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The trade magazine for tube and pipe products

July 2017



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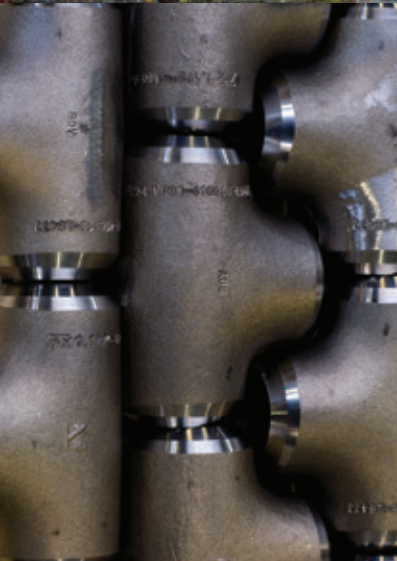
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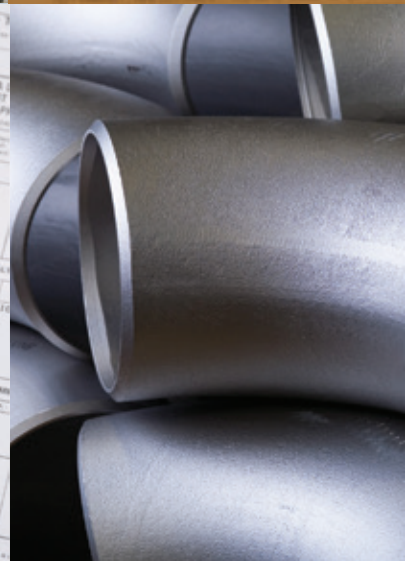
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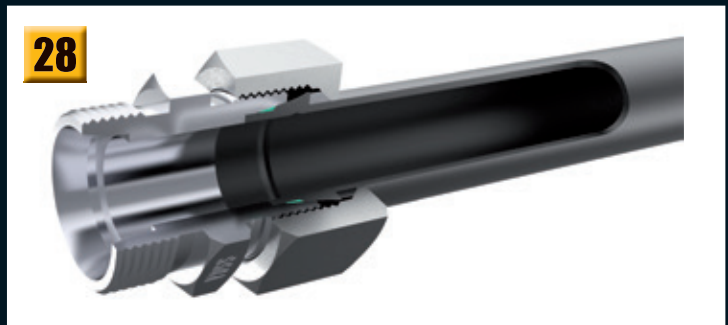
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Tube Products

INTERNATIONAL

The trade magazine for tube and pipe products



The July issue

Welcome to the latest Tube Products INTERNATIONAL magazine.

In this issue we have a feature on material handling and logistics as well as two in-depth articles on protecting pipe bores from corrosion, by Arc Energy Resources, and condition monitoring for competitive advantage from Parker Kittiwake.

We also have comprehensive coverage of all the latest news from the global industry such as exciting news from Marcegaglia about its innovative new factory on page 8.

We take a look at two major international tube shows – Tube Southeast Asia in Bangkok, Thailand, and Tubotech in São Paulo, Brazil. The team will be at both events so we hope to see you there.

Next issue we have features on copper pipes and inspection technology, and the issue will be distributed at the fantastic FABTECH 2017 in Chicago.

FABTECH is always an excellent show and well worth attending for those in the tube industry, but it is generally more focused on machinery and the wider world of fabricating than tube products specifically.

However, this year Messe Düsseldorf has teamed up with the show's organisers and sponsors to offer a brand new pavilion for tube producers and suppliers, which is a fantastic idea and a great boost for the industry in the US. I have often felt there was a lack of strong trade shows for the tube producing industry in the US, so this is an exciting development and I hope it is a big success.

If you would like to submit editorial for our September issue then please get it to me by 3 July. If you would like to advertise the deadline is 10 July.

Enjoy the magazine.

Rory McBride
Editor



events calendar

2017



18-23 September
EMO (Hanover, Germany)
International Exhibition
www.emo-hannover.de



19-21 September
Tube Southeast Asia (Bangkok, Thailand)
International Exhibition
www.tube-southeastasia.com



3-5 October
Tubotech (São Paulo, Brazil)
International Exhibition
www.tubotech-online.com



6-9 November
FABTECH (Chicago, USA)
International Exhibition
www.fabtechexpo.com



28-30 November
Stainless Steel World (Maastricht, Netherlands)
Conference & Exhibition
www.stainless-steel-world.net

2018



27-30 March
TOLEXPLO (Paris, France)
International Exhibition
www.tolexpo.com



16-20 April
Tube Düsseldorf (Düsseldorf, Germany)
International Exhibition
www.tube.de



FABTECH 2017

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business & market news

Marcegaglia's Ravenna plant uses automated guided vehicles to transport materials

On the way to smart factories

In the plants of Ravenna and Casalmaggiore, Italy, 'Industry 4.0' is a reality, with robot works improving the supply chain and reducing human errors.

R&D, product and cutting-edge process technology are some of the keywords driving the development of Marcegaglia. The Italian industrial group in the steel processing sector has a yearly output of 5.6 million tons (2016), and 39 manufacturing plants covering six million square metres.

Through the adoption of a unified network for company and plants, capable of enabling the re-engineering of processes in a perspective of 'Internet of Things', Marcegaglia, supported by Cisco, is on the way to smart factories, along a totally digitalised supply chain.

In the plants for the processing of flat products (Marcegaglia Ravenna) and welded steel tubes (Marcegaglia Casalmaggiore), important technological investments were brought forward, on the path of connected factories, in the creation of a fully interconnected and automated production system, improving the controlled supply chain that reduces the human error on certification and safety.

Marcegaglia Ravenna is the company's largest steel metallurgy plant, specialising in the treatment and finishing of coils, plates and pre-painted steel, as well being the centre for integrated logistics to supply each production and distribution facility of the group. Technological innovation has led to the creation of a fleet of automated guided vehicles for the

transport of materials between the processing plant and the points for final shipment.

Marcegaglia is also a supplier for carmakers and OEM manufacturers of structural parts, components and interior details and, in the plant of Casalmaggiore, specialises in machining welded pipes with diameters up to 406.4mm. With dedicated production for the automotive sector, Marcegaglia has developed an intelligent and automated crane system that handles storage of the collected bundles of tubes, directly from the production plants, moving them to the area for loading onto transport vehicles.

Marcegaglia – Italy
info@marcegaglia.com
www.marcegaglia.com

Transam Extrusions invests in Davis-Standard technology

UK tubing and profile manufacturer Transam Extrusions Ltd is continuing to invest in Davis-Standard extrusion equipment. Transam, which has experienced significant growth in the last ten years, produces both flexible and rigid plastic pipes and profiles up to 180mm wide.

The relationship between the two companies has grown over the past decade, and has included investment in new Davis-Standard extruders, screw technology and other downstream equipment to support the company's growing business.

"Davis-Standard's expertise, dedication and responsiveness to their customers goes beyond all expectations," said Russell Brazier, managing director, Transam. "Their equipment is extremely reliable, screw technology second to none and we've been delighted with the technical staff that support and help us to concentrate on our growing business in the UK."

Most recently, Transam added a new Davis-Standard EB50 EuroBlue extruder – the sixth Davis-Standard extruder, with associated downstream, to be installed by the company. The machine was ordered and delivered within five days, resulting in minimal production delays for Transam's clients. The company also purchased a custom-built

Davis-Standard water bath specifically designed for its business requirements.

Transam operates a programme that ensures a proportion of its annual profits are allocated to reinvestment into its business in the form of new equipment.

Davis-Standard, LLC designs, develops and distributes extrusion and converting technology. Its systems encompass more than ten product lines to support manufacturing applications and customers within every major industry, including agriculture, auto-

motive, construction, healthcare, energy, electronics, food and beverage packaging, and retail industries. The company has a network of independent sales agents and suppliers in nearly every country, with manufacturing and technical facilities in the USA, and subsidiaries with facilities in China, Germany and the UK.

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

Transam Extrusions Ltd – UK
www.transamltd.co.uk



Flexible and rigid pipe and profiles

TMK starts shipments of drill pipe with TMK UP EXD tool joint connections

TMK, a producer of tubular products for the oil and gas industry, has shipped the first batch of drill pipe with TMK UP EXD second-gen double-shoulder premium tool joint connections. The pipe batch was shipped to Samotlorneftepromkhim.

TMK UP EXD tool joint connections offer a number of benefits over the first-gen double-shoulder connections. In particular, the updated design of tool joints has provided for improved drilling hydraulics. TMK UP EXD tool joints

are capable of withstanding higher torque loads compared with TMK UP TDS joints (approximately 20 per cent improvement in performance).

The modified profile of the thread crest provides for improved performance versus the standard design, reducing thread galling on the faces of the pin and the coupling when assembling or disassembling drill strings. Another benefit of the TMK UP EXD connection is a reduction in assembly times.

TMK UP EXD tool joint connection was developed by TMK-Premium Service as part of TMK's import substitution programme.

The company states that in terms of performance it is in no way inferior to similar products by leading global manufacturers.

TMK – Russia
tmk@tmk-group.com
www.tmk-group.com

Final beam placed on new welding training centre

Construction on Lincoln Electric's new \$30mn Welding Technology Center project continues to progress toward a projected 2017 opening. Crews placed the final beam on 8 February, completing the structural frame of the building on the company's campus in Euclid, Ohio, USA. The next phase will focus on the building's facade, interior, electrical and plumbing work.

"Construction is progressing rapidly – structural framing just wrapped up, allowing us to move on to the next phase of construction," said John Mueller, director of facility planning and development, Lincoln Electric. "We look forward to opening the facility later this year."

Before crews hoisted and placed the beam into position, representatives from Lincoln Electric and other companies working on the project participated in a beam-signing ceremony. On hand to sign the beam were Chris Mapes, George Blankenship and Doug Lance from Lincoln Electric's senior management. Members of the Lincoln Electric facilities team and representatives from Panzica Construction Company, Structura Architects Ltd and Ironworker Local Union No 17 also added signatures.

Representatives from Lincoln Electric and other companies working on the construction participated in a beam-signing ceremony



Crews placed the final beam of Lincoln Electric's new Welding Technology Center

Multiple northeast Ohio contractors are working on the project, including Contemporary Electric Co, Fire Protection Inc, Geauga Mechanical, Harner Plumbing Inc, Mr Excavator Inc, Nova Structural Steel, Panzica Construction Company, Phoenix Cement Contracting LLC and Valentine Contractor Inc.

"We are proud to be using tradesmen from the same trades organisations we

actively help to train at a variety of sites around the country," said Jason Scales, manager, education solutions, Lincoln Electric. "General contractor Panzica Construction Company, steel fabricator Nova Structural Steel and other contractors on the site employ skilled trades workers typically trained on Lincoln Electric equipment in their skilled trade schools."

When the new Welding Technology Center opens, it will mark the centennial anniversary of the company's legacy welding school, claimed to be the longest operating in the USA. The facility reflects Lincoln Electric's 100-year commitment to welding education and innovation.

The new 130,000ft² centre will double Lincoln's welding education capacity to 180 welding booths and will include high-tech classroom and seminar spaces. It will also showcase and integrate Lincoln Electric's latest technologies and solutions into a comprehensive welding curriculum. In addition to training for new and seasoned industry welders, programming will include train-the-trainer courses and certification activities, as well as resources to support welding training for veterans.

Lincoln Electric – USA
www.lincolnelectric.com

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Our delivery program ■■■■

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- Inspection certificate
EN 10204 / 3.1. b

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- Inspection certificate 10204 / 3.1. b

Structural hollow sections

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

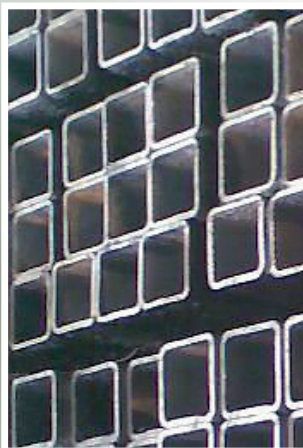
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New cooperation on steel

A strategic partnership has been signed by Oliver Jung, chief operating officer of Schaeffler AG, and Qian Gang, CEO of steel manufacturer CPS (CITIC Pacific Special Steel).

The two companies want to strengthen their business relationship both economically and technologically.

The Chinese CITIC Pacific Special Steel Group is a major Chinese manufacturer of special steel. Schaeffler is one of the largest globally active automotive and industrial suppliers of precision components and systems for engines, transmissions, chassis applications, and rolling and plain bearing solutions.

CPS has been a Schaeffler supplier for 13 years. The company primarily supplies the Chinese market, including the 13 Schaeffler production plants in China and the Asia Pacific region, but also locations in the USA and Europe.

In addition, CPS supplies more than 50 Schaeffler suppliers, with increasing annual growth rates.

Since 2012, Schaeffler has increased the quantity of special steels it purchases



CPS CEO Qian Gang and Oliver Jung, chief operating officer at Schaeffler, sign the strategic partnership agreement
Photo credit: Schaeffler

from CPS by an average of 13 per cent year after year to approximately 140,000 tons. Growth rates are also expected to be around 10 per cent during the next few years.

The Schaeffler Group is also planning a new production location in Xiangtan, China, as expansion at the existing locations has reached its limits.

Initial operation of the plant, which will produce automobile parts and precision bearings, is planned for the end of 2018.

"In view of Schaeffler's future development and global course for

growth, it is important that we not only strengthen the business relationship with our long-standing partner, but also extend it along the entire value added and supply chain in a sustainable manner," said Mr Jung.

CPS management would like to increase sales in overseas markets such as Korea, Japan, the USA, Southeast Asia and the EU.

CPS has a chain of production plants strategically located on the Yangtze River, and uses the latest manufacturing technology.

In conjunction with Schaeffler, CPS is hoping to develop innovative materials and continuously optimise its manufacturing and logistics costs for rolling bearing steels.

Improved risk control is also one of the objectives of the strategic partnership.

Schaeffler AG – Germany
www.schaeffler.com

CITIC Pacific Special Steel Group – China
www.cp-ssteel.com

Global gas and LNG conference concludes

The Gastech gas and LNG conference and exhibition welcomed more than 20,000 attendees over four days. The conference was attended by 2,500 delegates from around the world, and hosted 200 international speakers, across both commercial and technical disciplines.

The in-depth sessions and panel discussions focused on topics that are currently of importance to the industry, and explored how gas suppliers are adapting to the changing global market, and key trends influencing the sector.

The proceedings commenced with a welcome address by Yosuke Takagi, Japan's State Minister of Economy, Trade and Industry, followed by a ribbon-cutting ceremony with members of the Japan Gastech Consortium.

Christopher Hudson, president of energy, DMG Events Global Energy, commented, "It was the first time for Gastech in Japan, and it didn't disappoint. A major milestone in history was made in the world's largest LNG market of Japan, where the country's biggest energy companies came together as one consortium to collaborate for Gastech. The conference has played host to a unique alliance between Japan's most influential companies and has brought together hundreds of businesses from the up-, mid- and downstream sectors of the supply chain."

Business leaders from companies such as Shell, Chevron, ExxonMobil, Total and ConocoPhillips were among those who took to the stage to address the delegation. Specialist conference streams focused on driving diversity

in the workforce, and attracting young talent to the industry.

The Gastech exhibition spanned six halls and featured 600 companies from 50 countries, multiple networking lounges and product showcase theatres.

