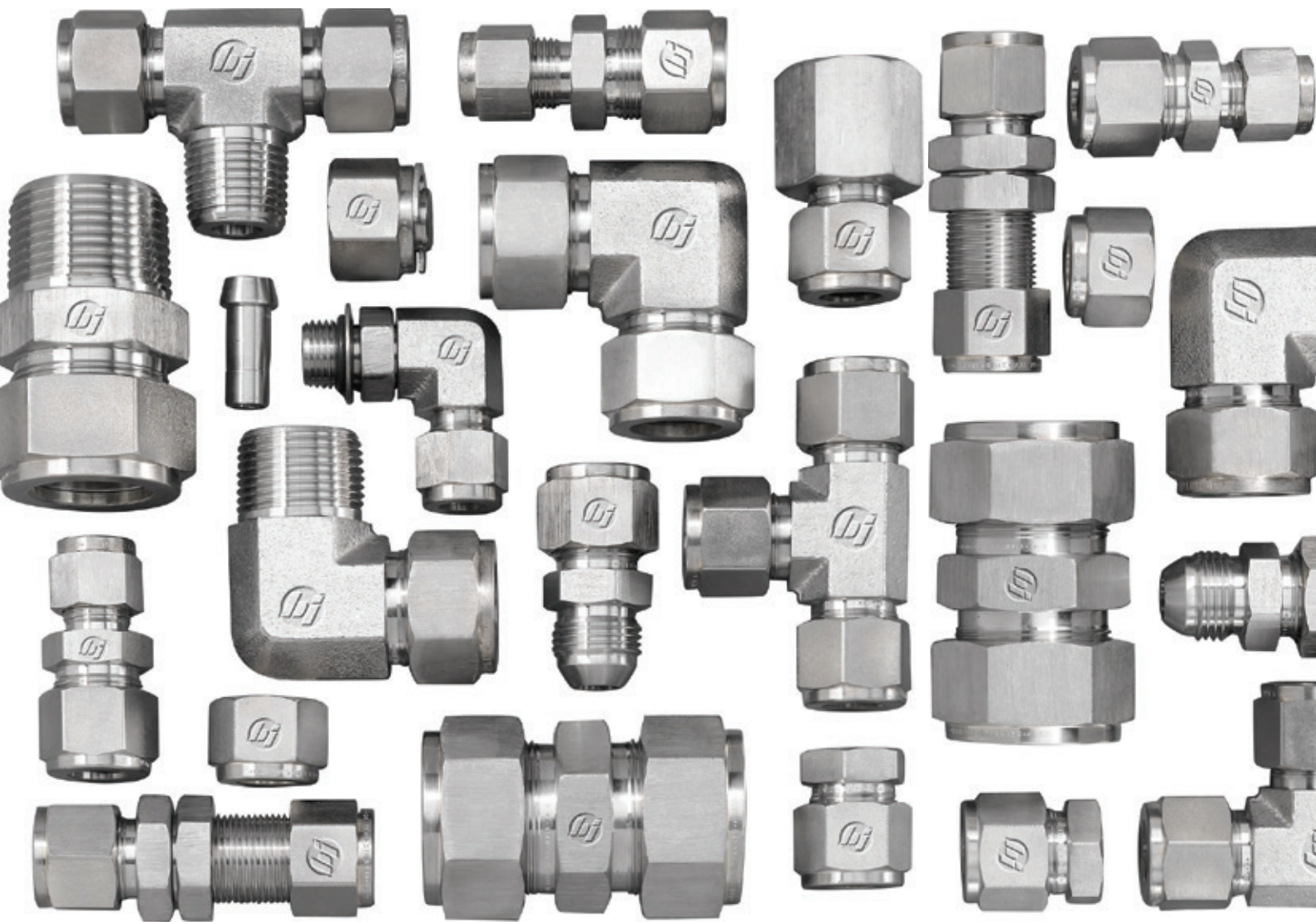


# Tube Products INTERNATIONAL

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The trade magazine for tube and pipe products

May 2017



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2017

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**Date:** 14th - 16th Novembre del 2017.

**Venue:** Puerta de Oro – Centro de eventos y convenciones. Barranquilla – Colombia.

**Organizator:** Andinafairs S.A.S.

**Exhibitors:** 100 companies (Plus 200+ Exhibitors in the Industrial fair by Corferias).

**Area:** 2000m<sup>2</sup> (Plus 5000+m<sup>2</sup> In the Industrial fair by Corferias).

**Exhibitors Registration Date:** April 2017.



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TP 405	1.4724	353 MA	1.4854	TP 316 H	1.4919	Alloy C-4	2.4610
TP 430	1.4742	TP 330	1.4864	TP 321 H	1.4941	Alloy 602 CA	2.4633
TP 446	1.4749	Alloy 800	1.4876	TP 304 H	1.4948	Alloy 617	2.4663
TP 446	1.4762	TP 32/27	1.4877	TP 304 N	1.4949	Alloy 600	2.4816
TP 327	1.4821	TP 321 H	1.4878	TP 310 HCBN	1.4952	Alloy C-276	2.4819
TP 309	1.4828	TP 304 HCu	1.4907		1.4961	Alloy 601	2.4851
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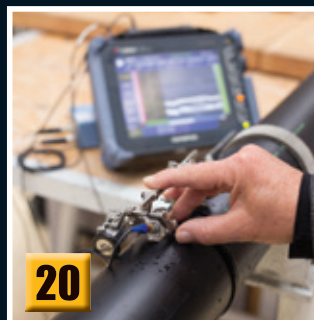
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# Tube Products

## INTERNATIONAL

The trade magazine for tube and pipe products



## The May issue

Welcome to the latest Tube Products INTERNATIONAL magazine. In this issue we have a feature on fittings, valves, flanges and connectors (page 42). We also take a look at Tube Russia 2017 and the Guangzhou 2017 trade show.

The magazine will be distributed at both of these trade shows, and members of the team will be in attendance distributing the magazine to the international tube industry. Do come and say hello.

Our extended technical article this issue examines new tube cutting technology and is written by Geoff Shannon and David Van de Wall from Amada Miyachi in America and Europe, respectively. You can read their fascinating insight starting on page 56.

I had read a number of stories over the past few months referring to an improvement in the price of oil. I have written about this with a little trepidation over the past few issues, but it is good to see the green shoots of recovery now start to take root. Several companies with oil industry related products have reported an upsurge in sales and interest globally, so hopefully we will see some stability in that market in 2017.

A less optimistic picture was generally painted for the steel industry. However, I am now seeing some of these predictions being revised, which would be another vital boost for many of our readers. China made a number of cuts to its over capacity in 2016, which seem to have paid dividends. Demand in the EU and US is also predicted to rise due to tariffs on cheaper imports.

Next issue we have features on steel tubes, material handling solutions & logistics and the Tube South East Asia 2017 trade show. This event will be our main focus so get in touch if you would like to promote your products to a massive potential audience in Thailand, China, Malaysia and beyond.

Enjoy the magazine.

**Rory McBride**  
Editor



# events calendar

## 2017



**17-19 May**  
**Made In Steel** (Milan, Italy)  
International Exhibition  
[www.madeinsteel.it](http://www.madeinsteel.it)



**5-8 June**  
**Tube Russia** (Moscow, Russia)  
International Exhibition  
[www.metallurgy-tube-russia.com](http://www.metallurgy-tube-russia.com)



**28-30 June**  
**Guangzhou Tube Fair** (Guangzhou, China)  
International Exhibition  
[www.chinaexhibition.com](http://www.chinaexhibition.com)



**18-23 September**  
**EMO** (Hanover, Germany)  
International Exhibition  
[www.emo-hannover.de](http://www.emo-hannover.de)



**19-21 September**  
**Tube Southeast Asia** (Bangkok, Thailand)  
International Exhibition  
[www.tube-southeastasia.com](http://www.tube-southeastasia.com)



**3-5 October**  
**TuboTech** (São Paulo, Brazil)  
International Exhibition  
[www.tubotech-online.com](http://www.tubotech-online.com)



**6-9 November**  
**FABTECH** (Chicago, USA)  
International Exhibition  
[www.fabtechexpo.com](http://www.fabtechexpo.com)



**28-30 November**  
**Stainless Steel World**  
(Maastricht, Netherlands)  
Conference & Exhibition  
[www.stainless-steel-world.net](http://www.stainless-steel-world.net)



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# business & market news



*PolyTest system on-site inspection of a butt fusion joint in service*

## PE pipeline integrity testing service launches in North America

TWI has partnered with Team Qualspec, a provider of services related to the maintenance, inspection and construction of mechanical and piping systems, to supply the PolyTest service to the North American market.

PolyTest is a new field inspection system specifically designed for volumetric non-destructive testing of butt fusion and electrofusion joints in polyethylene (PE) pipes. It has been used in a wide range of pipeline industries including gas, water, offshore oil, mining and nuclear since it was developed by TWI, with the support of NYSEARCH, a collaborative RD&D sub-organisation of the Northeast Gas Association.

PolyTest is supported by procedures to enable detection of all types of flaw that can occur in PE pipe joints, including planar flaws, particulate contamination and cold fusions.

It is backed up by extensive performance testing to determine the acceptance criteria that should be applied.

The self-contained system is fully portable, allowing in-trench inspections, and incorporates a simple scanner to accommodate pipes with outside diameters from 4" to 40" and wall thickness from 0.3" to 2.5". It can also be adapted for pipes outside these ranges.

After the joints have been inspected the system generates the results, providing a permanent record of joint integrity.

PolyTest complies with the requirements of ASTM E3044, ASME BPVC Section III Appendix XXVI and EN 13100-3, giving the end user increased confidence in the integrity of PE joints within their pipelines.

**TWI Ltd – UK**  
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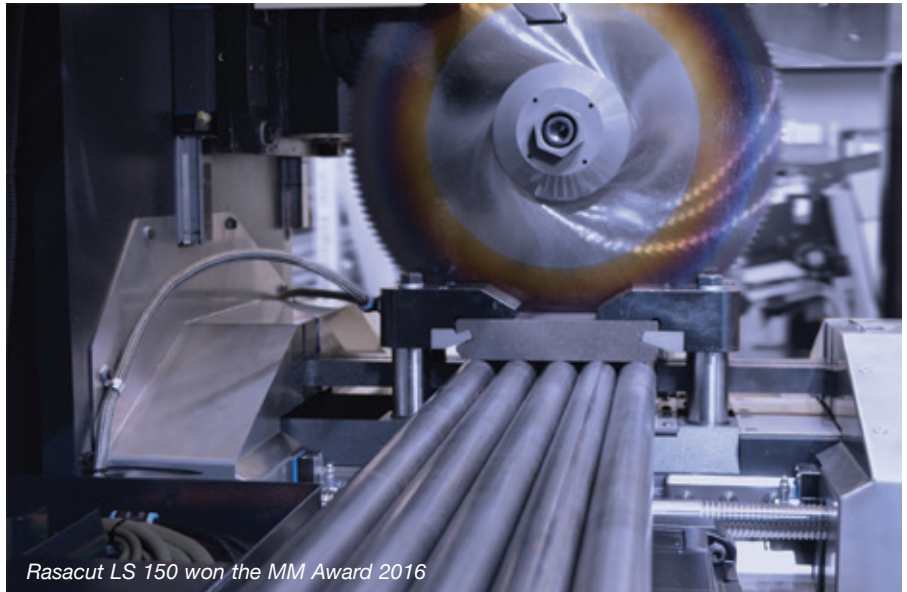
## RSA wins innovation award in separation technology category

RSA cutting systems GmbH has won the MM Award 2016 in the 'separation technology' category, with the layer saw Rasacut LS 150, which was introduced in April 2016.

The award, which recognises innovations in metal processing that benefit users, the environment and society, was presented to RSA managing director Thomas Berg and development manager Stephan Feldhoff during a ceremony at the AMB international exhibition for metal processing in Stuttgart, Germany.

RSA produces cold circular saws, de-burring systems, industrial brushes and saw blades for the global market. The products are used in the automotive and furniture industry as well as in the steel trade.

By using newly developed servo clamping, the layer saw Rasacut LS 150 can saw especially thin-walled tubes, tubes with a difficult ratio between diameter and wall thickness, and tubes with a stability higher than 1,200N/mm<sup>2</sup>



Rasacut LS 150 won the MM Award 2016

in single, double and triple cut. It can replace three cold circular saws or four band saws.

It can produce workpieces that previously required complex laser processing, and after sawing

production steps like de-burring, chamfering, checking, washing, drying and unloading can be executed.

**RSA cutting systems GmbH** – Germany  
rsa.d@rsa.de  
www.rsa.de

## Deal sealed for Liberty to acquire Tata's Speciality Steels business

International industrials and metals group Liberty House has signed an agreement with Tata Steel UK to acquire its Speciality Steels business for a total consideration of £100mn.

The deal secures the future of around 1,700 jobs directly, and thousands more in the supply chain and regional economy.

The sale follows an extensive due diligence period, after the parties entered exclusive discussions in November 2016.

It will make Liberty one of the largest steel and engineering employers in the UK, with more than 4,000 workers at plants located across the country.

Speciality Steels, which makes high-value steels for the aerospace, automotive and oil and gas industries, has manufacturing facilities in Rotherham, Stocksbridge and Brinsworth in South Yorkshire, and Wednesbury in the West Midlands, as well as service centres located in Bolton, and in China.

The business has the capability to make around 1.1mn tonnes of liquid steel per year from recycled scrap, melted in two electric arc furnaces at Rotherham. This steel feeds downstream casting, re-melting and rolling processes, producing a range of high-value steels.

Liberty House has a vertically integrated business model ranging from the production of raw steel and aluminium

to advanced engineered products. The group is already a Tier 1 supplier of steel components to the automotive and aerospace sectors and the Speciality business will allow it to expand its product range.

Commenting on the agreement, Sanjeev Gupta, executive chairman of the Liberty House Group, said, "I am proud that we are acquiring a world-class business with a very skilled workforce and broad range of high-value products. It is one of only a handful of such operations in the world and I am confident it will flourish within our group."

**Liberty House** – UK  
www.libertyhousegroup.com

# Barnshaws extends structural expertise to aluminium louvres

Aluminium louvres have become a mainstay of modern architecture, ensuring that excessive sunlight does not adversely affect the interior environment of a structure. However, as architectural design has become more freeform, increased demand has been placed on louvres to seamlessly integrate with these new aesthetics.

As a result, increased intricacies have seen the advent of bending aluminium louvre profiles, a demanding process that is familiar to Barnshaws Section Benders.

Barnshaws claims to have the largest specialist aluminium bending machine currently in the UK. Its facility can cater for one-off sections to orders of thousands, enabled by an expert aluminium engineering team and large machine capacity.

To ensure that the internal profile of the extruded section is consistent, Barnshaws uses a specialist technique that is a closely guarded company secret, allowing consistent profiles to be attained almost regardless of the required radii.

Offering short lead times and adaptability to client requirements, Barnshaws can ensure that any project can benefit from modern and specialised solutions.

Established in 1969, Barnshaws supplies market sectors such as construction, power generation, mining, transport and general manufacturing with shaped beams, tubes, plate and other profile section materials.

**Barnshaw Section Benders Ltd – UK**  
info@barnshaws.com  
www.barnshaws.com

# Asahi/America welcomes new business development manager

Thermoplastic fluid flow technology specialist Asahi/America, Inc has promoted Rodney Van to industrial



Rodney Van

business development manager for the eastern and central regions.

Mr Van will lead the company's sales efforts of industrial single wall and double wall piping systems for chemical service.

Mr Van has been with Asahi/America for 27 years in various roles, most recently as district sales manager in Tennessee, North Carolina, South Carolina and Virginia.

He has a deep technical knowledge of the company's products and has successfully managed large piping installations in his previous sales

territory. Asahi/America specialises in providing solutions for fluid handling systems, individualised to meet customer needs. The company manufactures corrosion-resistant thermoplastic fluid handling products, including valves, actuators, pipe and fittings.

The company also maintains an extensive custom fabrication department, and provides on-site consultation, supervision and training where required.

**Asahi/America, Inc – USA**  
asahi@asahi-america.com  
www.asahi-america.com

# Stainless steel growth anticipated

Global stainless steel demand is expected to increase up to 15 per cent in five years from 37.4mn tons in 2015 to 43.2mn tons in 2020, industry analysts say.

Foshan Chengde Stainless Steel Co, based in China, recently contracted Fives for project management of its new stainless steel line. The new cold

annealing and pickling line (CAPL) with a production capacity of 500,000 tons per year will produce 200, 300 and 400 series stainless steel products intended for different applications: construction, machinery, automotive, household appliances, medical equipment, chemical containers, high-speed rail and aviation. The line is scheduled to be put into operation before the end of 2017. Fives

is responsible for project management as well as design and supply of an annealing furnace and terminal equipment.

The equipment will be manufactured by a Fives subsidiary in Shanghai, China.

