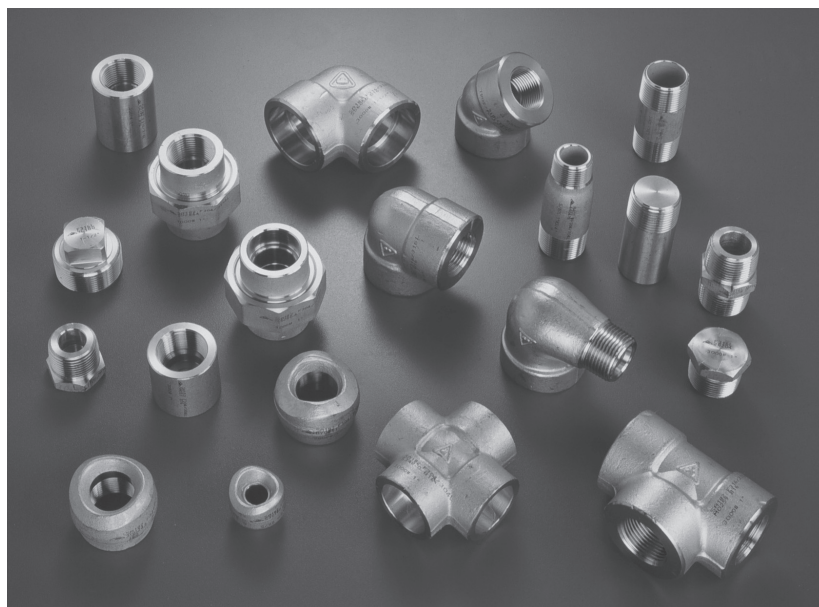
- Stainless Steel: ASTM A182, F304/304L, F316/316L, F304H/F316H, F317L
- Carbon Steel: ASTM A105, SF440A & A181, A350 LF2
- Alloy Steel: ASTM A182 F11, F22

PRESSURE RATINGS:

2000, 3000, 6000 & 9000 lbs

APPROVAL CERTIFICATES:

ISO-9001 Quality Assurance, L/R, C/R, N/K & ABS register of shipping, PED (CE)



Manufacturer & Exporter

BOTH-WELL STEEL FITTINGS CO., LTD.

No. 303, Jen-Hsin Rd., Jen-Wu Hsiang, Kaohsiung Hsien, Taiwan (814)
Tel: +886 7 3711536, 3710497, 3720260 Fax: +886 7 3713864, 3713882
E-mail: box@mail.bothwell.com.tw http://www.bothwell.com.tw
E-mail: export@mail.bothwell.com.tw

MECSPE 2009: innovation within tradition

The eighth edition of the MECSPE International Fair of Skilled Mechanics will be held in Parma, 19-21 March 2009.

"The mechanical field has a leading role in Italy," commented Emilio Bianchi, director of event organiser Senaf. *"That's why we're willing to increase MECSPE's offer in 2009 to meet the entrepreneurs' needs, promoting new ideas".*

The 2008 fair featured a show area of 42,000m² and almost 23,000 exhibitors. The 2009 event will also feature the return of the two-year exhibition Trattamenti & Finiture alongside MECSPE, Eurostampi, PlastixExpo, Subfornitura, Control Italy and Motek Italy. The seven shows will offer visitors an overall view of all the different fields that make up the manufacturing industry.

Senaf will organise the exhibition areas with many avenues and thematic squares

to assure visitors the best visibility and comfort. The show will feature 50 working areas, including 'From the project to the object', an initiative that has reached its tenth edition and focuses on topical subjects such as innovation and the technological transfer to industries where the moulding technique of plastic materials is used.

The working areas will gather in a single site all companies that are involved in the creation of an item, from the design to the final product, creating a real industry within the 'mechanical town'. Everything will be performed using working machines to enable visitors to see each step of the production process and find out the best solutions to their needs.

Senaf srl – Italy
info@senaf.it • www.senaf.it
www.mecspe.com

Sales reorganisation

PHI, a leader in tube bending and end finishing machines, and a division of Tulip Corporation, has announced the reorganisation of its sales department and the recent appointment of new sales manager, Steven Moss.



▲ Steven Moss has been appointed as sales manager at PHI

Having purchased Leonard Precision and Conrac Corporation's Machine Tool Division, and operating as PHI since 1985, the company is now poised to add more distributors and representatives worldwide, in response to growing demand for its machines.

PHI offers a complete family of machines and tooling for applications ranging from 1/8" light wall tubing to 8" pipe. The end finishing machines are used to shape the ends of pipe and tubes including flaring, beading, squaring and deburring, and 90° cold flanging.

Bending machines are available from small bench-top models to larger machines designed for tubes up to 3" x .188 WT, with bend radii as tight as 2 times the tube diameter. Controls range from manual to programmable. The company also manufactures welders, presses and tooling.

PHI – USA
info@phi-tulip.com • www.phi-tulip.com

Annual results for Cronimet Group

The Cronimet Group, Germany, is an international group of companies involved in the trading, production and recycling of alloying raw materials for the stainless steel industry.

The group has reported that its 2007 fiscal year went very well, and that Cronimet achieved a new sales record in the company's history over the past fiscal year.

With an annual tonnage of 1.056 million tons, the group achieved sales of €3.2 billion (US\$4.7 billion), compared with €3.067 billion (US\$4.046 billion) in 2006. This increase in sales was achieved despite weak stainless steel activity and lower global stainless steel production.

The number of employees across the group increased from 4,052 to 4,180, and new recycling operations were opened in Italy and Turkey.

Armenian Zangezur Copper and Molybdenum Combine AG (ZCMC), in which Cronimet Mining GmbH has a majority holding, also registered outstanding development in fiscal year 2007 and a very satisfactory result.

Cronimet Group – Germany
mail@cronimet.de
www.cronimet.com

Water China 2009 and PVP China 2009 trade fair

The largest Chinese trade fair for the water industry, Water China/PVP China in Canton (Guangzhou), will be held from 4-6 March 2009. The fair is organised by the China Foreign Trade Centre Group in association with Merebo Messe Marketing, Germany.

The fair incorporates the 10th International Water, Wastewater & Water Treatment Trade Show (Water China 2009) and the 9th International Pump, Valve & Pipe Trade Show (PVP China 2009). The show will take place in a gross space of 12,000m² in Asia's largest venue, the

Guangzhou International Convention & Exhibition Centre.

The 2008 event attracted 386 exhibitors, including 91 international participants from 17 countries, and 8,590 trade visitors. Since its launch in 2000, Water China has become the largest and most important exhibition of its kind in China. Merebo will again organise the International Pavilion, dedicated to companies, associations, chambers and trade press from all over the world.

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

Interpipe to buy major Ukrainian scrap metal processing plant

Interpipe has announced the acquisition of 95.95% of the shares of OJSC Dnepropetrovsk Vtormet (Dneprovttormet), the second largest scrap metal processing plant in Ukraine.

The plant's facilities for metal scrap storage and processing total 950,000 tons per year, and the plant has a wide spread of areas for scrap collection in Central and Eastern Ukraine. Scrap metal is the basic raw material for production of steel ingots used for the manufacturing of Interpipe seamless pipes and railway wheels.

Alexander Kirichko, Interpipe's chief executive officer, commented, "The acquisition of this scrap metal processing plant is the next important step forward in the transformation of Interpipe into a fully vertically integrated company. Dneprovttormet's facilities will enable us to satisfy our growing needs in scrap metal for the production of pipe and wheel billets, and will also provide high quality raw materials to our new electric steel melting facility, Interpipe Steel, which is due to come on stream in 2010".

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

'Supertube' leaves for London



▲ Load-testing the tube using weights

Deepdale Engineering Company Ltd, UK, has completed and despatched a large section of monopile tube to form a key part of a major rail construction project in Central London.

The 40mm thick carbon steel tube, which is 20m long and has an outside diameter of 2,200mm, was cold rolled and automatic submerged arc welded in the firm's specialist engineering and fabrications unit in Dudley, West Midlands.

Weighing 46 tonnes, the finished fabrication was supplied complete with internal stiffening rings, lifting frame assembly and wing brackets. The giant tube was loaded onto a long trailer and taken to a local testing facility where it was subjected to a number of rigorous load tests, which including being lifted into the vertical position using specialist crane equipment.

Having been successfully trialled for strength and integrity, the monopile was transported to the capital where it will form the base of a temporary crane structure.

The order is one of many civil engineering contracts carried out by Deepdale Engineering for clients in the UK and throughout the world.

Deepdale Engineering Limited – UK
sales@deepdale-eng.co.uk • www.deepdale-eng.co.uk



▲ The ultimate test: the 46 tonne pile is lifted into the vertical position

Acquisition of Indian FeCr smelter

Cronimet Mining GmbH, part of the Cronimet Group, Germany, and investors from Dubai have acquired 70.5% of the shares of GMR Ferro Alloys and Industries Ltd from the Indian GMR Group. The remaining 29.5% of the shares remain widely held. The approval of the antitrust authorities has already been received.

The acquired company, which is involved in the area of ferrochromium production, will operate under the name Cronimet Ferro Alloys (India) Ltd.

The company is headquartered in Tekkali Mandal, Andhra Pradesh State. Founded in 1989 and certified in accordance with ISO 9001-2000, the company operates a ferrochromium melting plant that includes two melting furnaces with a capacity of 6 MVA and 9 MVA.

The melting plant produces approximately 27,500 tons of ferrochromium annually. 75% of output is exported to Europe, China, Japan and Korea. The acquisition continues Cronimet's expansion in the area of raw material supplies with ferro-alloys for the stainless steel industry.

Earlier this year, a consortium of German and South-African companies led by Cronimet Mining GmbH invested in the mining rights for a significant chromium ore deposit in South Africa.

Cronimet Group – Germany
mail@cronimet.de
www.cronimet.com

New regional manager for Hypertherm

Plasma metal cutting technology firm Hypertherm has appointed a new regional manager for distribution sales in northwest Europe.

Magnus Olsson, previously a district sales manager responsible for Hypertherm Europe's Nordic region, has been promoted to the new position of regional distribution sales manager, Northwest Europe. Mr Olsson will give operational leadership to the district sales managers in an area encompassing the UK, Northern Ireland, Scotland,

Scandinavia and Germany, and work to further support the distribution business in this region.

Mr Olsson's expertise in distribution sales resulted in his more than doubling Hypertherm's manual plasma business in the Nordic region in less than three years. In addition to his recent experience in the plasma cutting field, Mr Olsson has broad knowledge of the welding industry where he worked as a district sales manager and later as a regional sales manager for Elga, a Swedish manufacturer of high-end welding consumables.

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

Hypertherm Europe – Netherlands
hteurope.info@hypertherm.com
www.hypertherm.com

Interpipe announces Q1 results for 2008

Steel pipe producer, Interpipe, Ukraine, has announced results for the first quarter of 2008. According to preliminary results, the company has recorded 12% growth in pipe production, with volumes up to 328,000 tons in the first three months of 2008 against the same period in 2007 (292,000 tons).

Commenting on the results, Fadi Hraibi, director for product and resource management, said, "In the first 3 months of 2008 Interpipe significantly increased sales on the CIS, North American (NAFTA), Middle East and North African markets. The growth in production volumes is explained by the mastering of API PSL2 pipe production at Interpipe NMPP and the launch of its continuous manufacturing regime. The opening of a sales office and warehouse in the United Arab Emirates also contributed greatly to Q1 success."

In the first quarter of 2008, the company's railway wheels production

Butech 2009 International Machinery Fair

Butech 2009, the fourth Busan International Machinery Fair, will be held from 20-24 May 2009 in Busan, South Korea. The trade fair is organised by the Busan Metropolitan City, the Korea Industrial Marketing Institute and other industrial associations. Merebo Messe Marketing, Germany, is in charge of the European & North American Pavilion.

The event will take place at the BEXCO Busan Exhibition & Convention Center, and will cover 26,500m². The range of exhibits will be divided into machinery technology, factory automation equipment, die and mould industry, environment industry, tool and welding industry, and parts and material industry.

406 exhibitors from 25 countries participated in Butech 2007, and attracted 53,014 trade visitors.

Korea Industrial Marketing Institute – Korea
kwj@kimikorea.com
www.butech.or.kr

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

volumes decreased by 21%, to 46,000 tons, against the same period of 2007 (58,000 tons). This decrease was due to a major overhaul of Interpipe's railway wheels shop, which lasted 25 days.

Interpipe – Ukraine
officechudnovskydp@interpipe.biz
www.interpipe.biz

Growth in UK market prompts sales territory restructure

UK-based Cheltenham Induction Heating's business development manager for the southern region, Adam Smith, has been given the responsibility of managing Wales and the West Midlands areas, due to continuing successful levels of business in Northern England.

With experience in the application of induction heating solutions and the design and manufacture of special purpose and automation equipment, Mr Smith brings extensive sales and project design expertise to the role.

Sales and marketing director Peter Ewers commented, "These are exciting times for our business. The investment we have made over the last few years in high quality, compact and competitively priced induction solutions are reaping benefits to us now, and with the impending launch of our next generation of 15 to 45 kW systems this reorganisation sets us up to provide the best level of support to our customers."

Cheltenham Induction Heating Ltd is part of the Ambrell Group, along with Ameritherm, Inc and Ameritherm France SARL. These induction heating specialists provide over sixty years of induction expertise. Products offered under the Ambrell brand are available through offices, distributors or representatives in the Americas, Europe, Asia, Africa and Australia.

Ameritherm has been an expert in the development, manufacture and application of RF induction heating equipment for a wide range of industrial and research applications since 1986. The company's products

are manufactured at its ISO 9001:2000 certified facility in Scottsville, New York.

Cheltenham Induction Heating has 40 years' experience in the design and manufacture of high and medium frequency induction heating equipment. CIH products are manufactured at the ISO 9001 registered facility in Cheltenham, Gloucestershire, England. Combined, the two companies have 20 technological patents and installations in over 40 countries. Precision heating solutions include power supplies, custom induction coils, remote heat stations

and water-cooling products. Extensive product and applications information, including video demonstrations, are featured at the Ambrell, Ameritherm and CIH websites.

Cheltenham Induction Heating Ltd
– UK
info@cihinduction.com
www.cihinduction.com
www.ambrell.com

Ameritherm, Inc – USA
sales@ameritherm.com
www.ameritherm.com

SHINSEI FORGED FLANGES CARBON, ALLOY, STAINLESS STEEL

PRODUCTS:

Blind, Slip-on, Slip-on Plate, Socket Welding, Threaded, Welding Neck & Lap Joint....etc.

MATERIALS:

–Stainless Steel: ASTM A182, F304/304L, F316/316L, SUS304L, SUS316L
–Carbon Steel: ASTM A105, A350 LF2

PRESSURE RATINGS: (ANSI, DIN, JIS)

150, 300, 600 & 900 lbs
5, 10, 20, 40 K
PN2.5, 6, 10, 16, 25, 40

APPROVAL CERTIFICATES:

ISO-9001 Quality Assurance, PED(CE)

We have the most advanced technology in our forging process, with an excellent management team. Please send your inquiries via our email or approach us for our company brochure and products catalogues.



Manufacturer & Exporter

SHINSEI

SHINSEI (JIANGYAN) STEEL FLANGES CO., LTD

NO.688, TIANMU ROAD, JIANGYAN ECONOMIC DEVELOPMENT ZONE, JIANGYAN CITY, JIANGSU, CHINA (225500)
Tel: (0086) 523-88206028 Fax: (0086) 523-88206058
E-mail: shinsei@ssflanges.com.cn

products & developments

Photo – International Industries Limited (page 20)

Launch of trenchless solutions products in the UK

Warrior has launched its range of pipe bursting and thrust boring equipment in the UK. The products, already successful in the US, are fast, easy to use, compact and portable. The first product to be launched in the UK is the WR-33 – a pipe bursting machine with an installation rate of 2m/min, developed specifically for the UK market.

The Warrior range is designed for underground pipe installers and repairers that find digs problematic and disruptive, reinstatements expensive and environmental considerations increasingly important.

The company spoke to installers and repairers, and found that they perceived traditional solutions too difficult to operate, and that they have been put off by the need for additional plant. These factors combined mean that profitability of jobs isn't achieved, so trenchless solutions have not been adopted at the same rate as other markets. Warrior's range removes digging problems,

minimises environmental disruption, and requires no expensive transportation or lifting equipment; the whole operation is easily completed by two operatives working from a van.

Tony O'Brien, managing director of Warrior, commented, *"This is an exciting time for Warrior. We've had some amazing feedback from contractors and utility organisations we've been working with, and we're already receiving great interest in our introductory seminars. We'd say to anyone who has had problems with pipe bursting or thrust boring in the past to pick up the phone and call us as we are happy to help anyone with any queries about trenchless solutions."* Additional services provided by Warrior include a nationwide support and breakdown service; a range of finance options, including outright purchase, finance leasing and hire; and interactive training workshops.

Warrior – USA
www.warriorworldwide.com

Heat and corrosion resistant materials

Hart bv is a distributor of heat and corrosion resistant materials. Nickel, Monel®, Incoloy®, Hastelloy® and titanium alloys are supplied globally to the chemical, petrochemical and offshore industries. Complete packages of pipe, flanges, forgings, plate, bar and fittings are supplied to fabrication companies, contractors, engineering companies, and also direct to the oil and gas industries.

The company works with partners worldwide who specialise in these materials, and supplies either through its extensive stocks of material, or for larger quantities and longer deliveries through major nickel and titanium manufacturers. Since the start of 2008, the company has had an extensive stock range of seamless pipe in alloy 200/201, alloy 400, alloy 600, alloy 625 and titanium grade 2.

Hart bv – Netherlands
central@hartbv.nl
www.hartbv.nl

Supporting clean, renewable energy

RathGibson, a manufacturer of welded, welded and drawn, and seamless stainless steel, nickel, and titanium tubing, has shown its commitment to protecting the environment through its support of geothermal power generation.

The company has supplied tubing to plants that use this renewable source of energy, which produces electricity by using the earth's natural heat and steam sources to run generator/turbine units.

Lean Duplex 2003™ tubing is being used in power generation facilities in Southern California's Imperial Valley.

These plants take steam from superheated water reservoirs located in the Salton Sea Known Geothermal Resource Area (SSKGRA) to generate at least 327 net megawatts.

RathGibson has also provided corrosion resistant materials, including Duplex stainless steel and super-ferritics, for use in other high quality modular geothermal power plants.

"RathGibson is proud to play a role in providing electrical energy in an environmentally friendly manner," said Dave O'Donnell, director, process and product development.

"Geothermal energy has minimal environmental impact with near zero carbon emissions, while helping the world reduce its dependence on expensive fossil fuels."

RathGibson's corporate headquarters are located close to Chicago in Lincolnshire, Illinois. Manufacturing locations include Janesville, Wisconsin; North Branch, New Jersey; Clarksville, Arkansas (Greenville Tube); and Marrero, Louisiana (Mid-South Control Line).

In addition to the sales offices in Janesville, North Branch and Marrero, the company has strategically placed sales offices in Houston, Texas; Shanghai, China; Manama, Bahrain; Knoxfield, Australia; and Seoul, Korea.