Returning to Europe, following three editions in Asia, Gastech 2018 is scheduled to take place in Barcelona, Spain (17-20 September 2018).

The move to Spain reflects the resurgence of gas and LNG in Europe. The event will be hosted by Enagás, Repsol, Gas Natural Fenosa, Técnicas Reunidas and Sedigas.

DMG Events Global Energy – UK
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LKAB to supply 1.3mn tonnes of MagnaDense

LKAB Minerals has sold 1.3mn tonnes of the iron ore product MagnaDense to Wasco Coatings Europe GmbH, for use in the production of high density concrete to coat the pipes for Nord Stream 2.

MagnaDense is produced from the mineral magnetite, which has been processed to match the needs of the end-user industries.

Its size distribution, high iron content and density make it suitable for use as loose ballast or as an aggregate when producing high density concrete.

“We are pleased that Wasco have chosen MagnaDense from LKAB Minerals; it is a proof of our high

and consistent product quality,” said Leif Boström, CEO of LKAB Minerals. “MagnaDense has been used in many large pipe coating projects previously, as an example the Tuxpan pipeline in Mexico and the first Nord Stream pipeline.”

MagnaDense is used in the production of high density concrete that will be used for the concrete weight coating of the pipes. One pipe section weighs 24 tonnes, of which half is derived from the heavy concrete that will help to keep the pipe stable on the seabed.

The deliveries of MagnaDense commenced in May and will continue until early 2019. The product is shipped from LKAB’s port in Narvik, Norway,



Leif Boström,
CEO of
LKAB
Minerals

to Wasco’s coating plants in Kotka, Finland, and Mukran, Germany.

The proximity to the source of iron ore and the efficient logistical solutions support the aim of minimising the environmental impact of the project.

LKAB Minerals has offices, production units and deposits in 12 countries in Europe, Asia and the USA. It is part of the Swedish state-owned company LKAB, a major producer of highly upgraded iron ore products.

LKAB Minerals AB – Sweden
www.lkabminerals.com



LKAB Minerals MagnaDense iron ore aggregate

WIN Eurasia

Two events for the manufacturing industry – WIN Eurasia Metalworking and WIN Eurasia Automation – organised by Hannover Fairs Turkey Fuarçılık, are to be combined in 2018 under the name WIN Eurasia – World of Industry, from 15 to 18 March.

WIN Eurasia is able to bring together six fairs, 3,000 exhibitors and 150,000 visitors under one roof thanks to the increasing capacity of TUYAP fairground.

While visitors will have the chance to see more product groups in one stop, exhibitors will get the opportunity to reach more national and international trade visitors from several sectors. In addition, since the exhibitors of the shows are also potential customers for other WIN shows, WIN Eurasia 2018 will

generate more business contacts by gathering all WIN fairs at one location.

The exhibitions under the scope of WIN Eurasia – World of Industry are:

- Metalworking Eurasia – International Trade Fair for Sheet Metal Processing, Metal Cutting and Metal Forming Technologies
- Surface Technology Eurasia – International Surface Treatment Technologies Fair
- Welding Eurasia – International Joining, Welding and Cutting Technologies Fair
- IAMD Eurasia – Integrated Automation, Motion and Drives Fair
- Electrotech Eurasia – International Energy, Electric and Electronic Exhibition
- CeMAT Eurasia – International

Materials Handling, Supply Chain Management and Intralogistics Fair

Alexander Kühnel, general manager of Hannover Fairs Turkey, commented, “We have always attached great significance to the requests of the industry. Both our exhibitors and our visitors made heavy request for the WIN Eurasia Exhibitions, which are organised in two separate phases, to be merged. As a result of our evaluations, we agreed on the idea that a single event covering seven industries that are closely related would create significant synergy. We are happy to be able to realise this project in 2018.”

Hannover Fairs Turkey Fuarçılık AŞ
– Turkey
info@hf-turkey.com
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NECE started year with contract success

Integrity monitoring solutions specialist North East Corrosion Engineers (NECE), part of the ICR group, celebrated starting 2017 with its first contract in Kazakhstan.

The company, based in Aberdeenshire, UK, secured a contract with Karachaganak Petroleum Operating BV (KPO) for the provision of corrosion coupon removal services for pipework on onshore oil and gas production facilities in Kazakhstan. The contract will run for three years, with an option for two further one-year extensions. The value of the contract is estimated to be in excess of £500,000.

Corrosion coupons are used for measuring corrosion rates through a weight loss calculation. Technicians from NECE will break into live process systems without affecting production, removing the original coupons and replacing them with new ones. All activity will be undertaken by NECE under normal site operating conditions. The contract will require the replacement of approximately 400 coupons.

NECE managing director Alan Taylor said, "Winning our first contract in Kazakhstan is a major step for us in developing more business in this region. The contract with KPO kick-starts what we believe will be an optimistic 2017 for our business, as we expect to secure more work both in the North Sea and globally throughout the year."

NECE will increase its international presence with support from ICR.

The company is also planning to enhance its research and development programme by exploring new technologies and advancing existing products.

The contract with KPO is the second recently secured by an ICR company in Kazakhstan. Chemical Injection Utilities (CIU), also based in Aberdeenshire, successfully fabricated and commissioned nine engineered chemical injection systems for a major operator in Kazakhstan during 2016. All systems supplied were fully automated, included chemical tanks, and were designed to operate in the harsh climate conditions within the region.

ICR chief executive officer Bill Bayliss said, "With the improvements and changes made within the ICR group of companies, both managerially and operationally, we are starting to see the dividends of all our hard work. We are motivated that the ICR business will continue to grow at pace in the coming months and service many new clients both internationally and in the UK."

NECE's asset integrity monitoring solutions ensure productivity, reliability and safety. The company can tailor an integrity monitoring programme to suit customer needs, helping reduce risks and meet all relevant regulations. It can provide a comprehensive package to exploit synergies between different monitoring activities offshore and to maximise the amount of data gathered in one site visit.



Alan Taylor, NECE's managing director

The complete package includes corrosion monitoring, oilfield microbiology, thermography, optical gas detection, dissolved oxygen monitoring, chemical performance evaluation, sand monitoring, dip cell surveys, data management, consultancy and equipment rentals.

NECE – UK
sales@neceltd.com
www.neceltd.com



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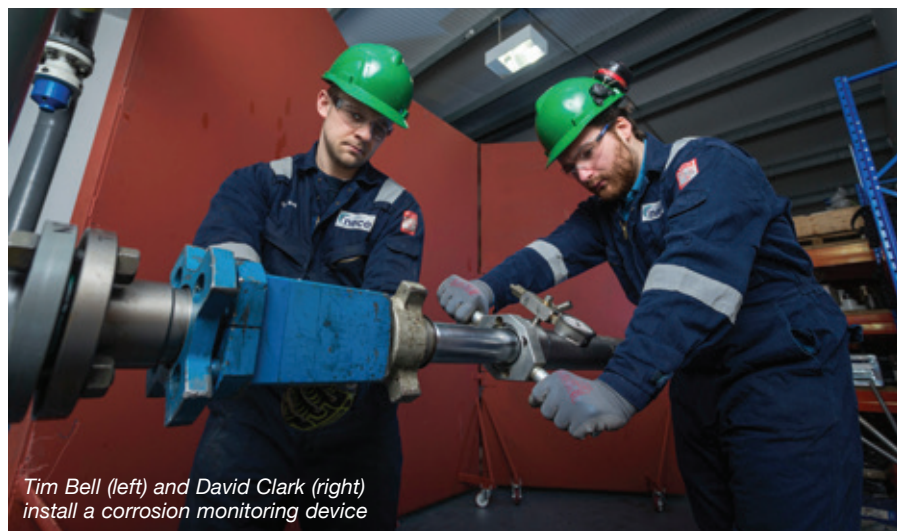


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Tim Bell (left) and David Clark (right) install a corrosion monitoring device

Bureau Veritas reaffirms commitment to future of oil and gas industry with scholarship support

Bureau Veritas, a provider of testing, inspection and certification (TIC) services, has confirmed its commitment to the North Sea oil and gas sector with the support of a scholarship programme at Robert Gordon University (RGU) in Aberdeen, UK.

Despite the challenging trading environment, which has seen others unable to continue their sponsorship of scholarship students, Bureau Veritas has supported the programme for the past five years and has reaffirmed its commitment to the industry by continuing this year. The scholarship is an opportunity for mechanical or electrical engineering students in their

second or third year at RGU to gain practical industry experience.

Students are given a three-month work placement over the summer, during which time they will be working on real projects across different parts of the business.

Paul Shrieve, Bureau Veritas regional CEO North Sea offshore operations, said, "While the industry as a whole is experiencing challenges, it has always been important to Bureau Veritas to ensure that we continue to nurture talent and bring the right skills in to the sector. Typically, our students' first placement sees them working in a business support

function, such as contracts, finance or business development, so they can gain an understanding of engineering in a business context. After this, the students are then part of one of Bureau Veritas's busy engineering teams, where they can put their knowledge and studies into practice on real projects."

Charlie Stewart is one student to have turned the scholarship into a long-term career opportunity.

After impressing the Bureau Veritas team during his scholarship placements, Mr Stewart was last year offered a permanent role as a graduate design verification engineer.



Charlie Stewart, with operations manager Jamie Thomson, and Artjoms Diverts, verification engineer, who completed the scholarship in 2014

"I found the Bureau Veritas (RGU) scholarship to be a very rewarding experience," commented Mr Stewart. "It has given me a direct pathway to full-time employment and the ability to put my education into practice with the benefit of a paid summer placement.

"As a result of RGU's course structure it also enabled me to reduce the length of my course, as placements can be counted as modules. I would strongly recommend the scheme to all. It gives you an early introduction to the industry, great work experience and the prospect of securing a full-time role."

Bureau Veritas – UK
www.bureauveritas.com

Sandvik Materials Technology wins large order for Leviathan gas field

Sandvik Materials Technology, a developer and producer of advanced stainless steels and other high-performance materials with headquarters in Sweden and offices around the globe, has secured a contract to be the sole provider of stainless steel umbilical tubes for the Leviathan gas

field in the Mediterranean Sea, just off the coast of Israel.

The value is around 400mn SEK, with deliveries scheduled for 2017.

"I am pleased that our strong position and customer offering have resulted in

us being selected as the supplier for this large and challenging project," said Petra Einarsson, president of the Sandvik Materials Technology business area.

Sandvik AB – Sweden
info@sandvik.com
www.sandvik.com

Detroit Metro Access Pipeline enters service

Wolverine Pipe Line Company, USA, has announced that the new Detroit Metro Access Pipeline (DMAP) is in service; the first commercial volume shipped on 6 March. The approximately 34-miles of 16"-diameter pipeline, which connects to an existing Wolverine line, enables the pipeline company to deliver refined petroleum products from the Chicago area to consumers in Metropolitan Detroit.

Construction of the DMAP was completed in January and final pre-operational testing was conducted in February. The pipeline traverses from Schneider Road in Washtenaw County's Freedom Township to its Detroit Metro Station in Romulus, where it connects to an existing Wolverine line that continues to Woodhaven in Southwestern Metropolitan Detroit.

With the new DMAP, Wolverine now has nearly 700 miles of pipeline in active service and can transport up to 90,000 barrels per day of gasoline and diesel fuel products from the Chicago area to Metropolitan Detroit. The pipeline was designed to meet or exceed all applicable federal and state regulatory requirements.

"There is a demand for additional gasoline and diesel fuel in the Detroit metropolitan area," said Wolverine president Saul Flota. "The Detroit Metro Access Pipeline connects to our existing pipeline so we can bring gasoline products into southeast Michigan from refineries in the Chicago market."

As well as creating four to six new permanent jobs at Wolverine, the

new pipeline generated 250 to 300 construction jobs. As part of the agreement, general contractor Minnesota Ltd built the pipeline with union labour, with approximately 45 per cent of the workers sourced from local halls. Other pipeline work was done by specialised labour.

Last year, Wolverine was recognised for safety and environmental performance by the American Petroleum Institute (API).

API awarded its Distinguished Safety and Environmental Award to the company, its highest safety and environmental performance award for pipeline operators.

Wolverine Pipe Line Co – USA
www.wolverinepipeline.com

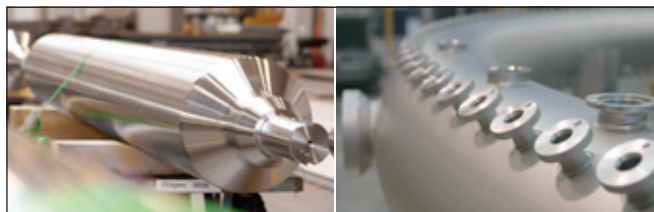
Support for project to improve water and sewage systems

The governments of Canada and Quebec are safeguarding public health and helping protect the province's waterways by investing in projects to ensure that water and wastewater systems are up to date, efficient and meet communities' increasing capacity needs. These investments will also help create jobs and grow the economy.

More than \$1.35mn will be invested under the Clean Water and Wastewater Fund (CWWF) for the renewal of water pipes in Saint-Adolphe-d'Howard. The financial support will enable the municipality to renew its infrastructure, ensuring the production and distribution of high quality drinking water for residents.

The Government of Canada is investing more than \$815,000 in the project and the Government of Quebec is providing more than \$535,000. The municipality will provide the remainder of the funding. This project is in addition to 12 already announced for the Laurentians region under the CWWF and the New Building Canada Fund-Quebec, Small Communities Fund (NBCF-SCF).

Infrastructure Canada
infc.info.infccanada.ca
www.infrastructure.gc.ca



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www.butting.com



Trelleborg inaugurates new UK manufacturing facility

Trelleborg's applied technologies operation has inaugurated its new purpose-built facility in Retford, UK. The facility will be a centre of excellence for the company's diversified polyurethane component manufacturing, bringing together experience, innovation and technology under one roof.

Trelleborg Group CFO Ulf Berghult and Councillor Jim Anderson of Bassetlaw District Council took part in a ribbon-cutting ceremony to officially open the facility.

Cllr Anderson commented, "The council's regeneration and investment team have worked closely with Trelleborg prior to and during the planning stages to ensure that this centre of excellence is based in Bassetlaw and, as industry leaders in a number of different fields, including polyurethane manufacturing, we wish Trelleborg continued success."

Mr Berghult said, "By combining our local expertise from several Trelleborg facilities in the area into one, we will reduce our footprint and environmental impact on the local area. Our investment into this facility demonstrates our long-standing commitment to accelerating performance for our customers both locally and globally."

The facility in Retford consolidates four sites, one in Retford, two in Coventry and one in Knaresborough, into a single facility. Constructed using lean manufacturing principles and with a focus on environmental efficiency, the 7,225m² facility will manufacture the current product portfolio of Trelleborg's applied technologies operation.

Trelleborg AB – Sweden
appliedtechnologies@trelleborg.com
www.trelleborg.com



A ribbon-cutting ceremony officially opened the new facility

McElroy to grow HDPE equipment business

Pipe fusion machine manufacturer McElroy and irrigation company Netafim have joined forces to meet the demand for HDPE pipeline solutions serving the irrigation industry and the growing opportunities in potable water and natural gas.

"There are many similarities in the history of our companies – the team-based reward systems and the passion we each share to do our part to make the world a better place," said McElroy president Chip McElroy.