**Fives Group – France**  
www.fivesgroup.com





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- Inspection certificate 10204 / 3.1. b

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Hot-produced acc. to EN 10210 and cold-produced acc. to EN 10219  
40 x 40 - 400 x 400 mm  
50 x 30 - 500 x 300 mm

- materials S355J2H, S235JRH, S235J2H
- Inspection certificate EN 10204 / 3.1. b

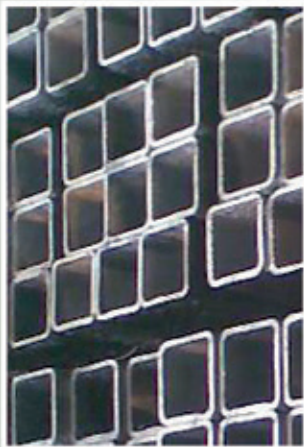
#### Precision steel tubes

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**eMail** hamburg@staro-gmbh.de

[www.staro-gmbh.de](http://www.staro-gmbh.de)

## MagnaDense selected for Mexican gas pipeline

Shawcor and LKAB Minerals have signed a contract for the delivery of several hundred thousand tonnes of MagnaDense up to October 2017.

LKAB will supply MagnaDense (made from magnetite, an iron ore product) to Shawcor's pipe coating facility in Altamira, Mexico. Shawcor will coat pipes for the Sur De Texas-Tuxpan pipeline with a high density concrete (concrete weight coating) containing MagnaDense to ensure optimal anti-buoyancy and seabed stability.

Sur De Texas-Tuxpan natural gas pipeline is an 800km project that begins

offshore in the Gulf of Mexico, at the border near Brownsville, Texas, USA, and ends in Tuxpan, Mexico.

"We selected MagnaDense because of its outstanding performance characteristics, track record in similar offshore applications and confidence in the LKAB Minerals logistics capabilities and team," said Henri Tausch, group president Shawcor pipeline performance.

The agreement was finalised by LKAB



Concrete weight coated pipes

Minerals CEO Leif Boström and Peter Mörtlund, president of LKAB Minerals Inc. Mr Mörtlund commented, "We are proud to have a long-standing relationship with Shawcor, having supplied them in numerous projects around the world. It has been confirmed time and again that MagnaDense is a high quality and consistent product that meets the demands of the offshore industry. It is used for both loose ballast and as an aggregate in high density concrete. That we again can supply a project on another continent proves that we are competitive on a global scale and that our services and supply capacity matches the high quality of our product that we believe to be a benchmark in the industry."

**LKAB Minerals** – Sweden  
[www.lkabminerals.com](http://www.lkabminerals.com)

**Shawcor Ltd** – Canada  
[www.shawcor.com](http://www.shawcor.com)



Leif Böstrom and Henri Tausch

## Pumps, Valves and Pipes Africa 2017

Indutec is a large and comprehensive trade show dedicated to all the industries involved in the conveyance of liquids, gases and slurries, eg mining, manufacturing, oil and gas, agriculture, construction, chemical and petrochemical.

The event will be held from 17 to 19 May at the Gallagher Convention Centre, Johannesburg, South Africa.

Indutec (Pumps, Valves and Pipes) has been delivering a B2B environment for the industry for over 20 years, with 2017 being the 11<sup>th</sup> edition, which will

incorporate new features and focus areas to complement the trade show.

Features and events co-located with PVP Africa will include:

- Watertec Innovation Hub: A contented space for introducing, launching and boosting awareness of products designed to contribute in solving the current water crises in South Africa
- Petrotex Africa: The mid- and downstream event for the petroleum and petrochemical industries in South Africa, with the main objective of promoting products and services within Sub-Saharan Africa

- PVP Live Conference: A three-day, high-level and informative forum dedicated to the supply chain in the conveyance of liquids, gases and slurries

Three new sectors have also been added to the event this year to expand the market for suppliers: tanks, vessels and fluid/gas storage solutions; comvac (compressed air and vacuum); and PPE (personal protective equipment).

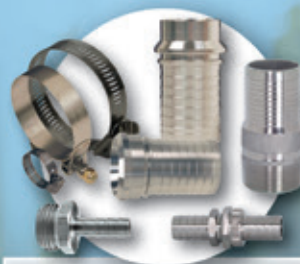
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[www.dixoneurope.co.uk](http://www.dixoneurope.co.uk)



The Right Connection®



## Supporting new standard for water pipes in contaminated land

The BPF Pipes Group has added its support to the new British Standard (BS 8588) for polyethylene pressure pipe with an aluminium barrier layer and associated fittings for potable water supply in contaminated ground.

Since 2007, Water Industry Specification (WIS) 4-32-19 has specified the materials and performance of piping systems. At the time, these products offered a new and innovative means to transport drinking water through brownfield sites without the need for extensive remedial work.

Ten years later, and with an increasing emphasis on land reuse, polyethylene pipes with an aluminium barrier layer are routinely used on large development sites. The long lengths offered by coiled

*Polyethylene barrier pipes are widely used on brownfield sites*



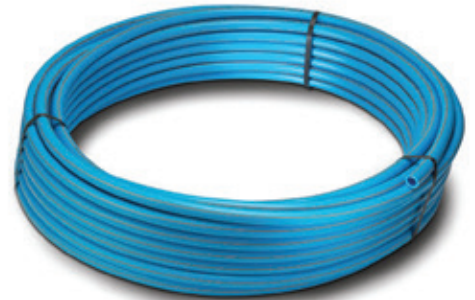
pipes minimise the number of joints required, saving time and the risk of contamination.

Members of the BPF Pipes Group offer complete pipe and fitting solutions that are tested and awarded a BSI Kitemark to the WIS. In addition, the products offered by members are WRAS approved, ensuring that public health is protected by preventing contamination of public water supplies.

The Water Industry Specification and the products manufactured to it are now so successful in dealing with the problem of laying potable water pipes through contaminated land that manufacturers and water suppliers have been keen to ensure that the protection offered to consumers through rigorous testing was further encouraged through translation of the requirements into a British Standard.

Mike Shepherd, Water UK standards manager, who chaired the drafting group, said, "The water companies, WRAS and manufacturers have worked together to accomplish the publication of BS 8588. I am pleased that the British Standard retains all elements of the Water Industry Specification and ensures that systems tested to its requirements will continue to be a reliable solution for protecting drinking water."

BPF Pipes Group members remind purchasers that WRAS approval is given



*Barrier pipe for water*

to the whole piping system. Dominic O'Sullivan, GPS PE Piping Systems, explained, "The true benefit of installing these barrier systems is peace of mind for water suppliers and their consumers when it comes to the quality of water at the tap. Integrity is assessed through the test for resistance to permeation which is designed to demonstrate that components in a system can together adequately resist the ingress of hydrocarbon contaminants. To comply with BS 8588, manufacturers will need to declare the combinations of pipes, fittings and fusion joints which have been proven to meet this standard. Purchasing from a member of the BPF Pipes Group will ensure that confidence in the whole system can be assured."

Water UK will archive WIS 4-32-19 when the new British Standard is published, and will encourage specifiers to reference the new standard. Over the following 12 months, manufacturers will update their certification from WIS 4-32-19 to BS 8588.

**BPF Pipes Group – UK**  
[www.bfppipesgroup.com](http://www.bfppipesgroup.com)

## New appointment at RMTS

Jim Petkus from James Steel Tube has joined Roll Machining Technologies & Solutions (RMTS) as VP of operations.

Mr Petkus's work history includes 32 years from all aspects of tube production and operation. He started packaging tubes in 1985, moving on to become mill foreman, then plant manager superintendent, and becoming president and general manager in 2008. With each position he was able to provide improved results through efficiency

and profitability, scrap reduction, cost reduction and running a lean operation. Training and developing mill operators and supervisors was key to maintaining continued improvements.

RMTS states that Mr Petkus is capable of understanding how the customer would use the product, and is able to adjust the product line or shape to fit. He is experienced in producing products and shapes including difficult D/T ratios (eg 7 x 1¼" rectangle x 3/16"

wall, 6.625" x 0.1" wall, 5" x 0.075" wall), many other structural sizes, and small diameter mechanical tube in a wide range of gauges and materials.

This year, Mr Petkus will be the vice chair for the Tube and Pipe Producing Council.

**Roll Machining Technologies & Solutions – USA**  
[rmts@rollsolutions.com](mailto:rmts@rollsolutions.com)  
[www.rollsolutions.com](http://www.rollsolutions.com)



# Trelleborg appoints sales director to enhance global customer support

Trelleborg's pipe seals operation has appointed Tim van Putten as sales director for pipe, connector and manhole seals.

Based in Lelystad, Netherlands, Mr van Putten will lead business development for sealing systems with a focus on expanding international sales and customer relationships. He has almost 20 years' experience in business-to-business sales, including senior roles across the plastic pipe and building materials industry, and previously worked at Wavin and Henco Industries in the Netherlands and Asia Pacific, where he led the delivery of national and regional sales strategies and targets.

Bill Hagenberg, business unit president for Trelleborg's pipe seals operation, said, "The water and wastewater industry is increasingly coming under the spotlight. While western markets look to replace ageing infrastructure, developing markets are driven to

improve the supply of quality drinking water and closed drainage systems in response to rapid urbanisation and rising living standards. As potentially the weakest link in the system, the seal plays a vital role in keeping these networks but receives the least budget and attention.

"With a deep understanding of our portfolio, Tim is well placed to advise customers on how our customisable solutions can achieve a leak-free, hassle-free network. Tim brings a wealth of experience in the pipeline industry and will play an integral role in supporting our international customers, leading the business development and sales teams for pipe, manhole and connector seals."

Trelleborg's pipe seals operation supplies new and rehabilitation sealing solutions for concrete, plastic pipes and manhole pipes used for water and drainage. It offers a wide range of technology designed to provide



Tim van Putten

structural renovation of pipelines, and specialises in the sealing of pipes to prevent infiltration and exfiltration.

**Trelleborg AB** – Sweden  
www.trelleborg.com

# Zekelman completes acquisition of Western Tube & Conduit

Zekelman Industries has finalised the acquisition of Western Tube & Conduit Corporation. Through this acquisition, Zekelman will expand its presence across the western half of the US and Canada in the electrical, fence and mechanical tube markets.

"We are very excited to welcome Western Tube & Conduit Corp to the Zekelman Industries family," said Barry Zekelman, executive chairman and chief executive officer of Zekelman Industries. "Western shares our passion for operational excellence and our high-quality, customer-centric focus."

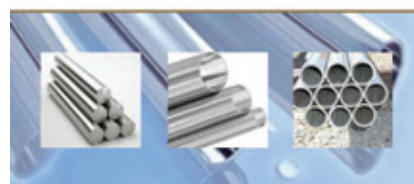
Western Tube & Conduit Corp will continue to operate under its individual brand and identity. "Western Tube is an

excellent fit for our company," said Jim Hays, president of the electrical, fence and mechanical product divisions of Zekelman Industries. "The acquisition complements our long-term strategies of continued growth in the tubular product market."

Zekelman Industries also includes the operating divisions of Atlas Tube, Picoma, Energex Tube, Sharon Tube, Wheatland Tube and Z Modular.

**Zekelman Industries** – USA  
info@zekelman.com  
www.zekelman.com

**Western Tube & Conduit Corp** – USA  
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## Research highlights diversification opportunities for Scotland's oil and gas sector

A new guide aimed at Scotland's oil and gas supply chain to maximise opportunities in additional markets has been published by Scottish Enterprise.

The economic development agency's Oil and Gas Diversification Opportunities guide is accompanied by a series of factsheets that profile opportunities in ten growth markets, including offshore wind, heating and cooling, oil and gas decommissioning, and nuclear decommissioning.

Maggie McGinlay, director of energy at Scottish Enterprise, said, "Whilst the North Sea will continue to have a long term future for Scotland's oil and gas sector, the current global challenges have highlighted the need for supply chain companies to leverage their skills and experience built up over the last 50 years to target opportunities in other sectors. Through the Energy Jobs Taskforce we have prioritised our support to help them do just that.

"The new guide and factsheets aim to provide companies with an understanding of the main diversification opportunities and how they can maximise them to protect jobs, skills and investment in Scotland.

"It complements our existing diversification support to companies such as our Offshore Wind Expert Support Service."

Offshore grouting specialist FoundOcean first entered the offshore wind industry in 2010, following a 50-year history in oil and gas.

From its European offshore service base in Livingston, UK, the firm has secured global contracts within the growing offshore wind sector, which now accounts for around 50 per cent of its revenues.

Andrew Venn, FoundOcean sales director, said, "We realised that offshore wind was a market that offered us a diversification opportunity right on our doorstep and we identified that there was a gap in the market for companies, like ourselves, able to offer competitive and innovative solutions. Entering the offshore wind sector is challenging but get it right and it can be a long-term part of a company's strategic vision with excellent global prospects."

Ten years ago, manufacturing firm Flowline Specialists also expanded into the renewables sector. Its recent key projects include Gwynt y Môr offshore wind farm, SEM REV marine renewable energies test site and the Bay of Fundy tidal turbine.

Managing director Jim Smith commented, "At Flowline Specialists we realised that in order to grow our company we would require to achieve two goals. Firstly, expand our products and services geographically. Secondly,



Maggie McGinlay

diversify into other industrial sectors, preferably new growing industries. We focused on our core products and skills then tried to match them into other sectors. Technology transfer, innovative solutions, keeping an open mind and thinking outside the box are key to success."

The new diversification guide contributes to Scottish Enterprise's overall aim of encouraging companies to look at new opportunities to maximise growth. It builds on the series of 50 Oil and Gas Opportunity Country Guides launched last year.

**Scottish Enterprise** – UK  
enquiries@scotent.co.uk  
www.scottish-enterprise.com

## ADS acquires PTI

Advanced Drainage Systems, Inc (ADS) has acquired the assets of Plastic Tubing Industries (PTI), a manufacturer of HDPE pipe and related accessories, for \$9.5mn. The transaction is expected to be accretive to ADS's net income and adjusted EBITDA in the first full year.

"We are very excited to announce the acquisition of the PTI assets, which further increases our customer base

and capacity in the growing Southeast region of the United States," said Joe Chlapaty, chairman and chief executive officer. "PTI is a highly complementary business, carries a strong brand and has exceptional customer loyalty dating back more than 40 years. We welcome the PTI team to the ADS family."

With the acquisition, ADS will increase its US manufacturing footprint

in Georgia and Texas, while adding production capacity to the existing ADS manufacturing facilities in Florida, to better serve growing demand in the region. PTI had sales of approximately \$11mn for the year ending 31 December 2016.

**Advanced Drainage Systems, Inc** – USA  
www.ads-pipe.com



# Investment in reducing gas leakage in utility networks

The Institution of Mechanical Engineers has completed a new investment, through its £2mn Stephenson Fund, into Southampton, UK-based company Utonomy, whose smart network pressure management aims to reduce leakage by up to 25 per cent.

This provides a significant financial payback for gas network operators as well as reducing greenhouse gas emissions.

The institution's investment was made through the Stephenson Fund, launched in 2015.

The fund, initially worth a total of £2mn, is in line with the institution's original statement of purpose set out by founder George Stephenson in 1847 to "give an impulse to invention likely to be useful to the world."

Announcing the investment, Stephen Tetlow MBE, chief executive of the Institution of Mechanical Engineers, said, "The technology Utonomy has developed has the potential not only to cut losses to gas network operators but also substantially reduce greenhouse gas emissions. We feel privileged to be able to support Utonomy through this fund, which aims to help companies overcome the hurdle between research and development and bringing a product to market.

"Apart from the monetary support we are providing, this will also connect Utonomy to the vast resources and network of the institution and its membership."

Utonomy CEO Adam Kingdon said, "We are delighted to receive investment through the Stephenson Fund. This

will enable us to complete the product development and certification of our innovative solution for reducing methane emissions.

"We are very fortunate to have the Institution of Mechanical Engineers as a shareholder and look forward to working with them as we grow Utonomy into a world leading company."

The Stephenson Limited Liability Partnership Fund is independently managed by specialist venture capital company Midven Ltd and aims to invest in innovative companies engaged in mechanical engineering over the next few years.

**Institution of Mechanical Engineers**  
– UK  
enquiries@imeche.org  
www.imeche.org



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## Stainless steel pipes for offshore oil and gas industries

At the Offshore Technology Conference (OTC) in Houston, Texas, USA, Schoeller Werk will exhibit its solutions for the extraction of oil and gas on the high seas, which are tailored to industry requirements.

At stand 3615-3 in Hall B the company, which specialises in German-made longitudinal seam-welded piping, will demonstrate its heavy-duty control line and chemical injection pipe solutions, which are precision-designed for use at a depth of 10,000m below surface level.

The surface quality of the pipes and the quality of the welded seam allow the pipes to withstand extreme conditions.

For customers in the offshore industry, the array of products is enhanced by a broad range of services, including encapsulation, and flushing and filling of pipes.

The requirements for piping in the offshore industries are demanding: extreme pressure, temperatures up to 300°C, aggressive media and salt water.

Any fault can lead to loss of energy, high repair costs and, in the worst case, environmental damage. At OTC Schoeller Werk will demonstrate how these challenges can be met.

The company is a manufacturer of stainless steel piping with 35 years of experience in the offshore industry.

At the conference, the focus will be on chemical injection and control line piping. These deal with pumping chemicals into an oil reservoir or act as hydraulic control pipes for safety valves.

Schoeller Werk uses a wide range of austenitic stainless steels and nickel-based alloys as well as a special manufacturing process to finalise the pipes. They are first welded using the tungsten inert gas (TIG) technique, then subjected to a drawing process to reduce the pipe walls to the required thickness. The company states that this results in superior surface quality and better quality of the welded seam. Even at a microstructural level, the weld is hardly noticeable.