RathGibson – USA
www.rathgibson.com

Pipe systems in a global market

The Saudi Arabian Amiantit Company was established in 1968, and has developed into a major diversified industrial group with operations spanning the globe. The group's core business activities include: manufacture and sale of pipe systems; ownership and sale of pipe technologies; and provision of water management consultancy and engineering services.

The Group consists of 30 pipe system manufacturing plants, six technology companies, four materials suppliers, and eight engineering subsidiaries, in many countries around the world. In addition, an extensive sales and service network has been established, covering more than 70 countries.



▲ Installation of 2,500mm diameter T-Lock lined pipes

Amiantit markets a wide range of pipe products and serves municipal, civil engineering, industrial, energy, and agricultural markets worldwide.

The group manufactures pipe systems made of: glass fibre reinforced plastic (GRP) in diameters DN 100-4,000mm; glass reinforced epoxy (GRE) in diameters DN 25-1,000mm; ductile iron (DI) in diameters DN 100-800mm; concrete in diameters DN 300-3,000mm; high density polyethylene (HDPE) in diameters DN 20-630mm; polypropylene (PP) in diameters DN 200-1,000mm; and unplasticised/modified polyvinyl chloride (uPVC/mPVC) in diameters DN 50-500mm.

Another core business activity of the group is the ownership and sale of technologies for pipe manufacturing. Amiantit wholly or jointly owns six leading technology companies and has a close relationship with several others. Key technologies cover glass reinforced plastic, glass reinforced epoxy, ductile iron and concrete pipes.

The group also offers a range of water management, water technology, consultancy, operation and engineering services with worldwide subsidiaries and affiliates. These subsidiaries offer services in the development, management and operation of water and waste water infrastructure facilities, covering the full project life cycle.

Saudi Arabian Amiantit Company – Saudi Arabia
info@amiantit.com • www.amiantit.com

European headquarters – Germany
info@amiantit.de • www.amiantit.com

Sensors for pipe transport

Xi'an Space Star Technology (Group), China, specialises in researching and producing all kinds of sensors.

The company's products include pressure sensors, vibration sensors, load and force sensors, stress and strain sensors, temperature sensors, acceleration sensors, torque sensors and weighing sensors, and other products such as drop test analysers, controller analysers, dynamic signal

analysers, digital pressure gauges and load cells. Products are designed to meet national standards, and are often used in industries such as petroleum chemistry, steel and iron, aeroplane and ship manufacturing, automotive, liquid piping, transportation piping and bridge design.

Xi'an Space Star Technology (Group) Corporation – China
xaqbbrian@yahoo.com.cn

Chinese manufacturer of ERW pipes

Shanghai Zhongyou Tipo Steel Pipe Corporation, established in 2002, is a large-scale enterprise funded by Shenyang Zhongyou Tipo (Group) Materials & Equipments Corporation, China Petroleum Pipeline Bureau and Shanghai Pujiang Town Assets Administration Co, Ltd. The total investment of the corporation is 0.45 billion RMB.

The company has introduced advanced equipment and technology to establish

the first domestic Ø610 straight-seam and high-frequency ERW pipe mill, which can produce ERW pipes with an outside diameter ranging from 219 to 630mm and with thickness from 3.2 to 20mm. Its specified length can reach 18m.

The corporation has an annual production capacity of 300 thousand tons of ERW pipes, which include line pipes of grade X80 and lower pipe grade according with the API 5L of American

Petroleum Society, line pipes which conform to GB/T 9711.1-1997 and GB/T 9711.2-1999, petroleum casing pipes in grade J55 and K55 according with API 5CT of American Petroleum Society, and rectangle structure pipes conforming to Japanese JIS3466 Standard and GB/T 9711.2-1999.

The dimensions of square pipes range from 200x200mm to 500x500mm, while the dimensions of rectangular pipes range from 300x200mm to 600x400mm. The thickness of square pipes and rectangular pipes ranges from 4 to 20mm.

Shanghai Zhongyou Tipo Steel Pipe Corporation – China
yanzr@tipo-steelpipe.com
www.tipo-steelpipe.com

Range of steel pipes from Pakistan

International Industries Limited, IIL, was established in 1948 in Karachi, Pakistan. During 2008, the company conducted business of US\$212 million, with exports exceeding 50,000 tons, amounting to US\$46 million.

The company claims to have the highest production capacity of steel pipes in Pakistan, with over 300,000 tons capacity in a 25 acre production and storage facility. Following expansion projects undertaken in the last six years, IIL is now operating with six cold rolled tube mills, six hot rolled tube mills, three hot



▲ IIL produces galvanised iron pipe from ½" to 6"

rolled slitters, two cold rolled slitters and four fully automatic hot dipped galvanising plants. Four ThermoTool welders, eight vacuum tube type welders and eight cold saws plus four friction saw NC cut offs are utilised in manufacturing. These, along with on-line eddy current testing systems, ensure production of zero-leakage pipes. In galvanised iron pipes, the product range varies from ½" to 6", having a thickness range from 1.80-7.11mm. Capacity is 150,000 tons/annum.

rolled slitters, two cold rolled slitters and four fully automatic hot dipped galvanising plants. Four ThermoTool welders, eight vacuum tube type welders and eight cold saws plus four friction saw NC cut offs are utilised in manufacturing. These, along with on-line eddy current testing systems, ensure production of zero-leakage pipes. In galvanised iron pipes, the product range varies from ½" to 6", having a thickness range from 1.80-7.11mm. Capacity is 150,000 tons/annum.

IIL states that it is the only local private sector company to have a cold rolling mill, and its cold rolled tubes product range varies from

12.70-60.3mm in round, 10-38mm² in square, 10x20 to 32x62 rectangular and 19x42 to 24x56 elliptical tubes, with a thickness range from 0.6-2mm, and a capacity of 72,000 tons/annum.

A sizable amount of the local API pipe demand is met by IIL with its 2", 4" and 6" pipes. All API pipes are produced with in-line seam annealing and hydro-testing. In 2006, the company widened its portfolio of products by installing two extrusion plants for polyethylene pipes (PE), with a product range of 12-250mm and a thickness range of 1.8-30.5mm.

IIL has been the recipient of the FPCCI Export award for mechanical products over the last eight consecutive years. In the Karachi Stock Exchange listing of top 25 companies, IIL has featured in the last seven consecutive years.

International Industries Limited – Pakistan
inquiries@iil.com.pk • www.iil.com.pk

Cold drawing and hot rolling

AnhuiTiandaOilPipeCo, Ltd, established in 1993, operates cold drawing and hot rolling branch factories.

The company's cold drawing branch factory located in Tianchang City, Anhui Province has more than twenty production lines equipped with advanced manufacturing technologies.

The major sizes for oil tubing and other industrial applications include Ø60.3, Ø73, Ø88.9 and Ø114.3, including API pipes, tubing and casing. Products are supplied for high pressure boilers, ship-building, stainless steel pipes and alloy steel tubes, and the annual output is 150,000 tons.

The hot rolling branch factory is located in the Development Zone of Economy & Technology, Chuzhou City, Anhui Province. The major sizes produced by the hot rolling oil pipe production lines are Ø114.3, Ø139.7 and Ø177.8 for oil casings. Annual output is 300,000 tons.

The company has invested in oil tubing and casing heat treatment lines with an annual output of 100,000 tons, and casing threading machining lines also with an annual output of 100,000 tons.

Anhui Tianda Oil Pipe Co, Ltd – China
xsk@td-gg.com
www.td-gg.com



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Products engineered for abrasive and corrosive compounds

A range of bi-metallic barrel lining products is available from Davis-Standard, LLC, including products to support applications with highly abrasive and corrosive properties.

The DS8000 wear-resistant barrel lining material is a nickel-based alloy with a high percentage of tungsten carbide particles suspended within its matrix.

This corrosion and abrasive wear-resistant lining is suitable for those processes requiring highly filled or reinforced compounds, high-temperature resins, silicones, vinyl resins, polyethylenes, LLDPE, HMWPE and blends.

The company also offers three other options within the product line: DS1000, DS2000 and DS6000. DS1000 is an iron-based barrel lining for general purpose wear environments and is

fitted in nearly all Davis-Standard machines as a standard item. Similar to DS1000, the DS2000 alloy provides additional wear resistance, being able to accommodate a higher degree of filler or reinforcement in the material to be processed and also a moderate degree of corrosion resistance.

DS6000 is nickel-based like DS8000, and is designed for use in corrosive wear environments when processing compounds such as those with flame retardants, fluoropolymers and high-temperature resins. The product line is manufactured by D-S Brookes Limited, Davis-Standard's Extrusion Systems Europe subsidiary in the UK.

Davis-Standard, LLC – USA
info@davis-standard.com
www.davis-standard.com

D-S Brookes Limited – UK
www.dsbrookes.com

Steel products group

The Imextal Group has been present in the steel market since 1984, marketing of all types of stainless steel and other steel products. The group consists of the companies Imextal, Corteinnox and Perfiles Barcelona, through which a range of activities are carried out: cross cutting and flattening, shearing, disk cutting, longitudinal cutting, but mainly profile forming, and the manufacture of tubing.

Since 2002, the group has also had five manufacturing lines for round, square and rectangular tubing in TIG welded stainless steel, 100% eddy current tested, with a ground or polished finish. Standards include DIN 17455-17457, ASTM A554 and AFNOR NFA 49647.

The Imextal Group supplies its products to a diversity of industries, including the food, white goods, stamping, construction, automotive, electrical resistances, domestic water pipes and profile forming sectors. The group has experience in exporting stainless steel materials, primarily in Europe, adapting its products and services to the markets' needs.

Imextal Group – Spain
info@grupoimextal.com
www.grupoimextal.com

Seamless and precision steel pipes

Changzhou Tongchuang Tube Industry Co, Ltd is a manufacturer of seamless steel pipes and precision steel pipes, established in 1987. Specifications range from OD 5mm to 168mm and wall thickness from 1mm to 16mm.



▲ Carbon steel pipe from Changzhou Tongchuang

The company uses the latest technologically advanced machinery, and customises products to customers' specifications. All product indexes conform to state standards, with reliable quality and stable performance. The company has also obtained ISO9001:2000 and API certificates issued by American Petroleum Institute.

Changzhou Tongchuang Tube Industry Co, Ltd – China
sun@lc-tc.com • www.lc-tc.com

Clean water for the Baltic Sea

Kaliningrad is a Russian exclave with half a million inhabitants, situated at the Baltic Sea between Poland and Lithuania. Given the relatively large number of inhabitants it is understandable that the lack of a water treatment plant is a concern to the public, as well as to surrounding countries.

Over 250,000m³ of wastewater flows into the Baltic Sea each day, polluting seawater and the Polish and Lithuanian coasts. Construction work for a wastewater treatment plant had been planned in the 1970s. However, investments were ceased after the collapse of the Soviet Union, and the project was brought to a halt.



▲ HOBAS DN 1200 pipes were used to rehabilitate three parallel culverts into which the sewer main divided to fit under a railway

20 years later, the Swedish government offered support for the city to continue the construction that would cost an estimated €54.5 million, yet it is only now that the actual construction can be initiated, due to technical requirements and Russian laws. The mainly concrete line that was previously installed has corroded with time, despite never being used. Rehabilitation of this line is the first step toward the new treatment plant.

Light weight and leak-tightness of the complete system were among the decisive criteria for prime contractor OOO Meba to award HOBAS Pipe Poland the contract for 2km of HOBAS SewerLine® systems in September 2007. With a roughness factor $k \leq 0.01\text{mm}$, the almost mirror-like lining of the pipes allowed a decrease in nominal diameter retaining the same hydraulic properties. Several reference projects successfully conducted with other Baltic contractors in Lithuania, Latvia and Estonia with the technical assistance of HOBAS engineers were a further advantage.

Deliveries from HOBAS Pipe Poland began in September 2007 and were completed in January 2008. For the larger part, the HOBAS CC-GRP SewerLine pipes are dimensioned DN 2000, PN 1, SN 5000; the rest being DN 1200, PN 1, SN 5000 – an order worth in total over €1,245,000.

The original collector leading to the planned treatment plant runs through the suburbs of the city and consists of a 1km circular DN 2500 and a 1km rectangular 2,500 x 2,500mm line. To install the new HOBAS SewerLine, the rectangular channel was uncovered, while open cut and relining was chosen for the circular line.

High groundwater levels (above the pipe top) along the river Sapies and soil

consisting of sand and clay created some concern. Due to these difficult site conditions, HOBAS site engineers were on-site to ensure a flawless installation. To the constructor's advantage, only simple site equipment and little manpower were necessary, despite the mentioned difficulties.

The pipes were lowered into the trench from which the water had been removed and were then placed and assembled in the right descending grade. After filling the trench with sand and gravel, the bedding was compacted, and finally covered with concrete plates to prevent the pipes from buoying up. To rehabilitate the circular concrete line, HOBAS CC-GRP pipes were simply slipped inside on special steel rails

provided by the constructor. The annular space between host and HOBAS pipe was subsequently grouted.

The last pipes delivered by HOBAS were installed toward the end of March 2008. Smaller diameter DN 1200 pipes were utilised to rehabilitate three parallel culverts into which the sewer main divided to fit under a railway.

The contractor has already placed a second order, for 3.9km of CC-GRP SewerLine systems, DN 1000, PN 6, leading from the pumping station to the treatment plant.

HOBAS Engineering GmbH – Austria
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Pipes for Italian oil and gas field

The worldwide increase in the demand for energy sources presents the oil and gas industry with the challenge of increasingly having to extract from fields that are difficult to reach.

This includes energy sources in deeper waters, containing corrosive components, and sometimes at high temperatures or high levels of pressure. These general conditions impose high demands on the non-corrosive qualities of the pipe materials in which the oil and gas is to be transported.

Butting, Germany, has obtained an order to supply BuBi® pipes, clad pipes and clad elbows for such an inaccessible energy source – the Miglianico oil and gas field in Italy.

Last year, the company supplied 2,550m of 12m BuBi pipes, 450m of 6m clad pipes and 52m of clad elbows made from X65/alloy 825 material for the Miglianico oil and gas field, which lies on the Adriatic, north of Ortona. The pipes are used on-shore with conventional earth moving technology. Butting claims to be the only pipe producer in Europe which manufactures clad pipes on the basis of two different procedures: metallurgically clad pipes, and mechanically clad pipes (BuBi pipes). Clad pipes meet the demands of durability, corrosion resistance and value.

For more than 20 years, Butting has been producing and supplying pipes for this demanding and sensitive application. More than 50 projects to date, including oil and gas extracting and petrochemical industries worldwide, both on-shore and off-shore, have opted for the long life and reliability of the company's clad pipes.

H Butting GmbH & Co KG – Germany
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▲ Butting has secured an order to supply BuBi pipes to the Miglianico oil and gas field



▲ Butting manufactures both metallurgically clad and mechanically clad pipes

Service pipeline rehabilitation

During the course of a reconstruction project in Idar-Oberstein, Germany a concrete waste water pipe was repaired using the partial open-trench method.

As it was not possible to repair the sewer by means of pure reconstruction and relaying, Simona AG was asked for a special solution to avoid any damage to the nearby 16 bar main water supply line.

The company's new Simofuse® brand uses the latest joining technology for plastic piping systems.

With the help of specially designed electrofusion spirals integrated within



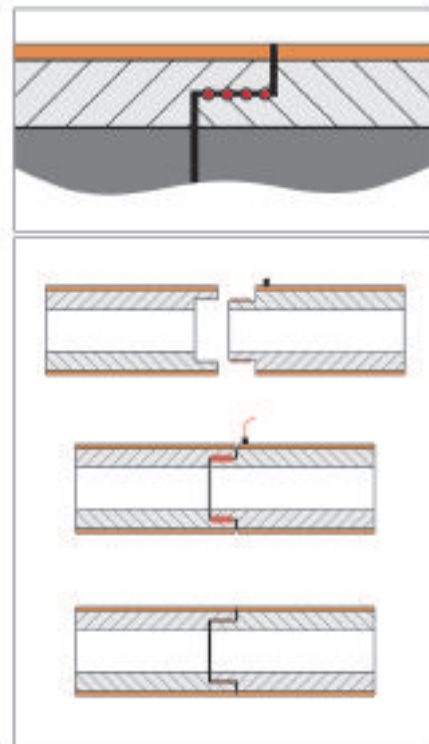
▲ The Simofuse PE external saddle has an adjustable design, allowing connection to standard, large format and ovoid pipes

the surface of the pipe ends, pipes and fittings can be welded together to produce a homogeneous, high-strength joint.

The electrofusion method applied within this area conforms to the guidelines of Deutsche Verband für Schweißen und verwandte Verfahren eV (German Association of Welding and Associated Processes), ensuring high quality results.

Using Simofuse, operators can install leak-proof pipelines in a single material used consistently throughout the system.

Advantages provided by Simofuse include a permanently tight and perfectly flush-fitting welded pipe connection without interfering socket structures; ready-to-install, meaning no welding preparation on-site; uncomplicated connection of service pipes to PE sewer pipes and a standardised transition to the rigid PVC sewer pipes; and a permanently corrosion-resistant and abrasion-resistant plastic pipe system, capable of bearing a sustained static load.



▲ Simofuse schematic diagram

In the above application, Simofuse PE 100 pipe modules with integral electrofusion joints were welded together and inserted into the old pipe, without interfering socket structures.

The old concrete pipe was broken open in the connection areas beforehand, to enable subsequent installation of Simofuse PE 80 external saddles for the connection of service pipes to the previously fed-in PE 100 pipeline using clamping tools.

With the help of integral electrofusion joints, the external saddles were welded to the pipeline to produce a perfectly tight, flush-fitting connection in accordance with the German DVS guideline.

Precise connection boreholes in the PE 100 main sewer enabled the connection of the existing PVC and vitrified clay service pipe feeds through an extended pipe connection using push-fit sockets. The welded pipe system guarantees permanent tightness and functionality.

PE 80 is available in diameters from 225 to 560mm (630 to 1,000mm upon request).

Simona provides Simofuse pipe modules (PE 80/PE 100) in diameters

Seamless and LSAW manufacturing

Established in 1994, Shanghai Yueyuechao Steel Tube Group mainly deals in seamless steel pipe, seamless square/rectangle steel pipe, and large OD longitudinally submerged arc welded (LSAW) manufacture.

The specification for the company's LSAW pipe is $\text{Ø}356\text{-}1,422 \times 12\text{-}60\text{mm}$, to quality standards API/ASTM/GB/ISO/DNV/JIS.

Cold drawn seamless steel tube for Jiangyin Yueyuechao Manufacture Tube Co, Ltd ranges from $\text{Ø}6\text{-}426 \times 1\text{-}20\text{mm}$, while hot expanded tube specifications range from $\text{Ø}168\text{-}630 \times 4\text{-}30\text{mm}$.

The range of products includes seamless steel tubes for construction, fluid conveyance, high/medium/low pressure boilers, petroleum cracking, high-pressure fertiliser equipment and dew point anti-erosion steel tubes, high carbon and chrome bearing steel tubes, cold drawn or cold-rolled precision steel tubes, square/rectangle seamless steel tubes and various alloy steel tubes, including API, ASTM, DIN and EN standard series.

Yueyuechao has already become an important steel pipe supplier in China and abroad, with pipes being exported to countries including USA, Germany, Canada, Spain, New Zealand and Korea.