McElroy was the featured equipment manufacturer at Netafim's open house recently, which debuted the expansion of Netafim's HDPE fusion equipment business.

Netafim also sent representatives to McElroy's headquarters in Tulsa, Oklahoma, USA, to take fusion operator courses at McElroy University, which also offers training in troubleshooting, maintenance and inspection. Marwan Ali, owner of Northern Arc, took fusion training for medium- and large-diameter

pipe in preparation for several jobs in the water industry and what he expects will be many more jobs in Israel and South Africa. "I've been around different countries, but what we saw here made a big impression on us," Mr Ali said. "It's a good machine and the training is very professional." He also drew attention to the machines' productivity and safety features.

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

Integrated project for subsea equipment

TechnipFMC has been awarded a contract by Shell Offshore Inc for the delivery, integration and installation of the subsea production system (SPS) and subsea riser, jumper and flowline (SURF) equipment for phase one of the Kaikias deepwater project in the Gulf of Mexico. This new contract

builds on an established relationship between Shell and TechnipFMC. Under the terms of the contract TechnipFMC will manufacture, install and integrate proprietary SPS and SURF equipment designed to improve project economics by optimising field production and minimising lead times. This includes

the first application of TechnipFMC's compact pipeline end manifold and horizontal connection system technologies with flexible jumpers in the deepwater Gulf of Mexico.

TechnipFMC plc – UK
www.technipfmc.com

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North Sea contract for FES International



FES International, a producer of fluid transfer solutions, has been awarded a major contract from National Oilwell Varco (NOV) to supply equipment to be used in the Maersk Oil UK-operated Culzean field of the North Sea.

The project includes the design, manufacture and supply of automatic diverless bend stiffener connectors (DBSC). The Culzean field, which is one of the largest recent gas discoveries in the North Sea, is a high-pressure, high-temperature gas field located around 145 miles east of Aberdeen, UK, at a water depth of 90m.

Ian Latimer, technical director at FES International, said, "This project was particularly challenging in terms of delivery times and cost parameters; however, our well-established

relationships within our supply chain and our streamlined internal processes mean we have been able to deliver on time and on budget for NOV.

"From design stage through to completion, we support our customers throughout and maintain a flexible approach at all times. With NOV and Maersk Oil we have a long-standing working relationship based on mutual trust, where both companies have faith in our ability to supply equipment of the highest quality, and FES has faith in NOV and Maersk Oil to work proactively with us to ensure we have the information and feedback we needed to meet the brief."

FES International – UK
fes@fesltd.co.uk
www.fesinternational.com

NEB amends safety advisory and issues draft order on pipeline materials

Canada's National Energy Board (NEB) has expanded the scope of a previous Safety Advisory and draft Order regarding the quality assurance of pipeline materials.

In February 2016, the NEB issued two Safety Advisories and an Order that required NEB-regulated companies to identify and report on purchased and installed pipeline components that contain material properties that do not meet standard associations' requirements.

The NEB has become aware of additional quality issues associated with pipeline fittings. In order to continue to ensure the safety of NEB-regulated pipelines and facilities, the NEB has issued an amended Safety Advisory and Order.

The amended Safety Advisory will expand the scope of the previous advisory by naming additional manufacturers whose components did not meet requirements. The draft Order will require NEB-regulated companies

to identify components fitting this description, confirm they are safe, and take appropriate mitigation measures.

The NEB is concerned about these manufacturing issues but stresses that there is no immediate risk to the public or the environment. No incidents have been reported on NEB-regulated in-service pipelines that relate to the use of these materials.

The NEB's Onshore Pipeline Regulations (OPR) section 23 requires regulated companies to conduct pressure testing on all pipe and fittings before they can be connected to a pipeline system.

In all cases, fittings are pressure tested to at least 25 per cent above maximum operating pressure because they are over-designed for their intended use.

The NEB expects regulated companies to demonstrate a proactive commitment to continual improvement in safety, security and environment protection,

and to promote a positive safety culture as part of their management systems.

To support these expectations, the draft Order will require companies regulated by the NEB to verify components having material properties not meeting required specifications; provide a timeline to conduct engineering assessments that demonstrate the safety of identified pipeline components installed in operating pipelines having material properties not meeting the required specifications; provide a timeline to revise the company's quality assurance programme, as required under section 15 of the NEB OPR, which is aimed at preventing the installation of pipeline components with material properties not meeting the required specifications; and the company's accountable officer must file a written confirmation certifying that the engineering assessments have been completed and the quality assurance programme has been revised.

National Energy Board – Canada
www.neb-one.gc.ca

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Jobs secured as Liberty House takes control of Tata Speciality Steels business

International industrials and metals group Liberty House announced in May that it would be creating around 300 new steel jobs and making multi-million pound investments to secure the future of five sites across the UK.

The news came as Liberty formally completed the £100mn deal to acquire the Speciality Steels division of Tata Steel UK, protecting the jobs of 1,700 existing staff at three major sites at Rotherham, Stocksbridge and Brinsworth in South Yorkshire, smaller sites in Bolton, Lancashire and Wednesbury in the West Midlands, and two distribution centres in China. It also announced expansion plans expected to generate an additional 300 production jobs in the business.

Speciality Steels produces a range of high-value steels used in the manufacture of vehicles, aircraft, industrial machinery and equipment for the oil and gas industry. Liberty said it

Precision components are made at Liberty's advanced machining centre



The company claims to now have the largest arc furnace capacity in the UK

would invest up to £20mn in new plant and equipment in the first year alone to boost competitiveness and secure international market leadership for the business, which is being re-launched as Liberty Speciality Steels. The business will increase output substantially at the electric arc furnaces, casting shop and bar mill in Rotherham, with larger plans across the wider Speciality business in the years ahead.

Production from the arc furnaces is expected to rise to over one million tonnes per annum, and there are plans for the bar mill to roll over 400,000 tonnes per year. In addition, the business will grow its position in the aerospace markets, utilising recent

capital investments at Stocksbridge and investing in additional capacity and new technology.

The acquisition marks a major step forward for Liberty's Greensteel strategy as it gives the group the largest arc furnace capacity in the UK, a key component in its plan to increase low-carbon steel production based on recycling metal in furnaces powered by renewable energy. As part of the Greensteel strategy, sister company SIMEC is actively considering investment in bio-diesel power generation at Speciality Steel sites.

Liberty House Group – UK
www.libertyhousegroup.com

MRC Global awarded expanded PVF contract

MRC Global Inc has announced that its subsidiary, MRC Global (US) Inc, has been awarded an agreement to be the preferred provider of pipe, valve and fitting (PVF) products and services to PBF Energy Company LLC. The five-year agreement includes all project and maintenance, repair and operations needs.

"We have a long history with PBF and I'm grateful that they have chosen

to continue to grow our relationship together," said Andrew R Lane, MRC Global president and CEO. "Our quality programme and record of reliable service to PBF has given us the opportunity to work alongside them as the industry recovers from the current downturn."

As part of the agreement MRC Global will now service the Torrance, California, and Chalmette, Louisiana, refineries

that were recently acquired by PBF, in addition to its refineries in Delaware, New Jersey and Ohio.

Headquartered in Houston, Texas, MRC distributes PVF and related products and services across the upstream, midstream and downstream sectors.

MRC Global Inc – USA
www.mrcglobal.com

Fibreglass pipes market worth US\$4.11bn by 2021

'Fiberglass Pipes Market by Type (GRP, GRE), Fiber (E-Glass, T-glass), Application (Oil & Gas, Chemicals, Sewage, Irrigation), and Region – Global Forecast to 2021', published by MarketsandMarkets™, reports that the market was valued at US\$3.04bn in 2015, and is projected to reach US\$4.11bn by 2021, at a CAGR of 5.22 per cent from 2016 to 2021.

The fibreglass pipes market is driven by the increased production and exploration of oil and gas and the increasing demand for fibreglass pipes in sewage and water management applications.

In addition, the high demand for fibreglass pipes in emerging economies is an opportunity.

GRE pipes are a leading segment of fibreglass pipes used for applications

such as chemicals, oil and gas, and sewage. GRE pipes constituted the largest market share in the global fibreglass pipes market in 2015.

Various properties and advantages associated with GRE pipes in applications including chemicals and oil and gas are driving its market.

Being corrosion resistant, light in weight and durable, fibreglass pipes are commonly used in water and sewage management.

Fibreglass pipes offer less frictional losses as the C-value for the design does not deteriorate over time, so they provide good hydraulic efficiency and are suitable for ground and underground sewage applications.

In sewage pipe applications, fibreglass pipes are utilised in water treatment

plants, metallurgy sewage facilities, wastewater treatment plants and industrial effluent treatment plants. Improving the sanitary conditions and industrial sewage management has been the major thrust of governments and private bodies in many Asia-Pacific countries.

Asia-Pacific accounts for the largest share of the fibreglass pipes market globally, due to the high demand for these pipes as they offer low maintenance and long product span in comparison to conventional materials such as concrete and metallic pipes.

The increasing demand is observed in applications such as sewage and chemicals.

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Online building information modelling design and CAD library goes live

Thermoplastic fluid flow technologies company Asahi/America, Inc now offers building information modelling (BIM) design files through its website. Engineers, estimators and designers can download BIM and CAD files through the company's online catalogue at cad.asahi-america.com

The new library contains approximately 1,000 BIM files for Asahi/America's most popular manual valves, including the Type-57 butterfly and Type-21 ball valves. BIM files for the company's Air-Pro® compressed air piping system are also available. To access files through the new interface, the user simply

chooses the desired part and file type, and then downloads, prints or emails the files. 32 formats are supported.

BIM software platforms include Revit® MEP, AutoCAD® MEP and CADmep™. Supported CAD software platforms include AutoCAD®, Pro/ENGINEER®, CATIA®, SolidWorks®, and Solid Edge®.

Asahi/America specialises in providing solutions for fluid handling systems, individualised to meet virtually any customer need. The company manufactures corrosion-resistant thermoplastic fluid handling products

including valves, actuators, pipe and fittings. It maintains an extensive custom fabrication department, and provides on-site consultation, supervision and training where required.

Its products are used in a variety of applications and industries including chemical processing, water and wastewater treatment, pharmaceutical and semiconductor manufacturing, aquariums, mining, landfill, and oil and gas.

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

Certification for ERW and galvanised pipes

International Industries Limited (IIL), a Pakistan-based manufacturer and exporter of pipes and tubes, has been qualified by Underwriters Laboratories (UL) for ERW and galvanised (ASTM 795) pipe in sizes ranges from ½" to 12". IIL states that this makes it the first and only UL-certified pipe manufacturing company in Pakistan.

UL's standards and certification are recognised as indicators of product safety and reliability. In an industry where quality standards of the products are of critical importance to the customer, the acquisition of this

certification provides IIL with a platform to enhance the appeal of its ERW and galvanised pipes in the domestic and international market.

The company has ambitious plans for the future and is committed to grow sustainably, and says that this certification confirms its commitment to quality.

IIL produces steel pipes and tubes, stainless steel tubes and plastic pipes. The company has a pipe manufacturing capacity of 500,000 tons. It is also the majority shareholder of International

Steels Limited (ISL), a manufacturer of galvanised, cold rolled and colour coated steel with an annual capacity of 800,000 tons.

Though based in Pakistan, IIL has a growing global footprint, with a presence in Australia, Canada, the UK and Sri Lanka and an export network that spans five continents. The company is ISO 9001, 14001, OHSAS 18001, CE, API 5L, API 15LE and PSQCA certified.

International Industries Ltd – Pakistan
inquiries@iil.com.pk
www.iil.com.pk

Steel tubing supplier launches new website

The Joint Perforating Company (JPC), a supplier of perforated stainless steel tubing, has launched its new website at www.jpc-ltd.co.uk. The site has a clean, uncluttered design, improved functionality and enhanced rich content.

The redesigned website offers quick and easy access to essential information and features, to offers a more comprehensive understanding of the company's perforating process and its enhanced product. The website also provides

in-depth reviews of JPC's products and a clear understanding of the level of service customers can expect. Traditionally, perforated tube is manufactured through a lengthy operation starting with flat strip, going through four stages before reaching the end result. JPC's process perforates pre-formed tube in one operation, saving time and cost, and providing an end result that visually enhances the product.

"We are excited about our new website launch and the robust information that it now provides for our many

customers and partners as well as the global media to help them to better understand JPC's innovative perforating process and products," said commercial manager Ian Griffiths.

The website will be updated with news of product launches, business activity, corporate milestones and events.

The Joint Perforating Company Ltd – UK
info@jpc-ltd.co.uk
www.jpc-ltd.co.uk

Wasser Berlin International 2017

After four days of events, Wasser Berlin International 2017 came to an end. At its conclusion, the trade fair and congress reported satisfied trade visitors, significant numbers of international exhibitors and visitors, and high participation in the supporting programme of events.

450 exhibitors from 26 countries presented their latest water infrastructure and wastewater technology, products and services on the Berlin Exhibition Grounds, and 19,273 visitors representing business, politics and science took part in the event.

“International participation in this year’s Wasser Berlin International was very high,” said Matthias Steckmann, director at Messe Berlin GmbH. “The fact that 25 per cent of exhibitors were from abroad and delegations from 20 countries took part showed that the capital is the ideal trade fair venue for global water industry companies. The best example of this was the Iran Conference, which took place for the first time. It represented a successful start to Iran’s future cooperation with Germany, Europe and the world.”

The Iran Conference set the tone for cross-border cooperation. According to Iran’s Deputy Energy Minister, Rahim Meidani, because of the growing challenges of climate change his country has begun a number of water industry projects worth billions.

Foreign exhibitors and trade visitors were both represented in large numbers. One in four visitors came from abroad – the majority from Europe, followed by Southeast Asia, the Middle East, Africa and the Americas. According to a representative trade visitor survey, more than 90 per cent of those polled gave a ‘good’ to ‘very good’ assessment of Wasser Berlin International. 84.3 per cent of trade visitors were satisfied with their overall results at the fair, and more than ten per cent said they had concluded business deals. Wasser Berlin International 2019 will take place from 26 to 29 March 2019.

Messe Berlin GmbH – Germany
www.wasser-berlin.com

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Acrobat 180 in the field

Hydraulic butt fusion machine for underground/construction market

The McElroy Acrobat hydraulic butt fusion machine, originally designed for the plumbing and mechanical industry, is now available for the underground/construction market.

The Acrobat 180 is suitable for those interested in a reliable, easy-to-use machine. It butt fuses 63 to 180mm (2" IPS to 6" DIPS) HDPE pipe and fittings with a variety of pressure ratings. The lightweight machine can be carried from joint to joint but still maintains rugged reliability.

It is also a suitable tool for in-ditch work and tie-in fusions, and provides an alternative to electrofusion, which requires the purchase of additional fittings. It functions in tight workspaces by removing the base and converting the carriage from four to three jaws. The top jaws can also be removed for easier manipulation around pipe and fittings.