Photo credit: Schoeller Werk

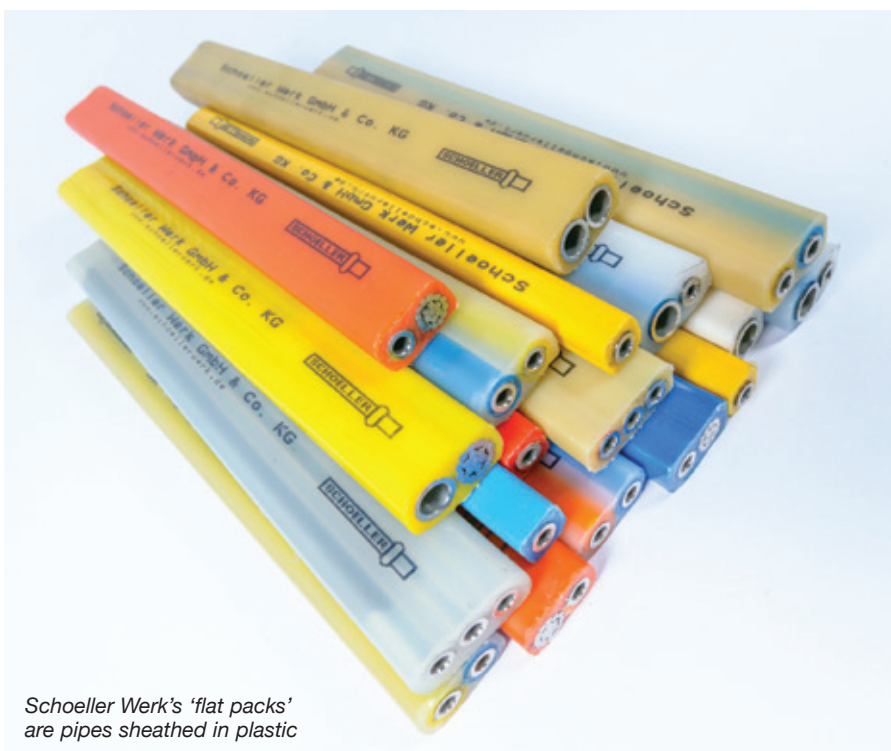
Oil and gas pipeline with control line and clamp

If required, the company can supply solutions with an external diameter of 3.18 to 25.4mm; the wall can range from 0.5 to 2.11mm in thickness. Depending on the specifications, the pipes can be suitable for pressures as high as 2,500 bar. It is also possible for customer-specific requirements to be supplied, if found to be feasible after assessment.

Schoeller Werk supplements this range of products with services to deliver an overall concept for the offshore industry. These services include encapsulation of pipes with plastic sheathing in flat-pack format, and flushing and filling of pipes.

The company can also equip pipe bundles with TEC and PDC cables or stainless steel bumper wires. The smooth pipes are also suitable for installation of fibre optics.

**Schoeller Werk GmbH & Co KG –**  
Germany  
info@schoellerwerk.de  
www.schoellerwerk.de



Schoeller Werk's 'flat packs' are pipes sheathed in plastic

Photo credit: Schoeller Werk



# ITF steps up action to solve pipe-walking problems

The Industry Technology Facilitator (ITF) is welcoming additional participants to a new joint industry project (JIP) to develop pipeline anchoring and monitoring systems that could mitigate the risk of pipeline walking and reduce pipeline anchor installation costs.

The Anchoring Pipeline Technology (APT) JIP currently involves Shell. The initial phase of the project will run for eight months and will bring together major global operators and pipeline installation companies to collaborate with ITF and Crondall Energy, an independent oil and gas consultancy.

It aims to investigate alternative and less costly solutions and create a roadmap on how to manage and mitigate the pipe-walking challenge.

David Bruton, director subsea, Crondall Energy, said, "There is much uncertainty over walking rate predictions in design, leading to increased design costs and schedule overruns.

"In many cases, these uncertainties are resolved by installing anchors as a pre-emptive mitigation measure, which has proven to be extremely costly, not entirely successful and, in some cases, unnecessary.

"Because the evaluation of alternative, less costly, more elegant design solutions are generally beyond the timescale of a

typical project, there has been little opportunity for optimisation or more considered evaluation of alternatives. The knowledge gained from the APT JIP will add significant value to a client's ability to design and install efficient and safe pipeline anchoring systems."

Pipe-walking, or axial ratcheting, has been observed on a number of pipelines and can cause integrity concerns, including very large global axial displacements of the pipeline.

In some cases, this has resulted in tie-in connector failures or subsea intervention to mitigate or control high rates of walking.

Large suction anchors with a capacity of around 100 tonnes are typically installed at the end of the pipeline to control walking. In more recent projects, some long pipelines have required several anchors to be installed over the pipeline length.

The study will complement existing research by using the experience of JIP participants. It will provide design strategies to simplify the design process and present a roadmap for projects to manage and mitigate the walking challenge over the project cycle.

This will include the development of a 'wait and see' approach based on effective monitoring of pipeline walking

by applying mitigative measures only when they are required.

Ben Foreman, technology team lead with ITF, added, "The APT JIP is focused on providing the necessary research to present viable and economical solutions to this problem and we aim to do this over a relatively short time frame.

"The JIP team already demonstrates a great deal of expertise and knowledge in this subject matter and will work together to develop and test more effective, low-cost pipeline anchoring systems that are simpler to deploy, more cost-effective to install and able to be retrofitted."

**ITF – UK**  
www.itfenergy.com

**Crondall Energy – UK**  
www.crondall-energy.com

A typical 100t pipeline suction anchor, installed on Greater Plutonio field, offshore Angola  
Photo credit: Jayson et al – Offshore Pipeline Technology Conference 2008



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## Inspection technology boost

George Fischer's HDPE pipe systems have been enhanced through the development of the first non-destructive testing (NDT) regime for HDPE products, which allows the manufacturer to issue a 'fit for service' certificate on both electrofusion and butt welds.

Individual couplings such as tees or crosses already included a 'completion indicator', but the new service offers assurance for the whole project team regarding the quality of the finished installation. This means that clients in the water, gas distribution, food processing and other industries requiring high standards can specify systems such as eco-Fit, Elgef Plus and Progef with the same confidence as with metal pipework alternatives.

The company states that customers will continue to benefit from the systems' speed of installation, versatility, low weight and durability.

GF Pipe System's new ultrasonic-based, non-invasive testing will see the company's partner provide a responsive on-site service that can check up to 20-30 separate welds per day. The pass/fail report can include details of any discontinuities detected by the scanners and is accompanied by a ten-



year guarantee to provide assurance for the specifier or their end client.

A spokesperson for George Fischer commented, "At GF Pipe Systems we understand the challenges that customers face during the project cycle, which is why we have developed the NDT solution to fulfil the same quality

standard they would expect from any other piping system but with the pass/fail fusion long term weld statement. This increases the value of our offering and ensures it is fully fit for purpose."

**George Fischer Sales Ltd – UK**  
uk.ps@georgfischer.com  
www.gfps.com/uk

## Yokogawa receives order for UK multi-product fuel pipeline project

Yokogawa United Kingdom Ltd, a subsidiary of Yokogawa Electric Corporation, has received an order from the British Pipeline Agency Limited (BPA), a UK provider of engineering and operational services to the oil and gas pipeline sector, to supply a management and control system for a major multi-product fuel pipeline system. This project will replace BPA's existing pipeline management and supervisory control and data acquisition (SCADA) systems.

The pipeline system consists of three integrated multi-product fuel pipelines, totalling around 650km in length,

which extend from Ellesmere Port in North West England to the country's southeastern coast. The pipelines connect to London's major airports and are a critical part of the UK's infrastructure.

This order is for Yokogawa's Enterprise Pipeline Management Solution (EPMS), which will manage functions such as delivery scheduling and oil storage, and the Fast/Tools SCADA software, which will monitor and control the oil pipelines and related equipment such as compressors. The EPMS supplements a basic pipeline management system with specific gas and liquid applications that

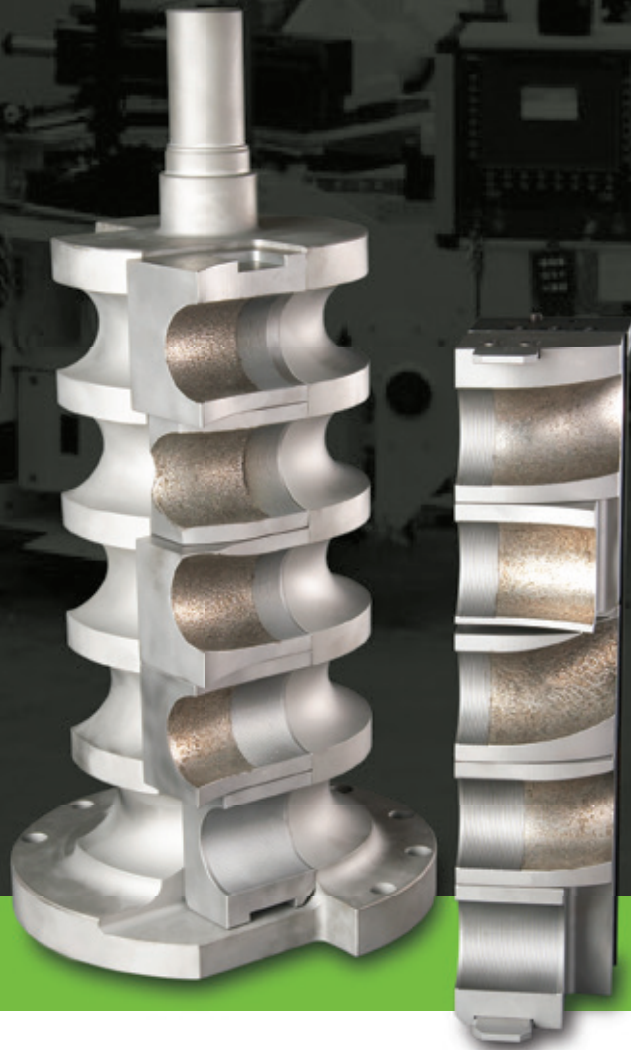
enable a pipeline operator to manage delivery contracts and associated logistics. With the SCADA system covering monitoring and control, the EPMS will integrate the management of the SCADA data.

Yokogawa United Kingdom Ltd will be responsible for the engineering, installation and commissioning of the systems. Yokogawa Europe Solutions BV will provide support.

**Yokogawa Europe BV – The Netherlands**  
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www.yokogawa.com



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## Creaform and Sonatest in global distribution partnership

Sonatest, a manufacturer of ultrasonic non-destructive testing (NDT) solutions, is now an official reseller of Creaform's Pipecheck Analyze pipeline integrity assessment software.

Fully compatible with Sonatest's ultrasonic testing instruments, Pipecheck enables the identification of potential issues on both the inner and outer surfaces of pipes, whether those issues are corrosion, dents or gouges.

Combined with the strengths of the NDT equipment, Pipecheck's single software solution gives accurate and realistic damage evaluation of a pipeline.

Sonatest's entire sales network is now able to distribute Pipecheck to

the company's pipeline corrosion assessment market. With Pipecheck, Sonatest will continue its expansion into other sectors, including nuclear plants and geothermal facilities, where corrosion and erosion caused by water vapour travelling at high speeds have become a major problem.

"We were very impressed by Pipecheck's performance and accuracy, as well as its amazing simplicity and ease of use," explained Sonatest product manager Jonathan Turcotte.

"Thanks to a basic three-step workflow – scan, analyse, report – our clients' field technicians can quickly gain access to the vital information they need to make critical decisions and ensure both compliance and community safety."

Jérôme-Alexandre Lavoie, product manager at Creaform, added, "Pipecheck is an excellent complement to Sonatest's current ultrasonic data acquisition solutions, helping clients to increase their assessment efficiency in the field.

"With Sonatest's powerful flaw detectors and Creaform's comprehensive and intuitive Pipecheck software, operators and inspectors need look no further than this joint solution for all their pipeline assessment needs."

**Sonatest – UK**  
sales@sonatest.com  
www.sonatest.com

**Creaform – Canada**  
www.creaform3d.com

## Addison Saws appointed as UK distributor for Simonds bandsaw blades

Addison Saws, a UK-based cutting and sawing technologies specialist, has been appointed as the sole UK distributor for Simonds International's bandsaw blades.

"Having sold Simonds' woodworking and metalworking blades for more than thirty years, we are delighted to have been appointed as their official UK agent," commented Addison Saws

managing director Gary Knight. "As the oldest cutting tool manufacturer in North America, Simonds enjoys an enviable reputation for the quality of its products. Thanks to our many years spent working with the brand, we have an unrivalled knowledge of the Simonds product range – including its Bi-Metal, TCT, Carbon and 'Red Streak' wood-cutting blades."

The appointment of Addison Saws by Simonds occurred after the bandsaw blade manufacturer's previous UK distributor ceased trading.

"We are proud to be working with Simonds to ensure that UK metalworking companies can continue to buy their quality bandsaw blades – blades which are manufactured to the most stringent quality standards," added Mr Knight. "We have invested in significant levels of stock to ensure continuity of supply."

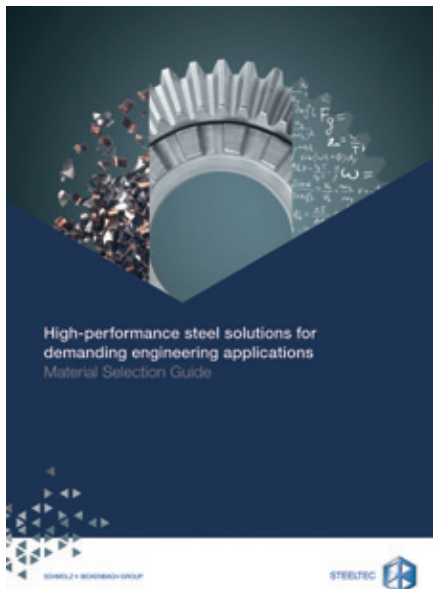
**Addison Saws Ltd – UK**  
sales@addisonsaws.co.uk  
www.addisonsaws.co.uk

*Bandsaw blades from Simonds International*





# Steeltec publishes material selection guide



Steeltec's new Material Selection Guide can help users find the right material for manufacturing advanced steel components

Components used in high-tech applications have to meet increasingly sophisticated demands, such as greater efficiency, improved dynamic strength and longer service life. Cost-effective production processes are essential to maintaining long-term market viability.

In its recently issued Material Selection Guide, Steeltec has identified five steps that manufacturers of advanced steel components can take to select the right high-performance steel for their purposes and to optimise the costs of their manufacturing processes.

The guide explains the benefits of getting the material selection process right and the problems that can arise when the wrong choice is made, and recommends ways to optimise material processing and machining stages. It also provides checklists that enable users to translate their individual

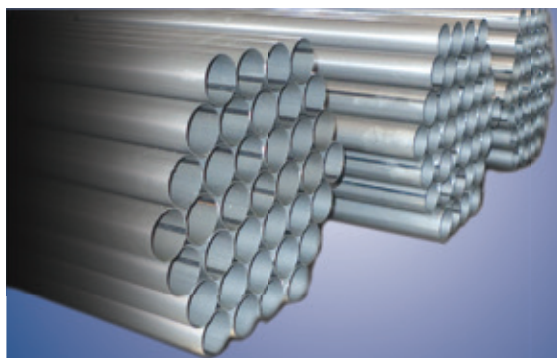
processing and product requirements into material properties, and illustrates preventive quality assurance measures. A case study of electric power tool manufacturer Metabo is included.

"We help component manufacturers to achieve the best possible cost-benefit ratio along the entire value chain," explained Guido Olschewski, head of quality and product development at Steeltec.

"The key is simply to provide manufacturers with the best high-performance steel for their specific application needs."

The free Material Selection Guide is available as a downloadable PDF file or a printed document.

**Steeltec AG** – Switzerland  
www.steeltec-group.com



**Silva Mash EOOD** is a specialist in the production of precision and high-tensile electro-welded tubes according to standard EN 10305.

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## Large polyolefin pipe manufacturer orders complete extrusion line at K show

Indian customer Jain Irrigation Systems ordered a complete extrusion line to manufacture large polyolefin pipes up to 2,500mm in diameter from battenfeld-cincinnati at the K trade show. This was one of a number of orders received by the manufacturer at the 2016 show.

“We had many more visitors than three years ago, especially from Africa, Asia and the Near and Middle East and we received several major orders directly at the fair. This is pleasing feedback to receive and the orders are evidence that our new machine concepts are able to fulfil our customers’ needs,” said Gerold Schley, CEO of the battenfeld-cincinnati group.

One of the highlights at the booth was the new solEX NG extruder series, which was ordered by Jain Irrigation Systems. The high-performance extruders, with their processing length of 40D, have been created on the basis of the proven solEX extruders. However, their completely re-designed process technology concept is setting new benchmarks. A barrel with internal grooves in combination with a matching screw and grooved bushing geometry optimises the extruder’s processing attributes.

The result is a lower melt temperature by up to 10°C along with a completely changed axial pressure profile in the feed zone and barrel, which leads to an overall reduction of the load on the system and consequently a cut in energy consumption of up to

15 per cent. “The interest shown by the pipe industry in these new extruders is very encouraging,” said Mr Schley. He added: “Together with our FDC system, which was also on display, the range for pipe manufacturers is very attractive all round.”