Shanghai Yueyuechao Steel Tube Group – China
yycit@yyc88.cn • www.yyc88.com



▲ The Simofuse technology integrated within the pipe modules can be operated with standard electrofusion welding machines

from 180 to 800mm and SDR 33, 26, 17.6, 17 and 11.

Simona's product range includes semi-finished products (sheets, rods, profiles and welding rods), pipes and fittings, and fabricated parts.

With strong resistance to aggressive chemicals, the products are used for a wide range of applications, with particular emphasis on chemical tank and equipment engineering.



▲ The connection of PE 80 external saddles for service pipe connection to the main sewer and a PVC-KG pipe

Other key areas in which the company's high-performance plastics are used include mechanical engineering, automotive applications, life sciences, structural engineering and advertising.

Simona pipes and fittings are mainly deployed within the utility and waste disposal industry, as well as in the field of landfill engineering. For the construction of piping systems, Simona offers a product portfolio consisting of pipes, fittings and valves. Materials used range from PE, PP and PVC to partially fluorinated PVDF and E-CTFE.

Simona AG – Germany
pipingsystems@simona.de
www.simona.de

Wide range of pipe varieties

Wuxi Baishun Steel Pipe Co, Ltd is a branch company of Jiangsu Baile Group, and mainly produces precise welding steel pipes, common structural steel pipes and thermal-galvanising steel pipes. The company can produce round, square, rectangular, ellipse, and olive-shaped pipes, as well as other pipes in special forms.

The company possesses a professional lab and advanced inspection and testing apparatus, and can execute relative industrial standards of GB/T13793-92, GB/T6728-2002, GB/T6725-2002, ASTM A500, A513, A53-04, EN10219 and BS1387. The company's products are certified by ISO9001 international standard, and are sold to domestic and international markets.

Wuxi Baishun Steel Pipe Co, Ltd – China
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Hypertherm plasma featured as 'World's Greatest'

Hypertherm, an expert in plasma arc metal cutting technology, was recently featured on 'World's Greatest', a thirty-minute show dedicated to highlighting the world's greatest companies, products, places, and people. The company was selected as the 'World's Greatest manufacturer of plasma cutting systems', in an episode titled 'Maximum Performance', broadcast on the ION network, at the end of July.

"Hypertherm is exactly the type of company we like to feature on World's Greatest," said executive producer, Gordon Freeman. *"The company has been leading the way for more than 40 years now by building high performance plasma systems people can count on time and time again."*

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. The company's reputation for plasma innovation dates back 40 years, to 1968, with its invention of water injection plasma cutting.

Hypertherm, Inc – USA
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Industrial stainless steel pipes

Huzhou Xinyahua Stainless Steel Pipes & Tubes Co, Ltd has more than 14 years' experience in manufacturing industrial stainless steel pipes and tubes in China.

The company's products are manufactured using advanced technology, with state-of-the-art facilities catering to the high standards of customer requirements and demands. All raw materials are procured from a leading Chinese steel manufacturer. Grades include austenitic 304, 304L, 304H, 304LN, 316, 316L, 316Ti, 310H, 310S, 317, 317L, 321, 321H, 347 and 347H, as well as duplex S31803 and 2205.

Xinyahua produces pipe according to American ASTM/ASME, Japanese JIS, EN and other standards.

Annual output exceeds 15,000 tons (5,000 tons of seamless pipes and 10,000 tons of welded pipes). Quality of products is ensured by complete manufacturing equipment and advanced scientific techniques. The company passed ISO 9001:2000 quality certifications by Lloyds, and PED 97/23/EC authorised by EU/Pressure Equipment. The company provides products and services for both domestic and overseas clients.

Huzhou Xinyahua Stainless Steel Pipes & Tubes Co – China
sales@xinyahua.cn
www.xinyahua.cn

Seeing is believing

Sonatest NDTs has expanded its Rapidscan series, with the introduction of the Rapidscan 3D, which has the capability to scan structures quickly and accurately in three dimensions, using a co-ordinated measuring arm.

The speed and ease of use of this system has revolutionised traditional NDT scanning methods, removing the need for both expensive immersion baths and tooling, and also reducing the time taken to locate and identify defects and anomalies.

The Rapidscan 3D offers a complete and integrated ultrasonic scanning system. Large area coverage is possible due to the combination of the high resolution ultrasonic arrays used within the Wheelprobe™, powerful Workflows software and the measuring arm.

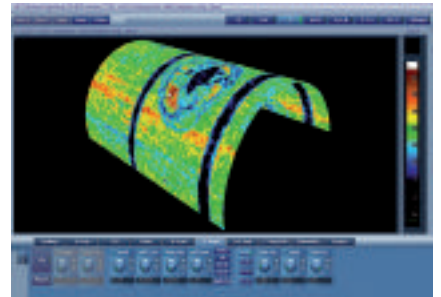
Using the measuring arm to inspect parts is intuitive and efficient. The system is designed to follow complex 3D shapes, which reduces inspection



▲ Using Rapidscan 3D's measuring arm to inspect parts is intuitive and efficient

time. The inspection of even large areas can be achieved in a fraction of the time of traditional NDT methods.

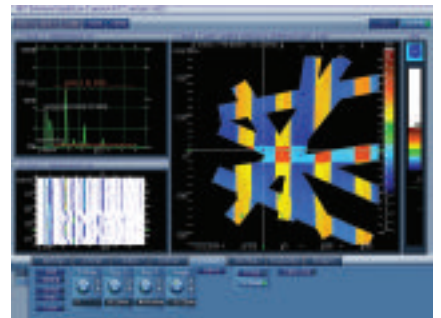
Accurate results are presented in the form of 3D images of the inspected part. These results can easily be shared and understood, even by those without NDT experience.



▲ Rapidscan 3D is provided with a suite of software tools

The Rapidscan 3D comes with a complete suite of software tools as standard, enabling the storage of test measurements taken in situ.

Post-processing and results analysis can be performed off-line or even off-site. Powerful analysis functions allow defects to be detected, sized and reported. The Rapidscan software wizard allows the operator to quickly choose a specific part from a library stored on the instrument.



▲ Delamination detection results

These parts are supplied from a mixture of images based on specific 3D CAD models and parts generated from pre-defined stock objects.

The wizard then presents compatible inspection tools for different regions of the test part. The library can be developed for many specific testing applications and environments, providing a selection of different measuring solutions.

Applications are wide and varied. Sonatest reports that performance within the aerospace, automotive, marine and composite manufacturing environments have proven to be successful, with focus on composite inspection, delamination detection, bond inspection and thickness mapping, among other areas.

Sonatest Ltd – UK
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 www.sonatest.com

New packaging models from Sica



▲ Sica has designed new models for the packaging of flexible and rigid pipes

Sica is an expert in plastic pipe processing machinery, and provides advanced solutions for increasing extrusion line capacity and adding value to pipes.

Established in 1962, the company's top ten markets are Italy, Germany, Austria, Turkey, Poland, Australia, Spain, Mexico, Sweden and Ukraine.

Constantly engaged in the technical development of products such as haul-

offs, saws, bellling machines, slotting machines, threading machines and hydro-testers for pressure pipes, Sica has recently designed new machine models in the packing field: Technocoil 2200 produces coils of flexible plastic pipe packaged in polypropylene strapping, while Multipack and Multipallet are designed for the packing of rigid pipes.

In the field of pipe cutting, there is a new Sica patent for the Duet machine and its cutting method, designed to resolve the problem of producing great quantities of short pipes on high-speed extrusion lines.

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

DSAW and SSAW pipes from China

Jiangsu Yulong Steel Pipe Co, Ltd is a large DSAW pipe and square and rectangular steel tube manufacturing company in the east of China. The company covers 320,000m², and has total assets of RMB 1,500 million. Production equipment includes ten Ø219-Ø2850 SSAW steel pipe production lines; four 200x200 to 400x400 square and rectangular steel tube production lines; four sets of machine units of Ø1422, Ø508, Ø168 and Ø60 ERW straight-seam steel pipe; and one 3PE anti-erosion pipe production line.

Annual production capacity is 250,000 tons of spiral submerged arc welding pipes (SSAW); 300,000 tons of square and rectangular steel pipes, and cold-bending pipes; and 300,000 tons of ERW longitudinal steel pipes.

Jiangsu Yulong Steel Pipe Co, Ltd – China

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New CD-ROM catalogue of pipes, fittings and valves

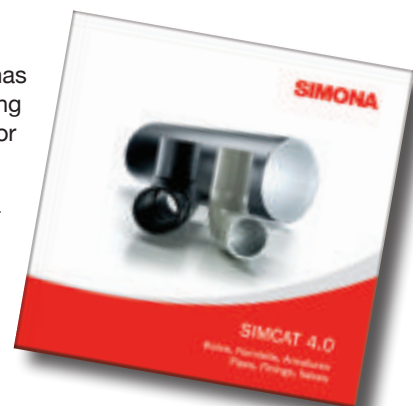
Thermoplastics manufacturer Simona, Germany, has released its new SIMCAT 4.0 catalogue, featuring the full range of measurements and designs for standard Simona products on a single CD.

Alongside the current gross price list, SIMCAT 4.0 is an ideal planning tool for projects involving pipes and fittings. In addition to sizes and dimensions, the CD includes technical details and product-specific templates for tenders relating to Simona pipes, fittings and valves. The CD contains extensive information about the entire product portfolio, as well as a company profile.

More than 12,000 pipes, fittings and valves are listed, categorised by field of application, along with material properties, standards/certification and relevant forms. The information is provided in five languages (German, English, French, Spanish and Polish). Simona offers extensive consulting services, headed by qualified staff at its technical sales service unit, and within the field sales organisation, from project planning and product selection to on-site assistance tailored to all applications.

The SIMCAT 4.0 CD can be ordered from the company's website.

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



▲ Simona's SIMCAT 4.0 catalogue details over 12,000 products on one CD

Major construction steel manufacturer

Pangang Group Chengdu Iron & Steel Co, Ltd (CSST) is a large-scale iron and steel enterprise in the western region of China.

CSST manufactures metallurgical products such as seamless steel tubes and pipes, steel bars, wire rods and colour-coated steel sheets. The company also designs and manufactures metallurgical equipment.

Main products include hot-rolled and cold-rolled (drawn) seamless steel tubular products in various types of carbon steels, alloy steels and heat-resistant stainless steels, hot-rolled ribbed reinforcement steel bars, steel coils and round rods, as well as other metallic fabrications.

CSST claims to be one of the largest manufacturers of steel products for construction and machining purposes in West China, having an annual capacity of 1.5 million tons of iron, 1.8 million tons of crude steel and 2.3 million tons of steel products, including 1.3 million tons of seamless steel tubular products and 1 million tons of construction steels.

Pangang Group Chengdu Iron & Steel Co, Ltd – China
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www.csstco.com



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Laser marking from REA

REA Elektronik has extended its range of laser marking with the REA FL Laser, a diode-pumped fibre laser marking system. Available in 12W and 20W versions, the pulsed laser system works with a wavelength of 1,065nm and offers an alternative to maintenance-intensive and bulky Nd:YAG and Vanadate (Nd:YVO) systems.

Sample applications of REA fibre laser marking systems include engraving and annealing metals; colour inscription of untreated and with additives transferred plastics; day and night design; laser transfer foils; and coated substrates.

With a focus diameter of less than 30µm, the highest marking resolutions can be

achieved, and character heights of under 150µm are possible, allowing marking to be applied even on the smallest IC components.

The use of the MOPA (master oscillator power amplifier) principle makes a q-Switch obsolete, and pulse parameters such as pulse duration, repetition frequency and peak power can generally be controlled independently, maintaining maximum flexibility.

The maximum pulse frequency of 500 kHz makes it possible to extend the



▲ The REA FL Laser

range of application and also improve the product throughput. Product-dependent marking speeds of 900m/min are claimed, and the system can be operated in continuous mode.

Due to the fibre technology specified, no thermal effects occur within the source of the laser. Thermal lens effects and time-consuming warming up cycles are a thing of the past. The REA FL Laser has an expected life span (MTTF) of 400,000h, with no regular maintenance required.

The REA FL laser concept of separate marking head and control unit substantially reduces the space required for the installation of the laser system, compared with solid lasers. The 1.8m long umbilical line between the marking head and the control unit also increases the integration flexibility.

The REA-Laser FL has six digital inputs and outputs which can be used and customised, for example as start, stop, shaft encoder input, 'mark in process' and 'mark finished' output.

The graphically orientated and Windows-based operator interface permits simple and comfortable handling of marking content and makes clear control of all laser parameters possible by the operator.

In addition to simple and automated texts, all usual bar codes (1D and 2D) and logos can be imported and generated with high resolution, and also as grey tone objects.

REA Elektronik GmbH – Germany
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www.rea-jet.de

Square tubes in a round hole – new flux leakage advancements

InspecTech Analygas Group, Canada, has been manufacturing customised NDT solutions for the tube and pipe industries for over 30 years. The company is constantly exploring new technologies and innovative ways to meet ever-evolving NDT requirements.



▲ InspecTech produces NDT solutions for both on-line and off-line applications

A flux leakage weld line flow detection system was recently installed in Midwestern USA. The unique aspect of this on-line application is that the tubes being inspected are heavy-walled, rectangular, structural steel tubular products.

Challenges encountered during the project included the magnetising of square steel tubes, and the

firmware requirements for handling the signals generated by magnetic flux patterns in the square tubing, through the weld line and sensed by the probes. The probes were mechanically redesigned to work on small, flat surface areas in close proximity to magnetic pole pieces.

The calibration stand lies parallel to the tube mill, and the inspection system travels over on a mechanical gantry, for quick and readily accessible calibrations with no modifications required to the mill run tubing. The system was fitted into a very limited space, with minimal modifications to the production line.

InspecTech provides flaw detection systems to tube and pipe producers using eddy current, flux leakage and ultrasonic technologies, in both on-line and off-line applications for international markets.

InspecTech Analygas Group – Canada
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Borealis promotes infrastructure renewal at Italy's H₂O 2008 water supply show

Italy's water supply and treatment infrastructure is in need of a significant upgrade. According to research by Agici Finanza d'Impresa ('Study of Benefits of Innovation in Italian Water Networks', 15 May 2008), the country's ageing pipe system is creating annual losses for its operators of at least €3.9 billion, and possibly up to €5.2 billion.

Renewing the system will require major investment, but as much as €85 billion could be saved in the costs of materials, installation, maintenance and environmental impact, if plastic pipes are used instead of traditional materials to put an end to this wastage.

At the Accadueo 2008 (H₂O) international exhibition of technologies for treatment and distribution of drinking water and waste water, held in Ferrara, Italy in May, plastics solutions provider Borealis demonstrated how these savings can be made, using innovative polyethylene and polypropylene materials.

Borealis highlighted new developments in its BorSafe™ medium density polyethylene for small diameter pipes, and BorSafe high-density polyethylene (PE) for large diameter pressure pipes and fittings. Borealis also showed BorECO™ polypropylene (PP) grades for non-pressure underground drainage and sewer systems. These materials, used in new installation techniques, can deliver sustainable solutions for water supply and sanitation, in high-quality, low-loss, low-maintenance pipe systems that will perform at the highest levels for decades.

"Cooperation between all the parties involved in the pipe value chain for gas and water distribution infrastructure remains the most important way to ensure quality and innovation," commented Jane Toogood, vice president, business unit pipe at Borealis. "The need for improvement is clear and we place great emphasis on delivering value to our customers through developing products and technologies that can help progress in infrastructure, economic development and environmental protection."

BorSafe PE pressure grades for water and gas pipes are characterised by durability and sustainability. BorSafe is

made using Borstar® technology, which provides plastics with good melt strength and extrudability, enhanced mechanical and heat deformation properties, and environmental stress cracking resistance (ESCR). New products such as BorSafe HE3490-LS-H and BorSafe HE3494-LS-H are currently being introduced.

BorSafe-LS-H products are Borealis's response to the latest developments in alternative installation methods. Some of the major benefits of using PE pipes for gas and drinking water applications are to be obtained by using such methods, but the techniques are becoming increasingly demanding on the pipe, which requires a polymer that exhibits very high resistance to slow crack growth (SCG) to overcome tough handling conditions. This resistance is achieved in BorSafe-LS-H grades, Borstar PE100 products based on a new hexene comonomer platform. Pipes made from BorSafe HE3490-LS-H have passed 18,000 hours in the notch pipe test (NPT), more than 100 times the current requirements of the European standards for PE drinking water pipe systems.

For smaller sizes, pipes are generally coiled in long lengths. Medium density PE80 materials with superior flexibility are the preferred choice, providing storage and installation benefits. Borealis brings the benefits of the bimodal process to this family of materials, allowing them to be engineered to meet higher targets. In producing the medium density BorSafe PE80 material, the viscosity of the material at processing shear rates has

been reduced, resulting in increased process efficiency, as demonstrated in extensive processing trials.

Currently in its launch phase, BorSafe ME3420 is claimed to be the most flexible PE80 on the market, providing for easier, safer and faster installation and outstanding mechanical properties.

BorECO PP materials are new high molecular weight block copolymers based on a high crystallinity homopolymer matrix. They were developed with the specific aim of delivering an optimal balance of stiffness and impact resistance, while retaining long-term performance and favourable processing properties. They also have high chemical resistance and can utilise all conventional jointing techniques, such as push-fit jointing and fusion.

A typical application for BorECO materials is the 'white water' sewerage pipeline recently installed for a new residential project in Legnano, Italy. ('White water' pipes carry storm drainage water separately from sewage, or 'black water'.) Key to the development was the selection of a pipe solution that was strong enough to be unaffected by ground movement and could be economically produced, easily installed, and deliver a long, low-maintenance and leak-free life. BorECO PP also allows for pipe weight reductions while maintaining the same ring stiffness levels.

Borealis AG – Austria
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www.borealisgroup.com

▼ BorECO polypropylene copolymers are suitable for sewer pipes



Endworking of pipes realised by powerful CNC machining units

The flexible endworking of pipes and tubes is crucial for the production process. Arla Maschinenteknik GmbH builds CNC controlled endworking machines which are available for single sided and double sided machining.

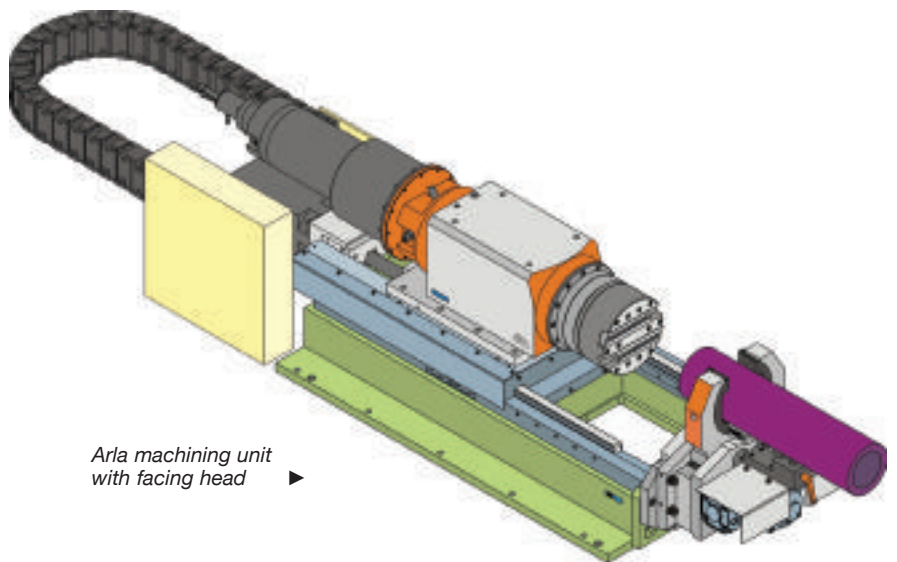
The machine concept is based on a solid frame with one or two precise machining units including a unique concentric workholding technology.