Jason Lawrence, director of product development, commented that although the Acrobat 180 is a sophisticated machine, it is easy to operate: "While

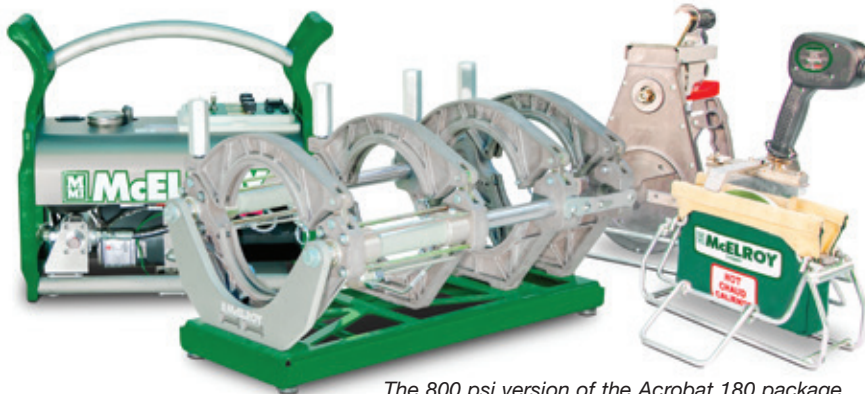
the capabilities of the machine are impressive, it is not intimidating. It was engineered from the user's perspective and what they need to meet the demands of their job."

Two hydraulic power unit (HPU) options are available to provide fusion pressures up to 800 psi or 1,500 psi. Both HPUs allow the operator to easily pre-set the carriage, facer and heater pressures, eliminating repetitive adjustments between operations.

Both the heater and facer plug into the HPU, allowing the entire machine to draw power from only one receptacle.

The Acrobat 180 is also compatible with the DataLogger® for joint reporting and quality assurance. McElroy machines have a five-year warranty, and are built with hard-anodised aluminium surfaces that prevent corrosion.

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



The 800 psi version of the Acrobat 180 package

Secure, easy selection and more uptime with one-type-fits-all valve actuator

There are several factors to consider when choosing an actuator. Manufacturer Alfa Laval states that easy selection is crucial in hygienic industries. To meet these demands, the company's Unique DV-ST UltraPure actuator fits its complete range of standard diaphragm valves, simplifying inventory management and making the specification process quick, easy and secure. Regardless of the process or application, the same actuator can be stocked as a spare part for all Alfa Laval Unique DV-ST UltraPure diaphragm valves, whether cast, forged or block, and can even be used for autoclave duties.

The actuator withstands the high temperatures required for sterilisation, and operates at working pressures up to 10 bar (6 bar TFM/EPDM). Unlike some actuators on the market, it is able to close the valve at the same working pressures at 0% pressure drop.

As long as the working pressure remains below 10 bar (6 bar TFM/EPDM), the actuator continues to deliver reliable, trouble-free performance.

There is no need to change the actuator size or configuration, even if changes in the process line occur.

Alfa Laval sensing and control units can easily be integrated with the Unique DV-ST UltraPure Actuator, which enables customers to take advantage of the company's valve automation solutions. Alfa Laval sensing and control units feature tight tolerance bands to provide process safety, and no-touch, set-and-forget sensors with simple set-up. This minimises human error and promotes safe and efficient production, ensuring more uptime.

Alfa Laval – Sweden
alfa.laval@alfalaval.com
www.alfalaval.com



Alfa Laval's Unique DV-ST UltraPure actuator

AISI 316L stainless steel 'V' profile press fitting

At the ISH 2017 Trade Fair in Frankfurt, Germany, Eurotubi officially presented its new AISI 316L stainless steel press fittings in a 'V' profile version.

The company used its experience with the 'M' and 'V' carbon profiles to design the new stainless steel V profile, and tested thousands of samples. Certifications obtained include the DVGW certificate that confirms the validity of the new V profile system for potable water and other applications. The new 316L stainless steel profile will be available in a range of diameters from 15 to 54mm. For larger diameters, as with the carbon V profile, users should refer to the M profile fittings.

The stainless steel V profile was created to make the line of steel press fittings produced and distributed by Eurotubi as complete as possible. The primary

goal was to allow the company's distributors to enter markets where installers are more inclined to use V profile press fittings. Even though there are no differences in performance, installers generally prefer either the M or the V profile. It is often a question of distribution, as there are areas with more distributors for one profile or the other.

Eurotubi plans to start selling the new line of V profile press fittings in 316L stainless steel by the end of 2017.

The company also used the ISH fair to present its new patent application: Mixpress, a system for creating a joint between normal press fittings and thicker pipes.

The strength of this new product will be in the structural simplicity of the system.

The company states that Mixpress will be useful in all plumbing installations where there are already segments of the circuit created using thick pipes. A new circuit can be created using the same piping already used, without having to use a special and costly fitting system.

The system uses the same Eurotubi press fittings already on the market, and even the same O-rings, but with new pressing terminals. Without needing to deform the pipe, the same normal pressing equipment for steel press fittings can be used. The new pressing terminals are claimed to be lighter and smaller than those offered by the competition.

Eurotubi Europa Srl – Italy
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www.eurotubieuropa.it

15 years of tube coupling with no known leaks

At the end of 2016, VossFormSQR, the tube coupling system from Voss Fluid, celebrated its 15th market anniversary without a single known system leak.

The system forms a 24° contour on a commercially available hydraulic tube to ensure a high quality connection.

High pressure peaks or vibrations are a particular challenge for classical hydraulic connections with cutting rings.

The VossFormSQR tube coupling system has proven itself over 15 years in



The VossForm 100 forming machine easily forms the required tube contour

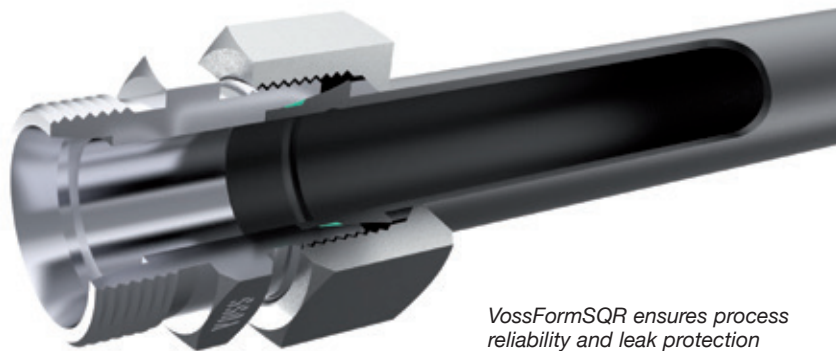
mobile work machines, shipbuilding and in the mining industry. Its installation-friendly design and specialised structure ensure a secure and permanently leak-proof coupling, even under extreme conditions.

VossFormSQR consists of three components: a standard nut with moulded seal made of FKM/FPM; a standard connector; and a cold-formed 24° tube contour at the end of the hydraulic tube that is to be connected.

Since the system has been on the market, Voss Fluid has sold several million SQR-function nuts and has had no complaints due to functional failure.

The fitter fabricates the tube contour with the VossForm 100 forming machine. This is supplemented by a soft seal and the special SQR-function nuts with integrated clamping ring that radially clamps the tube on the circumference, relieving the transition between the formed contour and the tube. This increases the tolerance with respect to dynamic loads.

With the metallic seal and the additional soft seal, VossFormSQR provides double protection against leaks, making the system attractive for a wide range



VossFormSQR ensures process reliability and leak protection

of applications. “In recent years, we have seen that tube coupling systems are used more and more frequently in stationary applications, as well,” said Marco Schawohl, marketing director at Voss Fluid. “There is clearly a trend toward this solution.”

A majority of all leaks and seal failures in hydraulic couplings occur due to faulty handling. With VossFormSQR, users significantly reduce this risk.

The integrated stop plate is a special feature of VossForm 100. For tube forming, the fitter pushes the tube to be formed up to the stop in the machine.

Pushing the start button triggers the process, and this rules out errors. The system also supports the fitter during assembly of the SQR-function nut.

When the nut is tightened, a noticeable increase in force indicates the end of the assembly process.

In 2015, Voss Fluid introduced the VossForm 100 Compact, a space-saving tabletop device for small runs.

Voss Fluid GmbH – Germany
www.voss-fluid.de

Vacuum priming air valves

Val-Matic's Vacuum Priming Valve is used in conjunction with a central vacuum priming system to prime a centrifugal pump, and is typically mounted on the suction piping or pump volute.

The purpose of the valve is to automatically allow air to be drawn out of the pumping system until the pump

fills with water. When the water reaches the priming valve, the float rises and closes the priming valve to prevent fluid from flowing to the vacuum priming system. The priming valve will continue to release air while the pump is running.

The Vacuum Priming Valve features stainless steel trim and float to provide years of trouble-free operation. The

valve can also be equipped with an optional water level control switch to signal when the water lever has reached the pump or provide a warning that the pump has lost its prime (wet well is empty or suction line is blocked).

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

Electromagnetic flow meter application for Hinkley Point

Bell Flow Systems is a distributor of flow meters, instrumentation and fluid transfer equipment for domestic, commercial and industrial applications worldwide.

The company was asked to provide a meter suitable for accurately measuring and recording the flow of seawater being pumped across a beach at Hinkley Point in Somerset – the site for the UK's first new nuclear power station for a generation.

As the ten-year construction scheme begins there are many environmental factors to be considered at each phase.

One of these is to ensure that enough water is pumped from the sea to areas where it is required to help preserve marine life following the temporary construction of a new jetty and sea wall, built to allow materials for the construction of the power station to be delivered by sea.

To provide evidence of sufficient pumped water supply, Bell Flow Systems was required to provide a suitable flow sensor to meet the demands of the application.

The flow meter had to be compatible with seawater and designed to cope with the challenging weather conditions found on the beach side installation location. It also had to be internally powered and capable of accurately logging the volume of water pumped. The ModMag M5000 from Badger Meter was selected.

The M5000 electromagnetic flow meter is battery powered, giving up to 20 years' battery life. The robust amplifier has IP67 or optional IP68 ingress protection, making it suitable for harsh operating environments. The meter measures with an accuracy better than ± 0.4 per cent of reading.

The M5000 also benefits from an integral data logger, able to record and store the volume measured at programmable time intervals, which can be downloaded to PC software via the IrDA or RS232 ModBus communication ports.

Electromagnetic measuring technology is maintenance-free and operates without mechanical moving parts, prolonging the life of the meter and allowing it to be used with fluids that may contain solids, including sand and organic solids.

The available choices of meter liner and electrode materials make it an option for various corrosive and aggressive fluids, including seawater.

Bell Flow Systems was established in 1997 with an emphasis on the provision of flow measurement solutions to industry.

Since that time, Bell Flow Systems and sister company Cortex Displays Ltd have adapted and grown to meet new demands in a changing marketplace.

The company now builds systems, manufactures display instrumentation and supplies a range of products to the renewables and environmental markets.

Bell Flow Systems Ltd – UK
sales@bellflowsystems.co.uk
www.bellflowsystems.co.uk



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:

Carbon Steel, High Yield Carbon Steel, Low Temperature Carbon Steel, Alloy Steel, Stainless Steel, Duplex and Super Duplex Stainless Steel, 6MO and the complete range of Nickel Alloys.

Phoenix Piping
 Piping packages in all materials
 Tel: +44 1204 849967 - Fax: +44 1204 849972
 Email: sales@phoenixpiping.co.uk

www.phoenixpiping.co.uk



Badger Meter ModMag M5000 battery-powered flow meter

'Armoured' heat exchangers

Traditional SiC heat exchangers offer the advantage of the high heat exchange coefficient typical of silicon carbide.

The weak point of the system is the sealing between the separation plates and the tubes.

At 100°C, PTFE loses tensile stress, hindering the proper sealing between plates and tubes. Leaks from traditional heat exchangers are due to fluid leakage near the plates.

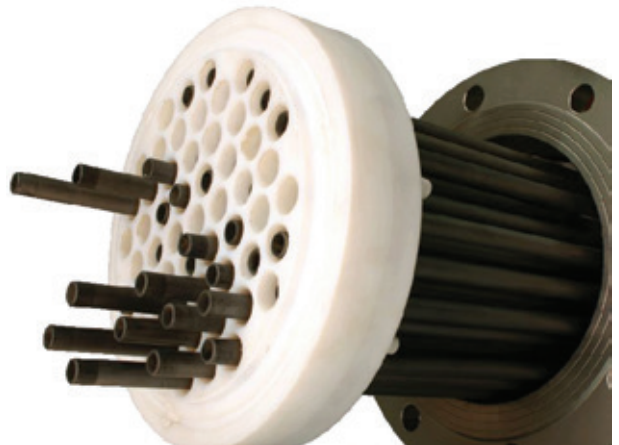
The IT Tech Swiss research and development department has worked during the last three years to optimise a new technology for the manufacturing of heat exchangers: the Guardian™ armoured PTFE exchanger. The special 'armoured' plates are made from stainless steel with an outer PTFE lining of suitable thickness.

While the stainless steel armour guarantees rigidity of the separation plates, the PTFE lining ensures chemical inertia. Splitting the tasks of providing structural rigidity and resistance to chemical aggression enhances reliability and life cycle duration.

Guardian heat exchangers are provided with a sealing system realised through Gualflon™ (modified filler PTFE) threaded bushings, which couple to the threading of the PTFE plate, blocking the tubes. The seal is provided by elastomeric O-rings that allow the tubes to expand without compromising the seal tightness. The O-rings are made of Kalfon™

79P, for the highest degree of elasticity, softness and thermal resistance.

IT Tech Swiss SA – Switzerland
info@ptfe.ch
www.ptfe.ch



The plates are made from stainless steel with an outer PTFE lining

High flow volume/filter booster

Bifold supplies a wide range of switching instrument valves and pumps to the oil and gas upstream and downstream sector.

The company's patented volume and filter booster range in 316L stainless steel is claimed to provide up to 500 per cent higher flow than the market equivalents.

By removing all elements from the main flow line, including regulators and filters, the effective CV of the filter booster is multiplied, resulting in significantly reduced tubing sizes.

Where safety is critical, Bifold's range of volume and filter boosters are SIL 3 third-party certified to IEC 61508 Parts 1 & 2.

In applications where a fast response time on modulating service is required in combination with a fast shutdown time (ESD), the VBP range also eliminates the need for an additional poppet or quick exhaust valve to achieve the required closing speeds. This results in reduced material and labour costs and simplifies positioned set up and control.

The range functions with a working pressure range of 2 to 10 bar g, with

maximum inlet pressure of 20 bar g, and operates at a working temperature of -55°C to +180°C. The common design format offers a choice of four main sizes with port threads of 1/4", 3/8", 1/2", 3/4", 1", 1 1/2" and 2" NPT, which allow for installation flexibility and easy hook-up.

The equal internal porting and balanced forces allow identical fill and exhaust flow, making set-up simple and controllable.

Amplification of any control logic can be achieved by incorporating the volume booster with Bifold's 'Axis' and modular system solutions.

The pneumatically balanced design minimises the impact of both downstream and upstream pressure variations, allowing for improved control along with the block before bleed function. Captive venting is suited to arctic service applications, and has been tested to -60°C.

Bifold Fluidpower Ltd – UK
marketing@bifold.co.uk
www.bifold.co.uk



Bifold's high flow volume boosters

Portable crack detection solution

TSC Inspection Systems has launched a new portable ACFM® crack detection solution and probe range – Pace™ and Sensu™.

The ACFM (alternating current field measurement) technique detects surface-breaking cracks in metallic structures and components without the need to remove protected coatings, therefore minimising downtime for critical operations.

The company says that, with a proven track record in the energy, transportation and defence sectors, ACFM continues

Pace crane structure inspection



to gain positive recognition in the field of advanced NDT as an accurate solution for surface crack detection.