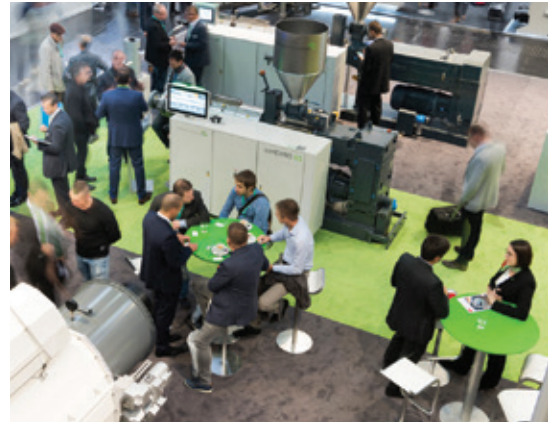
The fast dimension change system from battenfeld-cincinnati operates automatically across a range of diameters and allows not only a change of external diameters, but also of pipe wall thickness during running production. It is perfectly synchronised from pipe head to cutting unit, so that dimension change can be started by the push of a single button. FDC lines cover an enormous bandwidth of diameters, ranging from 90 to 630mm, which is currently unique on the market. The FDC pipe dies with an adjustable melt gap are available for diameters of up to 1,200mm, and FDC vacuum tanks, cooling tanks, haul-offs and cutting devices for diameters of up to 1,000mm.

“At K, the interest in our solutions, not only for pipe production, but also for the packaging industry, was particularly strong,” Mr Schley added.

With its XXL-Multi-Touch roll stack, the machine manufacturer presented a solution for making stress-free sheet for packaging at high speeds of more than 110m/min and with outputs of up to 3,300kg/h (PET) and 2,700kg/h (PP).

The Multi-Touch roll stacks combined with the high-speed extruders are suitable for high-speed thermoforming sheet extrusion. battenfeld-cincinnati also offers STARextruders, a special machine series for PET processing.

Also available in the battenfeld-cincinnati product portfolio is a special three-layer feedblock for thermoforming sheet production, which is manufactured in-house in Germany. The concept of using



a pin with a milled distributor curve to achieve an optimal layer thickness distribution has already resulted in eight orders being placed. This is an added incentive for the machine manufacturer to offer this type of technology for five-, seven- and nine-layer feedblocks in future as well.

battenfeld-cincinnati stated that it has seldom had so many new extruders and machine components on show at its booth. Apart from its new solEX NG single-screw extruder series, the conEX NG twin-screw series for PVC pipe and profile production also celebrated its premiere.

These new extruders were created by a complete re-design of the processing unit: a longer pre-heating zone and an optimised screw geometry ensure higher outputs with significantly reduced shear stress and machine wear. All extruders are easy to operate, thanks to the new BCtouch UX control system, featuring clarity and easy handling, which customers could experience at the booth.

“The very positive response shows that our motto ‘driven by innovation’ has paid off. We will keep this up and will present an even wider range of new technological solutions both in the coming years and at the K 2019,” said Mr Schley.

**battenfeld-cincinnati – USA**  
[www.battenfeld-cincinnati.com](http://www.battenfeld-cincinnati.com)

**Jain Irrigation Systems – India**  
[www.jains.com](http://www.jains.com)





# New Inductotherm company in Mexico to boost regional cooperation

Thermal processing equipment supplier Inductotherm Group has opened a new group company in Queretaro, Mexico – Inductotherm Heating and Welding Mexico S de RL de CV.

Mexican customers will benefit from timely and direct access to Inductotherm heating and welding brands, covering the many active market segments in Mexico. The company will provide local qualified, trained service and parts support for Inductoheat induction heating and Thermatool welding equipment to Mexican manufacturers, with fast response.

The company has appointed sales manager Cesar Tejeida, who has more than 20 years of pipe and tube making and HF welding experience. Mr Tejeida is responsible for delivering to Mexican customers the latest technologies offered by Inductotherm Group, including Thermatool's latest line of HF welders featuring HAZControl™ technology.

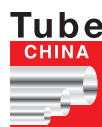
Kris Livermore, director of business development for Thermatool, commented, "The appointment of Mr Cesar Tejeida highlights the consistent growth of Thermatool and the continuing strategy of creating local business relationships that will serve for many years. In addition, two service engineers will work out of the local office. We recognise that excellent local technical sales, service and support will strengthen our customers' business in Mexico."

**Inductotherm Heating and Welding Mexico S de RL de CV – Mexico**  
[info@thermatool.com](mailto:info@thermatool.com)  
[www.thermatool.com](http://www.thermatool.com)



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# products & developments



*Metalube offers water-based rust preventatives*

## Advancements in water-based rust preventatives for tube and pipe

For the last three years, Metalube has been attempting to change the way people think about tube forming and metal protection. The launch of the company's tube and pipe range introduced the use of water-based rust preventatives that are compatible with specialist forming coolants (Cool-Tek), giving improvements such as higher levels of cleanliness, lower incidences of roll skid, greater consistency in performance and higher levels of corrosion control.

The range is currently being used by companies in India, the Middle East, Poland, Portugal, Spain and the UK,

with trials taking place even further afield. In addition to Meta-Shield W500 synthetic inhibitor for cleaning/short term protection, and Meta-Shield W1000C thixotropic rust preventative for medium-term protection, Metalube has now introduced Meta-Shield WX1200, a heavy-duty water-based rust preventative for long-term indoor protection.

Meta-Shield WX1200 is provided as a ready-made emulsion. When used as supplied, it deposits a heavy rust-preventative film capable of providing more than 3 years' indoor protection and short-/medium-term outdoor protection.

The product's formulation allows it to be diluted with water, forming a stable emulsion, to deposit lighter residual films for varying levels of corrosion protection. It can be applied in a variety of ways, such as dipping, wiping or through the use of spray systems to deposit a thin film that provides long-term indoor protection.

Meta-Shield WX1200 is compatible with all steel types and will also prevent white rust on galvanised parts.

**Metalube Ltd** – UK  
post@metalube.co.uk  
www.metalube.co.uk



## New large diameter high-performance pipe

Advanced Drainage Systems (ADS), a manufacturer of water management solutions, has announced its latest storm water pipe technology. HPXR™ 75 provides heightened levels of stiffness, and is available in a range of sizes.

“ADS continues to address critical infrastructure challenges through the industry’s most comprehensive and innovative suite of storm water solutions,” said Joe Chlapaty, ADS chairman and chief executive officer. “HPXR 75 complements our existing solution set by allowing customers to strategically focus capital on high performance products that offer cost savings and extended design service life.

“The HPXR 75 product will enable us to make significant inroads in the large and growing infrastructure and public construction markets for larger diameter storm pipe. The construction industry is seeking product options with improved service characteristics,

installation durability and increased joint performance; the HPXR 75 product line will directly address those needs.”

ADS internally developed and designed HPXR 75. The design of the pipe incorporates a corrugated polypropylene pipe with a smooth outer wall that includes orientated fibreglass reinforcement, creating a pipe with increased stiffness and installation performance. The product will be available in diameters ranging from 30" to 60", and in 13- and 20-foot lengths.

HPXR 75 will allow for a broad range of backfill materials and installation conditions. The watertight bell and spigot exceeds ASTM D3212 and complies with ASTM F477.

ADS provides a comprehensive suite of water management products and drainage solutions for use in the construction and infrastructure marketplace. Its products are used across a broad range of end markets

and applications, including non-residential, residential, agriculture and infrastructure.

**Advanced Drainage Systems, Inc – USA**  
www.ads-pipe.com



HPXR 75 storm water pipe from ADS

## Biodiesel hose products for performance in high temperatures

Power management company Eaton has launched the GH100 and GH101 hoses for high-percentage biodiesel blend and high-temperature oil applications. Unlike standard fuel hoses that only last one to two years, Eaton’s GH100 and GH101 solutions are engineered for performance in systems with a variety of fuel types, featuring a polymer that effectively resists degradation.

The GH100 and GH101 hoses are designed to perform in high-temperature mobile applications, including trucks, buses, agriculture and construction equipment and eco-friendly power vehicles.

Compatible with high-percentage biodiesel fuels and new synthetic oils, the solutions support a longer hose life while also ensuring that safety requirements and quality standards are met.

“Standard hoses not compatible with biofuels can prematurely crack, leak or burst at high temperatures, leading to a host of safety, liability and warranty issues,” said Dimitar Atanasov, product manager, Eaton. “Ushering in the future of sustainable hydraulics, Eaton’s new family of biodiesel hoses are tested and engineered to excel in high-temperature conditions – providing users with the ultimate performance assurance and complete peace of mind.”

Unlike conventional hoses that deteriorate at 100°C, the GH100 and GH101 hoses are qualified for -40°C to 150°C with B2, B5 and B20 biodiesels, and -40°C to 125°C with B100 biodiesel. With synthetic oils, such as those used in transmission oil cooler

applications, GH100 and GH101 are qualified to -40°C to 150°C (175°C intermittent). As GH100 and GH101 hoses are qualified with every blend of biodiesel up to B100, users do not have to worry about rotating between B5, B20 or higher and ultra-low sulphur diesel (ULSD) fuels. A choice of abrasion-resistant fabric or rubber covers and multiple fitting options are available.

**Eaton – Switzerland**  
www.eaton.com



GH100 and GH101 hoses

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## New guide to evaluation of fusion joints

The BPF Pipes Group has launched a new guide for the construction and utility industry, to help project managers demonstrate the quality of installed fusion joints and the integrity of their new polyethylene (PE) pipeline system.

Available from the BPF Pipes Group website, the guide provides a step-by-step approach, based on established non-destructive examination (NDE) and non-destructive testing (NDT) techniques, to providing assurance that good workmanship has been used throughout a project.

Titled 'Quality Assurance with Electrofusion Jointing', the guide encourages utilities to value well made and leak-free fusion joints in their bid to achieve zero leakage from new pipelines. It builds on the best practice for jointing set out in the recently revised WIS 4-32-08 standard for the fusion jointing of PE80 and PE100 pressure pipeline systems.

The guide considers the fundamental building blocks for a good fusion joint – cleanliness, heat and pressure – and how poor practice in any one of these aspects could lead to a poor joint. Electrofusion jointing is a reliable method of joining PE pipes, and when done properly produces a pipe joint as strong as the original pipe material itself,

resilient to corrosion, flexible enough to withstand ground movement and with a long and functional life.

The approach presented by the BPF Pipes Group allows installers to provide evidence that they have used reasonable standards of care and attention in making joints without the need to employ specialist imaging techniques, which in themselves do not provide complete assurance of joint integrity.

Julia Trew from the BPF Pipes Group emphasised that "the guide offers a practical means to demonstrating integrity of joints on site, which complements the updated version of WIS 4-32-08 perfectly."

Steve Webber, business development manager for infrastructure specialist Murphy's water team, said, "Murphy installs thousands of metres of PE pipe annually, welding numerous butt fusion and electrofusion joints, and we already go through a thorough testing and verification process to inspect all our records. Electrofusion jointing tends to be carried out in difficult conditions

within narrow trench excavations, so it's imperative that our site procedures enable reliable jointing.

"We and our clients insist on joints being well made, offering long lifetimes and flexibility to respond to ground movement. We support the BPF Pipes Group guidance document as it will help with on-site quality assurance, giving our clients confidence in the quality and integrity of their new PE pipelines."

**BPF Pipes Group – UK**  
www.bfppipesgroup.com

*The new guidance document is available from the BPF Pipes Group website*



## Elcometer opens new sales office in Dubai



Dubai

Elcometer is a UK-based manufacturer of inspection equipment, with specialised divisions dedicated to coating inspection, ultrasonic NDT inspection, concrete inspection and metal detection, and which operates around the globe.

The company's new subsidiary, EL Inspection & Blasting Equipment LLC, based in Dubai, is now open for business.

The new operation is responsible for sales, after sales and training support for the United Arab Emirates for Elcometer's complete range of coating, concrete and ultrasonic NDT inspection equipment.

EL Inspection & Blasting Equipment LLC is the tenth Elcometer International facility.

**Elcometer Ltd – UK** sales@elcometer.com www.elcometer.com

**EL Inspection & Blasting Equipment – UAE** www.elcometer.com

## Products finished in a single operation

LT-Free is a five-axis laser cutting machine developed by BLM Group to offer operational flexibility and simplicity of laser cutting of bent pipes, flat pipes, shaped sheets, hydroformed elements, collapsible elements and welded elements.

In its many configurations, the LT-Free machine is capable of performing a full work cycle with ease. Starting from simple off-line programming, the LT-Free machine reduces the number of semi-finished products and manufactured finished products within a short time. The system is created with various applications in mind, from prototyping to serial production, in such sectors as automotive, aerospace, motorcycles, household appliances, HVAC, furniture and steel structures.

To meet the needs of individual clients, four different configuration options are available. Entry Level is an option created for prototyping and job shops, intended for producing small lots, when the quality of processing and simplicity of operation are more important than production times. The unit is equipped

with a single base where elements are fastened for processing.

Piece Value is a unit intended for serial production typical for the automotive sector. This configuration, with a rotating base, is designed for applications requiring frequent replacement of instrumentation and high production capacity. Mid-Flex is a solution for small elements with additional manufacturing requirements. Two moving bases operating in a divided work area allow for optimisation of work cycles by quickly performing loading/unloading operations.

High Flex is the most comprehensive option, with two independent robotic bases providing maximum flexibility. Besides sheets and mechanical assemblies, this system is capable of precisely and efficiently processing bent and hydroformed pipes, which can be positioned at will during processing thanks to the robots, without the need for using complicated tools.

The application for a fibre laser with power between 1 and 2kW provides the LT-Free machine with the capability of cutting a wide range of materials, while saving energy and maintenance costs.

The active piercing function makes programming hole cutting easy, without any need to worry about the material's thickness, which is often variable from area to area in many elements processed on the LT-Free unit. This function also manages hole cutting within the shortest possible time, without damaging the wall of the pipe resting on the processed wall.

Planning and simulation software makes it easy to import 3D projects to quickly identify and isolate components to be processed, to automatically generate the work program and to simulate the program graphically for the purpose of inspecting and correcting potential irregularities. This is all done off-line, before going to the machine. The software package also contains a module for designing auxiliary tools, which can quickly be made using the LT-Free unit itself. The High Flex and Value options also include the bin packing unit, a powerful station for automatic loading/unloading, providing the LT-Free unit with totally independent operation.

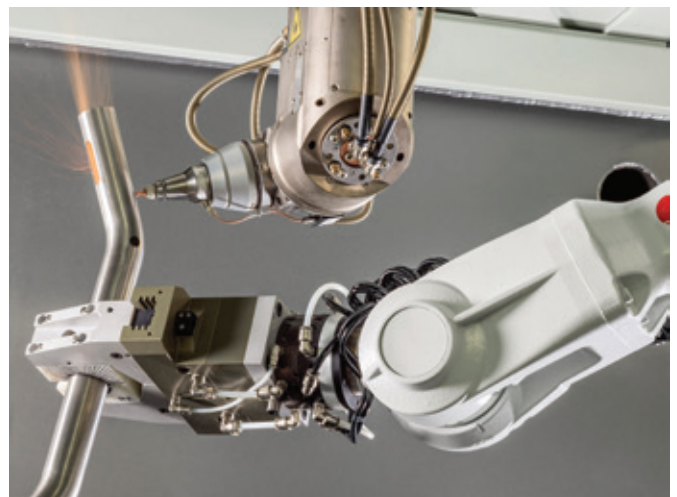
It is possible to detect individual elements to be processed inside the container by means of the precise monitoring system and to collect them by means of an external robotic arm, and then to place them on the base of the LT-Free unit for processing.

The cycle ends with collection of the processed element from the work base and placing it in the container for finished products. The presence of an external loading robot provides possibilities for customising the unit for loading/unloading for the LT-Free unit, with automatic solutions including possible loading onto other units from the BLM Group. A robot on a feed conveyor collects an element and places it in the pipe bending machine automatically.

**BLM Group – Italy**  
blm@blm.it  
www.blmgroup.com



BLM's LT-Free five-axis laser cutting system





## Trelleborg launches new mobile app

FireNut™ is a lightweight, easy-to-install alternative to the fire-insulated metal boxes used for the protection of bolted connections or flanges on offshore installations.

The rubber-based fire protection system specifically protects just the nuts of a bolted connection or flange. In contrast to the traditional bulky metal boxes, the lightweight solution is customisable to accommodate almost any bolt size, and extends the service life in the event of a fire, being resistant to both jet fire and pool fire.

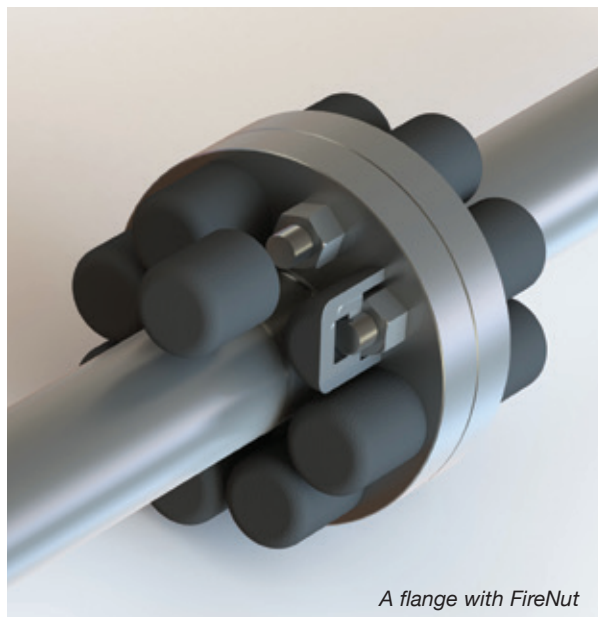
To make it easier to specify FireNut, Trelleborg's offshore operation has launched an app to calculate the correct FireNut a customer needs to suit their flange.