The machine can be compared to two separate CNC lathes, operated independently for every side of the workpiece. The principal difference is that this endworking concept comprises a fixed workpiece and revolving tools.

All machining units are directly driven by servomotors and are therefore very stiff, powerful, and designed for high torques.

In order to realise several machining steps, the units are built with integrated motor spindles and optionally available tool changing systems. Typical applications are turning, facing, planing, tapping, threading, chamfering, boring, drilling, milling and deburring.

The new series of Arla spindle units can be used either with HSK interface or with integrated facing heads. The machining of complex contours with a single tool system is usually realised by



Arla machining unit with facing head ▶

facing heads which are implemented in dedicated machining units.

The clamping systems used in Arla's endworking machinery are available as independent units, either pneumatically or hydraulically actuated.

Depending on the model size, the maximum outer diameter is between 5 and 410mm (maximum pipe size 1/4" to 16"). Due to the mechanically synchronous and fast clamping technology, a high clamping force of between 10 and 175kN is achieved.

Changeable jaw sets are used to reduce the diameter without readjusting the

centre. A new option allows workpieces to be clamped but also held in a special release position for radial and axial adjustment purposes.

Arla Maschinenteknik GmbH – Germany
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www.arla.de

Tubes from Ukrainian-British joint venture

Slavsant Tube & Pipe Works, a Ukrainian-British joint venture, produces steel welded tubes for plumbing, construction systems, building and metal constructions.

The tubes are produced according to national standards GOST 8645-68 and GOST 8639-82.

Tubes are delivered in 6-12m lengths, in Eurostandard packing.

Products available for export range from 20 x 20 x 1.5-20, to 120 x 120 x 3.0-4.0. Delivery of tubes is possible by railway, automobile transport and via Azov and Black Sea ports – Mariupol, Berdyansk, Odessa and Ilyichevsk.

JV Slavsant – Anratsit Tube & Pipe Works – Ukraine
slavsant@rambler.ru

Stainless steel products from China

Zhejiang Taigang Stainless Steel Co, Ltd, located in Pengyue Industrial Zone of Taishun County of Wenzhou, is one of the largest manufacturers in Zhejiang province.

The company specialises in stainless steel pipes and tubes, stainless steel rods, stainless steel wire rods and other related products.

Covering an area of 100,000m², with more than 500 employees, the annual output is over 90,000 tons. The company has a 25MT GOR converter stove, 25MT intermediate frequency stove, 25MT AOD refining stove, 15 sets of 10-150MT cold drawn production lines, and mechanical test, ultrasonic test, eddy current test, hydraulic test and spectrograph equipment imported from Germany. The company passed ISO9001:2000 certification in 2005.

Zhejiang Taigang Stainless Steel Co, Ltd – China
tgboxg@china-taigang.com • www.china-taigang.com

Seamless heat resistant stainless steel tubes

Stahlkontor Hahn, a division of ThyssenKrupp Materials International, is a master distributor of seamless stainless steel tubes and pipes in grades TP304L, 316L, 316TI, 904L, duplex and super duplex.

The company has extended its stock range for special grades. SKH has added beside austenitic tubes for high-temperature service grades TP304H, TP321H, TP347H, special heat resistant grade TP310S/310H for seamless tubes from 1/4" to 8" NPS to its stock range.

Stahlkontor Hahn – Germany
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Seamless steel pipe manufacturer

Zhejiang Jianli OCTG Seamless Pipe Co, Ltd, established in 1993, is a seamless steel pipe manufacturer with annual output of 500,000 tons. The company mainly produces ball bearing steel tube, tubing and casing, line pipe, mechanical pipe, coupling pipe, and other seamless steel pipes, conforming to API 5CT & 5L, and exporting to USA, Europe, the Middle East, Asia and other countries.

Zhejiang Jianli OCTG Seamless Pipe Co, Ltd – China
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Improved thickness gauge with A-Scanning display

Sonatest has launched a new model in its CT-Gage range. Building on the models launched earlier this year, the new CT-Gage DL+ thickness gauge now also offers an A-Scanning display.

The A-Scan feature allows the operator to see the signal and adjust all gates and parameters whilst testing, giving full transparency to the operator in the application environment. The user can ensure the correct signal is being measured, which is especially important where other problems such as pitting and delamination may be present, as well the basic thinning which is being measured.

In addition to these features, precise wall and coating thickness measurements are fast, easy and accurate, from only one side. The CT-Gage DL+ automatically measures any coating and eliminates its influence on wall thickness measurements, allowing users to locate the finest corrosion and pitting-without removing the coating.

The user can create and store 64 custom setups for all common testing applications. Switching into the time based B-Scan view enables a cross section view of the material being inspected. Enabling the high-speed scan function will give the user 50 readings per second.

The CT-Gage DL+ has built-in memory, with an RS-232 output for transferring data to a printer or PC. Data files can be user-set for a grid-type structure (data formatted in rows and columns) or a sequential file (all data appears in a single column). In addition, each file can be set to store data only or data plus B-scan graphic. The CT-Gage DL+ can store 16,000+ readings, with A-Scan captures and all gauges settings and features. With the graphics mode turned off, the unit can store over 210,000 readings.

Application environments include shipping, petrochemical and infrastructure (bridges), among others.

Sonatest Ltd is part of the Sonatest NDE group of companies, an independent manufacturer of ultrasonic flaw detectors, x-ray equipment, scanning systems, thickness gauges, transducers and NDT accessories.

Sonatest Ltd – UK
sales@sonatest.com • www.sonatest.com



▲ Sonatest's new CT-Gage DL+ thickness gauge




 <p>MAXVALUE INDUSTRIES</p>		<p>TUBES AND PIPES VALVES, FITTINGS AND FLANGES STAINLESS STEEL CARBON STEEL / ALLOY STEEL</p> <p>Add: Unit 1301, East Tower, The Ninth Zhongshan, No. 2, Xinglin Str., Dalian, China. 116001 Tel: 86-411-88800222/ 88800299/82812887 Fax: 86-411-82821131 E-mail: info@maxvalue.net http://www.maxvalue.net</p> <p>  </p> <p><small>PD/AD 2000-ND No. 01 202 CH/02 06 0170</small> <small>Certified ISO 9001:2000 by No. 179604</small></p>
		



Photo – Norres Schlauchtechnik GmbH & Co KG (page 34)

Fittings

Multifunction valve

Schroeder Valves GmbH manufactures the SMV multifunction valve, a further development of the company's proven SSV technology.

The SMV valve provides protection of centrifugal pumps from adverse effects of warm-up in the partial-load area like cavitations, flow interruption and dry operation.

This protection is guaranteed by the automatic release of the minimum flow. It also provides a reliable non-return valve function in the main delivery stream, and automatic degasification and therefore continuous filling of the pump in order to avoid dry operation pump damage and destruction.

Observations from practical applications gave the impulse for the new development. Operation breakdowns, damages and other problems caused by dry pump operation have often been observed in fluid gas plants as well as

in pump stations of fuel depots. These problems mostly occurred during times of start-up and restarts of pumps, often even during the presence of operation personnel.

In most cases, such pumps in processing plants are operated by remote control started by a central plant control.

Therefore a supervision of sufficient pump degasification pump filling is not possible. Insufficient fluid filling of the pumps, however, can result in extensive damages as well as operation breakdowns.

In case of fluid gases in the boiling point the transformation of fluid into gas already happens by a minor temperature increase in the stopped pump.

This gas volume then presses the fluid out of the pump towards the suction pipe with the result of the pump filling up partly or totally with gas.

This can be caused by the temperature influence from outside as well as from the after-heat of the pump immediately after disconnection.

Depending on the pump type it will become completely dry or filled up with gas in a way that the impellers cannot build up delivery pressure when the pump is re-started.

Thus the pump operates dry and seconds later considerable damages occur, possibly leading to destruction of the pump and environment.

The automatic degasification integrated in the Schroeder multifunction valve provides a continuous degasification of the stopped pump and secures a constant filling with the delivery fluid. The centrifugal pumps must be completely filled with fluid for a safe start or re-start of the pump plant, with immediate increase of the differential pressure and correct delivery of the medium.

The Schroeder multifunction valve is installed near the pressure connection. Due to the elevated position a geodetically high reference point is formed below the non-return cone on the pump pressure side in main stream direction.

During the dwell period of the machine, occurring gas is collected in the region of this high reference point. The automatic degasification of the valve is automatically kept in open position when the pump is not working.

A continuous degasification is provided and the pump is always filled completely with delivery fluid. This solution also applies to several pumps in parallel arrangement.

In the case of fluid gas pumps in low temperature service the working machine is constantly kept in a cold state, prepared for secure starts or re-starts.

Immediately after start-up, the pump produces the required differential pressure, and the automatic degasification of the SMV valve shuts the degasification line tightly.

When the pump is stopped, the degasification device opens because of the dropping differential pressure, so that developed gas, eg by after-heat in the pump system, will be passed off immediately and effectively. The pump remains filled with fluid for the next start or automatic re-start.

The main application area is in the process engineering of technical liquefied gases, especially in low temperature engineering, fuel depot engineering and shipping of liquefied gases.

The multifunction valve is qualified for all pump plants delivering fluids near the boiling point, two-phase mixtures, gaseous media and for pumps which are, because of modern sealing systems or similar devices, equipped with gas-injections.

The valve is also qualified to protect split cage motor pumps (non-seal pumps) and magnet pumps from dry operation.

Schroeder Valves GmbH & Co KG – Germany
 info@schroeder-valves.com
 www.schroeder-valves.com

Aluminium die-cast couplings

The extended delivery programme of hs-Umformtechnik GmbH comprises, in addition to existing components for the plastics industry, chemical industry and food industry, the advanced development of couplings for the high pressure range up to 20 bar. The DVK-HD couplings, which are available from stock, can be used both for suction and pressure conveying.

The couplings are suitable for the gas-tight connection of tubes and pipe bends, as well as branch pipes, without welding. The couplings offer technical advantages such as vacuum suitability up to 0.8 bar and pressure resistance up to 12 bar, an aesthetically appealing design, easy fitting and reliability, with optimal dimension accuracy and weight.

The known pressure resistances for such couplings are easily reached and surpassed when the couplings are installed properly. The couplings are available in lengths of 100mm (vacuum), 150mm (pressure) and 200mm. All common diameters from 60.3 to 154mm are available.

The coupling was tested by the TUV in accordance with specifications set by hs-Umformtechnik GmbH and is a registered design. A patent for the couplings DVK-HD high pressure has already been applied for.

The DVK-HD coupling consists of an aluminium base body, material AlMgSi 0.5 F22, a dented gasket, a grounding strip for continuous electrical conductivity, a strip on the screw's side and on the counter side as threaded strip with M12 thread, as galvanised version.

The standard version of the coupling is provided with a white EPDM-gasket (temperature-resistant up to 120°C) and with six zinc-plated hexagonal screws.

The structural round design ensures easy installation. The coupling is delivered in an opened state and can be pushed precisely onto the respective tube. By tightening the two or three hexagonal screws, the flange adjusts itself, first at the top and then at the bottom, to an almost rectangular shape. With a tightening torque of 80Nm, guaranteed sealing values for both vacuum and pressure are reached.

It is possible to close off the openings of the clamping claws with covering caps, for applications such as the food industry or for use in clean rooms. An anodised version of the coupling with screws in stainless steel (AISI 304) and nuts (AISI 316Ti) for use in aggressive conditions can be supplied.

hs-Umformtechnik's range of products includes the following additional components for pneumatic conveyors: stainless steel pipe bends with large radii (500, 800 or 1,000mm); stainless steel tubes; branch pipes 30°/45° and T-pieces; reducers; material distributors/coupling stations; and glass pipe bends.

hs-Umformtechnik GmbH – Germany
 info@hs-umformtechnik.de • www.hs-umformtechnik.de



▲ DVK-HD coupling from hs-Umformtechnik

New purge & bypass tee promises safety, quality and speed

A new purge pressure tee for gas purge points and bypass connections has been launched by Radius Systems (previously Uponor). The tee provides a solution to the challenge of making a safe, quick and simple connection for purge and pressure points and temporary bypass loops for polyethylene pressure pipes.

A compact, factory-made electrofusion fitting, the purge tee has been specifically developed to save time and reduce waste on-site, and is designed to be so easy to use that no extra training is

required to fit it. All fittings are approved to gas specification requirement PL2: part 4, which guarantees delivery of a quality product with long-term integrity. Benefits for installers are the ongoing consistency and quality of the fitting, ensuring safe work in less time. The fitting is also claimed to be smaller than any combination of products currently used for site-based constructions, also reducing the risk of third-party damage. A full range is available in all sizes for which connections are required, including a 40mm to 500mm range

for the 1" connection, and a 63mm to 500mm range for the 2" connection.

Other benefits of the new fitting include non-sparking plastic threaded closure caps with nitrile O-ring seals to prevent gas ignition risk. No 'snatch' operation is required. Unifit range rated bases are capable of working on more than one pipe size, minimising stockholding.

Radius Systems – UK
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Safety clamp and pressfitting systems for externally corrugated spiral hoses

Norres Schlauchtechnik, Germany has launched two new clamp systems for heavy and super-heavy, externally corrugated spiral hoses. The Connect Pressfitting System 232 is designed for the food, pharmaceutical and chemical industries, while the Connect Safety Clamp System 231 is intended for industrial applications, for example in plastics production.



▲ Connect Safety Clamp System 231 and Connect Pressfitting System 232

In the past, hose clamps were used to connect externally corrugated spiral hoses to adapters for all kinds of application. Under high pressure, however, this inevitably entails a risk that the adapter could become displaced or the system gradually lose its tightness.

Norres has now designed a special threaded sealing insert that is adapted to the outer hose contour and assembled between the hose and the shell

or pressing sleeve. The connection formed when the shells are clamped or the sleeves pressed together is very tight. In the case of the pressfitting system, users additionally profit from connections without any clearance spaces.

Both systems are designed with a form-locking groove and a form-locking bar. The resulting high tensile strength ensures that the adapter is securely held in the spiral hose even under considerable pressure. The Connect Safety Clamp System 231 has a special threaded sealing insert that is adapted to the outer hose contour. The system is consequently explosion proof.

The clamp shells are suitable for reuse and they are made of aluminium, which means they are quick and easy to fit. The system can be used in conjunction with the Airduc® 355 and 356 profile hoses for pellet suction and transport on pellet conveying systems in the plastics industry, as well as for loading and unloading silos and assorted other applications with a high throughput of media like powder or pellets.

Norres Schlauchtechnik GmbH & Co KG – Germany
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Specialised pipe fitting manufacturer

Shijiazhuang RuiDaTong Pipe Fitting Co, Ltd, China, is a specialised manufacturer and exporter of pipe fittings of various materials, including carbon steel, alloy steel and stainless steel. The company is one of the main manufacturers of electrical project 200MW, 300MW, 600MW Unit MS/HR/CR/FW high pressure fittings in China, and has successfully passed ISO9001:2000 International Quality Management System Standard certification, as well as being designated an A grade tubing enterprise by China Petrochemical Corporation and Electric Power Corporation.

The company's product range includes elbows-LR SR 45 90; return bends-LR SR 180; tees – straight and reducing; reducers – concentric and eccentric; stub ends – MSS type A & B; stub ends – ASME long; end caps; and flanges.

Specifications include wall thickness area from 2 to 100mm; ND: ½" to 24", 24" to 80"; ASME B16.9, ASTM A403 304/L 316/L 321 347, ASTM A234 WPB P11 P22 P5 P9, ASTM A420 WPL6; DIN ST37.0 ST35.8 ST45.8 S235JR, P235GH, P265GH, 10CRMO910, 15CRMO, 12CR1MOV; JIS G3454 STPG370 STPG410.

Shijiazhuang RuiDaTong Pipe Fitting Co, Ltd – China
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A better connection from AVIT

AVIT couplings are suitable for connecting high pressure steel pipes. The company's screw pipe connections are based on the tried and tested 24° cone system.

The 24° cone is connected to the end of the steel pipe by means of a butt-welded joint, while the welded hexagon nipple or the screw socket is welded or screwed with the construction.

The extremities of the pipe are centred when they are assembled by screwing, and are connected to each other by longitudinal friction-coupling when the nut is tightened. Standard pressures are: 160, 250, 320 and 400 bar.

Double sealing provides double safety for the connection. The screw coupling shows minor signs of settling on account of the wedge action.

There are no lateral forces so that slackening is impossible, and notch effects have no influence.



▲ AVIT's couplings are available for pressures up to 400 bar

These properties, combined with rotation-symmetric preloading force, result in long-term leak tightness. The screw mounting can be repeated often without deformation of the components. All parts are standardised (DIN/ISO 8434-4).

Changes to all tube dimensions up to 50mm external diameter can be realised with AVIT reduced welding cones.

Dimensions for tubes according to DIN 2448 are also standard. Providing couplings are mounted correctly, AVIT guarantees five years of secured pressure in single shift operation.

AVIT Hochdruckrohrtechnik GmbH – Germany
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Innovative pipe jointing technology

Friatec AG, Germany, is an expert in jointing technology for piping systems made of HDPE, and in electrofusion fittings.

The company's fittings feature exposed heating coils, and offer specialised solutions for gas, water, sewage and industrial pipe construction applications.

At the IFAT trade fair, held in Munich in May, the company presented its



▲ *Frialen spigot saddle SA-XL*

products for safe and effective connections. Visitors saw a large functioning model of the Frialoc PE shut-off valve as the focal point of the trade fair presentation.

With Frialoc, piping network operators can make use of the many advantages offered by polyethylene (PE).

Friatec has been offering the Frialoc PE shut-off valve for water supply systems since early 2008 in the dimensions d 90, d 110 and d 125. These will be followed by the dimensions d 160 and d 180 in the second half of the year.

The Friafit sewage system for HDPE sewage pipes has been expanded by compact sewage pipe elbows with integrated heating coils for house connection applications and a saddle for transition couplers to PVC/PP pipes.

Two different versions of the sewage pipe elbows are available:



▲ *Frialoc PE shut-off valve*

The ABM version equipped with two fusion couplers and the ABMS version with one fusion coupler and one pipe socket. Both versions are available in the size d 160 at angles of 15°, 30° and 45°.

The sewage pipe elbows with pipe sockets can be fused directly to the outlet of the ASA-TL sewage saddle.

The bright inner surface of the components additionally provides optimum viewing conditions for camera inspection procedures.

The hydraulically optimised, smooth interior contour ensures a bottom-level transition when using SDR 17/17.6 pipes, enabling simple, fast and permanent changes of direction in HDPE service lines.

The new sewage pipe saddle ASA-TL/ KG with integrated push-fit coupler in the outlet provides a direct transition to service pipes made of PVC/PP DN 150 and enhances the range of saddle components for domestic sewage connections.