As new industrial sectors have discovered the benefits of using ACFM, the demand for a more flexible and lightweight instrument has increased. Responding to this through user consultation and field testing, TSC has released the new Pace portable ACFM instrument.

Pace has robust, user-centric, ergonomic features, with a high-contrast toughened screen, long battery life and support of a new generation of software.

Ensuring high levels of data integrity and assurance, Pace will set new standards for non-destructive testing for surface breaking crack detection, according to TSC.

The company's functional design approach has also been applied to the new Sensu probe range, which partners Pace. The pencil-style ACFM probes, with a straight nose and right



The Sensu probes have been launched alongside the Pace instruments

angle nose, have been designed to perform easy, continuous scanning while being able to gain access to challenging tight-angle inspection areas. As 'intelligent' probes, the Sensu range stores configuration information and provides instant feedback of scanning status while in use.

Dr Payam Zargarzadeh, TSC's product design and development manager, stated, "This is an exciting time in product development for TSC. Pace is a smart, portable, lightweight, handheld ACFM instrument which offers reliable solutions for rope access, onshore/offshore (top side) inspections."

TSC Inspection Systems – UK
info@tscis.com
www.tscis.com

High-end tube cutting series extended

Dutch saw blade manufacturer Kinkelder has extended its range of TCT Champion saw blades for high-performance tube cutting. Applying a new carbide grade, PVD coating, body design and tooth geometry, the Champion TL saw blade series contains the company's latest innovations for TCT tube cutting.

Over the past few years, the number of heavy-duty tube cutting applications has increased. Following performance feedback from the market and the demand for a new high-end TCT saw blade, the Champion series has been extended with two new blade types.

The Champion TL saw blade has been designed to cut tubes with tensile strength up to 850N/mm² on high output/high quality stationary sawing machines.

Due to a new carbide grade, a new PVD coating to obtain a very smooth surface finish and a new tooth geometry and body design for better chip evacuation, this Champion saw blade has an improved blade life of typically 50 per cent and more compared to CX 3.

A dedicated Champion TL Multi saw blade has been developed for multiple tube cutting with a tensile strength of

400 to 800N/mm². This blade type is specifically suited for Rattunde Twin machines, but also for other applications where multiple tubes are cut, such as Bewo, RSA and Sinico machines.

Kinkelder's cutting experts can advise on the parameters for the application.

Kinkelder Champion TL saw blades are available in diameters from 225 to 560mm with a pitch of 9mm, 11mm and 13mm.

Kinkelder BV – Netherlands
info@kinkelder.nl
www.kinkelder.com

Press fittings for higher pressure applications in air-con and refrigeration

Visitors to this year's ISH 2017 in Frankfurt, Germany, had the opportunity to see the showcase of Conex Bänninger's latest innovation, >B< MaxiPro. A progression in the company's press-fit technology, the special design of >B< MaxiPro has been

specifically engineered to withstand the higher pressures of air-conditioning and refrigeration applications.

In a sector dominated by traditional braze fittings, the >B< MaxiPro fittings provide reduced installation time,

reliability and ease of installation in refrigeration applications that require higher operating pressures and temperatures.

Franke Zielke, business unit director for Central Europe, commented, "With the success of Conex Bänninger's >B< MaxiPro launch in the Australian and American markets, ISH 2017 provided the perfect platform to showcase this innovative solution to the European market. The feedback we received from visitors was very positive and we are now looking forward to introducing this revolutionary product later this year."

In addition to >B< MaxiPro, visitors had the chance to see the company's >B< Press range of fittings, featuring a three-point-press design that ensures a secure, leak-proof joint. A range of push-fit fittings, valves and ACR fittings were also on display.

Conex Bänninger – UK
www.conexbanninger.com



Rust stopper and lubricant for tubes and pipes

HinderRust is a solution to common problems in the tube and pipe industries, including flash rust. It is a solvent-free, all-in-one, rust-stopping, rust-inhibiting and lubricating product that aggressively wets and spreads across application surfaces.

Uses for HinderRust include protecting newly machined parts and equipment against flash rust, protecting chains, wire rope cables, tools and weapons, and potentially acting both as a mould release agent and as a protection agent against corrosion on moulds and dies.

The lubricating agent in HinderRust not only attacks corrosion, but also frees up frozen joints and fasteners.

HinderRust is available in three versions: R2.0 for short-term surface protection, removable by heavy washing to allow for final finishing; S4.0 for standard uses; and HV100, which slowly self-polymerises over time and provides added protection in cases of extreme exposure to rust-producing conditions. All three versions are solvent-free, allowing them to be used in enclosed areas.

The solvent-free, low-odour combination product uses the PTFE technologies developed by Fluoramics, Inc during its 50-year history.

The company is known both for its invention of Tufoil technology, an engine oil additive, and for its line of thread sealants and greases, Lox-8 and Formula-8, which are safe to use in harsh environments.

Fluoramics, Inc – USA
information@fluoramics.com
www.fluoramics.com

New and enhanced fibre lasers with power up to 1,000W

Amada Miyachi America, a manufacturer of resistance welding, laser welding, marking, cutting and micro machining equipment and systems, has added four new higher power models to the LF Series range of fibre laser welders.

The addition of the new models will address thicker materials or increase processing speed for a given application.

The company now offers an LF Series fibre laser in power levels ranging from 250W to 1,000W in the same form factor and with the same features.

With the precise control needed for small component welding and fine precision cutting of metals, the LF Series fibre lasers are suitable for micro spot welding, seam welding and precision cutting.

They are also an option for medical spring attachment and medical component assembly, as well as battery tab welding.

The LF Series offers continuous wave and modulated fibre laser technology with both single mode and multi-mode options.

Featuring a large touchscreen pendant that enables clear visibility of process schedule parameters, the LF Series has an intuitive interface that offers users quick and easy programming.

All models in the series enable spot sizes down to 10 microns for thin metal welding, with welding penetration depth beyond 4mm (0.16") in metals. Their power stability provides reliable results.

The new models incorporate the most recent enhancements to the LF Series, including a new chiller updated to accommodate laser engines with up to 1kW of average power.

This additional capacity improves performance in hot environments. Several other chiller design changes make routine maintenance easier.

In addition, the new models feature improved industrial design, adding safety and serviceability features. The back panel has been modified for improved airflow to extract heat from the chiller, and the front door and

frame have been updated for improved appearance and functionality.

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



CARBON STEEL PIPES AND TUBES MANUFACTURER FROM INDIA

KHANNA INDUSTRIAL PIPES PVT. LTD., established in the year 1986, has a firm foot-hold in tube manufacturing since inception. The company manufactures Steel Tubes & Pipes having an installed capacity of 50,000 Metric Tonnes. per annum. The company holds ISO-9001:2008 Certification accredited by TUV India. We manufacture pipes and tubes as per International Standard: BS En 10219, 10255, 10217 and ASTM A-53 Gr A and B, A-500.

Size Range	Size	Thickness	Length
Carbon Steel Pipes / Tubes			
	12.7mm OD to 219.10 OD	0.8mm to 8.0mm	Upto 12 Mtrs.
	12.7mmx12.7mm to 150mmx150mm	0.8mm to 8.0mm	Upto 12 Mtrs.
	20mmx10mm to 200mmx100mm	0.8mm to 8.0mm	Upto 12 Mtrs.
Pre-Galvanised Pipes / Tubes			
	19.05mm OD to 76.2mm OD	1.0mm to 2.5mm	Upto 12 Mtrs.
	15mmx15mm to 60mmx60mm	1.0mm to 2.5mm	Upto 12 Mtrs.
	20mmx10mm to 80mmx40mm	1.0mm to 2.5mm	Upto 12 Mtrs.

LANCING PIPES
 6mm OD to 48 OD THK - 1.0mm - 3.0mm LENGTH - upto 6.0mtrs.
 • NORMAL LANCING PIPES
 • CERAMIC COATED LANCING PIPES
 • THERMAL WIRE FILLED

CONDUIT PIPES AS BS 4568, IS 9537, ANSI-C80.3, C80.6 & C-80.1
 20mm to 50mm THK - 1.4mm to 2.2mm LENGTH - upto 5.0mtrs.
 • BLACK PAINTED
 • PRE-GALVANISED
 • HOT DIPPED GALVANISED.









Pipe and tube marking and measuring

By Walter N Arth, Jr, director of automation and engineering, InfoSight Corporation, USA

There are many different needs for marking and measuring pipes and tubes for the OCTG industry. These needs continue to grow as API, customer and internal requirements become more demanding for proper identification, tracking and improved quality.

Fortunately, the various technologies implemented to meet these changing needs also continue to evolve and can be used to reduce initial investment as well as downtime and maintenance costs. Specifically, advancements in lasers, robotics, sensors, machinery and automated stencil equipment as well as barcode marking and reading can improve accuracy and simplify implementation.

To save on equipment cost, in-line equipment can be used. Length measurement and stencil marking are easily accomplished 'on the fly' (Figure 1), while weight can be measured on approaching 'roll-by' gravity transfer rails. Alternatively, if conveyor space is limited and/or cycle time is critical, cross-transfer equipment can be implemented to perform various functions simultaneously in a small footprint (Figure 2).

The above are only examples. In either case, the equipment is used to first measure the pipe, and then perform tolerance checks, followed by marking as needed, and then finally to report the information on a per-pipe or per-order basis.

Measurements include both length and weight, followed with associated

Figure 1: In-line length measure and stencil

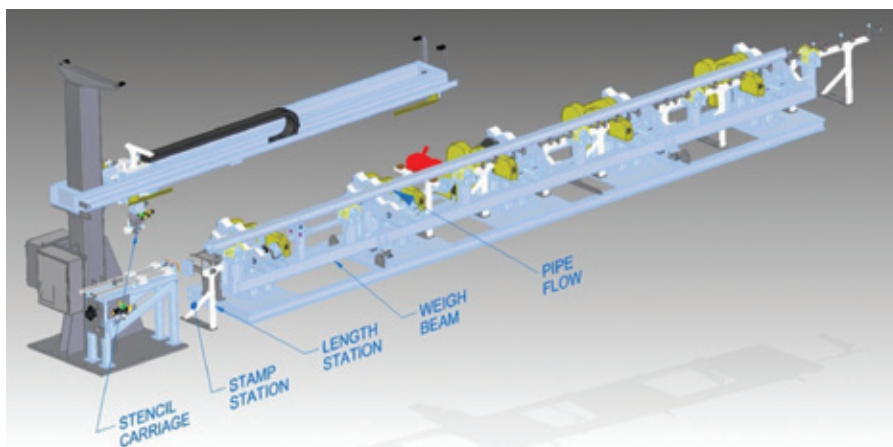
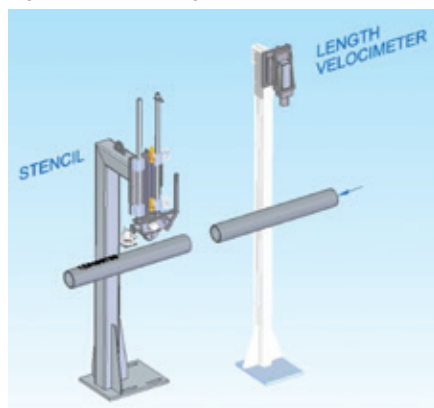


Figure 2: Cross-transfer weigh, measure, stamp and stencil

tolerance checks and calculations to meet various API or customer-driven requirements. Length measuring methods including lasers, photo-eyes, proximity sensors, encoders, etc easily meet the API required ± 0.1 foot accuracy, with typical actual length accuracies approaching ± 0.03 foot (0.375"), and can be accomplished with contact or non-contact distance measuring devices.

Accurate weight measurement can be performed via lift-and-weigh devices, cross-transfer equipment or even roll-by methods by installing the load cells beneath the support structure. The measurements are then used to validate, and report (tally) each specific pipe by performing weight-to-length calculations and comparing those to the API acceptable tolerances.

Once the specific pipe measurement information is gathered and combined with the remaining message that has been downloaded from the host, the markings can be applied to a large variety of locations via numerous methods. The two most common methods are OD stencil and/or OD stamp marking of man-readable text and/or logos, followed by the need for OD colour bands.

Additionally, barcodes (either 1D or 2D) can be utilised, not just to meet customer or end-user requirements, but also for manufacturers' own internal tracking and traceability needs. Beyond that, interest in defect marking and

thread engagement verification ($\frac{3}{8}$ " triangle) is also growing.

The specific marking processes can be performed in a number of automatic or manual methods, including stencilling, stamping, application of labels/tags, and line/band spraying. OD and ID stencilling can be on just one end of the pipe, both ends or even full-length, and can be achieved with in-line, cross transfer or overhead beam equipment.

Variations of the above methods and requirements can often be combined into a single integrated machine commonly referred to as weigh measure stencil (WMS) equipment that utilises a multi-station cross-transfer machine to process multiple pipes at once. For example, the first station can process weigh and length measure functions, the second station can stamp, and the third station can stencil.

The specific designs generated vary greatly based on needs and plant geometry. For example, equipment can include cross-transfer walking beams to move the pipe from station to station, or robots may be better suited for the variability of pipe dimensions associated with both ID and OD marking needs of stationary pipes. Individual requirements along with ingenuity and technology will drive the specific solution.

InfoSight Corp – USA
sales@infosight.com
www.infosight.com

Buoyant cable and flowline protection

Trelleborg's offshore operation has launched Buoyant Uraduct®, a protection system for subsea cables, umbilicals, flowlines and hoses.

Based on the original Uraduct design, Buoyant Uraduct protects cables from abrasion and impact.

The protection system reduces the crush risk at crossing locations by reducing the overall weight of a sub-sea cable. Made from highly buoyant materials, the protection system also

minimises drag and lift, avoiding possible stability issues.

Robert Knowles, design engineer with Trelleborg's offshore operation, stated, "As the global requirement for data and product transfer increases, so does the demand for advanced cable and flowline protection.

"When these vital lines cross each other on the seafloor, there is a potential risk of damage to the previously laid power cables or flowlines.

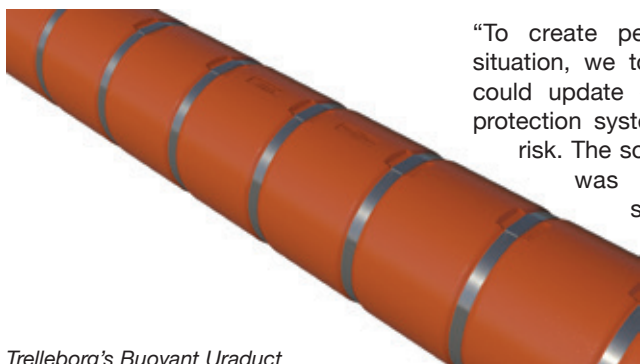
"To create peace of mind in this situation, we took a look at how we could update our renowned Uraduct protection system to help reduce this risk. The solution we came up with was a buoyant protection system which would not only protect cables from abrasion and impact, it would also reduce the excess weight of a subsea

cable so that it will not crush other lines at crossing locations."

Buoyant Uraduct can be customised to suit customer specifications for buoyancy, pipeline diameter and multiple subsea configurations. It is also an alternative to subsea crossing bridges, and can be installed on the cable or pipeline before it is laid on the seabed.