Patrick Waal, sales manager at Trelleborg's offshore operation, said,

"FireNut may seem like a simple product, but it can be critical in terms of fire protection. The app will give our customers a quick guide to choosing the best FireNut for their flange type.

"By installing effective and reliable passive fire protection systems like FireNut, our customers can significantly improve on-board safety."

FireNut is one of a range of passive fire protection solutions from Trelleborg's offshore operation. These include Elastopipe™, a flexible piping system; Elastoshield, a protective cover for electric cables and hoses; and Vikodeck™, a surface protection material.



A flange with FireNut

The FireNut app is already available for download for iPhone and iPad (search for 'Trelleborg FireNut' in the App Store), and is also planned for release on Android and as a web tool.

**Trelleborg AB** – Sweden  
www.trelleborg.com

## Laser surface preparation range

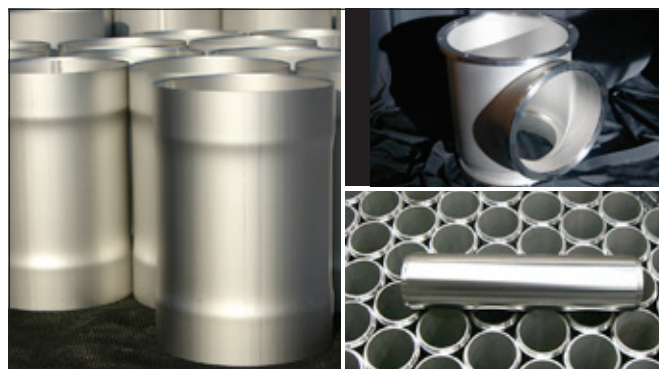
Fonon Corporation has announced the release of Flexion™ technology, to be incorporated into the CleanTech™ product line. Marketed under the Laser Photonics™ brand, CleanTech laser products are used for surface preparation, paint removal and surface cleaning. The newly released CleanTech systems offer a non-abrasive cleaning process that is safer and more eco-friendly.

Flexion technology allows CleanTech to remove rust, paint, anodisation and other surface materials in areas that are typically difficult to reach. Most other systems are statically positioned, which limits the laser cleaning ability to only the static path of the trajectory beam.

The CleanTech Megacenter with Flexion technology offers a motion control stage that operates in both x and y axes, allowing the ability to move in various directions and clean nested parts under the path of the trajectory beam path.

This allows the laser cleaning process to efficiently affect 100 per cent of all sides of the exposed parts. The Megacenter is available as a stand-alone unit or can be integrated into a production line.

**Fonon Technologies, Inc** – USA  
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## Pulsed fibre laser welding system

Amada Miyachi America Inc has announced the availability of the LMF70-HP, an addition to its LMF series of lasers. The 70-watt LMF70-HP is suitable for welding small components and thin metals up to 0.25mm (0.01") thick.

In addition to welding, the unit is capable of engraving, deep engraving and cutting of metal, plastic welding and general-purpose high speed marking.

The laser is offered as an OEM product with galvo scanning beam delivery and controller or integrated into the LMWS platform, a CDRH Class 1 laser workstation offering a wide range of integration flexibility, depending on processing and facility requirements.

The LMF series lasers combine cutting-edge technology with industrial robustness. This versatile series has numerous performance features to

match the right laser to the right application. The system is designed with multiple integration options to suit stand-alone operation, full production automation, or low-volume prototype development.

The air-cooled, sealed industrial package has been designed for operation in harsh environments and comes with powerful control software with user-friendly interface. The unit complies with IEC13849-1 category 3 Performance Level d (PL d) safety circuitry with proper integration. It is equipped with a Marker Motion™ unit with integrated stage controllers for up to four axes.

Amada Miyachi America manufactures equipment and systems for resistance welding, laser welding, laser marking, laser cutting, hermetic sealing and hot bar reflow soldering and bonding. The company serves a wide range of markets including medical devices, battery, aerospace, automotive and electronic components.

**Amada Miyachi America, Inc – USA**  
info@amadamiyachi.com  
www.amadamiyachi.com



Amada Miyachi's  
LMF70-HP  
welding system

## Carbide-tipped band saw blades

Simonds Saw, a manufacturer of band saw blades and files, has introduced CWT carbide-tipped band saw blades for demanding production cutting operations such as those in steel service centres, foundries and aerospace sawing applications.

CWT blades are suitable for aluminium block, aluminium gates and risers, aluminium automation (Mossner), Inconel and nickel-based alloys.

Similar to the 'California wing tip' tooth formation used in circular saw blades, CWT blades have been engineered in a three-tooth set pattern with positive rake geometry.

This provides a faster, aggressive cutting action and penetration, for increased performance in production sawing applications.

"Our CWT blades have been producing outstanding results, significantly out-cutting blades used in foundry and aerospace applications," said Dale Petts, Simonds Saw's global product manager.

Simonds CWT carbide tipped blades are available in five widths (1¼" x 0.042; 1½" x 0.05; 2" x 0.062; 2⅝" x 0.062; and 3⅞" x 0.062), and are shipped in 150-foot coils. Variable tooth pitch (TPI) options include 2-3, 1.9-2.1, 1.4-1.8 and 0.9-1.1 teeth per inch.

Blades are furnished with plastic capping to protect teeth against damage in transit and handling.

Simonds blades are made to stringent quality standards and are manufactured both in the US in the company's Fitchburg, Massachusetts, headquarters



and in Europe by WESPA®, Simonds's band saw blade technology division located in Melsungen, Germany. Both factories operate under a single quality system that is ISO 9001:2008 certified.

**Simonds Saw – USA**  
www.simondsint.com





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# Socket fusion installations for polypropylene pipe and couplings



Spider 125 is lightweight and compact

McElroy's Spider 125 with universal clamping performs socket fusion installations for polypropylene pipe and couplings from 63 to 125mm, quickly and accurately. The lightweight and compact device is suitable for use in overhead, vertical and tight workspaces.

A worm gear drive and parallel link system brings pipes and fittings together evenly and under control, and the universal clamping system accommodates any size of pipe or coupling, eliminating the need for inserts.

**McElroy – USA**  
fusion@mcelroy.com  
www.mcelroy.com

# Stainless steel long products stockist

Amodil Supplies Ltd is a privately owned British family company, established in 1976, that carries a UK stock of more than 5,000 tonnes of stainless

steel long products, including over 500 tonnes of stainless steel and duplex seamless pipe. All material is of EU origin and is produced to international

standards such as ISO, ASTM, EN and NORSOK.

The company offers services that include cutting, end preparation, NDT, PMI, ferrite check, packaging, marking, third-party verification and worldwide delivery. Markets served include all oil and gas sectors, chemical, petrochemical, power generation, food processing, waste and water management, and general engineering.

**Amodil Supplies Ltd – UK**  
sales@amodil.co.uk  
www.amodil.co.uk

*Amodil stocks over 5,000 tonnes of stainless steel products*



# Cross section scanning for tube makers

Most optical profile measuring systems are in line-devices equipped with a sensor ring with four to six cameras. This can make quality control a costly and inflexible obligation, as camera/laser modules represent the most expensive parts of an optical measurement system. Additionally, sensor ring-based devices lack flexibility regarding the range of views.

The Copra® ProfileScan Desktop with patented 360° measuring method

addresses both of these problems, using only one sensor module and a turntable. In addition to high accuracy, Copra ProfilScan Desktop offers flexibility and mobility due to the compact build. It is quickly assembled and can be deployed in other production locations using the provided transport case. With its high range of views and full integration into the Copra workflow, ProfileScan Desktop is also suitable as a measuring tool for reverse engineering projects.

Paired with the provided software solutions, Copra ProfileScan Desktop can be applied in various ways by tube makers. Designers can measure cross sections of roll-formed round tubes after each station and therefore both evaluate the manufacturing quality and locate deviations at different production sites.

**data M Sheet Metal Solutions GmbH**  
– Germany  
datam@datam.de  
www.datam.de



## The Pico 160 cel puls from EWM

EWM AG has brought one of the lightest portable electrode welding machines to the market: the Pico 160 cel puls, weighing only 4.7kg, can be used safely for vertical-down CEL welding and TIG pulse welding for the 230V lighting main. The latest addition to EWM's Pico range has been optimised in several ways with the focus on welding results, universal usability and enhanced user-friendly operation as well as a high level of robustness.

The Pico 160 cel puls also features a new ergonomic design. With its stable, splash-proof housing made of plastic and aluminium and a transparent protective cap over the new control, this is a suitable machine for all applications – for construction sites, workshops and other assembly work.

Another highlight is the simple operability of the welding machine. The new control's easy-to-read display enables the welding parameters to

be set precisely. This is an important prerequisite for simple reproducibility in order to ensure that consistent high-quality welding results are achieved. EWM's single-hand operation concept also enables the functions to be set using a single large button, which means users do not need to remove their gloves every time they need to change a setting. Other advantages are the remote control connection option and the large connection sockets (50mm<sup>2</sup>), which enable the machine to be combined with standard electrode holders and standard TIG welding torches with rotary gas valves.

It is not only the external features of the new Pico 160 cel puls that have improved. Hot start and an anti-stick function for sticking electrodes are all integrated as standard, providing support for all welding processes. The new pulse function also enables easy vertical-up and vertical-down welding without having to resort to the complex

'Christmas tree' technique. This makes work easier, especially in hard-to-reach areas or locations with poor visibility. The Pico demonstrates its strengths when welding electrodes up to 4mm and enables 100 per cent safe vertical-down welding also when using cellulose electrodes.

EWM's inverter technology is characterised by its high efficiency. Among its advantages are the switchable standby power-saving function and the adjustable 230V mains fuse restriction to 10A, 13A, 16A and 20A. The machine's high mains voltage tolerances of -40 per cent to +15 per cent ensure smooth operation with generators and enables welding with mains connection leads up to 100m in length. The machine is also protected against inadvertent connection to 400V mains voltage.

**EWM AG** – Germany  
[info@ewm-group.com](mailto:info@ewm-group.com)  
[www.ewm-group.com](http://www.ewm-group.com)


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## Positive start to 2017 for Tube Developments

While 2016 was a challenging year for companies in the steel industry and in particular within the oil and gas sector, Tube Developments Ltd was involved in a number of major projects around the world.



The company supplied the process pipes to the Rumaitha and Shanayel Phase II project for ADCO, part of the NEB field.

The NEB (North East Bab) field is located 31km southwest of Abu Dhabi City in the United Arab Emirates and covers 1,400km<sup>2</sup>. NEB lies across the Abu Dhabi coastline, so Rumaitha and Shamayel are onshore while Al-Dhabbiya is located 30km north, mostly offshore in shallow water.

The company started 2017 with the booking of orders for various projects.

Tube Developments has established

itself in international markets covering Europe, Australia, USA, Africa, India, the Middle East and Asia.

Thousands of tonnes of carbon steel pipe and tubulars are held in covered warehouses at the company's premises near Glasgow, UK.

This allows the company to service the needs of customers quickly and efficiently, and to dispatch pipes immediately to anywhere in the world without significant lead times.

**Tube Developments Ltd – UK**  
info@tubedev.com  
www.tubedev.com

## Investment in cutting technology

UKF Stainless Ltd, a supplier of stainless steel tubing, has purchased a Lasertube LT5, in order to allow the company to offer a more specialist cutting service. The purchase represents the culmination of 12 months of research and development within a variety of marketplaces, both new and existing to UKF.

The machine, equipped with a fibre laser generator, is made by BLM Adige in Italy. The project, partly funded by the ERDF, offers precision opportunities for UKF's customers.

The LT5 is designed for cutting tubes with small and medium thickness, and can cut a wide variety of materials with high productivity and quality level, from steels and alloys to copper and brass. The machine will allow UKF



*UKF Stainless has invested in the Adige Lasertube LT5*

to manufacture and add more value to parts that previously could not be achieved.

The addition of the Lasertube LT5 will enhance the company's current suite of machines and allow it to offer customers

a 'one stop shop' solution for users of stainless steel tube and sections. Diameters from 12 to 120mm can be accommodated by the new machine, with the added bonus of a clean and spatter-free product throughout thanks to its use of an accessory that protects the inside of the tube.

The dedicated Artube CAD/CAM package provides the opportunity to exploit all the machine functions during the design stage, and to obtain accurate costings. The use of the laser can eliminate the need for additional operations such as welding, delivering more cost-effective parts that are cosmetically enhanced.

**UKF Stainless Ltd – UK**  
info@ukfstainless.co.uk  
www.ukfstainless.co.uk

## Portable ultrasonic flow meter

Coltraco Ultrasonics has launched the Portasonic™ portable ultrasonic flow meter, a handheld, clamp-on device that provides accurate flow measurement from the outside of a pipe.

The self-adapting Portasonic measures the flow rate by utilising two transducers that function as ultrasonic transmitters

and receivers. It is suited to checking the flow rates of clean, non-aerated fluids such as water, with the ability to measure anywhere on full pipes from 12 to 4,570mm (½" to 180").

The compact and lightweight Portasonic can penetrate all common metal and plastic pipe materials with its non-

invasive external clamp. The technology provides an easy way to cater for sprinkler system maintenance in the fire industry.

**Coltraco Ultrasonics Ltd – UK**  
info@coltraco.co.uk  
www.coltraco.co.uk



## Automatic cold saw pipe/bar cutting

Jet Machines, India, has been manufacturing cold saw pipe/bar cutting machines for ten years. The company's JE-485 AT-S automatic cold saw pipe/bar cutting machine features auto feed (bunch cutting), auto clamping, auto cut piece ejecting, PLC and servo control. It is programmable up to five different lengths, with length accuracy within  $\pm 0.1\text{mm}$ . The clamping source and cutting feeding source are both hydraulic.

The machine can be connected with SCADA server through Ethernet. Several of the machines can be controlled by the SCADA server at the same time. The user at the server can create programs for the cutting schedule; within each program the user can feed in five different cutting sizes, and each size can have a counter for complete data collection.

The user can define cutter rpm and feed rate for each program, which are saved with PLC/HMI for later recall. The server assigns a program to each machine, and cutting counting can be monitored on the server for each machine in real-time.

SCADA can be integrated with SAP for further automation, such as coordination with the store department relating to which machine will cut each pipe size and in what quantity.

**Jet Machines – India**  
vipul@janakent.com  
www.jetmachines.net



*Cutting technology from Jet*

## HIGH PRESSURE FITTINGS & FLANGES

FORGED CARBON · ALLOY · STAINLESS STEEL, THREADED AND SOCKET WELD

### PRODUCTS :

FITTINGS : 90°/45° ELBOW, TEE, UNION, COUPLING, BUSHING, PLUG, CAP, INSERT, PIPE & SWAGE NIPPLE.  
FLANGES : BLIND, SLIP ON, LAP JOINT, THREADED, SOCKET WELD, WELD NECK.

### MATERIALS :

STAINLESS STEEL : ASTM A182(F304L, F316L, F304H/F316H, F317L, F321H, F44, F51, F53, F60)  
CARBON/LOW TEMPERATURE CARBON STEEL : ASTM A105, ASTM A350 LF2  
ALLOY STEEL : ASTM A182(F5, F9, F11, F22, F91)

### PRESSURE RATINGS :

FITTINGS : 2000, 3000, 6000 & 9000 lbs  
FLANGES : 150, 300, 600, 900, 1500, 2500 lbs

### APPROVAL CERTIFICATES :

TUV Rheinland ISO 9001 Registered Manufacturer, LR, CR, & ABS Register of Shipping, PED(CE)



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E-mail : box@bothwell.com.tw ● sales@bothwell.com.tw  
Web Site : www.bothwell.com.tw

## Versatile saws for the workshop

A new range of swing-frame, pivoting-bow bandsaws for use in workshops has been launched by the German manufacturer Kasto. The versatile KASTOmicut machines are designed for high-accuracy cutting to length and mitre cutting of tubes, sections and solid materials.

Four model variants are available: manual (P 2.6), manual clamping with hydraulic downfeed (E 2.6), hydraulically actuated clamping and downfeed (U 2.6), and fully automatic (A 2.6) with ballscrew-driven material feed, carbide blade guides and an optional chip conveyor.

The saws supersede six machine models in the KASTOpractical and KASTOfunctional series, compared with which they have higher power motors and greater band tension, allowing a 50 per cent increase in cutting force.

Feed rate is constant throughout, avoiding lost productivity due to the

blade slowing towards the centre of the cut. Blade speed is infinitely variable from 20 to 120m/min, allowing a range of different materials to be processed.

KASTOmicut saws have a cutting range of 260mm for rounds and 310 x 260mm for flat stock. Mitre cuts are possible at continuously adjustable angles from -45° to +60°.

A torsionally rigid, vibration-damped, cast iron frame provides support for the saw blade, ensuring cutting quality, even in difficult-to-cut materials. Available accessories include a rotary table to support the material.