Scraping operations on pipes and outlet couplings of house service connection fittings made of HDPE and PE-Xa can be performed using the new FWSG RA scraper tools. The tools are easy to use and, thanks to their compact design, are suitable for working in confined spaces.



▲ *Friafit sewage pipe elbow ABM 30°*

Butt-welding fittings

Erne Fittings is a manufacturer and supplier of butt-welding fittings such as elbows, tees and reducers from 21.3 to 1,016mm (½" to 40") external diameter and wall thicknesses up to 50mm, made of alloyed, unalloyed, stainless steels and exotic materials.



▲ *A selection of products from Erne Fittings*

Production takes place in the company's four plants in Austria, Germany and Saudi Arabia, where special demands for short production times are accommodated. The company offers a high degree of product availability and the ability to deliver on urgent demands.

The company is a flexible partner for both stockists and project specialists, and

offers services on the basis of individual, customised system solutions. Erne understands the applications and technical challenges of its project partners, and provides expertise and experience, also with regard to standards, certifications and quality, in various languages.

Erne products are used worldwide in power stations, oil and gas fields, pipelines, refineries, chemical plants, ships and other areas of industry.

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



▲ Friatec scraper tool FW5G RA

They can be operated both manually with a hand crank as well as with a battery-operated power driver.

Friatec also produces the Frialen spigot saddle SA-XL for large pipe applications, which offers an economic and efficient alternative to integrating a reduced T-piece when constructing large pipe outlets.

The new Friagrip reducer coupling DN 32/40 has been developed specifically for high strength renovation of old cast iron house service lines using HDPE materials.

Friatec AG – Germany
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www.friatec.com

Fluid connectors simplify construction of state-of-the-art compressor seal testing line

Parker Instrumentation's fluid connector, Phastite, has simplified the construction of a state-of-the-art facility for testing dry gas compressor seals at John Crane's new turbomachinery facility in Slough, UK.

The new connector's combination of high pressure operation and push-fit assembly has allowed the company to make time savings compared with a system built using the conventional options of cone-and-thread and welded tube connections.

John Crane is a manufacturer of mechanical sealing systems, and has invested over £2.4 million in its new gas seal test facility.

This included the installation of five new high-pressure test rigs that reproduce a vast range of compressor environments.

Upgraded test facilities include the ability to test at higher pressures than was previously possible – up to 800 bar (11,603 psi). The rigs are also able to test seals with shaft diameters up to 500mm (19.7"), or at speeds to 42,000rpm.

Phastite connectors have been used to provide high pressure connections in two areas: for the permanent flow connections inside each of the five test rigs, and for the permanent flow connections on the large-bore gas service tubes that supply compressed air and helium gases to the test cells.

On previous compressor seal testing equipment, the company typically used cone-and-thread style fluid connectors for high-pressure lines, which required substantial time for preparation and assembly.

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E-mail: kjx@plumbingchina.com

➔ The launch of Parker's Phastite offered a new time- and money-saving option to the equipment builders, allowing these high-pressure connections to be assembled by a push-fit operation taking seconds.

The five test rigs simulate the real-world gas pressures that will exist inside compressor casings and provide high-accuracy instrumentation to measure any leakage from the seal. Each of the five rigs requires around 20-25 permanent high-pressure connections. Compared with implementing these using cone-and-thread connectors, Phastite allowed the equipment builder to eliminate machine-based preparation of the large bore tube ends, and the subsequent thread cutting. Phastite connectors were simply slid onto the tubing ends and assembled in seconds using a hand-held tool.

A spokesman for the equipment builder commented, "Phastite gave us a much faster and more efficient assembly process. For high-pressure and high flow rate applications, Parker's new fluid connector technology offers a very interesting alternative wherever permanent fluid connections are needed. The connectors are also very attractive for this application because of their intrinsic resistance to vibration."

Phastite connectors are also employed on two large-bore tubing runs that supply compressed air and helium gases to the test rigs. These long pipes carry the

▼ *Phastite connectors have been used to provide high pressure connections for the permanent flow connections inside each of five new rigs at John Crane's new multi-million pound test facility*



gas services around the test bay, above the test equipment. T-shaped Phastite connectors are used to provide junction points for delivering gas into each test cell. In this application, Phastite connectors provided an alternative to welded connections, saving the cost and time of orbital welding.

Around 30 joints in total were needed to implement the tubing runs; each of these being assembled in less than 2 minutes using the handheld tool. The complete installation exercise for the gas services, including cutting and mounting the tube runs, took just one day. The simplicity of this approach allowed John Crane to reduce installation costs to a small fraction of the cost of a welded system.

John Crane's investment sees the company's test bay facilities upgraded to handle twice the previous number of seals being tested, and to allow higher pressure testing. In addition, the new rigs have a sophisticated data acquisition system that allows customers who are located remotely to monitor testing of their own seals online. This will help to speed delivery, saving time and money for customers who would normally send someone to witness the tests.

Parker Instrumentation Products Division – UK
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Parker Instrumentation Products Division – USA
 ipdsales@parker.com • www.parker.com

Airbag technology for lateral pipe connection systems

The airbag revolutionised safety technology in the automotive industry. Since it was launched, the chances of drivers and passengers surviving an accident have risen considerably.

Rehau has applied this proven technology to its lateral pipe connection systems, and has further developed its connection systems with Awadock New Generation.



▲ *Awadock connection systems*

This works similarly to an airbag which reduces the risk of head and chest injuries in a car crash – the airbag is not a substitute for a safety belt but a necessary and useful supplement.

The Awadock connection seal is comparable with a safety belt in a figurative sense. The job of the airbag in the system is taken over by a specially developed additional seal.

If a leak occurs between the bore hole and the seal, the green 'airbag seal' absorbs the water, increases its volume and effectively plugs the leak, ensuring permanent tightness.

The green 'airbag seal', named Q-TE-C, was designed by the Fraunhofer Institute UMSICHT specially for the Awadock connection system.

It is a swelling thermoplastic elastomer composite which begins to swell in contact with water to plug leaks.

The Q-TE-C seal was designed so that the noticeable water absorption begins



▲ Awadock deflection

after ten hours and is completed after about 48 to 72 hours.

This time delay prevents too fast a swelling on the building site. The material is also form-stable in the swollen state, and holds the water even under high pressure. Q-TE-C seals at a low swelling volume directly at the leak.

The sealing effect of the previous version of the Awadock connection system has been fully retained. This means that a large bore hole tolerance of a total of 3mm (200 -1/+2mm) is allowed.

Despite this ability to compensate such great tolerances, flaws such as cavities in the bore hole or a skew bore cannot always be ruled out. Therefore an additional safety feature has been installed in the connection system with the Q-TE-C seal, providing additional sealing in an emergency.

The Awadock connection system from Rehau is an easy-to-install, tight solution for the later lateral connection of sewer pipes made of polymer and traditional materials to concrete, steel-reinforced concrete and stoneware pipes.

If the conical Awadock screw-in crown is inserted into the connection seal, the entire surface of the seal is pressed against the bore hole. Awadock DN 160 received the predicate 'very good' (2002) for its proven tightness even under extreme stress such as from shearing forces during settling, in a product study carried out by the independent IKT Test Institute, Gelsenkirchen.

The Awadock connection system for connecting PP or PVC pipes DN 160 to concrete, steel-reinforced

Variable area flowmeters

Swagelok variable area flowmeters (VAFs) are the latest addition to the company's broad line of fluid system components. Used to measure liquid and gas flow rates by means of a tapered tube and float, Swagelok flowmeters provide accurate measurement with individually calibrated scales and a 10:1 turndown ratio. All Swagelok VAFs are factory calibrated and marked to indicate the specific media, flow range, and accuracy class. In addition, the product can be calibrated and marked to customer-specific applications.



"Our customers have asked us to provide more of the products they need, and VAFs seem to be a natural fit," commented Doug Nordstrom, analytical instrumentation market manager, Swagelok Company. *"Customers can select from a full line of VAFs that can be calibrated to meet their application needs, and that's an important benefit."*

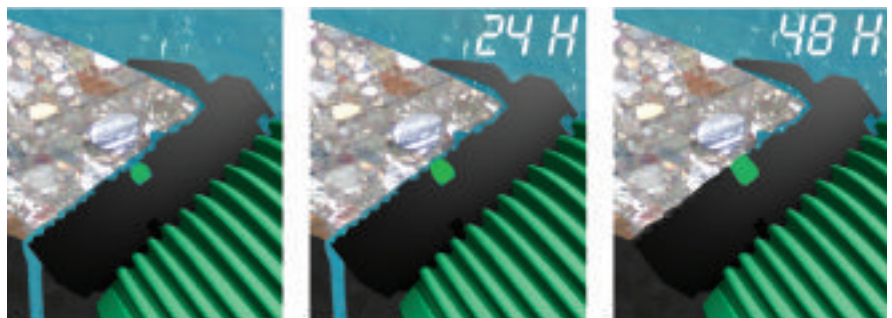
▲ Swagelok's new variable area flowmeters are available in a variety of models and sizes

Ten variations of the flowmeters are available, fitted with glass or metal measuring tubes. G series models feature glass measuring tubes, which enable direct view of the process reading and flow at the meter. A miniature glass tube model and a glass tube model with plastic end connections are also available.

For use in difficult operating conditions where pressure or temperature is a factor, M series models are equipped with metal measuring tubes and mechanical or electronic displays. All models are easy to install and have no wearing parts, to help extend product life.

Swagelok VAFs are available with NPT and flange end connections in sizes from 1/8" to 1 1/4". Available options include high/low flow indicators, transistor relays, and 4 to 20mA analogue outputs.

Swagelok Company – USA
www.swagelok.com



▲ The Q-TE-C seal swells completely after 48 to 72 hours

concrete and stoneware pipes has had a new version added. A ball joint integrated into the screw-in crown enables the connected branch pipe to be angled continuously, horizontally or vertically, by $\pm 7.5^\circ$. This mobility

makes installation easier, especially in confined pipe trenches.

Rehau AG + Co – Germany
info@rehau.com
www.rehau.com



Photo – DNEPR-GL Ltd (page 42)

Small diameter High-precision tubes

Because tubing for medical uses can require diameter tolerances as close as $\pm 5\mu\text{m}$, this is the application that comes first to mind in any review of small-diameter tubes. Minimally invasive surgery, examination by miniaturised optics, and microsurgery employing laser techniques leave no room for error in their tubing delivery systems. More than any other speciality, medicine is responsible for the rule of thumb: the smaller the tube, the greater its technical precision.

While the proud history of tubing in laboratory and hospital may justify this assumption, these venues by no means exhaust the uses and industrial importance of small-diameter, high-precision tubes. They are a vital element in a wide array of instruments — converters, sensors, detectors, transformers, amplifiers, lighting, exchangers, condensers, evaporators, impellers — that would, simply, be inconceivable without them.

For these, as for a host of other applications, small-diameter, precision-engineered tubes are not only better — they are best. As such, they fully deserve to be the focus of the many excellent products and services featured in this section of Tube Products INTERNATIONAL.

High-precision tubes

Seamless and welded steel tubes

Zeleziarne Podbrezova is a private shareholding company located in the Central Slovakia region. The main production focuses on producing seamless and welded steel tubes.

The company's main advantage is that it owns a modern steel shop that can quickly react to secure all necessary raw materials for the production of seamless steel tubes.

Part of the company's production of hot rolled seamless tube is sold directly to customers, and part is used as semi-finished product for the production of cold drawn precision seamless steel tubes.

Outside diameters of these precision tubes range from 3 to 120mm (0.120" to 4.75"), and wall thicknesses range from 0.5 to 10mm, depending upon the outside diameter.

The length of the tubes can be up to 18m, also depending upon the diameter. The tubes are made out of carbon and low alloy steel.

In addition to seamless tubes, the company makes precision welded tubes in two versions: cold calibrated and cold drawn. The latter can be supplied in diameters starting at 4mm.

Precision tubes are produced and delivered according to all appropriate international standards – EN 10305 – 1, 2, 3 or according to other national European standards and to USA and JIS standards.

Specific types of technical or shipping conditions can be negotiated.

The company's tubes can be delivered as semi-finished products that are made out of the raw tubes by splitting, shearing, modification of the tubes ends and bending.

The precision tubes are shipped directly, or through the company's subsidiaries.

Zeleziarne Podbrezova as
– Slovak Republic
admin@zelpo.sk
www.steeltube.sk

60 years of small tube experience



▲ A selection from the Small Tube Products range

Small Tube Products (STP) is a tube mill producing OD sizes as small as 1mm (0.04").

Serving industry for over 60 years, the US-based company operates as a make-to-order mill, producing custom size non-ferrous tube (copper, brass, bronze, cupronickel and titanium) and tube fabrications.

STP's key strengths are its manufacturing process knowledge, tooling design and tooling fabrication skills.

The company is certified to ISO 9001:2000, and its on-site laboratory is certified to ISO 17025, making it available to provide independent testing services.

The company's experienced workforce crafts tube from over 20 different non-ferrous alloys to ensure a match between the tube's performance and the customer's application requirements.

Small Tube Products – USA
rlowe@smalltubeproducts.com

Ultra high purity tubing for the pharmaceutical and biotechnology industries

RathGibson, a manufacturer of welded, welded and drawn, and seamless stainless steel, nickel, and titanium tubing and pipe, offers 6" OD tubing for high purity and ultra high purity applications in the pharmaceutical and biotechnical industries.

The company's 6" OD product line includes both SFT1 and SFT4 finishes that fulfil the stringent ASME BPE and ASTM A270 S2 specifications. Crafted with 316L stainless steel, the 6" OD tubing is bore scoped and polished to minimise surface anomalies and reduce corrosion and pathogen contamination.

Mechanically polished with RathGibson's proprietary finishing processes, the 6" OD high purity stainless steel tubing is SFT1 finished with 20µ-in Ra (0.5µm) ID maximum and 30µ-in Ra (0.8µm) OD maximum.

To maintain high purity, the tubing is packaged with plastic end caps in

2 mil poly sleeving which is boxed in heavy wall cardboard sleeves. For its ultra high purity tubing, RathGibson electropolishes its 6" OD tubing to a SFT4 finish with a 15µ-in Ra (0.4µm) ID maximum and 30µ-in Ra (0.8µm) OD maximum.

Before being placed in heavy wall cardboard sleeves for shipment, the tubing is processed in an ISO Class 5 cleanroom to ensure airborne particles 0.5 micron or larger are not present.

"Our 6" high purity and ultra high purity tubing is ideally suited for pharma and biotech applications," commented Paul Sedivy, director – high purity products. "The weld formed by our proprietary process withstands the toughest treatment, as evidenced by the results garnered from the full range of testing performed on each tube."

RathGibson – USA
www.rathgibson.com

International supplier to the aerospace, oil and gas industries

TW Metals Ltd, based in Southampton, UK, is the international headquarters of a wholly owned private USA company that stocks, processes and distributes speciality metals. The company's product range includes, tube, pipe, bar and rod in stainless, aluminium, alloy, and carbon, as well as a variety of high alloys such as nickel and titanium.

TW opened in Southampton in 1963 as Tubesales Ltd, and established itself as a distributor of instrumentation tube. The company was rebranded as TW in 1998.

The company's major markets are aerospace (both airframe and engine), and oil, gas and petrochemical.

TW markets and exports its products worldwide. Gail Thomas, managing director, reports that the company now exports over 56% of its sales to 136 countries around the globe.

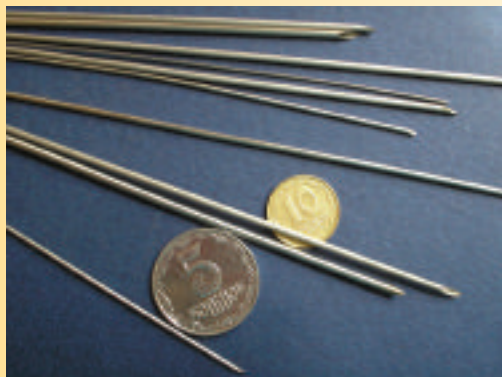
TW International has facilities in France, Poland, India, Singapore and China, supporting global offload to the major aerospace companies such as Boeing, Airbus, and Rolls Royce.

It further supports oil, gas and petrochemical industries for a wide variety of uses such as down hole drilling.

The company has implemented a state-of-the-art automated information system, adopted the latest concepts in supply chain management, installed new processing equipment and also enhanced its delivery system.

TW Metals Ltd – UK
sales@twmetals.com
www.twmetals.co.uk

Tubes from refractory metals



▲ DNEPR-GL manufactures tubes from 0.3 to 55mm

DNEPR-GL Ltd, Ukraine, specialises in the manufacture and sale of tubes made from alloys based on refractory metals.

The company has established high-tech intensive production of tubes of refractory metals (RMT) using its own manufacturing capabilities, jointly with the leading specialists from this field.

Tubes produced from refractory metals are used in industries including aerospace, aviation, nuclear power engineering, defence, machine building, electronics and electric engineering, and medicine. The tubes are an irreplaceable construction material for the production of components and units of special machinery used for operation in an aggressive medium and in temperatures above 1,000°C.

DNEPR-GL's manufactured products are completely ready for operation and require no additional processing. The tubes are produced only out of certified billets. The company uses special high-precision equipment, vacuum methods of heat treatment and modern technologies of chemical treatment and finishing of ready products.

The high-precision technologies used allow the company to produce thin wall tubes including capillary tubes, tubes of any steel grades including refractory metals (tungsten, molybdenum, tantalum, niobium and alloys on their base). The main size range is from 0.3 to 55mm and wall thickness from 20µm to 20mm.

The market of refractory products is rapidly developing. Great demand for tube products of this segment is stimulated by fast development of robotics and instrument making, electronics, machine-building, chemical and petrochemical industry, space and military industry as well as mastering of new technologies. For instance, the demand for molybdenum tubes from Russian companies is more than 2,000kg annually. The market has increased during the last 2-3 years mainly due to military-industrial complex enterprises. Production and consumption of tubes made from tungsten, titanium, and zirconium tubes for atomic power engineering is increasing rapidly.

DNEPR-GL Ltd – Ukraine
dnepr-gl@a-teleport.com • www.dnepr-gl.com.ua

Precision steel pipe from China

Wuxi Tianlong Steel Pipe Co, Ltd is a Chinese and foreign jointly-funded company located in Development Zone, Xishan District, Wuxi City.

The company manufactures precise steel pipe, and owns three production lines, with associated equipment for plate-rolling and scissoring.

The company produces various gauges of high frequency welding steel pipe, between Ø32 and Ø165, with a production capacity of 40,000 tons.

Its products are used in applications including air-conditioning compression tanks, belt conveyors, steam exhaust pipes and vibration absorber pipes for automotive lines.

Wuxi Tianlong Steel Pipe Co, Ltd
– China
tianlong@wxtlgg.com
www.wxtlgg.com

High-precision tubes

Lab line supports medical tubing developments

A sophisticated lab line at Davis-Standard's Technical Center in Pawcatuck, Connecticut, is engineered to support new applications in medical tubing technology, including higher rates for commodity products and catheters with tighter tolerances.

The line, installed in September 2007, is equipped for research and development processes ranging from screw design to the extrusion capability of specific polymers, materials such as FPVC, PEEK, PEBAX, fluoropolymers and other medical grade resins.