As part of the Trelleborg offshore and construction business area of Trelleborg Group, Trelleborg's offshore operation specialises in the development and production of polymer and syntactic foam-based seismic, marine, buoyancy, cable protection and thermal insulation products, as well as rubber-based passive and active fire protection solutions for the offshore industry. Within its portfolio are brands that include CRP, OCP, Viking and Emerson & Cuming.

Trelleborg AB – Sweden
www.trelleborg.com



Trelleborg's Buoyant Uraduct

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, F316/L, F304H/F316H, F317L, F321/H, 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)



BOTH-WELL STEEL FITTINGS CO., LTD.

NO.303 Rensin Road, Renwu District, Kaohsiung City, TAIWAN.(81460)

TEL : 886-7-371-1536 • 371-0497 FAX : 886-7-371-3864 • 371-3882

E-mail : box@bothwell.com.tw • sales@bothwell.com.tw

Web Site : www.bothwell.com.tw

Valve products for the water and waste water industry

Val-Matic offers a wide range of products for the water and waste water industries. Quarter-turn valves (plug, butterfly and ball valves) are designed with flow path geometries optimised to provide exceptional flow control characteristics, low headloss and energy conservation.

Clean water air valves are NSF/ANSI 61 certified for use in drinking water

systems and NSF/ANSI 372 certified lead-free. Wastewater air valves are specifically designed for grit and sewage service without the need for backwashing when combined with fusion bonded epoxy slick coatings.

VaultSafe® products are designed to protect potable water systems from contaminated flood waters, freezing

temperatures and intentional malicious contamination. Val-Matic Check Valves are suitable for potable water, abrasive slurries and corrosive chemicals, with a wide range of metallurgies, seating materials and accessories available.

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

Corrosion performance of Tungum alloy

Research has been carried out on behalf of Tungum Ltd, to look at the corrosion performance of Tungum alloy UNS C69100 compared to other alloys used for the same purposes. Used for installations in the harsh environments experienced by the oil and gas, dive, transport and marine industries, there was a need to re-assess and bring up to date the performance of Tungum UNS C69100 to determine its performance against competitor products and stainless steels.

To undertake a study of this type and provide robust data, the nC2 Engineering Consultancy of the University of Southampton was commissioned to conduct rigorous performance testing of Tungum UNS C69100 against other alloys specified for the same use.

Tungum UNS C69100 is marketed as a viable, cost-effective, more durable material in place of UNS S31603 stainless steel, UNS S31254 and UNS S32750 super duplex alloys.

The manufacturer states that, with UNS S31603 stainless steel predicted to last on average four years and super duplex alloys 20 years at best, Tungum UNS C69100 is expected to last more than 30 years without failure. The company can boast 381 installations worldwide, spanning 80 years, with no recorded failures. This endurance in safety critical installations and hostile environments is a great benefit given the difficulties in maintenance for offshore vessels, and the huge costs of downtime while repairs are made.

In order to assess the corrosive resistance of Tungum UNS C69100, testing had to be replicated on competitor products and alloys to enable quantification of performance. Six other materials commonly used in similar environments were therefore subjected to the same range of tests and conditions. Corrosion is an electrochemical reaction, and electrochemical tests offer some of the most powerful results in gaining an understanding of corrosion behaviour. They offer real-time corrosion rate measurements and can simulate a variety of environmental factors.

The measurements and tests carried out on the samples were: potentiodynamic polarisation; galvanic coupling (Tungum UNS C69100 and UNS S31603 stainless steel); corrosion monitoring using electrochemical impedance spectroscopy (EIS); and scanning electron microscopy (SEM). These are recognised methods for testing corrosion and were chosen to mirror industry-accepted standard testing for materials used in the marine environment. The measurements were taken over a 30-90 day timescale, and involved accelerated tests as well as galvanic reaction testing.

The report states that, in the timeframe involved, Tungum alloy performs as expected, standing up to scrutiny against competitor materials and showing strong indications to support the benefits provided by the quick-forming oxide layer. Tungum states that it is widely accepted that UNS S31603 stainless steel can no longer offer the life span or level of integrity required in

system designs. However, it is generally accepted that this limitation applies to UNS S31603 stainless tube, whereas UNS S31603 fittings still offer good service life at a reasonable cost.

Alternative alloys such as UNS S31254 and UNS S32750 offer greater protection against corrosion than UNS S31603 stainless steel, but at a significant increase in cost. Often these materials require a more expensive fitting in the same alloy grade, which adds even more cost to the total system price. Although these alloys offer a greater service life they are still affected by pitting and crevice corrosion and require more lengthy and complicated installation processes. Tungum UNS C69100 can be used with standard UNS S31603 stainless steel compression fittings without any adverse galvanic corrosion, to offer an easy-to-install and cost-effective system. The galvanic testing conducted proved this combination, as no deleterious effect was noted on either material when coupled.

The oxide layer that forms on Tungum was also evidenced in the experimental procedure. All copper-based alloys generate a coating to some extent, but in many cases it is not durable and simply rubs off. The layer observed on the Tungum samples was more robust, and measurements suggested that over time its durability increased substantially.

Tungum Ltd – UK
sales@tungum.com
www.tungum.co.uk

Quick connector meets the highest requirements in vehicles

Norma Group has developed a new quick connector made of plastic. The V2-XC ("X-treme Conditions") withstands particularly high temperatures, vibrations and pressures.

The durable connector is therefore principally well suited for connections in trucks, commercial vehicles and agricultural vehicles.

The V2-XC can be used in systems for air intake and crankcase ventilation. With its rugged design made of fibreglass-reinforced plastic, the quick connector maintains a temperature of up to 150°C and over-pressure of up to five bar. The stainless steel locking ring provides a 270° lock, making connections with plastic or metal spigots even more secure.

"Because our customers' requirements are steadily increasing, it is only logical

for us to also continue developing our product portfolio," said Werner Deggim, CEO of Norma Group.

"We must react quickly to these requirements and trends. It took only one year from the idea of the new quick connector to its serial maturity. The new V2-XC connector complements the previous V2 model with a new, particularly robust connection product."

The V2-XC quick connector is made of recyclable plastics such as fibreglass-reinforced polyamide 6 (PA 6) or polyamide 12 (PA 12).

The new product is based on the design of the V2 quick connector and has a nominal width of 27mm.

Due to its flexible, modular design, nominal widths of 6 to 33mm will also be able to be implemented in the future,

as with the current V2 connector. The V2-XC connector will be manufactured at the plant in Pilica, Poland.

Norma Group SE – Germany
www.normagroup.com



Norma V2-XC quick connector



Jingning Junwen Steel Co., Ltd



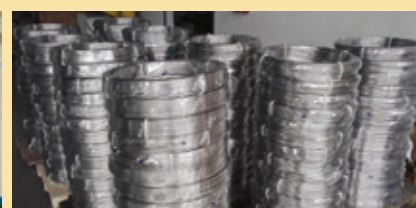
Stainless Steel Seamless Pipe / Tube

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 3/16"-1 1/2" (6mm-38mm), WT 0.028"-0.118" (0.7mm-3mm)
 Tolerance: Outer Diameter: ±0.08mm (0.00315"), Wall Thickness: ±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 3/16"-1" (4.76mm-25.4mm), WT 0.028"-0.083" (0.7mm-2.11mm)
 Tolerance: Outer Diameter: ±0.08mm (0.00315"), Wall Thickness: ±10%
 Length: 100ft-2,000ft, or according to customers' requests
 Certification: ISO9001:2000, GB/T19001-2000



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www.pipe-coil.com

AlphaGage+ joins range of gauges

As part of its extended thickness gauge product range, Sonatest has introduced the complete AlphaGage+ series.

For inspectors, maintenance operators and quality engineers looking to measure thickness for applications in multiple industries, the AlphaGage+ offers all the functionalities of a performance ultrasonic thickness gauge to measure different materials, including true thickness under coating, data logger (B-Scan) for corrosion

mapping, live waveform (A-Scan) and oxide scale for boiler tubes.

Upgradable in the field, the AlphaGage+ is also a flexible solution as it can be 'fully loaded' from the start or upgraded later by easily activating its software options when required.

Packaged in an ergonomic and rugged handheld enclosure, the AlphaGage+ can precisely measure the remaining wall thickness of structures subject to

corrosion, such as metal pipe works, pressure vessels, structural parts or storage tanks. The corrosion version of AlphaGage+ is a tool for ageing asset management and to solve or prevent production issues in the oil and gas or petrochemicals industries, for example.

In precision mode, the AlphaGage+ achieves higher accuracy performance than standard corrosion gauges to meet very strict quality control requirements, such as those in the aerospace and automotive industries. It is a key asset instrument to address specific manufacturing thickness control and applications for steel, aluminium, glass, ceramic, rubber or plastic parts.

The AlphaGage+ can be delivered with both corrosion and precision modes in one instrument. This makes AlphaGage+ an attractive choice for demanding service companies that invest time and money to train their technicians on one instrument that is fully capable to efficiently measure the thickness of any kind of engineering works on the market into one simple workflow.



The corrosion version of AlphaGage+ is suitable for management teams responsible for ageing assets

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

e-learning tool to reduce Elastopipe installation training time and cost

Trelleborg's offshore operation has developed an interactive e-learning tool with a series of lessons on installing the Elastopipe™ flexible piping system for offshore installations. The new tool uses different learning approaches to pre-train installers around the world in an effective and timely manner.

The Elastopipe™ Installation e-learning tool provides installers with an introduction to the product and pre-training that reduces on-site training time and costs.

Designed as a self-guided programme, the online lessons feature videos, images, documents and quizzes to

make learning more interactive, and are all fully voiced in English and Spanish.

Alongside a product overview, the tool gives an introduction to the practical aspects of Elastopipe, including modules on health and safety, quality, pre-installation and installation.

Business group director Morten Kristensen stated, "We pride ourselves on using local labour to support our professional Elastopipe installation teams all over the world. This tool enables us to use local personnel to an even higher degree, which is something that our customers are looking for."

Elastopipe is a patented flexible piping system developed for transporting a variety of fluids, and is claimed to be the first corrosion-free, explosion-, impact- and jet-fire-resistant flexible piping system. The system uses synthetic rubber instead of traditional materials and incorporates the only piping material approved for offshore deluge systems that has survived sequential explosion, impact and jet-fire testing. Elastopipe has been independently tested and certified by DNV, as well as approved by Lloyd's, RMRS, ABS and the US Coast Guard.

Trelleborg AB – Sweden
www.trelleborg.com

Flexibility aids clamping force readings



Force Products offers the Force Gauge tool with greater flexibility for gathering actual lb/tonnage force data from many shop floor situations.

The rugged, lightweight handheld instrument features an anodised aluminium body and a hexagonal shape that allows for three-point or two-point linear force readings. The large-diameter gauge face reads direct lb of force exerted in the situation being analysed.

For a quick and easy way to know precisely the clamping force in a three-jaw lathe chuck setup, the hydraulic pressure gauge on the machine tool will not deliver a close repeatable value immediately at the jaw/part contact point. This feature saves time and reduces scrap, and allows quick re-setup of a repeating job where an out-of-round condition is not acceptable.

Tapped holes on each of the six faces (monitor armature included) allow for direct mounting into a static setup such as the end of a hydraulic press arbor, to give the operator an accurate direct force reading.

The gauge is available in three different psi ranges: 0 to 1,000; 0 to 5,000; and 0 to 15,000.

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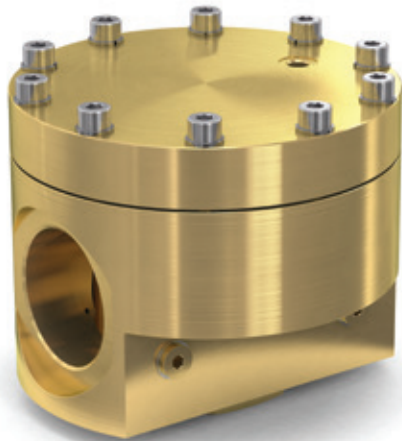
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www.messe-duesseldorf.de


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Düsseldorf

Dome-loaded back-pressure regulator

The German gas systems manufacturer Witt is extending its range of pressure control equipment with the new BPR2 dome-loaded back-pressure regulator.

The pressure retention valve keeps the pressure of gases in processes, system components or tanks constant.



BPR2 dome back-pressure regulator

In technical terms, back-pressure regulators regulate a higher inlet pressure, by opening up only as much as necessary to achieve the desired pressure at the inlet.

In contrast to spring-loaded systems, the new development works by controlling the gas pressure by means of a dome diaphragm. This dome-loaded pressure system ensures high precision. Irrespective of the volume or fluctuations in the gas flow, the pressure remains constant, over the entire performance spectrum of the device.

A typical application is the control of gas blankets in tanks. The overpressure control opens as soon as the supply pressure reaches the set value. The gas is blown off in a controlled manner when the pressure rises, so the pressure in the tank is kept constant. In this way, the BPR2 also provides effective prevention of hazardous overpressure.

Rapid and precise control of pressure is crucial for operability and quality of any process system, and Witt now offers a further solution with the BPR2. The new device is suitable for almost all technical gases, including oxygen, in the range 0.5 bar to 20 bar. Installation can be in any orientation, and the wide temperature range from -30°C to +50°C ensures it can cover a wide array of common applications.

This device meets all relevant standards, and can even be used in ATEX zones and food environments.

Witt's product portfolio includes fittings for safety when using gases. Among these are gas mixers, gas analysers and gas metering devices, as well as leak detection systems for packaging and industrial components.

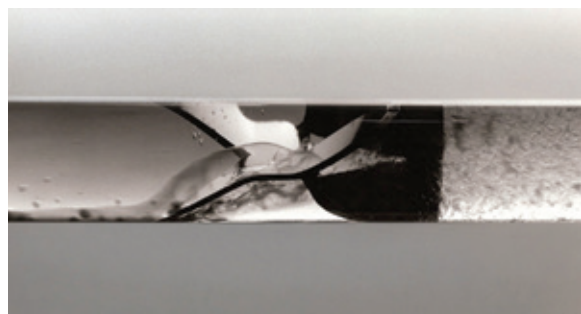
Witt-Gasetechnik GmbH & Co KG – Germany
www.wittgas.com

Custody transfer mixer for more accurate crude oil sampling

Komax engineers derived the Custody Transfer Mixer design when approached by the chief engineer of Chevron Pipeline Company.

The carbon steel Custody Transfer Mixer was developed in response to the request for a low pressure drop static mixer designed specifically to optimise accuracy of crude oil sampling.

Homogeneous dispersion of water into the clear mineral oil immediately downstream of the mixer, even at low fluid velocities



“Errors in crude oil sampling were an industry-wide problem plaguing profitability,” said Frank Estrada, production manager.

The engineers at Komax worked intensively to eliminate issues such as wall streaming and ensuring uniform distribution. The internal vortices or back-mixing created by the Komax mixing elements also send a portion of the flow back upstream within the mixer, minimising spikes of bottom sediment and water concentration. This combination of smart mixing helps the custody transfer sampler maximise its accuracy.

The goal with custody transfer mixing is to ensure a truly representative sample. The Custody Transfer Mixer

can be operated in either a horizontal or vertical pipeline. In the horizontal line, the first element acts like a ramp, forcing the bottom water into the crude to be further mixed homogeneously.

“One of the best features of our products is the final mixing element that eliminates all of the axial rotation of the flow downstream of the mixer,” said Nolan Smith, senior applications specialist. “Violent rotation would create barber poling in the water. The automatic sampler is then located two to four pipe diameters downstream of the mixer. The result means reliable data that shows up in the sampling.”