The shortest cut length is 6mm, with a residual length of 15mm for manually cut pieces or 40mm in automatic operation,



*Kasto has launched the KASTOmicut range of swing-frame, pivoting-bow bandsaws*

so users can make maximum use of material. Cutting accuracy is 0.1mm per 100mm of height.

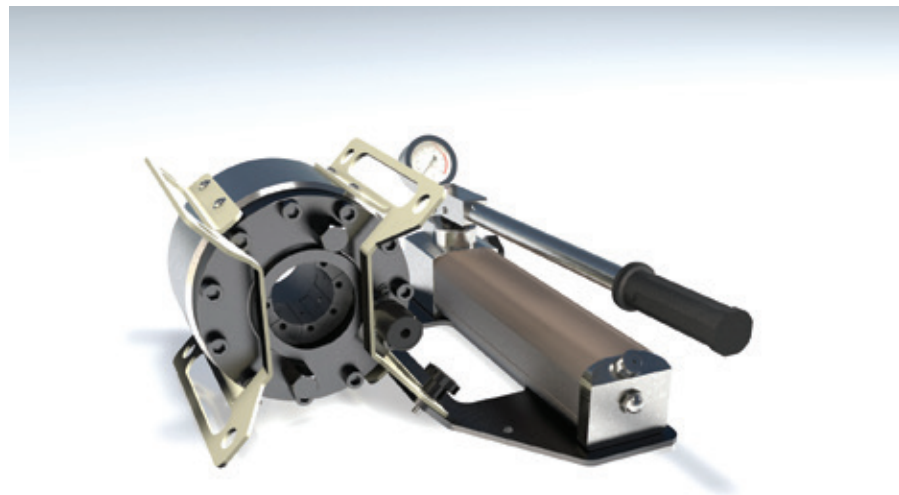
**Kasto GmbH & Co KG** – Germany  
kasto@kasto.com  
www.kasto.com

## Portable crimper

Techmaflex, a French manufacturer of assembly machines, has developed a hose crimping solution for the forestry industry.

Forestry machines such as forwarders, skidders, harvesters and cranes consume a lot of hydraulic hoses. With numerous constraints due to the

challenging environment, the hydraulic hoses need to be changed regularly. Most forest sites have restricted accessibility, but on-site maintenance can be carried out using a mobile workshop.



Techmaflex's H Crimp 110 can crimp hoses up to 1" 4SP. It is lightweight (21kg) and robust thanks to protective wings surrounding the head. The narrow head (220 x 222 x 240mm) delivers a 110-ton crimping force, combining flexibility with high power. A removable plate improves the operator's comfort and makes carrying more convenient.

H Crimp 110 is available via a distributor network, both in France and internationally.

**Techmaflex** – France  
info@techmaflex.com  
www.techmaflex.com

*H Crimp 110 portable hose crimper for the forestry market*



## Oxygen analysis down to ppm

Gas technology manufacturer Witt has unveiled a new development that can measure trace oxygen levels. The gas analyser PA 7.0 enables reliable analysis in the ppm (parts per million) range.

In many industrial processes, even the smallest amounts of oxygen can cause

major problems, such as undesired oxidation. A highly sensitive zirconium cell, available as an option, allows the PA gas analyser to detect trace quantities of oxygen in gaseous media.

This extends the PA product series into a new area of gas analysis. While

the classic PA with chemical sensor measures in increments of 0.1 per cent, the new zirconium version detects in the ppm range. The accuracy of the measurements is  $\pm 5$  per cent relative to the measured value.

All measured values are stored, and can be downloaded via a standard interface for further processing. Weighing just under 6kg, the PA is only 186 x 285 x 270mm in size, and is protected by a stainless steel housing.

The new PA version is part of an extensive product portfolio comprising mobile and stationary systems for gas applications, especially in food packaging, medical applications, metalworking and glass production, as well as in industrial processes requiring a high degree of precision.

**Witt-Gasetechnik GmbH & Co KG** –  
Germany  
[www.wittgas.com](http://www.wittgas.com)



Witt PA 7.0 gas analyser

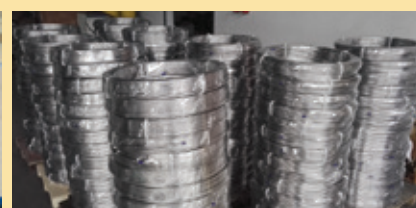


## Jingning Junwen Steel Co., Ltd



### Stainless Steel Seamless Pipe / Tube

Type: Austenitic stainless steel seamless pipe  
Process Method: Cold Drawn / Cold Rolled  
Surface Finish: Bright Annealed / Pickling / 180# 240# 320# 400# 600#  
Manual Polished / Mechanical Polished  
Grade: TP304, TP304L, TP316 / 316L Dual Grade.  
Standard: ASTM (ASME) SA / A312 / A213 / A269 and DIN, GB, JIS  
Size: OD  $\frac{3}{16}$ "-1 $\frac{1}{2}$ " (6mm-38mm), WT 0.028"-0.118" (0.7mm-3mm)  
Tolerance: Outer Diameter:  $\pm 0.08$ mm (0.00315"), Wall Thickness:  $\pm 10\%$   
Certification: ISO9001:2000, GB/T19001-2000



### Stainless Steel Cold Drawn Seamless Tubing in Coils & Pipe Coils

(Made of Cold-Drawn Pipe Billet Instead of Plank-Welding)  
Type: Austenitic stainless steel seamless pipe  
Process Method: Cold Drawn / Cold Rolled  
Surface Finish: Bright Annealed  
Grade: TP304, TP304L, TP316 / 316L Dual Grade  
Standard: ASTM (ASME) SA / A312 / A213 / A269 and DIN, GB, JIS  
Size: OD  $\frac{3}{16}$ "-1" (4.76mm-25.4mm), WT 0.028"-0.083" (0.7mm-2.11mm)  
Tolerance: Outer Diameter:  $\pm 0.08$ mm (0.00315"), Wall Thickness:  $\pm 10\%$   
Length: 100ft-2,000ft, or according to customers' requests  
Certification: ISO9001:2000, GB/T19001-2000

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[www.pipe-coil.com](http://www.pipe-coil.com)



# 5-8 June 2017

Despite a difficult economic environment over the past few years, the tube industry is now looking to the future with optimism thanks to the constantly improving investment climate in Russia. Investment activities are up, the construction sector is picking up speed again, and consumption remains a strong pillar of this upswing. The trade fair is an important trading and contact platform in Russia and for the neighbouring states.

Messe Düsseldorf GmbH, Messe Düsseldorf Moscow OOO and its Russian partner Metal-Expo have secured official participations from Germany, Italy, Austria and China. The trade fair is supported by AMAFOND – Italian Association for Foundry Machines and Products, ITA, VDMA – German Engineering Association, EUnited Metallurgy – The European Metallurgical Equipment Association, CEMAFON – The European Foundry Equipment Suppliers Association, and CECOF – The European Committee of Industrial Furnace and Heating Equipment Associations, as well as MC-CCPIT – Metallurgical Council of China Council for the Promotion of International Trade.



#### Venue

ZAO EXPOCENTR, Exhibition Centre, Krasnaya Presnya, Moscow, Russia  
centr@expocentr.ru | www.expocentr.ru

#### Organisers

Messe Düsseldorf GmbH | Tel: +49 211 4560 01 | Fax: +49 211 4560 668  
www.messe-duesseldorf.de

#### Opening times

5 to 7 June: 7:10am – 6:00pm | 8 June: 10:00am – 4:00pm



# International tube and pipe trade fair in Russia



[www.metallurgy-tube-russia.com](http://www.metallurgy-tube-russia.com)



# Fittings, valves, flanges & connectors

In today's ever-widening universe of tube products, connecting devices assume greater importance to designers, engineers and builders all the time. It follows that makers and suppliers of valves, fittings and flanges become steadily more proactive in the partnership with their customers – standing ready to research, recommend and provide solutions, and to maintain an interested presence beyond the sale.

With global markets imposing shorter lead times and demanding more flexible responses, the new emphasis is not solely on the devices but on the total service package. Even a casual review of online catalogues suggests that manufacturers and distributors relish the challenge, and it is a fair bet that their enhanced assistance is very welcome to the buyer.

*Photo: Tubacex SA – Spain*





## Increased corrosion resistance for hydraulic ball valves

Fluid technology specialist Stauff will be changing from a zinc/iron coating to a higher quality and corrosion-resistant zinc/nickel surface for a substantial part of its range of two-way and multi-way block ball valves for hydraulics.

Andreas Heinzen, product manager for ball valves at Stauff, explained, "With this change to the zinc/nickel coating, which has been standard for many of our other products for years, we are following the demands from numerous OEM customers and users.

"But we are also backing up our own claim to increasingly supply steel line components with a standardised

*The zinc/nickel surface has a similar appearance to stainless steel*



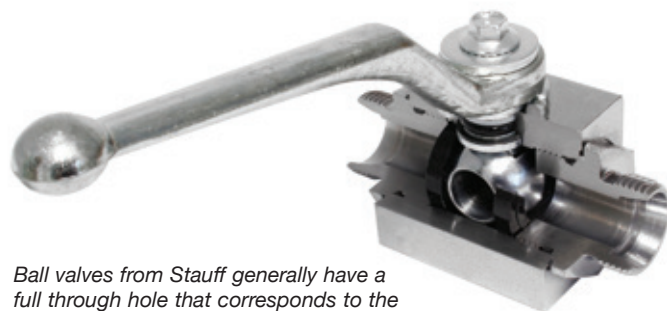
surface coating with the highest possible quality – all from one source."

The established zinc/nickel surface offers over 1,200 hours of resistance to red rust/base metal corrosion under practical test conditions in the salt spray chamber in line with EN ISO 9227.

The chromium(VI)-free coating exceeds the highest requirements with regard to durability, eg as defined in the VDMA Standard Sheet 24576. It has an appearance similar to stainless steel, while complying with all relevant ELV, REACH and RoHS guidelines.

The gradual changeover affects two-way ball valves from the BBV-2 series and the most commonly used three-way ball valves from the CBVL-3 and CBVSL-3 series (with L-hole in the ball), as well as CBVT-3 and CBVST-3 (with T-hole in the ball).

These are available with BSP, NPT and UN/UNF internal threads, ORFS or 24° cone connections, and are



*Ball valves from Stauff generally have a full through hole that corresponds to the nominal diameter of the line*

primarily used as manually operated shut-off valves in mobile and stationary hydraulics. The company states that although mixed deliveries are possible during the changeover period, ie until the zinc/nickel version has become standard for all products delivered, this will create no difference with regard to storage, installation or operation.

Ball valves from Stauff are made from European quality steel with the option of full material traceability. The balls with hard chromium plating, which reduce friction and wear, usually have a full through hole corresponding to the nominal diameter of the line, so that no detrimental reduction in the diameter of the hydraulic line occurs.

Free flow is also supported by the fact that no exposed threads are located in the medium passage. This reduces vibration, noise and heat generation in the system, ensuring full capacity of the machine.

**Walter Stauffenberg GmbH & Co KG**  
– Germany  
sales@stauff.com  
www.stauff.com

## Products for the chemical industry

Val-Matic's QuadroSphere® ball valves, air valves and check valves are key components for the chemical industry.

The QuadroSphere trunnion ball valve has benefits that include four recessed surfaces of the ball to provide self-flushing and prevent clogging – a common problem in chemical production. The company also has a wide range of air valves that perform important functions

including system design efficiency and system protection.

The air valves' system efficiency is maintained by venting air from the system that can restrict flow and increase pumping costs. In addition, the air valves provide system protection by exhausting and admitting air through the air valves during system operations.

The Swing-Flex® check valve's smooth, unrestricted, full-flow design is suitable for slurries and sludge, including vertical flow up applications, while the Silent check valve is claimed to provide silent operation.

**Val-Matic Valve & Manufacturing Corp** – USA  
valves@valmatic.com  
www.valmatic.com

# Reducing the risk of unplanned heat exchanger downtime

Getting the best plate heat exchanger performance requires preventive maintenance, especially for hygienic applications within the food, dairy, beverage, pharmaceutical and home and personal care industries. However, each process system has different parameters that affect the heat transfer and sealing efficiencies of the plates and gaskets.

A gasket, its material properties and its construction are specifically selected to provide optimal sealing performance for its intended application.

Knowing exactly when to replace gaskets is almost impossible, since the timing varies depending on the application, but over time all gaskets wear due to natural ageing as well as the temperature, pressure and stress of normal operating conditions.

Without preventive maintenance, operators risk potentially costly unplanned downtime.

Factors to be considered include temperature and pressure, with higher operating temperatures and pressures causing more wear and tear on the gaskets; and compression – gaskets are subjected to local stress from the moment the

plates are tightened. In addition, spare gaskets should be stored in a sealed bag, in a cold, dry and dark place, and away from ozone-producing equipment such as machines or light armatures.

Alfa Laval is a provider of specialised products and engineering solutions based on its key technologies of heat transfer, separation and fluid handling.

The company's equipment, systems and services are dedicated to assisting customers in optimising the performance of their processes. The solutions help them to heat, cool, separate and transport products in industries that produce food and beverages, chemicals and petrochemicals, pharmaceuticals, starch, sugar and ethanol.

Its products are also used in power plants, aboard ships, oil and gas exploration, in the mechanical engineering industry, in the mining industry and for wastewater treatment, as well as for comfort climate and refrigeration applications.

**Alfa Laval** – Sweden  
info@alfalaval.com  
www.alfalaval.com



Alfa Laval FrontLine gasketed plate heat exchanger

## FET acquires Cooper and Innovative

Forum Energy Technologies has acquired the assets of Cooper Valves and a 100 per cent ownership interest in Innovative Valve Components.

Based in Texas, USA, Cooper Valves manufactures Accuseal® metal-seated ball valves engineered to meet Class VI shut-off standards for use in severe service applications, as well as a full line of cast and forged gate, globe and check valves. Innovative Valve Components, in partnership with Cooper Valves, commercialised critical service valves and components for the power generation industry. Prady Iyanki, Forum's president and chief

operating officer, commented, "The Cooper Valves and Innovative Valve Components acquisitions fit with our strategy of increasing our product offering to midstream and downstream customers. Importantly, Cooper complements our product offering with high specification, engineered valves. The capabilities of Forum's valve solutions product offering and Cooper Valves are expected to benefit each business as they are integrated. We welcome the Cooper employees to Forum."

Forum Energy Technologies is a global oilfield products company, serving the

drilling, subsea, completions, production and infrastructure sectors of the oil and natural gas industry. Its products include highly engineered capital equipment as well as products that are consumed in the drilling, well construction, production and transportation of oil and natural gas.

Forum is based in the USA, with manufacturing and distribution facilities strategically located around the world.

**Forum Energy Technologies, Inc** – USA  
info@f-e-t.com  
www.f-e-t.com



# Hygienic stainless steel valves and fittings

Pipeline Products is an importer of stainless steel hygienic and BSP valves, fittings and tube, with over 30 years' experience in the industry.

The company operates an in-house fabrication facility, and can produce machined items and welded products quickly from standard products or customer drawings. All welding is hygienic standard and is finished and blended to match the original material.

The range provides piping systems for hygienic applications in breweries, dairies, food production, chemical, pharmaceutical, packaging and OEM machinery. The company states that its most important attributes are stock range and service, and claims to hold the widest range of hygienic stainless steel valves, fittings and tube in the UK. Deliveries are generally next-day.

Pipeline Products has been involved in a wide range of projects. Customers have used its stock of different radius bends on jacketed piping systems for chocolate manufacturing; its valves and flanges on wastewater methanol dosing systems; full bore ball valves and bespoke bends on pigging systems for cosmetic manufacturing; and RJT machined liners to reduce waste on a toothpaste manufacturing line.

The company places great importance on its relationship with its suppliers. Alongside its products in the UK it is able to take advantage of its supply chain to offer bespoke products, or larger volume orders with quick lead times.

Pipeline Products can accommodate all sorts of requests, from changing the colour of a valve or union seal to match factory standards, to producing a machined item to drawing for a machinery build.

The company supplies products internationally, and aims to work in partnership with customers to find the best supply solution. Since 2004, importing became the focus of the company and strong relationships were forged with its stockist customers. The company is relied upon by many as a competitive outlet for primary and secondary stock ranges.

**Pipeline Products Ltd – UK**  
info@pipeline-products.co.uk  
www.pipeline-products.co.uk



**Bangkok,**  
**19–21 September 2017**

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## Welded industrial valves

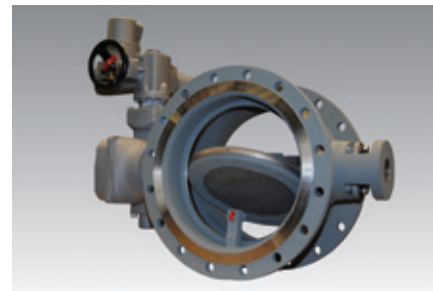
Shut-off valves, check valves and combined shut-off check valves under the Exentromat brand name have over 50 years of tradition at Alfred Konrad Maschinenfabrik GmbH.

The success of the valves was the consequence of the series production of metallic seals and the resulting double eccentric locking geometry.

Konrad Armaturentechnik GmbH has continued its business at the same location under its managing partner, Dipl -Ing (FH) Lutz Löbardt, since April 2010. The company's valves are manufactured exclusively as welded structures, which allows for a wide variety of possible materials in comparison to conventional cast iron valves.