"There is a lot of growth potential in the medical tubing industry. We wanted to provide a means of demonstrating these capabilities while enabling our customers to run trials," said Wendell Whipple, vice president of Davis-Standard's pipe, profile and tubing systems.

"We held a seminar last September with almost 60 customers and all comments

about the line were very positive. We are currently working with two of those customers on similar lines for their medical tubing applications."

The line features ¾" (19mm) and 1" (25mm) Davis-Standard HPE extruders, two melt pumps, a high-tech vacuum tank, servo puller/cutter, conveyor/blow-off table and an OD/ID/wall gauge system, all controlled via the Davis-Standard Epic III supervisory control and data acquisition system.

The Epic III control system also has FDA 21.11 technology.

The extruders are ported with pressure transducers for screw design development on smaller extruders.

To date, the line has been used for applications such as single-lumen micro tubes, multi-lumen tubes, micro-catheter trials, new material development and co-extrusion die development.

Typically the line is running one week per month for development for screw design, process controls and other technology.

Currently there are 1-2 customer trials scheduled per month. The line is also being used for development of tooling for new system orders.

This includes tuning of die and tooling packages while equipment is being built in order to streamline the wet test approval process.

Customers interested in scheduling lab time can contact Bill Lee in the technical centre (blee@davis-standard.com), Kevin Dipollino (kdipollino@davis-standard.com) or Wendell Whipple (wwhipple@davis-standard.com).

Davis-Standard – USA
info@davis-standard.com
www.davis-standard.com

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A-788, A-790
D.O.D. : 6 mm OD to 219.08 mm OD
Thickness : 0.6mm to 10.00mm
Length : Up to 30 Mtr. Long
Inspection : Like E.L. LRS, ENVC, DMV,
SGS & also Under All Customers'
Third Party Inspection

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E-mail : surajm@surajgroup.com

Progress Through Co-operation

Precision welded tubes from India

Tube Products of India is a manufacturer of precision welded tubes. A part of Tube Investments of India Ltd, the flagship company of the US\$2.4 billion Murugappa Group, Tube Products of India began as a supplier of bicycle tubes to TI Cycles.

Operating from four manufacturing locations in India (two in Chennai, one in Pune and one in Mohali), and one in China, the company is a source

of precision welded tubes for boilers, air heaters, general engineering and automotive applications. The company exports tubes to North America, Canada, Australia, Europe and South East Asia, and has a marketing office in Detroit, USA.

For CDW tubes, the current manufacturing range is 10 to 101.6mm OD, in thicknesses from 0.89 to 5.59mm. ERW tubes range from 15.88

to 127mm OD, with a thickness range of 0.7 to 6mm. A proven expertise in developing customised processes for low and medium carbon steel enables the company to achieve strength levels of 1,500MPa. The company's tubes are used in applications such as shock absorbers, steering systems, hydraulic cylinders, propeller shafts, front fork and side impact beams. The company also supplies value added tubes and tubular components to automotive companies in India and the global market.

The company has earned T16949, ISO 14001 and OHSAS certifications.

Tube Products of India – India
info@tiindia.com
www.tiindia.com

High precision metal tubes

Fine Tubes Limited is a manufacturer of high precision metal tubes in stainless steel, nickel alloys and titanium, serving customers all over the world.

Founded in 1947, the company has over 60 years' expertise in the precision engineering industry sector.

The company has a fully integrated facility for the manufacture, research and development of high quality precision tubes in seamless, welded, welded and drawn or bead reduced forms. In addition to its head office and manufacturing plant in Plymouth, England, the company has sales offices in Munich, Germany and Lyon, France, to closely serve customers in Europe.



▲ *Products from Fine Tubes Limited are designed to operate in challenging environments*

straight lengths, coils or cut pieces with straight lengths up to 16m (51ft) and coil tubes (with orbital joints) up to 10,000m (33,000ft) long. The wide profile range also includes square, rectangular, oval, elliptical oval and aerofoil.

The products developed by the company are for niche markets, designed for the most challenging environments, and need to withstand extreme temperatures, pressures, seawater or acid corrosion. The standards and specifications for these tubes and coils are extremely high, and serve a wide range of markets such as aerospace, medical, oil and gas, and chemical process industry. Applications for the company's tubing frequently demand an innovative approach from materials selection, production route engineering through to full global distribution and technical support.

Fine Tubes Ltd holds BS EN ISO 14001 management systems certification under EMS 41528 British Standards Institute. Special processes approved by the performance review institute NADCAP, the TÜV AD-2000, the PED Pressure Equipment Directive and Quality Systems BS EN ISO 9001, AS9100, TS157 certifications are also held by Fine Tubes.

Fine Tubes Ltd – UK
sales@finetubes.co.uk • www.finetubes.com

Fine Tubes uses a range of materials, including austenitic, super austenitic and duplex stainless steels, nickel alloys and titanium. Sizes range from 1 to 50mm (0.04" to 2") OD. Tubes are supplied in

Stainless steel tubes with optional satin and mirror finishes

KG Ltd is a Bulgarian manufacturer of stainless steel tubes. The company, established in 1991, has specialised in the production of small diameter, high precision stainless steel tubes since 2004.

The company uses high quality material delivered by certified suppliers and approved in accordance with the international requirements for stainless steel. Types of steel used in the production of stainless steel tubes include AISI 304, 316, 430 and low nickel content steel. The main welding method is TIG.

At the customer's request, the company can produce and deliver satin finishes and mirror polishing. The production range is from 6 to 84mm outside diameter, with thickness from 0.5 to 4mm.

The company performs a full range tests in its material testing laboratory, using modern equipment and precise instruments to monitor the quality of the materials and the products.

KG Ltd – Bulgaria
office@kg-bg.com
www.stainless-steel-tubes.com

High-precision tubes

Precision welded steel tubes

Tubos de Precisión Delmas SL is a manufacturer of precision welded steel tubes of very small diameters.

The company's technology allows it to adapt production to customers' requirements, such as tight diameter tolerances, tubes cut in fixed lengths, and deburred and annealed tubes with very bright surface.

Delmas offers a precise outside calibrated tube and a precise outside and inside calibrated tube. Products range from 3 to 15mm OD and from 0.5 to 2mm wall-thickness.

Tubos de Precisión Delmas SL
– Spain
delmas@delmas-tubes.com
www.delmas-tubes.com

Tight tolerance parts from China

Tubetech, China, is an ISO certified supplier of small diameter metal tubular products.

The company's focus is on fabricating small diameter, tight tolerance metal tubular parts to exact customer specifications.

The company provides a combination of desired characteristics: dimensional accuracy, clean and smooth surface quality, high corrosion and heat resistance, and good machinability.

The main production techniques include argon welding and cold drawing, using TP 304/304L, 321 and 316/316L. Outside diameter range is 0.1 to 10mm, wall thickness range is 0.03 to 1mm, and lengths start from 0.5mm.

Tubetech's standard tolerance for cutting is ± 0.5 mm, but the company can meet required precisions as tight as ± 0.02 mm.

Tubetech Corporation Limited
– China
sales@tubetech.biz
www.tubetech.biz

PTFE coated nitinol tube for PTCA guide wires, catheters and needles

A PTFE coating service for kink-resistant nitinol tubes and stainless steel tubes that are used in cardio vascular medical devices for arterial transfer is available from Applied Plastics, Inc of Norwood, Massachusetts, USA.

Applied Plastics' PTFE coated nitinol tube features a highly lubricious coating while maintaining the kink-resistant characteristics of the nitinol tube, and can be processed in sizes from 0.0508mm OD upwards and lengths to 3.048 metres. Suitable for guide wire, catheters, needles and other devices, the PTFE coating can be applied with coating tolerances from 0.00254mm to

0.0762mm. Available in green, grey, blue and black colours, the PTFE coated nitinol tube can incorporate marker bands at user-specified intervals. The PTFE coating service is available for all hypotube variations, including spiral, skived, flared, crimped, ground and slotted types. Applied Plastics' PTFE coated nitinol tube is priced according to size and quantity. The firm can also source the tubing where required. Samples and literature are available upon request.

Applied Plastics Co, Inc – USA
davering@appliedplastics.com
www.appliedplastics.com

Swiss machined precision stainless steel medical components

Marshall Manufacturing Company, manufactures to specification small, custom cylindrical components, Swiss machined from 303 stainless steel and other medical grade metals.

Part features available include turning and milling grooves and cross holes at various angles, slots, threading, knurling and flanges. Diameters range from 0.05" to 0.188", in lengths to 10" with very close tolerances. Additional processes include, burnishing, heat treating, electro-cleaning and electro-polishing. Parts are available with laser marking for part traceability, and many specialised secondary operations are also available, including packaging with SPC and lot traceability.

Offering a broad range of customisation, Marshall Manufacturing provides medical design engineers with the freedom to create innovative medical device designs. Manufacturing and supplying these custom components to the medical community for over 20 years, the company brings experience with many types of medical devices from diagnostic and surgical equipment to orthopaedic and therapeutic devices.

In addition to the latest automated Swiss machining technology, Marshall Manufacturing provides CAD/CAM design assistance, integrated machine operations and cell manufacturing, CNC horizontal and vertical machining, CNC turning, multiple spindle drilling, polishing, stamping and packaging.

Marshall Manufacturing Company – USA
general@marshallmfg.com • www.marshallmfg.com



▲ Marshall Manufacturing provides large volume capabilities, high quality, efficiency and on-time delivery to the medical industry

Tube mill completes certification audit

As a result of successfully completing a recent audit, Plymouth Tube Company's Salisbury mill has earned the AS9100 Rev B registration to complement its existing ISO9001:2000 registration, with no major non-conformances found during an extensive audit.

The mill is a manufacturer of precision tubing for aerospace, high purity,

pharmaceutical, medical and nuclear applications.

The audit was conducted in accordance with the requirements of SAE AS9104 Rev A and the registration process was completed by PRI Registrar, which is accredited by the ANAB to perform AS9100 and ISO 9001:2000 certification audits for clients.

The aircraft and aerospace industries value a manufacturer which is ISO 9001:2000 and AS9100 certified, due to the requirements the certification holds in respect of maintaining an environment of improvement, communication, strong customer focus as well as growth in the field. Many of the top aerospace and aircraft companies require their suppliers to be certified to AS9100.

Steve Bohnenkamp, vice president of sales and marketing at Plymouth Tube Company, said of the achievement, "We are pleased to have the AS9100 certification as it reinforces the quality procedures that we follow to ensure that our customers receive a high performance product. Our people at Salisbury have worked very hard at achieving this recognition."

Headquartered in suburban Chicago, with 10 manufacturing plants across the US, Plymouth Tube Company supplies the aerospace, transportation, energy and industrial markets. Over the last five years, the company's sales revenue has more than doubled, due to market share growth and strategic acquisitions.

The company is a supplier of speciality carbon, alloy, nickel alloy and stainless steel tubing for mechanical, pressure, boiler, and hydraulic applications.

Steel, nickel and titanium extruded and cold drawn shapes are produced by Plymouth Engineered Shapes, while Plymouth Tube Company Chicago Processing offers coil slitting and a wide variety of speciality edging options.

Plymouth Tube Company – USA
www.plymouth.com

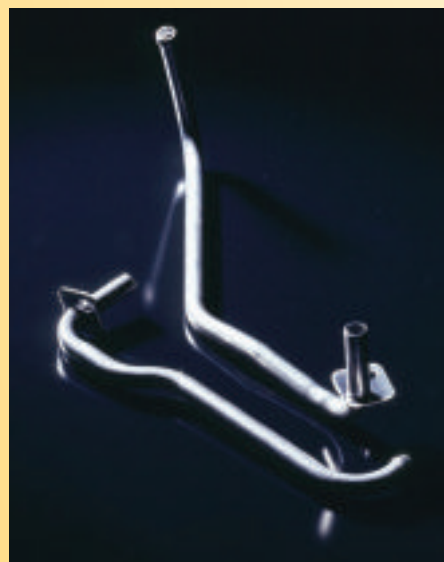
TIG welded tubes specialist

Energy Tubes is a specialist producer of TIG welded tubes in stainless steels, nickel alloys such as 600, 825, 800, and titanium, for industry all over the world.

The company has manufactured tubes in the UK since 1974, from gauges of 0.4 to 2mm, in diameters ranging from 6 to 42mm, and is currently installing a rolling mill to increase the range to 63.5mm OD.

Welded stainless steel tubes in small diameters

EGO Elektro-Gerätebau GmbH produces ferritic and austenitic stainless steel tubes and nickel-based alloys in tube diameters from 1 to 22mm and wall thickness from 0.25 to 1.5mm. The company can also develop special solutions and tubes according to individual demands.



▲ EGO offers a range of services, including tube bending



▲ Capillary tube from EGO Elektro-Gerätebau

EGO Elektro-Gerätebau GmbH – Germany
www.egoproducts.com

The company's stainless steel tubes are used in a wide variety of applications, including the automotive industry, heat exchangers, solar technology, heating, air conditioning and ventilation systems, control devices, medical technology and the food industry. Customer-orientated project management and technical engineering on-site are the basis for the company's pioneering products and sustained success.

Strict controls accompany each phase of production. Diverse methods for analysing the physical, metallographical and chemical properties of materials are available, including x-ray tests and chemical analysis with an emission spectrometer and ICP OES.

Careful material selection and precise production techniques ensure the performance of the company's stainless steel tubes.

Services offered include deburring techniques, heat treatment, brazing and connecting techniques, bending techniques, tube end forming, leakage test, defined roughness of weld seam, and defined increase of inner weld seam.

High-precision tubes



▲ The Energy Tubes product range includes coiled tubes up to 250m

Services include in-house comprehensive testing and inspection, in-line eddy current testing, fully annealed coiled tubes up to 250m long, cutting and polishing.

Energy Tubes is willing to help companies with requirements of specific tubes in specific materials, whether developing new products or changing an existing range of products to new materials.

Energy Tubes Limited – UK
enquires@energytubes.com
www.energytubes.com

Tubes for hydraulic and pneumatic applications

Jiangsu Huaheng Industry Group is situated in Zhangjiagang City, Jiangsu Province, China.

The company is an experienced specialist producer of small diameter, precision seamless steel tube for mechanical, pneumatic and hydraulic applications, and exports to the Far East, America and Europe.

The company has invested in the latest production technology to produce 70,000 tonnes per year of cold drawn precision seamless steel tubes to exacting worldwide standards.

The precision drawn seamless steel tubes start at 6mm diameter, extending to 114mm diameter, and in thicknesses from 0.8 to 14mm.

Tube lengths are produced to suit the customer's requirements. Short cut precision fixed length pieces can also

be provided. Jiangsu Huacheng Industry Group specialises in manufacturing tube to the exacting standards required by hydraulic and pneumatic applications.

Tubes for these applications range from 6mm with a 0.8mm wall thickness, up to 50mm with a 4mm wall thickness.

All tubes are fully tested, supplied stencilled, with end plugs in the customer's colour, and bright normalised or phosphated.

Jiangsu Huacheng Industry Group is represented in Europe by its exclusive agent, Tube Solutions.

Jiangsu Huaheng Industry Group
– China
dkwok50@163.com
www.jshuacheng.com

Tube Solutions – UK
tubesolutions@tiscali.co.uk

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Internal diameters from 0.055"

Dearborn Precision has been an expert in precision seamless tubing and tube hollows for the last 60 years. Small diameters and extremely tight wall variation tolerances are the company's speciality. The company states that due to its unique process and abilities, several major tubing manufacturers have chosen Dearborn Precision as their seamless tubing provider.

The company claims to provide tubing with much tighter tolerances than commercially available products, and that this makes it the supplier of choice to many tube mills and redraw houses.

Nominal wall thickness variation can range between 1% and 10% overall, while lengths can range between 1 to 30 ft. Dearborn offers internal diameters of 0.055" to around 2", while wall thickness ranges from 0.045" upwards. Internal surface finish has become increasingly important in high end tube hollows and with several horizontal hones, Dearborn Precision is prepared to meet micro finish requirements of 8 to 32 Ra.

The company has a wealth of experience with titanium alloys, nickel base alloys and stainless steels. As the company works to custom specifications, a wide range of material types, tubing sizes, wall thicknesses and surface finishes are available.

Dearborn Precision Tubular Products, Inc – USA

info@dearbornprecision.com
www.dearbornprecision.com

Stainless steel and nickel alloy tubes

Founded in 1974, Italian company Tecnofar SpA is a specialist in the manufacture of stainless and nickel alloy tubes. With advanced technology, the company has two production units, located in Delebio and Gordona, covering a total surface area of 7,000m². The company produces redrawn precision tubes, both in bar and coil

form, using the TIG welding process. The company offers a modern, well-equipped department for tube cutting, and is able to produce cut pieces measuring just a few millimetres in length, completely burr-free. Tecnofar can adhere to a range of dimensional tolerances, with a stainless steel tubes range of 0.30 to 76mm and wall thickness from 0.1 to 3.5mm. These tubes are produced using stainless steels provided and guaranteed by leading steel mills.

ISO 9001:2000 accredited (by Italcert), the company has been certified by RINA for its welding system and heat treatment for the production range of OD 6-19mm and wall thickness of 0.4 to 1.1mm.

Tecnofar SpA – Italy

info@tecnofar.it • www.tecnofar.it

Thin wall tubes down to 0.1mm ID

Russell Plastics manufactures tubes down to 0.1mm ID – a degree of thin wall that was extremely hard to initiate, but is now considered standard. Many other sizes are available, in a range of materials such as silicone, PVC, PE PP and flexible PVC. Special grades are also available. The tubes are used in a diverse range of applications, including sound attenuation in ear defenders, aerosol delivery tube, and in vitro fertilisation.

Products include very specialised multi lumen tube for applications such as liquid calibration and the passage of micro data in real time; and tubing with x-ray opaque 'stripes'. In a special development, the company is looking at tube with the ability of being seen by sound systems. UV light sensitive products are made to order. Non-invasive and general body tubes in the medical field are available, even in specialist grades of silicone polymer.

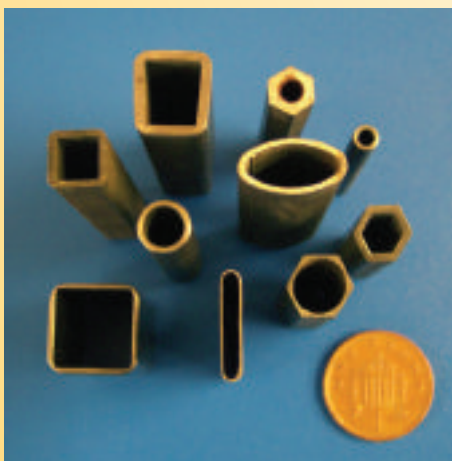
The company has the ability to interpret designers' ideas into practical solutions with its knowledge of materials and capabilities both for R&D and following through to production.

Russell Plastics – UK

www.russellplastics.co.uk

Precision steel tubes

At its specialist tube plant in Longueville, France, Osborn Tubes manufactures precision steel tubes for a wide variety of industries. Amongst the products manufactured are a range of small tubes in round, square and other shapes.



▲ Osborn Tubes manufactures precision steel tubes for a wide variety of industries

The range of tubes is from 3mm diameter upwards, with wall thicknesses as low as 0.4mm, in a wide variety of materials but with a specialisation in 15CrMoV6, or 15CDV6 as it is often referred to. This material has its origins in the aerospace industry, where its properties offer high yield strength combined with excellent weldability.