To date, Komax has installed more than 8,000 Custody Transfer Mixers worldwide.

Komax Systems, Inc – USA
info@komax.com
www.komax.com

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Tripods, jackets and tripiles: innovative tube systems for offshore wind energy systems



Steel tubes are used extensively in the construction of wind farms

Steel tubes or steel tube systems are among the most frequently used constructive elements for the foundations of offshore wind energy systems. In addition to the size and the weight of a wind energy turbine, water depth plays a primary role when it comes to choosing the type of foundation, and it normally increases in line with the distance to shore.

In 'Wind Energy Report Germany 2014', published in mid-2015, the Fraunhofer Institute for Wind Energy and Energy System Technology (IWES) says that the most important offshore countries increasingly rely on a further extension of their far-shore energy systems, ie offshore sites with a distance from shore of at least three nautical miles (5.5km).

Especially in Germany, most offshore wind farms are realised in higher water depths and distances from shore to avoid any negative impact on the marine environment in the Wadden Sea National Park. According to IWES, the offshore wind energy systems added worldwide in 2014 were built an average distance of 21.1km from shore in a water depth of 32.3m. In contrast, German offshore farms are located at an average distance of 65km from shore and in a water depth of approximately 29m; the international comparison thus shows that these systems are located farthest away from shore.

High diversity of support structures

The trend of constructing offshore wind farms in increasingly deep waters

has a profound impact on the support structures deployed (ie the structure used to anchor the turbine foundation on the seabed). After initially deploying gravity foundations and monopiles, other structures are now increasingly used. In addition to the high-rise power caps deployed in Asia, latticed support structures (jackets) and tri-sectional foundation foundations (tripiles and tripods) as well as floating foundations, suction buckets and artificial islands should be mentioned in this context.

According to IWES, the various designs are suitable for differing on-site conditions. Gravity foundations, monopiles and high-rise pile caps are primarily used in near-shore and shallow waters. The tripod and tripile types of anchoring foundation are deployed at an average distance of 96.5km and thus farthest away from shore. Floating structures are deployed in an average water depth of 78m and must still be considered as being in a test phase. As regards monopiles, it must be added that their manufacturers develop larger and larger models, which may also be used in deeper waters.

Offshore wind energy farms must have an especially high stability and robustness to withstand the powerful forces of nature throughout their lifetime of 20 years or more. In addition to high wind speeds, the turbines are particularly impacted by waves, ocean currents, tides and floating ice, and dynamic loads are generated by the wind turbines themselves. Support structures based on steel tubes are capable of withstanding all loads and of reliably carrying their superstructures for decades.

Tripods: three-legged support structures for offshore wind turbines

A tripod consists of three steel tubes welded together at an angle of 120° to form a tripod which carries a precisely centred central tube. A tower is then fitted on this tube. The tubes of the tripod construction each have a diameter of 1 to 2.5m and require a triangular base surface of 200 to 300m². Each leg may have a single pile

or consist of several tubes. Similar to jackets, centring sleeves are mounted at each end of the tripod structure to support the foundation pile driven into the seabed. The piles are interconnected by horizontal struts and joined to the central tube by a diagonal brace.

The ground surface should be level and free of too many stones, as the structure is anchored to the seabed at a depth of several metres using pile-driving machines. Tripods offer high stability even in rough sea areas and are suitable for water depths of 20 to 80m. The tripod support structures developed for the offshore wind industry were first deployed in 2009, when the German 'Alpha Ventus' offshore test site was built.

Jackets: latticed steel tube structures for large depths

For decades, jackets have been proven support structures for offshore platforms even at great water depths. In this case, the anchoring structure consists of a spatial lattice, which is made of steel tubes and is similar to the latticed towers used for high-voltage power lines. The four feet of the foundation end in sleeves housing the foundation piles driven into the seabed. Because of their high resistance, jackets are suitable for offshore wind parks up to a water depth of 70m. The Alpha Ventus test site did not only have tripod structures: six other wind turbines were installed on jacket foundations.

Compared to tripod foundations, a jacket is supposed to require a third less steel. Furthermore, the latticed support structure of the jacket is supposed to lead to benefits in terms of both capital expenditure and the logistics of the installation. On the other hand, jackets have a large number of welded connections with many edges and struts, which require regular maintenance because of their significantly higher corrosion risk, and may therefore lead to higher operating cost.

Tripiles: lightweight and low cost

Just as with tripods, tripile foundations were especially designed for offshore wind farms. Tripiles consist of three individual steel tubes that carry a tripod crosspiece at the water surface to install the wind turbine. Compared to monopiles, the individual tubes are of a



smaller diameter and more easily driven into the seabed. Tripiles are anchored to the seabed using a pile-driving template. The three steel tubes are then fitted with a tripod crosspiece to carry the wind turbine. The installation process is considered to be relatively demanding, as the piles have to be driven in with great accuracy so that the supporting crosspiece can be precisely installed.

Tripiles are suitable as foundations for water depths of up to 50m, and according to manufacturing data they are less expensive and lighter than other support structures. It is supposedly possible to adapt the wall thicknesses and lengths of each tube specifically to a given site. The first tripiles were realised in the Bard Offshore 1 wind farm in the North Sea and in the near-shore Hooksiel wind farm.

Hexabase: steel tube foundation with a hexagonal layout

Two recent developments in the support structures of offshore wind farms are the hexabase foundation and the texbase hybrid gravity foundation, which is based on the same principle. Hexabase, a steel tube foundation with a hexagonal layout, supposedly has major advantages compared to the more traditional structures: it is more efficient and more economic in production and installation. Compared to conventional jackets or large monopiles, it promises reductions of up to 20 per cent in weight and up to 20 per cent savings on manufacturing cost. Furthermore, it supposedly has a particularly high adaptability to various water depths and wind turbine types. The hexagonal lattice structure consisting of tubes with comparatively small diameters and wall thicknesses is said to show a

particularly good absorption capacity for the dynamic forces generated by wind turbines.

According to ThyssenKrupp, an important prerequisite for realising these savings is that a majority of the tubes used are made of hot-rolled wide strip. It is said that hot-rolled wide steel strip can be more easily processed into structural tubes than the quarto sheets that have been used so far. The welded tubes have a uniform diameter and the nodes are also standardised for the robots to automatically connect tubes and nodes.

Texbase: a 'lightweight' hybrid gravity foundation

Based on the hexabase principle, the texbase structure was developed as a hybrid gravity foundation combining the properties of a lightweight steel structure and a gravity foundation. A hexabase standard structure is mounted on the base structure of ballast tanks that are made of particularly durable water-permeable synthetic fibres and filled with 2,000 to 4,000 tonnes of sand. The base consists of a frame of steel tubes, which is then covered with geotextile fabrics and evenly transfers the load into the ground. With a weight of 450 to 700 tonnes before installation, the weight of a texbase structure is similar to a traditional foundation. The foundation requires only a minimum of soil preparation and is installed with simple construction machinery and little noise.

Innovations from the tube and pipe industry will be presented at Tube Düsseldorf from 16 to 20 April 2018.

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

Approximately 15,000 trade visitors went to the Exposições Imigrantes exhibition centre in 2015 and the organisers hope even more will attend this year. Brazil's boom in the construction, automotive and consumer electronics industries has led to a marked increase in the demand for tube products and there is an increasing interest in an international trade fair for these sectors on the South American continent.

TUBOTECH features approximately 500 exhibitors, all of which are involved in tube manufacturing, treatment, processing and related industries. TUBOTECH and wire South America 2017 will again be an outstanding opportunity for visitors from Brazil and its neighbouring countries to obtain information about advances in the industry.

International exhibitors will also have the chance to present themselves to South America, which is an important and attractive market of the future.

The event in São Paulo is organised by experienced tube trade show organiser Messe Düsseldorf GmbH.



Venue

São Paulo Expo Exhibition & Convention Center | São Paulo, Brazil
<http://www.saopauloexpo.com.br/>

Organisers

Messe Düsseldorf GmbH | Tel: +49 211 45 60 01 | Fax: +49 211 45 60 668
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Tube Southeast Asia returns to The Bangkok International Trade & Exhibition Centre (BITEC) from 19 to 21 September 2017 in Bangkok, Thailand.

The trade fair provides an attractive focal point and springboard for local businesses and international companies seeking to broaden their export of tube and pipe products and technologies.

Organised by Messe Düsseldorf Asia, more than 400 companies will be exhibiting their latest innovations during the three-day event.

As ASEAN prepares for further development with a major line-up of infrastructural projects in the pipeline, the wire and tube industries remain strong through robust support from the region and around the world.



Venue

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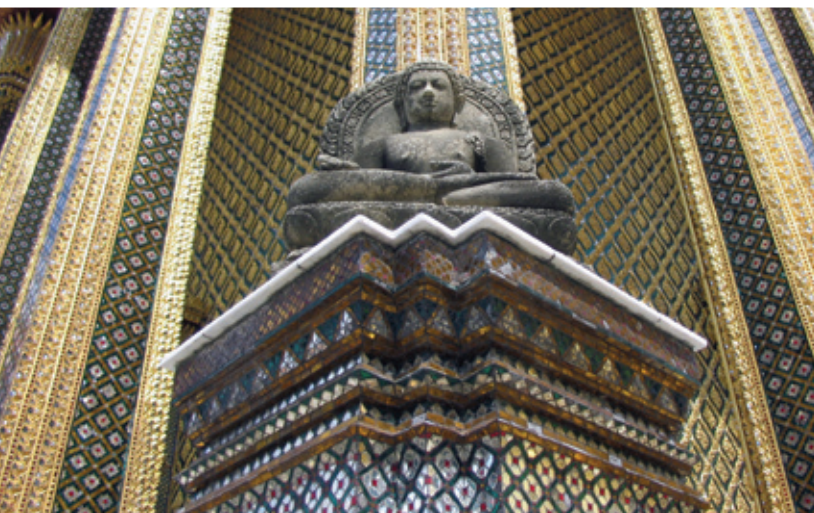
Organisers

Messe Düsseldorf Asia Pte Ltd | Tel: +65 6332 9620 | Fax: +65 6337 4633
Email: tube@mda.com.sg

Opening times

19 to 20 September: 10:00am – 6:00pm | 21 September: 10:00am – 5:00pm

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www.tube-southeastasia.com

Material handling & logistics

Material handling equipment is concerned with bar and billet, shapes and stock sizes, tube and pipe. Weighing, measuring and packaging equipment deal with payload. Flawlessly executed, they ensure that producer and customer alike receive the full value of the brawnier processes of fabrication.

The corollary here is, of course, that want of care in any of these specialties subtracts value. Having to repeat a procedure even once is unacceptable, as much so in weighing, measuring and packaging as in handling.

In prevailing market conditions, time is not only money. It is also productivity, competitiveness, repeat business, and much else besides — a point very well understood by the equipment suppliers reviewed in this section.



Photo: Combilift

Compact modular vacuum lifting system

The new CM 3 compact modular vacuum lifting system from Vacuworx is designed for contractors who run compact equipment such as skid steers, track loaders, articulating wheel loaders and mini excavators, to allow them to handle materials such as concrete slabs, steel plates and pipe up to 3 tonnes (6,600lb).

Claimed to be the first vacuum lifting solution of its kind, the CM 3 brings heavy-duty material handling capabilities to larger capacity compact equipment such as skid steers and track loaders. With a modular design and lift capacity of up to 6,600lb depending on the pad or pads used, the CM 3 is adaptable to a wide range of applications including concrete slab removal, road or trench plate placement and some pipe applications. The CM 3 with standard mounting plate weighs the same as a standard skid steer bucket, so it does not affect the lift capacity of the host machine.

The rugged, all-steel unit is designed to accommodate single or double pad

configurations interchangeably to be able to lift a variety of material weights and sizes. The adjustable spreader bar for double pads extends from 61" to 85" (measured from outside to outside of the seal channels). Flat and pipe pads are sold separately to meet specific needs.

The CM 3 is operated by a hydraulically driven vacuum pump using the auxiliary hydraulics from the host machine (minimum 10 GPM required with maximum 3,000 psi). With quick-connect hydraulic hoses and a universal mounting plate assembly, the CM 3 can be quickly attached to a variety of host machines. In addition, the unit is equipped with a factory pre-set flow control valve to ensure optimal performance with any equipment. Designed for both job-site durability and practicality, the CM 3 is supplied with steel legs for storage, which can either be removed or rotated up when the system is in use.

Founded in 1999 in Oklahoma, USA, Vacuworx engineers and manufactures heavy-duty material handling equipment for the oil and gas, water and sewer,

highway and heavy construction, concrete construction, landscaping and manufacturing industries. Its vacuum and hydraulic lifting systems can be customised for many applications and lift capacities.

Standard models lift a variety of materials including steel pipe (with most types of coating), plastic pipe (PVC, fibreglass and long flexible pipe), ductile iron pipe, concrete pipe, pre-cast concrete slabs, pre-cast concrete culverts, concrete road barriers, saw cut concrete (demolition or rehabilitation), landscape pavers, steel plate and piling and road plate.

Lifters can be attached to hydraulic excavators and backhoes (with or without a coupler system), wheel or track type loaders, cranes, pipe layers, skid steers, forklifts and knuckle booms, and can also be mounted for a variety of in-plant applications.

Vacuworx – USA
requests@vacuworx.com
www.vacuworx.com



CM 3 modular vacuum lifting system

Integrated stacking/packaging system from Haven Manufacturing

Reducing workplace injuries and increasing productivity are common goals for manufacturers. Haven Manufacturing is helping a Midwest USA tube producer achieve those goals by developing a four-axis robotic packaging system and integrating it with a cut-to-length and brush de-burring line.

The customer produces a wide range of conduit diameters from 1" to 4.5" and wall thickness from 0.049" to 0.237". What once required three or four people to operate a line, including manually packaging product, now takes one operator and one part-time material handler.

The equipment had to be flexible, reliable and user-friendly. The process begins with a Soco model SA-115NC-CL2 sawing machine with automatic

bundle loading and servo length control. Cut tubes are deposited onto a Haven-built conveyor, which transfers and diverts the tube into a Haven model #970 wire brush de-burring machine. As the tubes exit the brush machine, they are deposited onto a preparation table that orientates them for pick-up by the packaging robot.

The pickup head design is electro-magnetic, with head motion of X, Y, Z and 90° rotation. Several packaging patterns are pre-programmed to allow for quick and easy changeover for diameter, length and container size.

This particular application requires a material handler to forklift out the full container and replace it with an empty container. The container orientation is guided by a two-sided fixed locator with electronic position verification.

The process cycle allows enough time to exchange containers without delaying production. Haven also has the option of adding an automatic container egress and ingress conveyance system.

Haven is a full service turnkey equipment supplier to a wide variety of tubular applications for cut-to-length, finishing and material handling.

In an effort to provide more comprehensive solutions to its clients' cutting requirements and to continue developing new and improved tube cutting processes it created a partnership with SOCO Machinery of Taiwan in 2009.

Haven Manufacturing – USA
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www.havencut.com

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Vacuum lifting systems

Sharewell HDD has launched the PipeVac lifting system. Manufactured with SmartLift technology, from its sleek, lightweight design to its hydraulic-drive system, each component is selected with safety, performance and durability in mind.