Nominal sizes range from DN 100 to DN 2000. Different flange connections are available, as are wafer check valves or welded valves. The overall length is manufactured as standard in accordance with EN 558-1, series 14, but special lengths are also available to meet customer requirements. Metallic seals can also be provided for different pressure and/or temperature requirements, in addition to different elastomer materials.

Slider crank gear mechanisms, which are produced in-house and have an intermediate gear for higher torque requirements, are typically used as drives. Third-party gear mechanisms can also be assembled at the customer's request.



Manual hand-wheels are available, as are pneumatic, electric or hydraulic drives from all well-known manufacturers. A small, specialist team with many years of experience manufactures, assembles and delivers valve components to customers as a complete unit for easy installation.

**Konrad Armaturentechnik GmbH** – Germany  
info@konrad-armaturen.de  
www.konrad-armaturen.de

## Tubacex reinforces its position in fittings

Within its strategy to become a global supplier of tubular solutions, Tubacex has reinforced its fittings and special components production programme with a joint venture signed with the Japanese company Awaji Materia. This strategic acquisition enables the company to complete the fittings range offered until now through TTA (Spain) and IBF (Italy). In particular, Tubacex Awaji Thailand will produce stainless steel elbows, reducers, tees and caps.

The decision was made against a market

background deeply affected by the crisis and low oil prices, which have had a great impact on the fittings segment. Tubacex has restructured its plants, aiming to specialise and to obtain higher productivity and profitability ratios, as well as having the capacity to offer the required packages demanded by the market.

In addition, a recovery is expected in the nuclear sector with the announcement of new plants to be built in India, the UK, Poland and Russia, among

other countries. This situation could have a positive impact on the group, specifically on IBF, since it is the sole supplier approved for the manufacture of key strategic parts.

With the acquisition of Awaji Materia Thailand and specialisation of the other plants, Tubacex states that it is making progress towards achieving targets of diversification and growth in the value chain.

Tubacex Group is also able to provide immediate product availability through Tubacex Service Solution (TSS), a master distributor of seamless stainless steel and high nickel alloys tubes and fittings with a worldwide network of warehouses in central Europe, France, Spain, USA, Brazil, the Middle East, Iran and India.

Tubacex activity in the fitting segment includes, from IBF – special high added-value fittings and standard fittings above 12-14"; TTA – butt welding fittings: elbows, bends and reducers up to 12"; and Tubacex Awaji Materia – standard fittings with small diameter for traditional Tubacex pipes.

**Tubacex SA** – Spain  
www.tubacex.com



*Tubacex is expanding its fittings business*



## Achieving cost of ownership improvements through valve equipment, supplier and process standardisation

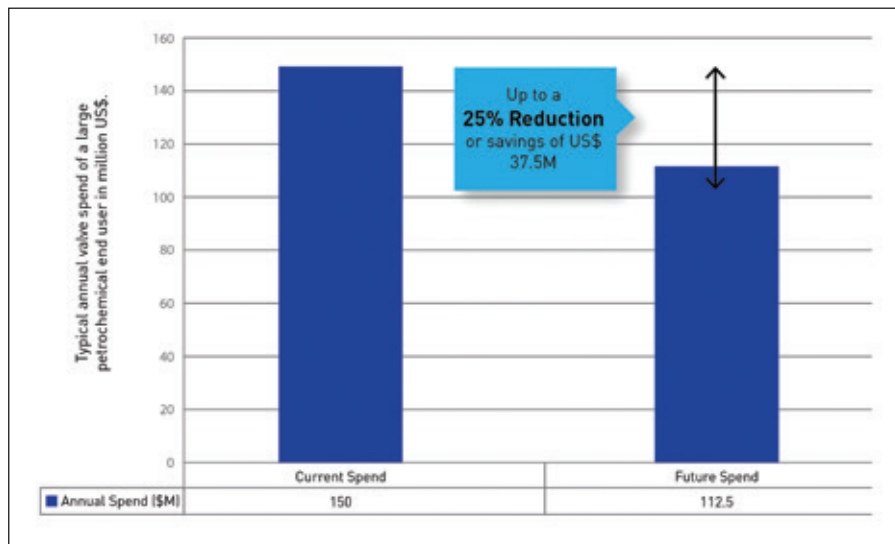
Pentair Valves & Controls has designed an approach for chemical and petrochemical plant owners and operators with the potential to deliver measurable improvements in total cost of ownership (TCO). Pentair is working with major chemical and petrochemical companies around the world to promote and implement standardisation programmes and processes with the goal of increasing efficiency and reducing total cost of ownership in areas such as procurement, installation and maintenance of valves and controls equipment, and inventory control processes across multiple plant sites.

Christof Lindner, director of Pentair Valves & Controls global accounts for the chemical and petrochemical industry, is one of Pentair's experts promoting this standardisation programme with major global customers. Mr Lindner has more than 25 years of industry experience and has been instrumental in helping companies to achieve equipment standardisation throughout their global operations.

"The concept of standardisation of equipment within global chemical and petrochemical companies to lower the total cost of ownership of valves and controls and use the best possible technology is a very important approach to supporting our customers," explained Mr Lindner. "Pentair has created an effective process that can potentially



Christof Lindner



Annual valve spend (US\$)

save chemical and petrochemical companies millions of dollars by standardising models of valves and controls equipment to increase reliability and efficiency and deliver proven results.

"This process begins with an evaluation conducted by Pentair with the approval of our customers. From this evaluation, we develop a customised plan that Pentair implements in collaboration with our customers across multiple plant facilities in various regions of the world across a period of several years."

TCO benefits can include cost savings by commonly used processes across the enterprise to define, specify and order technical equipment such as valves and controls; availability of products on short notice to allow quick response and delivery to solve customers' problems; technology-driven product standardisation with reliable high quality products that reduce plant down times, unexpected outages and operational issues; technical support and consultancy provided by Pentair representatives to enhance partnerships and identify new areas for improvement; and long-term commitment and solutions-orientated teams to help customers.

**Pentair plc – USA**  
www.pentair.com



We service and supply the Oil, Gas, Petrochemical and Marine industries around the world.

Products range from pipe, fittings, flanges, valves, gaskets, bolting, sheet, plate and bar.

### Materials range from:

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Email: sales@phoenixpiping.co.uk

[www.phoenixpiping.co.uk](http://www.phoenixpiping.co.uk)

## No fear of excess pressure

*Safety relief valves offer protection and aid process operability*

Safety relief valves protect from excess pressure by targeted release of vapours and gases. David Breil, product specialist at the German manufacturer Witt, talks about these passive protective devices.

*Who benefits mostly from safety relief valves?*

Anyone who operates pressurised systems, components or plants. These valves are typically fitted onto pressurised gas tanks or loop line systems which, for instance, work with an operating pressure of 16 or 25 bar. Safety relief valves prevent serious accidents by relieving pressure before excess pressure can build up and become dangerous to systems and people.

*What are the dangers?*

Process safety issues can exist, through design or operation. Excess pressure can build up rapidly and exceed the material's burst limit. Safety relief valves are a last line of defence to prevent damage.

*Does this mean that safety relief valves are only required for high pressures?*

No, not at all. Excess pressure can also have undesired consequences when working with low pressures, for instance below 500 mbar. In these cases, it is less about life and limb but rather about

its effects on the quality of the products or the devices used. I am referring to applications such as transport receivers for highly sensitive high-tech products, isolator and glovebox systems or industrial furnaces under a protective atmosphere. Even minor pressure fluctuations can put the process at risk. This area in particular is where the sensitive Witt valves of the AV series with opening pressures of 5 mbar can prove their strengths.

*How do these safety relief valves work?*

Our high quality valves are spring-loaded and are direct acting. This means that as soon as the opening pressure is reached, a spring-loaded component gives in, opens the valve and releases the excess pressure. It then closes automatically after equalising the pressure. A renewed increase in pressure will open it again.

*For which pressure range can these valves be used?*

Witt safety relief valves can cover an extremely wide operating range. The opening pressure can be set from 5 mbar to 45 bar, depending on the model. Thus, even minimal increases in pressure can be detected. As previously mentioned, this is important when it comes to protecting highly sensitive systems or housings. At the same time, they have a high venting



*David Breil, specialist for safety relief valves at Witt-Gasetechnik*

output of up to 970m<sup>3</sup>/h at temperatures ranging from -60 to +270°C. Because they are small, they can be installed just about anywhere, and in any orientation. However, the orientation needs to be known in advance for safety valves in millibar range, so that Witt can set the opening pressure to suit the system's operating pressure.

*You also offer special TÜV approved valves – why is this?*

Witt always checks the entire production line before delivery, piece by piece. Each device's set pressure testing is witnessed and signed off by a TÜV inspector. Consistent with our certification to the Pressure Equipment Directive, this individual approval is prescribed for the higher pressure models. However, we also offer this service for all models in the lower pressure range. In this way, our customers receive an external certificate that guarantees extra peace of mind with regard to safety.

*What other selection criteria are there for safety relief valves?*

The type of gas plays an important role. We use brass as a standard housing material for technical gases. In most cases, aggressive or corrosive media require stainless steel equipment, which is used for securing biogas plants, for instance. Aluminium is another possibility. Besides the housing, even the seals must be adapted. We have different materials available depending on the type of gas.

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*Witt safety relief valves*



## Metric shaft collars and couplings

An expanded line of metric shaft collars, couplings and mounting components suited for mechanical drive systems and structural applications has been introduced by Stafford Manufacturing Corp.

Stafford Metric Shaft Components feature more than 800 items, including the Grip & Go™ quick-release handle, which can convert a standard shaft collar into a rapidly adjustable locating device, and Staff-Lok™ shaft collars that reposition without tools. New items include flange collars, face mounting collars, and heavy-duty shaft collars and couplings.

Available in 3 to 80mm ID sizes, Stafford Metric Shaft Components are offered in aluminium, steel, stainless steel and thermoplastics, depending upon style. Standard metric items include set-screw, one-piece, two-piece and hinged styles, along with couplings in one-, two- and three-piece styles, with or without keyways, and inch-metric shaft couplings and adapters.

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Components from Stafford Manufacturing

## Instrumentation valves and fittings

Alliance Valves & Piping Supplies Manufacturing (AVPS) is a UK-based, ISO 9001: 2008 accredited manufacturer and supplier of instrumentation valves, fittings and associated products.

Its range includes needle valves, instrument valve manifolds, instrument ball valves, gauge root valves, compression tube fittings, instrument pipe fittings, CNC machined metal products, air headers and distribution manifolds, vessels and sample cylinders, syphons and thermowells.

As well as 30 years' experience in the manufacture of instrumentation valves and products, the company is able to supply valve and piping packages including process valves – gate valves, globe valves, butterfly valves, check valves, pipe, fittings and flanges.

AVPS has particular expertise in the supply of exotic alloy materials such as duplex, super duplex, titanium, alloy 400 and alloy C276.

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## Bend restrictor now completely API 17L1 certified

Trelleborg's offshore operation in Skelmersdale in the UK has been certified for the design of its bend restrictor reaction flange under the American Petroleum Institute's specification for flexible pipe ancillary equipment (API 17L1 Ed. 1 2013).

Having acquired the design review certification for the standard bend restrictor element in 2016, Trelleborg's complete bend restrictor product is now API 17L1 certified.

The certificate was awarded by Lloyd's Register EMEA, acting as an independent verification agent. All design verification was completed by conducting a thorough overview of the design philosophies.

Andrew Garside, innovation and engineering director from Trelleborg's offshore operation, said, "The API assessment is a detailed process approved by an independent third party, which put our design of the bend restrictor reaction flange under stringent analysis. Receiving the certification demonstrates the ability of our design team and the performance

of our bend restrictors, especially for use in challenging and harsh offshore environments."

Designed to reduce lead times, the concept of Trelleborg's bend restrictor reaction flange eliminates the need for welding. This avoids any constraints due to steel grade availability and procurement and, as steel is not used for welding the flange, the overall weight of the product is reduced.

Trelleborg's bend restrictors are used to protect flexible pipelines from over-bending and buckling during their installation or operation phase where static loads are generated. The system comprises interlocking elements that articulate in three dimensions when they are subject to external loads.

At a designed radius, the elements mechanically lock to form a semi rigid curved structure that will not bend further. Bend restrictors are of split design to allow easy installation of the restrictor after pipe termination, meaning installation and maintenance are much simpler.



API 17L1 specification was officially released in March 2013 and all the flexible pipe ancillary equipment now supplied to the offshore industry is in compliance with the standard.

The specification defines technical requirements for safe, dimensionally and functionally interchangeable flexible pipe ancillary equipment that is designed and manufactured to uniform standards.

These industry standards determine the minimum requirements for the design, material selection, manufacture, documentation, testing, marking and packing of flexible pipe ancillary equipment.

Trelleborg's offshore operation currently holds API certificates for bend restrictors, bend stiffeners, distributed buoyancy modules and Uraduct®.

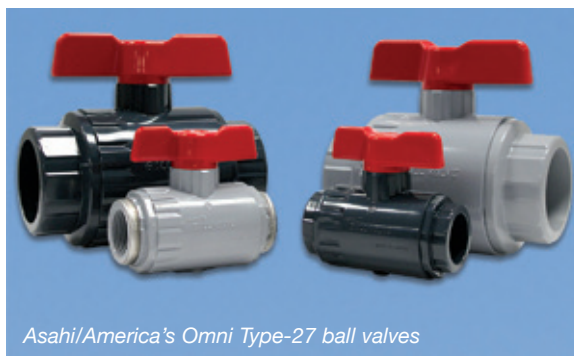
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[www.trelleborg.com](http://www.trelleborg.com)

## Asahi/America introduces Type-27 ball valve

Thermoplastic fluid flow technology company Asahi/America, Inc has announced the next-generation Omni® ball valve. The design of the Omni Type-27 compact ball valve includes updated performance features and improved actuation capabilities.

The rugged, injection-moulded one-piece body includes a single-threaded and sealed end carrier. Double stem O-ring seals provide added leak protection, and the smooth, ergonomic handle features open/shut indication.

A moulded ISO top flange for actuation mounting can be factory-added to the Omni Type-27. The ball valve is



*Asahi/America's Omni Type-27 ball valves*

available with socket or threaded end connections from 3/8" to 2", with body materials of PVC or CPVC, both with EPDM seals and PTFE seats. The Omni Type-27 is NSF-61 certified and rated 150 psi at 70°F. Suitable for water treatment, landfills, aquariums,

chemical processing, power plants, swimming pools, water features and fountains, the Omni Type-27 can be electrically actuated with Asahi/America's Electromni® Series 83 electric actuator.

Asahi/America specialises in providing solutions for fluid handling systems, individualised to meet customers' needs. The company manufactures corrosion-resistant thermoplastic fluid handling products including valves, actuators, pipe and fittings.

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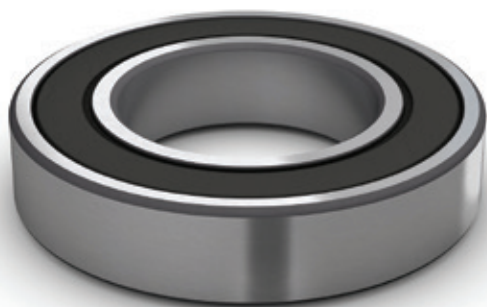
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# High performance seal available on extended range of deep groove ball bearings

SKF is making its RSH seal design available on a larger range of Explorer deep groove ball bearings.

The RSH seal uses an optimised dual-lip configuration to provide additional protection in demanding environments. For users, the result is bearings that last longer, especially in wet, contaminated or dusty operating conditions.

The secondary lip on the seal withstands high-pressure cleaning and offers increased resistance to the ingress of dust and other contaminants, while the seal's internal geometry has been optimised for smooth running and improved grease retention.



The seal is made from acrylo-nitrile-butadiene rubber (NBR), which is resistant to mineral oil-based lubricants, petroleum products and animal or vegetable fats. It has an operating temperature range of -40 to +100°C and up to +120°C for brief periods.

Previously only available on bearings with a bore diameter of 25mm or less, the RSH seal has now been further developed and tested for use in bearings up to 60mm in bore diameter.

Users can specify SKF Explorer deep groove ball bearings with the new RSH seal installed on one or both sides, depending on the requirements of the end application. The new bearing variants are already being introduced, and the full range will be available worldwide by July.

The extended RSH offering joins a growing list of options and improvements in the



*The secondary lip withstands high-pressure cleaning and increases resistance to contaminants*

SKF Explorer range. These include numerous shield and seal configurations and a choice of cage materials and lubricants.

Explorer was originally developed to take advantage of research into high-purity steels with improved fatigue resistance, allowing the development of bearings with a longer rated life and lower friction. Deep groove ball bearings joined the range 14 years ago.

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# Safety valves: protecting employees, equipment and the environment

Alfa Laval has introduced the spring-loaded Safety Valve, designed to protect both equipment and people. In a potentially dangerous situation, the valve will open at a pre-determined pressure.

The compressed spring force keeping the valve closed is forced open when pressure builds up at the inlet of the safety valve.

As these forces balance out, the valve will discharge and decrease pressure, ultimately reclosing as the system returns

to normal. Key features include dedicated and reliable protection against accidents; calibration to the desired pressure set point, sealed and delivered with a PED certificate; and a hygienic design that eliminates unsanitary leaks and overflow during and after pressure peaks.