In many cases welding can be achieved without subsequent heat treatment and with negligible loss of properties. Osborn can offer long tubes or customer lengths and finishes to suit demand.

Osborn Metals Limited – UK

www.osbornmetals.com

Osborn Tubes – France

tubes@osbornmetals.com • www.osbornmetals.com

High precision tubes for demanding applications

Sandvik produces small diameter, high precision stainless steel, duplex, high alloy, nickel alloy and special grade tubes for a range of demanding applications, from aerospace to nuclear, and from pulp processing to medical.

The company has dedicated production facilities capable of supplying the most demanding customer requirements. A major advantage is the ability to offer customers a dedicated product solution for a particular application.

▼ *Stainless steel tubes from Sandvik are used in aero engines*



The company specialises in working closely with its customers to develop project-specific special alloy tubes in coils, random lengths or cut lengths with defined mechanical properties for high pressure and medical applications. Its manufacturing capability for tube ranges from 1 to 120mm outside diameter and in wall thickness from 0.25 to 25mm. Factors such as tensile and yield strength and hardness can be adjusted to meet customers' requirements. All tubes are manufactured to exacting standards and close tolerances, including defined surfaces, drawn and polished with a finished straightness deviation of 0.5:1,000mm and concentricity up to 3% of nominal wall thickness.

Sandvik also manufactures welded and seamless redrawn precision tubes in stainless steel and nickel alloys, in a range of outside diameters from 0.3 to 50.8mm and 0.1 to 3mm maximum wall thicknesses, the inner and outer surface roughness of which is 0.4µm maximum.



▲ *A wide range of outside diameters and wall thicknesses are available from Sandvik*

These precision thin wall tubes can, where required, be produced in non-standard sizes and manufactured to customer-specific dimensions, with precision drilling and cutting offered as added value services. There are no minimum order quantity limitations.

Sandvik Materials Technology

– Sweden

www.smt.sandvik.com

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Add: Room 1002, Building No.13, Lane 100 Yinxiao Road, Shanghai, 201204 China
Tel:+86-21-5045 1844 Fax: +86-2150451464
www.tubetech.biz Sales@tubetech.biz

SS SMLS Tubes EN10216-5, ASTM A269/A213 DIN 17458 JIS 3459.
Material: 304/304L, 316/316L, 321,321H etc.

SS Coiled tubes ASTM A269 TP304/304L 316/316L

Low carbon Coiled Tubes: 1008, 1010

Coil length: 200-500 meters

Cold draw and Honed cylinder tubes DIN 2391, Tolerance H7-H9

Material: ST45 ST52 Inner roughness: 0.2-0.8um

90/10, 70/30 Cu-Ni pipe fitting & Flange as per DIN/EEMUA



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Team Up With Your Tubular Solutions!

Fabricated Tube products

Because products which began as tubing are so numerous and varied, they tend to suggest custom design and individualised treatment. This is not to be wondered at, since so many fabricated tube products, built for long life in hard service, are objects of incidental but very genuine beauty. The website of one manufacturer features a photo-montage in which images of the company's robust industrial wares — workmen's hand-trucks, collection bins, display cases — dissolve into one another, beguiling the eye like works of art. The display is identified as a photo gallery; one splendid piece, a fire-screen, may be viewed and admired from no fewer than 24 angles.

The reference to art is not altogether far-fetched, given the broad array of materials, finishes, and processes from which tube components, assemblies, and products may be fashioned. Carbon steel; stainless steel; galvanised; aluminium; copper alloy: one of these — one only — is the ideal choice for a particular object. Zinc; nickel; chrome; electropolish; powder: one of these, and not another, is the best plating or coating for a given application. Bending; notching; slotting; end forming; swaging; cutting: each must be performed with the precision demanded by the job in hand.

No one who has ever swung a perfectly balanced metal baseball bat will quarrel with the assertion that a fabricated tube product can be a magnificent thing. The companies featured in this section of TPI have built their businesses and staked their reputations on that conviction.

Tube bending specialist

Buigstaal Tube Bending Alkmaar BV, Netherlands, is an ISO 9001 certified company within the Van Der Wel Group, and is a specialist in tube bending and the assembly of tubular components in ferrous and non-ferrous materials with a diameter of 3 to 168.3mm.

Buigstaal has, in the course of 60 years, secured its position in both domestic and foreign markets as a producer of tubular components.

Industries supplied by the company include automotive (trucks, buses and military vehicles), industrial compressor manufacturing, hoisting and lifting equipment, shipbuilding and offshore, and nuclear energy.

The company's additional processes for tube forming include reducing or expanding tube diameters; partial tube flattening; tube end forming (flares, bedding, etc); and applying slot holes. For metal removal operations the company offers drilling or milling of holes; CNC turning of non-standard components; applying threads; and applying bevel ends.

The company's welding competence is ensured by continuous on-the-job training in the latest techniques and the supervision of Lloyds and Stoomwezen.

Buigstaal Tube Bending Alkmaar BV
– Netherlands
info@buigstaal.nl
www.buigstaal.nl

Corrugated HDPE pipe

Prinsco is a supplier of corrugated high density polyethylene (HDPE) pipe and fittings, manufacturing in 75 to 1,200mm diameters (3" to 48"). The company offers multiple configurations of its product in single wall and dual wall, with either soil tight or watertight joints to cost effectively meet project demands in commercial, residential, construction, industrial, and agricultural markets.

Prinsco's Goldflo pipe is a single wall corrugated pipe in 75 to 600mm diameters (3" to 24"), and is suitable for drainage projects where soil tight joints are acceptable and maximum flow is not critical. Goldflo, Goldflo WT, and Ecoflo

WT products are smooth interior, dual wall corrugated pipe in 100 to 1,200mm diameters (4" to 48"), with either soil tight or watertight joint performance.

These products are manufactured with virgin HDPE with the exception of Ecoflo WT, which is manufactured with an engineered blend of material containing a minimum of 50% recycled content, to meet or exceed the same performance requirements of the virgin products.

In addition to its standard product offering, Prinsco also manufactures custom pipe and fittings engineered to meet customers' specific requirements for demanding applications such as mining, post tensioning duct, and non-potable water transmission.

The company has manufacturing facilities in the Midwest and West coast of the United States, with each location containing a comprehensive laboratory for extensive product testing to ensure product quality. The newest production facility, in California, is designed to manufacture Prinsco's full product offering, and is located to service multiple international seaports.

Prinsco Inc – USA
prinscoinfo@prinsco.com
www.prinsco.com

Tubing consultant with manufacturing capabilities

MS Tube Technologies combines a singular focus on the tubing business with broad manufacturing abilities.

Tubing is the company's only product and it is dedicated to maintaining engineering expertise while offering turnkey manufacturing services. The company states that in the past four years, its business has grown tenfold.

MS Tubing provides a combination of tube-specific engineering knowledge and extensive tube manufacturing experience. At considerable cost, the company has developed several patented pieces of tooling equipment, allowing it to make all its own tooling on-site. The company also consistently invests in updated automated equipment.

The company claims to be able to produce fabricated tube products more cheaply than most of its customers who have internal tubing capabilities.

Value engineering combined with manufacturing expertise creates solutions that cost less than the solutions most customers could design internally for themselves.

MS Tube Technologies – USA
sales@mstubetechnologies.com • www.mstubetechnologies.com

Steel tubes and finishing services

Jansen, Switzerland, produces welded, cold-rolled or drawn precision and formed steel tubes made of various qualities of steel, using state-of-the-art, high performance machines.

The company's advantage lies in the development and production of customer-specific steel tubes. In close collaboration with customers and

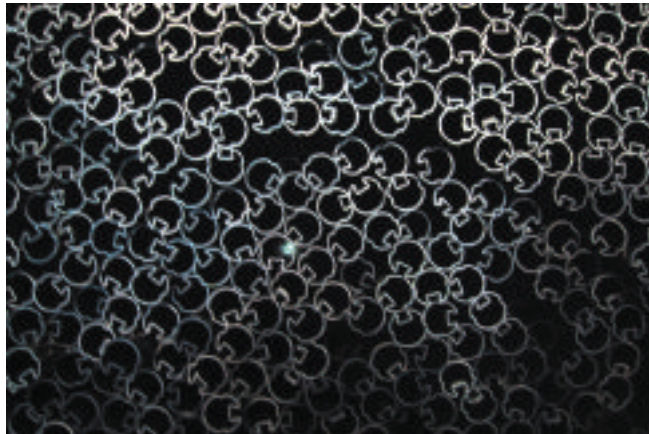


▲ Safety applications include car construction

Tube products



▲ State-of-the-art high-frequency welding machines for strong and uniform joints



▲ Special form steel tubes are available even in small quantities

➔ with select material suppliers, Jansen specialists develop solutions for the specific applications.

The company's own process development and tool making facilities allow rapid and flexible reaction times, even at the prototyping stage.

The drawing process allows the production of special sizes and forms at economical conditions beginning at only 500m. Among the most significant

buyers are the automotive and furniture industries, but the precision steel tubes are also used in the machine industry, for radiators and cooling aggregates.

The company's manufacturing centres in Oberriet, Switzerland and Dingelstädt, Germany are able to process high strength steels with tensile strengths up to 1,000N/mm² and tubes with special ratios of diameter to wall (from 6:1 to 60:1). The computer-aided monitoring of the relevant processes and continuous

testing ensure consistent quality. The services Jansen offers are supplemented by various pre-processing and individual logistics services.

Depending on requirements, the tubes are cut to size, deburred, chamfered, washed or annealed, among other possibilities, in Jansen's own plant.

Jansen Ltd – Switzerland
info@jansen.com
www.jansen.com

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Energy Tubes Ltd

At Energy Tubes we manufacture high quality stainless steel and nickel alloy tubes for industries all over the world.

Energy Tubes – Manufacturing Tig welded tubes from 6mm OD up to 42mm OD in Stainless Steel, Nickel Alloys, Titanium and Duplex.

Our tubes are used in Heating, Medical, Automotive, Marine, Petrochemical, Brewing, Food & Beverage, Architectural & Refrigeration Industries.

Energy Tubes Limited

Energy House • Unit 2 & 3A • Bean Road • Tipton • West Midlands DY4 9AQ • UK
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FABTECH 2008

6-8 October 2008 • Las Vegas, USA

www.sme.org/fabtech

The FABTECH International & AWS Welding Show is the longest running and **ONLY** annual North American event dedicated to showcasing a full spectrum of sheet metal forming, fabricating, stamping, tube & pipe, and welding equipment and technology. The event brings thousands of buyers and sellers together to exchange products and services, problem-solve, network, and share ideas.

The event boasts the highest quality, most targeted buying audience in the metal forming, fabricating and welding industry. In this section of the magazine we will be reporting on a small selection of companies that are exhibiting at FABTECH 2008 and what they will be displaying at the event.

AddisonMckee

USA

Booth 8182

At Fabtech, tube bending and end-forming technology specialist AddisonMckee plans to display one of its high-performance DataBend™ small diameter draw bending machines, and formally launch a user-friendly tube bending control solution.



▲ The DB150 ESRB tube bender

In displaying the DataBend™ model, a DB24ESR (all-electric, stack, multi-radius) 25mm high-performance draw bending machine designed for the production of smaller components, AddisonMckee intends to provide tube manipulators with a deeper insight into its capabilities.

Christian Rogiers, the company's vice president of global marketing, commented, "We produce a whole range of market-leading solutions, of which the all-electric DB24ESR – primarily a model for air-conditioning components and brake lines – is just one. Accordingly, Fabtech 2008 will provide the perfect platform to demonstrate our wider product range."

AddisonMckee will also officially unveil its Maestro™ controller, a flexible bending machine control solution. Developed around extensive feedback from the company's global customer base, Maestro offers user-friendly design with an intuitive user interface, and provides diagnostic control for real-time troubleshooting.

The company's executive vice president of sales, Mr Jim Sabine, commented, "With the launch of Maestro, all new AddisonMckee CNC tube bending machines will be available with our new Mark VI globally standardised back-end control system, designed to

provide maximum bender utilisation and up-time. From a front-end perspective, however, Maestro enables us to offer our customers the flexibility to choose a control interface to suit operator preferences."

Maestro is backed by the company's global support capabilities, including the ready-availability of non-proprietary spare parts. Visitors to the company's booth will be among the first to have the opportunity to take Maestro for a test drive.

AddisonMckee is a winner of Managing Automation magazine's Progressive Manufacturing 50 Awards for 2008, a prestigious award based on an organisation's ability to use information and automation technologies to transform its business and create a sustainable competitive advantage.

AddisonMckee – USA
info@addisonmckee.com
www.addisonmckee.com

Bug-O Systems

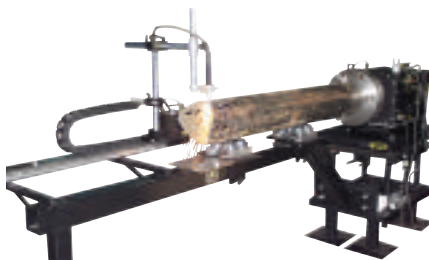
USA

Booth 5066

Bug-O Systems/Cypress Welding Equipment, a manufacturer of welding and cutting automation equipment, will display its newest innovations for increasing productivity.

The MM-1 is an economical automatic pipe cutter. The computer-controlled, 2-axis machine automates the cutting of shapes, profiles and holes in pipe with diameters of 2" to 16" (optional up to 24").

Programmed shapes such as saddle, hillside, lateral and mitre cuts can be made by simply selecting the type of cut from a menu, entering the diameters of the pipe being processed, and pressing the run button to cut the pipe.



▲ The Bug-O Systems MM1 pipe cutter

Bug-O's All Time Girth Welder is a self-propelled welding system for horizontal welding of field storage tanks. The Girth Welder can reduce field storage tank welding time by up to 40%, and weld defects are greatly reduced, saving tank erection costs.

Other products include the Mini-Vert, a compact, trackless, battery-powered fillet welder; Trac-Bug, a compact, friction drive cutting machine that will ride on any standard 6" V-grooved track, and will produce machined quality cuts and bevels with oxy-fuel or plasma; Uni-Bug III, which can produce stitch or continuous welds that can be programmed by distance, and will run on a variety of structural steel profiles; and the Bug-O Stiffener Welder, a dual-sided fillet welding machine with integrated wire feeders.

Bug-O Systems – USA
jwhite@weld.com • www.bugo.com

CML USA Ercolina

USA

Booth 4179

CML USA is a manufacturer of tube, pipe and bending machines, with over 40 years of experience. The company supplies the Ercolina 050KD Top bender model, which is suitable for bending pipe, tube, squares, rectangles, solids and other profiles. The machine is capable of bending ferrous and non-ferrous materials from 1/4" to 2 1/2", and accepts Ercolina's optional two-axis A40/P positioning table for multiple and sequential bends.

The company's heavy-duty gear case accommodates radii up to 11 7/8" centreline radius. Standard tooling is available from stock in multiple radii with centreline radius as small as two times diameter. Operator-friendly control programs bend angles to 180° with individual springback setting, and a linear scale provides a visual reference of counterbend axis and increased repeatability.

A standard motor brake ensures bend angle accuracy, and the patented swing away counter bending die vice allows quick loading and unloading of the workpiece. The hex mount patented tooling system allows rapid changeover for increased productivity.



Ercolina's
050KD Top
Bender ▶

The unit is portable, featuring base wheels and a lift handle to allow it to be conveniently moved to the desired location, and an optional remote foot pedal is available for hands free operation.

CML – USA
info@ercolina-usa.com
www.ercolina-usa.com

Combilift Ltd

Ireland **Booth 7223**

Combilift Ltd is a specialist in the long load handling sector. The company's versatile 4-way forklifts provide safe and space-saving handling in confined spaces, particularly in the tube and pipe, fabricating and manufacturing sectors.

The design of the Combilift truck enables it to perform the work of a combination of other forklifts, saving time on double handling of product and expense on capital outlay for multiple trucks such as sloaders, reach trucks and counterbalance forklifts.



▲ Combilift produces versatile forklifts for safe and efficient product handling

Sideways transportation of long loads in narrow aisles eliminates the hazardous practice of high level transportation above machinery or personnel. Resting the load on the platform also increases load stability, further contributing to improved health and safety procedures.

Combilift manufactures a range of models with load capacities from 5,000lb to 30,000lb, powered by diesel, LPG or electric. The 4-wheel steer GT stand-on forklift for very narrow aisle operation is available in LPG, with 6,000lb or 10,000lb capacities. As with all Combilift models, it can be used both indoors and outside, for convenient handling of stock throughout the premises. It is also suitable for guided rail operations, to ensure fast and accurate picking and positioning with reduced risk of stock damage.

Combilift Ltd – Ireland
info@combilift.com
www.combilift.com

Eagle Bending Machines Inc

USA **Booth 5263**

Eagle supplies a range of bending machines to small and large shops, providing advanced technology and repeatable performance. The company's staff and application engineers offer 80 years of experience in bending applications as well as machine and tooling design.

The Eagle Bending Machines/BPR Curvatrici BA CNC series of bending machines provide precision and control via servo roll bending controls.

The models BA20, BA35, and BA50 are capable of producing variable radius bends as large as required down to the 4D-5D degree bend range, which overlaps non-mandrel rotary compression bending. Eagle Bending Machines Inc inventories and supports the entire line of Eagle/BPR tube, pipe and profile bending machines with an extensive selection of machines, tooling and parts.

Eagle Bending Machines Inc – USA
sales@eaglebendingmachines.com
www.eaglebendingmachines.com

EH Wachs Company

USA

Booth 11128

EH Wachs will present its multi-axial PowerDrill – a field tool designed for drilling, boring, and tapping pipes of any diameter. The drill features 5" tool diameter, high-torque gearing, long feed travel, and multiple (5) axes of adjustment for amazing flexibility.

Optional equipment includes a two-speed gearbox, a pivot mount for non-radial drilling, a digital level and a laser pointer system.

Due to its modular design, setup is quick and easy for one operator. Optional mounting saddles allow the PowerDrill to be used on pipes or straight surfaces.

Multiple drive options are available, using a standard Wachs motor adapter. The drill can utilise standard and reversible air motors in 1½ HP and 2½ HP sizes (hydraulic power is also available).

The multi-axial uses a wide range of standard tooling and tool adapters (1½" straight bore spindle 38.1 mm/morse taper).

With its rugged construction and comprehensive features and options, the Multi-Axial PowerDrill is a powerful and versatile portable drilling tool.



▲ The multi-axial PowerDrill from EH Wachs

EH Wachs Company provides onsite machining equipment for the oil, gas, water, and power generation industries.

A comprehensive line of standard products is complemented by custom engineering and manufacturing of equipment for specialised machining applications. ▶

➤ The company designs and manufactures all products at its Lincolnshire facility, with a global sales and distribution network. It has operated in the Chicago area for over 125 years, and is ISO 9001-2000 certified.

EH Wachs – USA
www.wachsco.com

GE Sensing & Inspection Technologies

USA Booth 13214

GE Sensing & Inspection Technologies is a leading innovator in advanced measurement, sensor-based and inspection solutions that deliver accuracy, productivity and safety to its customers.

The company designs and manufactures sensing instruments that measure temperature, pressure, moisture, gas and flow rate for demanding customer applications.

The company also designs, manufactures and services inspection equipment, including radiographic, ultrasonic, remote visual and eddy current, that monitors and tests materials without disassembly, deforming or damaging them.

GE Sensing & Inspection's products are used in a wide range of industries, including oil and gas, power generation, aerospace, transportation and healthcare.

GE Sensing & Inspection Technologies has recently launched three new models to its Phasec 3 range of eddy current flaw detectors.



▲ The Phasec 3 range of eddy current flaw detectors

These lightweight eddy current inspection devices can be used for crack and corrosion detection and conductivity and coating thickness measurement in the most difficult of inspection environments.

The Phasec 3 is a single frequency instrument for crack and corrosion detection and conductivity and coating measurements in a wide range of applications in virtually every industrial segment. The Phasec 3s adds dynamic rotating inspection capability, which ensures increased probability of detection and faster operation when inspecting bolt-holes or other bores. The Phasec 3d adds dual frequency capability to the functionality of the 3s so that it is possible to inspect at two different depths and optimise weld inspections.

Due to a large colour screen, colour coding can now be used to highlight specific data, to allow easier, more reliable and faster interpretation of displayed signals, as each channel is assigned its own colour. Colour coding can be used to differentiate between stored and active signals and it is possible to use colour to differentiate the graticule from the signal. With a choice of eight colour combinations, viewability can be optimised for specific situations according to personal taste.

Incorporating all the functionality of earlier Phasec models, the new range of instruments can operate in phase plane, Y(t) and bar graph modes and spot information gives the coordinates on screen. Digital alarm systems can be audio or visual and help to ensure that all defects are identified.

GE Sensing & Inspection Technologies – USA
amanda.fontaine4@ge.com
www.geinspectiontechnologies.com

Gem Tool Corporation

USA Booth 5253

Gem Tool Corporation was established in 1973 to manufacture special HSS and carbide cutting tools. Today, offers its tool manufacturing expertise to the tube-producing area of the industry, and currently manufactures ID/OD scarfing

tools, end-prep tools, cut-off blades and related standard and special perishable tooling.

Gem Tool Corporation – USA
gemtool@execpc.com
www.gemtoolcorp.com

Hypertherm

Netherlands Booth 14077

Hypertherm designs and manufactures advanced plasma cutting systems for use in a variety of industries such as shipbuilding, manufacturing, and automotive repair.

The company's product line includes handheld and mechanised plasma systems and consumables, as well as CNC motion and height controls. Hypertherm systems provide performance and reliability that can result in increased productivity and profitability.

The company's reputation for plasma innovation dates back to 1968, with Hypertherm's invention of water injection plasma cutting.

Hypertherm – Netherlands
hteurope.info@hypertherm.com
www.hypertherm.com/eu

Mathey Dearman

USA Booth 12118

Mathey Dearman Inc assists with a host of pipeline and fabrication welding requirements, with the design and construction of a substantial range of machinery.

This range includes ten models of cutting and bevelling machines for all types of pipe and pipe diameters, fifteen types of pipe alignment and reforming clamps for welders and pipefitters, sixteen models of welding electrode and flux ovens, and twenty-four assorted smaller pipe tools for pipe fitting and layout.

Dependable and tough, the company's cutting and bevelling machines are specifically designed for critical pipe applications that require a high degree of cut quality and accuracy. Mathey Dearman offers both manual

and motorised cutting and bevelling machines to cut and bevel or contour pipe ends.

Whether the process involves aligning and/or reforming small tubes or larger vessels, a Mathey Dearman clamp is available to fit the process requirement. The company supplies carbon steel and stainless clamping systems to make pipe-to-pipe, pipe-to-tee or pipe-to-elbow connections.

Mathey Dearman offers a complete line of pipefitter's tools for flange fit-up and alignment, check pipe or fitting Hi-Lo and pipe or plate layout.

The tools are designed to precisely layout or verify the critical alignment of pipe or plate.

Furthermore, the company's complete lines of ovens are used to rebake or keep the electrode in a humidity free environment until they are consumed in the welding process. Mathey has a complete line of portable as well as large ovens to meet every facet of the customer electrode rebaking or keeping requirements.

Mathey Dearman Inc – USA
 sales@mathey.com
 www.mathey.com

Orbitalum Tools

Germany Booth 12093

Orbitalum Tools GmbH is a specialist in the area of orbital metal pipe cutting and facing technology.

The company's RPG series of Orbitalum tools includes the RPG 2.5 and RPG 2.5 Cordless tube squaring machines for pipes and micro fittings up to 63.5mm (2.5") OD, providing a solution for the demanding preparation of pipe-ends for orbital welding.

Facing of pipes and micro fittings from unalloyed, low alloy and high alloy steels, with an outer dimension range between 6.35 and 63.5mm (0.250" to 2.5") and a maximum pipe thickness of 3mm (0.118") is no problem for the electric and cordless drives.

The clamping shells of the RPG 1.5 machines can also be used with the

RPG 2.5, due to the use of a special adapter clamping shell included with the machine. Orbitalum Tools offers a large choice of durable stainless steel clamping shells for different diameters.

These ensure precise mounting of micro fittings and quick change of clamping shells without tools. Both machines come with a robust, padded hard case.

With the patented Quick-Tool-Change clamping system, the user is able to change tools quickly and easily; the integrated multifunctional tool has two cutting edges and a high-performance surface coating which prevents wear and tear, allowing pipes to be processed quickly and cost-effectively, with high precision.

RPG 2.5 Cordless is primarily used in the field of plant construction, including pharmaceutical, chemical, bio-tech and the food and drinks industries.

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

Shelby Welded Tube/Middletown

USA Booth 5199

Shelby is a leader in supplying high quality tubing to both the US domestic and international automotive industries. The company specialises in extra deep drawn steel tube for several fabrication and coated products, cold rolled, hot rolled, galvanised, aluminised, zinc nickel, galvanized, galvalume and 409 stainless.

The majority of these tubes are designed for highly engineered assemblies. Current applications include filler and overflow tubes for fuel tanks, exhaust systems, dash panel support assemblies, wiper brackets, interior vehicle support systems, and hydroformed door handles.

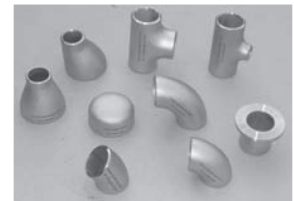
Shelby Welded Tube/Middletown Tube Works – USA
 info@shelbytube.com
 www.shelbytube.com



Zibo Wel-Fit Metal Products Co Ltd

Product Range

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



Specifications

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



Inspections

RT UT MT PT IGC PMI
 Hardness, Tensile
 Bending, Flattening, Flaring
 Impact, Hydrostatic Test
 Spectro-analysis



CRN



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How to choose a ball valve to curb fugitive emissions

By Michael Adkins, general industrial valve product manager, and Peter Ehlers, alternative fuels market manager, Swagelok Company, USA

More and more attention worldwide is being focused on fugitive emissions, which are equipment leaks, as opposed to point-source emissions from reactor vents or boiler exhaust stacks. United States regulations are honing in on fugitive emissions in regions such as the Gulf Coast of the United States. The European Union's Integrated Pollution Prevention and Control Bureau (IPPC) issued a comprehensive directive to curtail fugitive emissions. Effective for new construction since 1999, the directive applies to maintenance, repair, and upgrades at existing production facilities effective October 2007. It is estimated that this legislation will affect 50,000 installations in Europe. According to European Process Engineer, "*The new legislation is wide-ranging and introduces a concept of Best Available Technique (BAT), urging plants to find the best available solution for reducing fugitive emissions ... from areas such as design, product selection, fitting and fitter training to maintenance, site monitoring, and so on. As such, it requires companies to change the way they operate: industry must begin to make decisions on the basis of what is the best available product and operating method, and move away from its current cost-oriented framework.*"^[1]

Fugitive emissions are defined variously and may refer to a wide range of emissions not confined to a stack, duct, or vent, including emissions from bulk handling or processing of raw materials, windblown dust, and other industrial processes.

With respect to emissions in general, and fugitive emissions in particular, the trend is clearly toward higher standards and more scrutiny. Fugitive emissions will be on the vanguard as regulators attempt to impose the next set of emissions standards, especially as concerns highly reactive volatile organic compounds (HRVOC).

Not all leaks are considered fugitive emissions. Leaks may be either internal or external. In the case of a ball valve, an internal leak could refer to a leak across the seat, from the upstream to the downstream side. So long as the valve does not vent to atmosphere, an internal leak would not result in a fugitive emission. By contrast, an external leak refers to a leak from inside the valve into the environment, for example, by way of the stem seal or body seal. To the extent that leaks pose harm to the environment, they are fugitive emissions.

According to an article in *Sealing Technology*, fugitive emissions worldwide amount to more than one million metric tons per year.^[2] In a recent study undertaken by the European Sealing Association, fugitive emissions from leaking valves, pumps, and flanges in US plants account for losses estimated at 300,000 metric tons per year in the chemical and petrochemical fields alone.^[3] The same study observes that

one-third of all emissions are fugitive emissions, with one-half of these coming from valves.

External leaks from fittings, valves, and other fluid system components can add up over the course of a year to major financial losses. For example, for a plant with 50,000 fittings, the average annual economic loss due to leakage from fittings alone is estimated at more than \$25,000.^[4] Such examples make the case for a total cost of ownership approach to system design, product selection, and maintenance.

In this article, we will focus on discrete component leaks, in particular external leaks from ball valves, a widely used type of valve that enables high flow and effective shutoffs in many industries, including the chemical, petrochemical, oil and gas exploration, power, and alternative fuels industries.

To control fugitive emissions from ball valves, the critical point is to select the right ball valve for the application. Begin with accurate information about the application: pressure and temperature ranges, cleanliness of the medium, frequency of cycling, frequency of maintenance desired, allowable leak rate, flow requirements, and potential for contamination. Then choose the valve technology that most closely accommodates your operating parameters, giving due attention to design and performance features, as well as material compatibility. While this article cannot address all ball valve types, we will focus on two design features that are especially important in controlling fugitive emissions and overall cost of ownership: body seal design and stem seal design.

Body seal design

Two common types of body seals are (1) screw type and (2) flange type. While the screw type is a stronger seal, enabling higher system pressure, the flange type allows fast and easy maintenance with the valve in line – an important benefit.

The screw type consists of one or two threaded 'end screws' that screw onto the body of the valve after the ball and seat packing have been loaded inside. The sealing area of a screw-type fitting is relatively small and therefore it can be an especially efficient seal, enabling effective sealing at pressures as high 10,000 or 20,000 psig (689 or 1378 bar). In addition, the nature of the design enables the manufacturer to offer an especially wide range of end connection choices.

In valves employing the flange-type body seal, the valve body consists of three discrete sections that are joined together with flanges, seals, and bolts. Because the sealing area

across these components is larger, this design usually results in a lower pressure rating. Since the flanges are sealed with gaskets, there are fewer geometric constraints on the sealing material, and therefore a wider choice of sealing materials is available.

The manufacturer's standard sealing material is not always the answer. System designers should take care to research sealing materials in conjunction with their system operating conditions, considering the full range of options, including metal gaskets, many different types of elastomer O-rings, and Grafoil® packing, which may offer a more robust valve design. The bolts in the flange-type body seal should be of high grade and material, such as strain hardened 316 stainless steel, to ensure sufficient sealing load is maintained.

Beyond sealing materials, an advantage of the flange-type design is the ease of maintenance. Once the bolts are removed, the valve's body swings out for easy repair, eliminating the need to remove the entire valve from the system. Seat and body seals are easily accessible. As regulations targeting fugitive emissions get tougher, ease of maintenance and repair will become more important. A valve that is easy to maintain and repair is also one that is more likely to be maintained and repaired.

Leaks may occur not just at sealing points but also through body materials, such as castings. When specifying valves, system designers should inquire about the integrity and inspection of body material, whether cast or machined. What specifications does the valve manufacturer hold the metal supplier to? What quality controls are in place? A Certified Materials Test Report provides many answers to the most critical questions concerning the quality of body material.

Stem design

In a ball valve, there must be some means of ensuring that the system media, whether liquid or gas, does not leak from the stem and body interface. This is the role of the stem seal. With sufficient cycling frequency, all stem seals are subject to wear, and wear can lead to leakage. However, some seals are more effective than others in certain applications. Based on the application, a deliberate choice between design types should be made.

One-piece stem packing

The most basic and primitive technology is a one-piece gasket that encircles the stem. As the packing bolt is tightened down on the stem, the gasket, usually made of polytetrafluoroethylene (PTFE), is crushed, filling the space between the stem and the body housing.

Unfortunately, PTFE and other similar packing materials are subject to cold flow, which is the tendency for certain materials to change shape over time; cold flow can be exacerbated by pressure and temperature. In some cases, the material may extrude into areas where it was not intended to go, undermining its effectiveness and leading to leakage of system media.

To compensate for cold flow, the packing bolt may need to be tightened more frequently to increase the compression

load on the stem seal, especially as application pressures and temperatures change and as the valve is repeatedly cycled. The additional tightening increases the force against the stem, requiring more force for actuation. With all the occasional retightening, it is possible that the packing bolt will bottom on the valve body, at which point the packing will need to be replaced.

This basic packing technology requires frequent inspection and adjustment; otherwise, leakage may occur. Unfortunately, to the untrained operator, it is not always clear when adjustment is required.

To reduce the risk of fugitive emissions, the one-piece packing design should be reserved for applications where fluctuations in temperature and pressure will be minimal, where cycling will be limited, and where inspection and monitoring will be frequent and regular.

Two-piece chevron stem packing

A two-piece chevron stem packing design is an improvement on the one-piece design and therefore allows for wider temperature and pressure ranges, as well as regular and easy actuation without excessive wear.

A chevron packing consists of two matched gaskets, one fitting inside the other. The cross-section of the gaskets is triangular in shape. Fitted together, the two gaskets form a rectangular cross section. As force is applied from the stem's packing nut, the two gaskets are pushed against each other along the diagonal point where they meet, which sends the force horizontally and evenly against the stem and body housing. With minimal pressure from the packing nut, a substantial seal is created between the stem and the body housing.

For the chevron seal to work correctly, the two PTFE gaskets – the packing – must be held in place to reduce 'cold flow' during thermal cycling. The packing in the chevron design, therefore, must be adequately contained and supported by packing support rings and glands, which evenly distribute pressure to the packing.

To reduce the interval of inspection and adjustment, the chevron design also may include Belleville™ washers, which are springs that create a 'live load' on the packing. Live loading enables even pressure on the packing, as temperatures and pressures fluctuate. These springs provide a constant bias force against the seal and the body to ensure that the appropriate amount of sealing force is provided. At high temperature, the springs compress and allow space for the packing to expand. At low temperature, they expand and maintain the correct amount of pressure on the packing. This live loading system enables the chevron design to maintain a constant seal using this steady biasing spring force. The result is easy actuation and minimal wear to the packing. Without the springs, the packing would have to expand and contract in a relatively fixed space. As the packing expanded at high temperature, load on the stem would increase and cold-flow could occur. The result would be increased wear on the packing and difficult actuation.

Some valve designs may allow system pressure to push up on the stem, and a live-loaded mechanism accounts for this movement – as well as expansion and contraction of the packing – enabling consistent pressure on the packing.

One-piece packed valves may contain springs and purport to be live loaded but they are not as effective. The springs will enable the PTFE packing to contract and expand to some degree, but without the chevron design they cannot ensure consistent pressure on the stem. By definition, a single-piece packed valve requires heavy biasing spring force on the packing so it can bow outward and create a tight seal. With repeated actuation, wear to the packing can be considerable. The wear will require frequent replacement of the packing and may lead to leakage.

O-ring seal

Another effective stem seal technology is the O-ring design. When properly designed, this technology provides flexibility for applications requiring high pressure, low pressure, or a broad pressure range, such as a cylinder, where, for example, pressure may drop from 2,300 psig (158.5 bar) when full, to 100 psig (6.9 bar) as it nears empty.

The O-ring is usually made from a highly elastic material, such as fluorocarbon FKM. Like the two-piece chevron design, the O-ring design does not require excessive pressure from the packing nut. Rather, the O-ring is energised by pressure in the media stream. As pressure in the stream increases, the O-ring further deforms and increases pressure on the stem. Conversely, as pressure in the gas stream decreases, the O-ring relaxes, filling the space between the stem and the body. Because it is elastic, the O-ring's cross-section deforms and reforms to make the necessary seal.

A proper stem design with an O-ring configuration requires a back-up ring or some other mechanism, usually made of PTFE, which will contain the O-ring under high pressure. This back-up ring is designed to reduce the extrusion gap of the O-ring gland and therefore keep the O-ring contained. If permitted to extrude beyond its specific bounds, the O-ring may be sheared during actuation. Extrusion may lead to leaks and will make actuation difficult.

The O-ring design is highly effective at high pressure. In terms of temperature, pressure, and chemical attack, the design is limited by the specifications of the elastomer. The user must take the initiative to understand the system media and the potential for chemical interaction with the elastomer.

Stem misalignment

Beyond issues relating to stem seal design, there are some additional causes of leaks from the stem. These have to do with alignment of the stem. If for any reason the stem becomes tilted or forced to one side, there may be uneven wear to the stem seal, resulting in leakage. There are two basic causes of misalignment.

In the first case, misalignment may result from improper installation of the actuator. If the centre line of the actuator and the centre line of the stem are not properly aligned, the stem will become tilted or askew, resulting in uneven wear of the stem seal.

In the second case, damage to the seat seal inside the valve may cause the stem to tilt. Ball valves can employ either a floating or trunnion ball design.

In a floating ball design, the ball is not fixed inside the housing but, rather, floats between two seats. In the shutoff position, the ball seals against the seat on the low-pressure side, pushed downstream by a positive pressure differential.

By contrast, the trunnion design employs a ball, but the ball is not a discrete sphere. Rather, its geometry includes two cylinders – which are called the trunnions – affixed to the ball at the top and bottom. The unit fits into a space in the valve body and cannot move along the flow axis. As the ball rotates to the open and closed positions, it glides on the trunnions, which can be fitted with bushings or bearings.

In the case of high differential pressure across the seat, a free floating ball can be pushed downstream – too far downstream. In the absence of an advanced seat design – such as a spring energised seat, with an O-ring and spring on each side – the ball may not return to the centre position. As a result, the stem will tilt to one side and, with time, uneven stem wear will occur.

The trunnion design prevents excessive movement of the ball downstream. The trunnions, which are fitted in place, keep the ball centred and the stem properly aligned. Even with a 'hammer effect', where a non-compressible medium, like water, produces a pressure spike, the trunnion design will keep the ball centred.

Conclusion

The purpose of this article is not to advocate for one design over another – for a trunnion design over a floating ball design, for example. Most designs have their appropriate applications. This article intends to show that different designs have different strengths and relative merits, and these have a direct impact on fugitive emissions. When choosing a ball valve, a system designer should give due consideration to material compatibility, pressures, temperatures, desired frequency of inspection and adjustment, and frequency of actuation. Further, when cost becomes a leading determinant in choosing a valve, the system designer should be aware of what compromises he or she may be making. The real cost of a valve is not the purchase price but the overall cost of ownership. With raw material feedstock prices increasing, as well as the frequency and severity of environmental non-compliance fines, direct and indirect costs associated with frequent maintenance, failure and replacement must be considered.

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