The company also recently introduced a range of Alfa Laval Scandi Brew anti-vacuum and overpressure valves. These safety valves protect against overpressure in tanks and pipelines, eg from overflowing or fermentation processes. They also protect against

implosion, for example due to a vacuum caused by cold rinsing after hot cleaning or blocking of gas supply during emptying.

The Alfa Laval Safety Valve can be combined with the Alfa Laval SB Anti Vacuum House into a combined safety valve, protecting against both vacuum and overpressure in one hygienic valve solution with a single tank connection.

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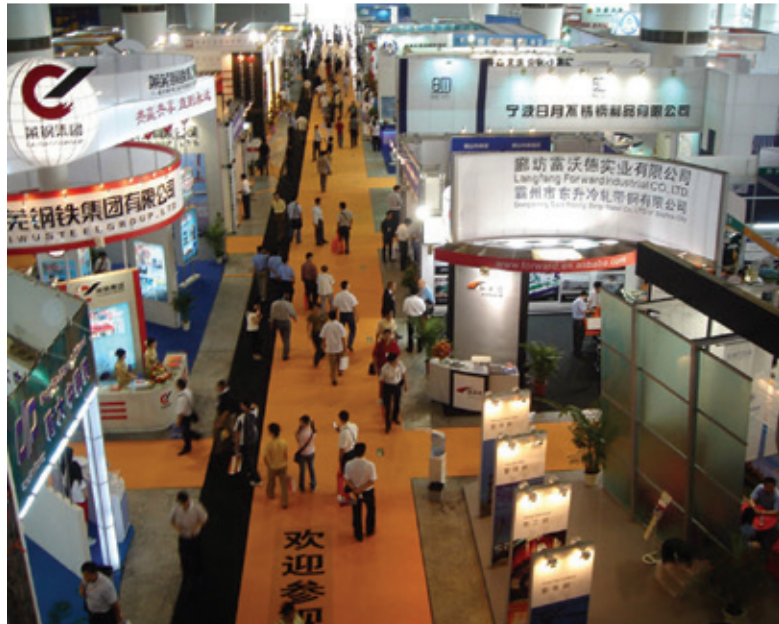
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# New tube cutting technology meets next generation production needs

By Geoff Shannon, Amada Miyachi America, and David Van de Wall, Amada Miyachi Europe

Stents and tubes are used in countless medical devices and new ones are being added every day, fuelled in part by the growth of minimally invasive surgery and the commonplace use of stents. The sheer number and diversity of devices is rapidly increasing, and with it the demand for more and more laser cut stents: flexible tubing, cannulas and micro cannulas, needles, biopsy devices and other minimally invasive tools. *Figure 1* shows examples of common features in modern stents.

While legacy stent and tube cutting systems have performed well during recent decades, new cutting technologies coming onto the market offer faster and better cuts, with higher production rates and new and unique cutting capabilities.

## Replacing legacy cutting systems

The pulsed neodymium-doped yttrium aluminium garnet (Nd:YAG) lasers used in the past two decades have definitely been great workhorses. They have performed well and been excellent manufacturing centres for many companies.

Unfortunately, the original integrated pulsed Nd:YAG lasers that remain in operation are now obsolete and difficult to service.

While many of these systems have been upgraded to fibre lasers, they still have old stage sets that are a number of generations behind current technology. In addition, they are running on slow and ageing controllers with legacy software.

Simply put, the laser, stages, controller, software, water systems and automated tube loader technology have all moved on.

Here is a brief overview of improvements in these components that enable faster and better cuts with higher production rates and less down time.

## Laser

The pulsed Nd:YAG lasers used in the past have been superseded by fibre lasers with better beam quality that does not change with pulse energy and average power. This provides a smaller and more consistent focused spot size, which offers tighter cutting tolerances and, with spot sizes down to 10 microns, the ability to cut much finer detail features. These lasers provide pulse frequencies up to and beyond 5 kHz and pulse widths down to 20 microseconds ( $\mu$ s) to enable energy input optimisation for a wide variety of tube materials and wall thicknesses.

Higher frequencies can be implemented to maximise acceleration and speed for a range of part thicknesses. From an operational standpoint, the fibre lasers have a number of advantages. They are air cooled, run off single-phase 240V electrical power, and have diodes with lifetimes that are greater than 70,000 hours, which equates to minimal operational costs. *Figure 2* shows an example of a tube produced by one of the new laser tube cutters on the market (left) and a close-up of laser tube cutting (right).

Fibre lasers use microsecond pulses and offer a cutting speed and edge quality that is sufficient for many applications. The femtosecond (fs) laser offers laser pulses that are under  $400 \times 10^{-15}$  seconds (s), or about one million times shorter than the fibre laser. The very short pulse duration, combined with

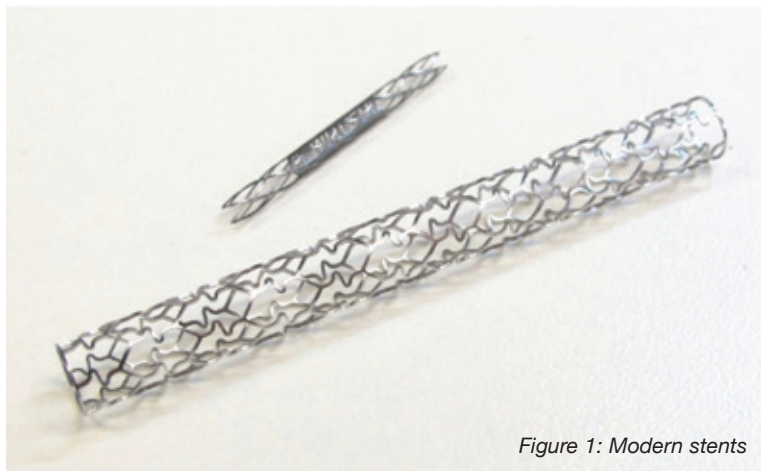


Figure 1: Modern stents



	Femtolaser	Fibre
Post processing cost per unit	\$2.08	\$11.01
<b>Post processing cost per annum</b>	\$214,892	\$1,158,588
Number of systems required	3	2
System unit price	\$550,000	\$300.00
Capital outlay	\$1,650,000	\$600.00
Payback period in months	12	Not applicable

Table 1: Laser cut stents and general tube cuts

peak powers into the gigawatt level, offer a unique cutting capability.

The fibre laser has a fusion cutting mechanism, whereby the laser pulse melts the metal, which is then ejected from the part by a coaxial high-pressure gas. The very high peak power of the fs laser and a pulse duration that is shorter than the material's conduction time creates a very nearly pure vaporisation mechanism. Since there is no melt creation during the cutting process, there is no burr, which is very beneficial for such materials as Nitinol.

Take the example of the ubiquitous coronary stent, one of the first devices manufactured with both Nd:YAG and fibre lasers. First, the part has to be machined, then honed, or cleaned out inside with a mechanical tool, and finally de-burred. Then a chemical etch process must be performed to clean up around the edges, followed by an electro polishing step. These steps are quite time consuming. They can also cause the part to become brittle or deformed and may result in micro cracks. Yields tend to be in the 70 per cent range, which means the loss of a significant amount of end product – a significant material cost in the case of Nitinol.

By contrast, the fs laser produces a burr-free cut that drastically reduces the number of time-consuming post processing steps; the part is machined and then undergoes an electro chemical process to round the edges. The integrity of the part is improved and yields can be closer to 95 per cent. In addition, using an fs laser can be an attractive proposition for end users who may be looking to bring the cutting process in-house, but do not want to go through the arduous red tape exercise of also bringing in-house the necessary chemical post-processing materials and processes needed for fibre laser cutting.

Table 1 shows an ROI comparison of a femtosecond laser and a fibre laser cutting a Nitinol coronary stent.

The fs laser with minimal heat input and exceptional heat input control is a very good tool for cutting small features in small parts with excellent edge quality and feature definition. Figure 3 shows some examples of fs laser cutting.



The majority of stents and tubing are metal. However, FDA-approved polymer stents and scaffolds are now on the market, which can only be cut with a femtosecond laser.

The fibre laser does not absorb sufficiently well enough in the polymer to make quality cuts.

The femtosecond laser has such great photon density that it is absorbed by the polymer material through a process known as multi-photon absorption, which makes cutting possible. This cutting can be further enhanced

by using a green wavelength over one micron, which provides better cut quality, faster speeds and a larger processing window.

## Software, controllers and stages

New digital motion controllers and improved stage accelerations enable users to follow the programmed tooling path with reduced following errors and faster accelerations and speeds, resulting in faster cycle times. In most tube cutting applications, the limiting factor for cycle time is the motion, specifically the rotary axes, and so stages and controller performance improvements are a key part of maximising production.

As part of day-to-day operation, the interaction of the operator with the control software user interface can optimise efficiency in setup and process monitoring, and reduce operator errors. The use of large-screen monitors has facilitated single-screen operator-orientated interfaces. Using the space on screen to organise areas of usage clearly, operators no longer have to battle the control software. Instead, they can become very comfortable with it, and even use it to streamline processes for operational efficiency.

In addition, in-line sensors, gauges, digital flow meters, and valves can report on the status of all process-critical parameters, including assist gas pressure, water flow and pressure. Not only are these vital process conditions monitored, but also values can be set with alarms and error states for low levels to avoid wasted material stock and, more importantly, equipment damage and down time.



Figure 2: Fibre laser 'wet' tube cutting

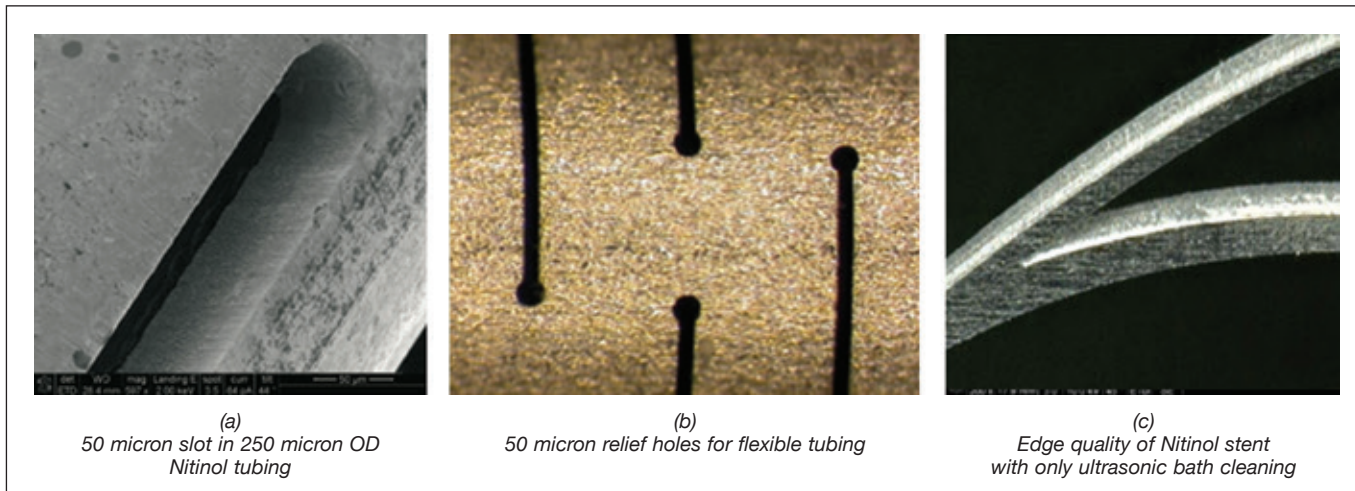


Figure 3: Examples of femtosecond laser cutting of fine features

## Water system

In many legacy system designs, the water system was a weak point, requiring constant attention and maintenance to keep the machine running. Such issues as small water tank sizes, short lifetime pumps and lack of internal flow monitoring all added up to an unreliable system. Compounding these issues is the fact that it was difficult to access, even to simply change water filters. Fast forward to newer systems, which have a ten-gallon tank size, four-level debris filtering, intelligent programmable flow valves, multiple solenoid switches to prevent large water leaks, and drawer-mounted hardware that enables filter changing in seconds. The user interface provides the operator all necessary information, along with pre-cutting safeguards and go/no go limits to ensure that all is well.

## Automated tube loaders

The standard stent and tube cutter is loaded manually with tubing that is typically up to 3m long. The cutter then cuts parts and advances the tube according to the program. At some point, the amount of tube remaining is of insufficient length to make the cut, and the remainder is removed and a new tube loaded. With more pressure to improve productivity and minimise labour costs, many are now using automated tube loaders to feed the cutter tubes. While this is not new, there is now an increased potential for using these tube loaders for automated wet connect on tube diameters larger than 1.5mm. Although one should not operate the tube cutter in a totally 'lights out' mode, using the automated loader can significantly reduce labour allocated to the machine.

## Open architecture system design

A key part of any system is making the hardware usable for the operator on an every-day basis. One feature that contributes to this is using composite over granite with better vibration damping. Because the composite has a uniform internal structure, it can be mechanically modelled and so optimised for vibration isolation, load bearing capacity and deflection under load. This enables a cantilever arm to support the focus

optics and z and cross axes stages, providing a very open machine from an operator accessibility perspective.

System design and cutting performance of the latest generation stent and tube cutting systems offer significant advantages and capability over legacy machines for increased productivity and enabling product innovation with better process capability. Whether using the fibre or femtosecond laser, improvements to motion, controller and control software make the latest stent and tube cutting system superior to legacy systems or provide new capability for future manufacturing needs.

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TAG PIPE BEVELLING PREP MACHINES (1/2" - 24")



The Tag Prep series has been developed with over 30 years of industry knowledge & experience, we are proud and confident that we offer a comprehensive range of the strongest I/D prep tools on the Market. We are constantly developing our range, and are on the brink of introducing some exciting new features and options for the machines in the coming months.

TAG 'E-Z' FAB - PIPE CUTTING & BEVELLING MACHINES (1/2" - 30")



A self-centering, semi portable heavy duty dedicated Pipe Cutting & Beveling machine. Operated via a Touch-Screen Delta Control, delivering signal to a Heavy Duty Servo Motor, giving the 'E-Z' Fab unrivalled power & torque, for heavy duty material and wall thickness applications. Available in 110v or 220v.

**6" 22mm Wall thickness Pipe – Loaded into machine, cut, and bevelled. In 6 minutes 20 seconds!!!**

TAG LIGHTWEIGHT ALUMINIUM SPLIT FRAME CLAMSHELLS (1/2" - 24")



The TAG Clamshell range of portable cold pipe cutting and beveling machines are designed for ease of use, even in difficult situations. Thanks to their low profile frame they are the perfect machine for use when access to the pipe is restricted.

**NEW! Heavy duty NC controlled, electric servo split frame motors. Offering unrivalled power & cutting speeds.**

PIPE BEVELLING MACHINES



PIPE CUTTING MACHINES



PIPE ALIGNMENT CLAMPS



PIPE STANDS & ROLLERS



PIPE PURGING EQUIPMENT



PLATE BEVELLERS

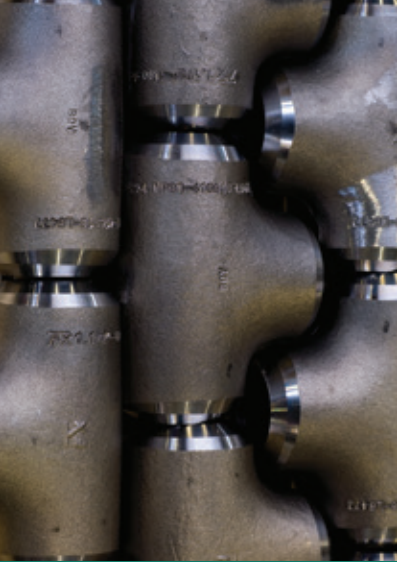


# The only stock you need for urgent deliveries



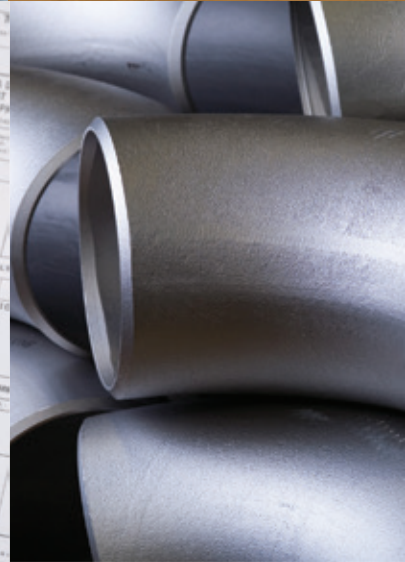
## Other possibilities

- Pipe & Tube
- Flanges
- Sheet and Plate
- Forgings
- Fabricating jobs
- Finned and studded pipe



## Fittings

- 45°LR
- 90°LR
- 180°LR
- 90°SR
- 180°SR
- Equal and Reducing Tees
- Concentric and Eccentric Reducers
- Caps



Our stock is most suited for shutdowns and breakdowns.



## INTERSERVICE TRADING

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**Alloy**  
WP1  
WP11  
WP22  
WP5  
WP9  
WP91

**Stainless**  
WP304L  
WP321H  
WP347H  
WP316L

**Carbon**  
WPB  
  
**Low Temp.**  
WPL3

the power is our stock