PipeVac provides a 26-ton lifting capacity, and the vacuum pad design allows the operator to safely lift a wider range of pipe diameters with fewer vacuum pad SKUs. The system can

be configured to lift virtually anything tubular, such as plastic, steel or concrete pipe, as well as multiple types of flat building materials.

“Our primary focus in developing our system was safety, engineered with a straightforward design,” said Shawn Lowman, PipeVac Lifting Systems.

“We have manufactured a lifting system that replaces the need for multiple models; one PipeVac does the same

job that our competitors manufacture four or five different models to do. Our vacuum pad design reduces the need for more than half the SKUs.”

The PipeVac system is powered by the host machine’s hydraulics. An on-board GPS module identifies where the equipment is located, and provides diagnostic data on the system.

Sharewell HDD – USA
www.sharewellhdd.com

Pick and carry crane Steel Prize finalist

JMG Cranes has been named as a finalist for the Swedish Steel Prize 2017 for developing a new pick and carry crane with a high payload and an easy-to-transport design.

“The market wanted a new crane with the same dimensions, but with bigger capacity and with a low deadweight,” said Emilio Berti, chief design director at

JMG Cranes. “It would need to be able to lift big loads, but also be light enough to move from site to site via lorry.”

To satisfy this demand, the company developed the MC 580, claimed to be the only electric pick and carry crane that is able to lift 58 tons. It weighs 42 tons in operating conditions and only 24 tons when being transported.

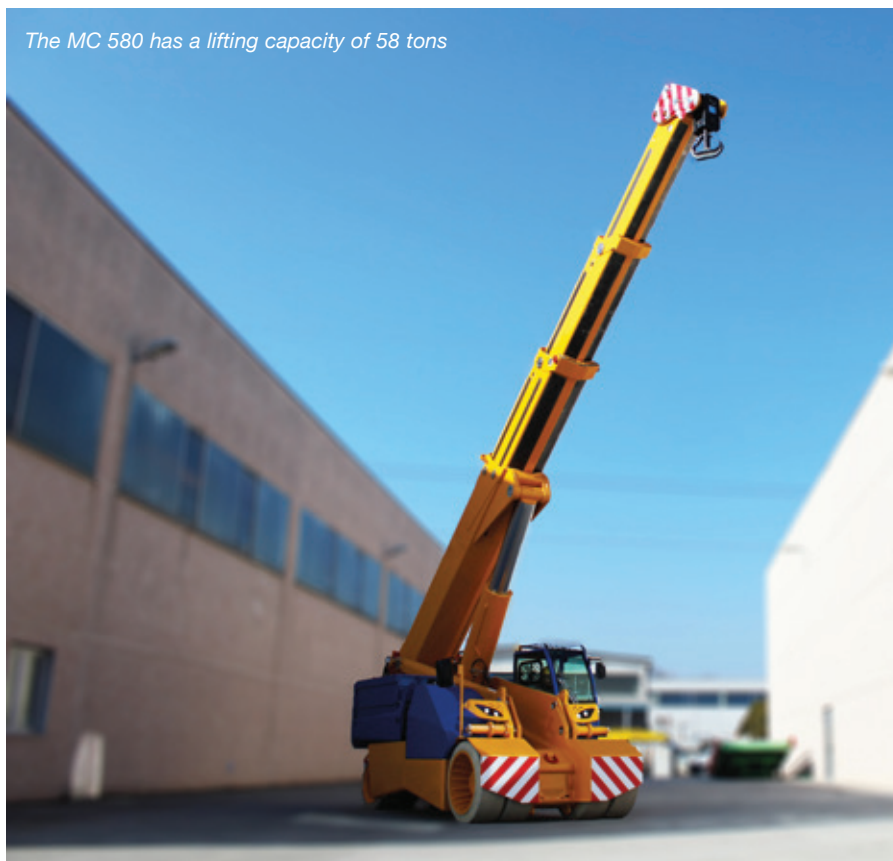
The compact design uses high-strength steel for the boom as well as in the rear frame of the crane and for the outrigger box – areas where mild steel is typically used.

The crane can be completely dismantled for transportation in narrow areas, including the counterweight, the outriggers and even the batteries, if needed. The boom of the crane has an optimised design and a clever solution to extend the chassis and achieve more counterweight moment. The company states that the modern design with an emission-free electric motor offers increased performance by up to 80 per cent over competing products.

The Swedish Steel Prize honours the art of engineering and innovation in the steel industry. JMG Cranes is one of four finalists for this year’s prize. The prize recognises and rewards small and large companies as well as institutions and individuals who have developed a method or product that utilises the full potential of high-strength steel. The winner will receive a statuette by the sculptor Jörg Jeschke and a cash prize that SSAB encourages to be donated to a charity of the winner’s choice.

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JMG Cranes Srl – Italy
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The MC 580 has a lifting capacity of 58 tons

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Advanced material handling systems

Raumaster is a supplier of advanced material handling systems and equipment, primarily delivering to power plants, pulp mills and the mining industry.

Since its founding, the company has listened to customers' needs carefully in order to develop a comprehensive design and service process.

"We concentrate on delivering reliable processes and turnkey deliveries to our customers," stated CEO John Bergman. "It is typical that our previous customers return to us when they have new delivery

needs: well above 70 per cent of all of our projects are repeat orders.

"We have completed over 3,300 advanced material handling projects globally. Additionally, thanks to the close co-operation with our customers, these projects have taught us more than we could have ever imagined.

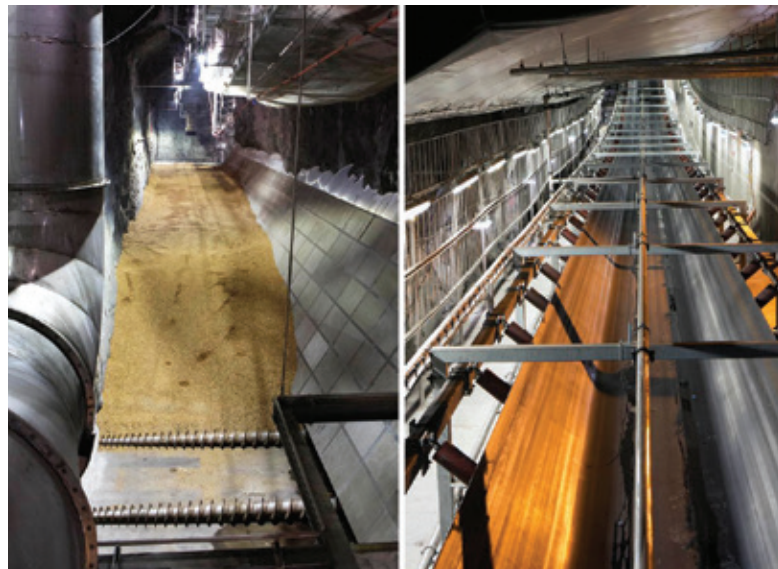
"Our core expertise relies heavily on the processing of biomass and bio-based fuels, which can be supplied to power boilers. So, we're working with renewable energy. We make deliveries, and maintain plants

worldwide, but our core know-how relies on the competence of our Finnish engineers."

The Raumaster portfolio includes deliveries to locations from South Africa to Northern Finland and Japan. "Asia is an interesting market for us, and during recent years we have delivered a myriad of different systems into Asian countries," said Mr Bergman.

"One of the largest deliveries we've done was for the Samcheok Green Power Plant in South Korea. Samcheok Plant has four boilers with a capacity of 4x550 MWe. Coal is used as the primary and biomass as the secondary fuel."

Another reference point is the fuel processing system of Fortum's Värtan, co-owned by Stockholm city power plant in Stockholm, Sweden. Mr Bergman commented, "The specifics of this project include the fact that the entirety of the fuel storage is situated underground, and fuel is received from ships, rail and trucks. We delivered the whole fuel processing system for this project, including devices for the internal processing of fuel, and the systems for processing fly ash, lime and sand."



Fortum's biomass-fired plant in Värtan, Stockholm, Sweden

Raumaster Oy – Finland
info@raumaster.fi
www.raumaster.fi

Contract with material handling equipment OEM

Concentric AB has been awarded a contract from a global OEM of material tele-handlers, boom and vertical lifts to produce hydraulic power units (HPUs) for its next generation of material handling equipment. Production started in the first quarter of this year.

The company's selection as the preferred supplier of HPUs was based upon its ability to easily integrate CALMA technology for low noise applications; reduced envelope size to allow greater design flexibility and ease of installation; and integrated

components to optimise system efficiency and reduce leakage paths.

David Woolley, president and CEO of Concentric AB, commented, "This contract win is another example of our commitment to advanced development projects aimed at reducing emissions, increasing power density and improving overall system efficiency through our market leading technology."

Concentric AB is an innovator in flow control and fluid power, supplying proprietary systems and components

to the truck, agricultural machinery, construction equipment and industrial applications end-markets.

The company has manufacturing facilities in the UK, USA, Germany, Sweden, India, China and Argentina. In addition to supplying oil, fuel transfer and water pumps for diesel engines, the group manufactures lubrication pumps for transmissions and compressors within its range of engine products.

Concentric AB – Sweden
www.concentricab.com

Condition monitoring for competitive advantage

By Larry Rumbol, marine condition monitoring manager, Parker Kittiwake, UK

Condition monitoring has a key role to play in every maintenance programme and can be a valuable tool for optimising safety standards, maximising operational efficiency and enhancing profitability.

But to do that you need the right people, processes and resources available to maintain the asset in a fit-for-service condition.

This can be done most reliably, safely and cost-effectively by employing a combination of online and offline condition monitoring tools.

Parker Kittiwake knows this because for more than two decades it has designed, developed and manufactured market-leading condition monitoring and test equipment for lube oil, hydraulic oil, fluids and fuels. In fact, engineers the world over use Parker Kittiwake equipment to gain vital insights into the health of their vessels' engines and machinery, and to accurately measure fuel quality and compatibility.

When companies emphasise the upkeep of their machinery, the lifetime of infrastructure significantly improves, costs are lowered and environmental impacts from faulty equipment are minimised. For a growing number, the way that they are accomplishing this rapidly and cost-effectively is through proactive condition monitoring.

Condition monitoring practice has evolved significantly, from the days of engineers physically examining equipment and relying on their hard-won experience and intuition, to the full range of tools available today.



Parker Kittiwake's Condition Monitoring Starter Kit combines the DigiCell, the Holroyd MHC-Bearing Checker and a PC tablet

This includes anything from sophisticated online sensor technology to simple on-board test kits. A well-trained engineer knows that through a combination of these online and offline tools, operators can arm themselves with the knowledge they need to avoid accelerated wear, prevent catastrophic damage and safeguard against downtime.

By using modern condition monitoring technology to simplify everyday maintenance observations and provide advance warning of required work, it is possible to maximise uptime.

Providing one example in the marine market, the Parker Kittiwake Condition Monitoring Starter Kit combines the Parker Kittiwake DigiCell (water in oil and residual base number), the Holroyd MHC-Bearing Checker (rotating equipment/bearing condition), and a PC tablet with a condition monitoring routine and log book pre-loaded on it to assist with the recording of results, to simplify the protection of vulnerable equipment and prevent failure.

It utilises modern condition monitoring technology to simplify everyday maintenance observations and provide advance warning of possible maintenance requirements. Using deskilled, intuitive technology, the starter kit empowers crew members with data that enables them to take corrective action and safeguard against potentially catastrophic damage in the worst case, and allows them to prioritise everyday maintenance to maximise operational efficiency.

Too often condition monitoring equipment provides meaningless data; the Kittiwake kit deconstructs that and allows anyone to make immediate judgements whether to act (intervene to lubricate, dismantle or maintain), or to take the equally cost-effective action of doing nothing.

The implementation of a rigorous quality control system is essential for ensuring high quality performance. Yet although the role of maintenance in the long-term profitability of a business is more frequently recognised these days, the issues relating to the quality of maintenance output can still retain outdated features that have become conventional through decades of use. In today's low margin era, when cost and risk are at the top of operators' minds, investing in equipment uptime and performance becomes paramount.

The majority of the marine market is still taking a planned approach to maintenance. However, the benefits of reliability-centred maintenance are steadily emerging and are being lauded by shipowners, class societies and insurers alike.

One insurer, the Swedish P&I Club, for example, has hard data that 60 per cent of critical machinery failures are caused by avoidable human interference, and it is an appraisal that our experience wholeheartedly echoes.

In any industry, by taking a proactive approach to monitoring the health of vital equipment and machinery, operators can achieve better control of the risks whilst also maximising an asset's return on investment.

Along with shipping, condition monitoring has a long history in the power generation and aviation sectors, providing asset health information about a wide range of infrastructure. The first applications of condition monitoring mostly focused on the human detection of irregularities, often after they occur.

As traditional manual inspection increasingly gives way to intelligent and automated analysis, the accuracy and detail available to engineers has correspondingly increased. With a continuous stream of data to analyse, changes to operational processes and maintenance scheduling are leading to transformative operational and efficiency gains.

Exceeding customer expectations is the key to success for every profession, across every industry. Of course everyone is looking for an edge, or advantage, in business – it is where opportunity resides. When engineers can face these day-to-day challenges with greater confidence in their ability to resolve them and focus on their deliverables, the details start to take care of themselves.

Empowered engineers with all the equipment, expertise and knowledge to get the job done first time, every time? That is market-leading behaviour that translates directly into savings that positively impact the bottom line.



Parker Kittiwake – UK
kittiwakeinfo@parker.com
www.kittiwake.com

Protection of pipe bores from corrosion

By Arc Energy Resources Ltd, UK

The extent of the damage caused by corrosion costs the oil and gas industries many millions of dollars annually. There is therefore an increasing need to manage and minimise this corrosion activity as pipelines and associated equipment are fitted into increasingly inaccessible and hostile areas around the globe.

Even when corrosion rates are predicted by calculation, there are unexpected factors that can still exacerbate the problem – changes in the composition of the product flowing, reductions in flow rate through shutdowns, additions of well-injected water, souring of wells or mechanical damage.

The control of corrosion on the outside of the pipe is usually made by means of coatings and cathodic protection, but a major challenge to pipeline design engineers is in the control of corrosion on the pipe bores. The process fluids can carry a variety of corrosive impurities such as free water, carbon dioxide and hydrogen sulphide. The effect of these products will differ, dependent upon factors such as pipe geometry and attitude, (horizontal or vertical) flow rate and fluid composition. In addition, the corrosion mechanisms are diverse and include galvanic corrosion, erosion-based, microbiological corrosion, stress corrosion cracking, crevice corrosion, CO₂ corrosion and hydrogen embrittlement.

One option to mitigate this corrosion is to utilise pipe made entirely from a corrosion-resistant alloy (CRA) such as Alloy 625. However, in many cases, and particularly for larger projects, this will be prohibitively expensive. A much cheaper and more readily available option is to use carbon steel pipe that has been weld overlay clad.

Weld overlay cladding is a welding process that provides protection for products that are destined for use in aggressive environments – such as pipelines, valves, flanges and specialist fabrications – by welding a corrosion-resistant protective layer to areas at risk of corrosion and wear. The highly versatile weld overlay process provides the practical combination of readily available base materials, coated with a suitable long-lasting corrosion-resistant alloy to protect any vulnerable areas. This provides the benefit of cost savings, as well as a reduction in lead time.

Where carbon steel pipe is selected, it is frequently specified that the seal areas of associated equipment – such as valves and flanges – are weld overlay clad in order to provide protection from localised corrosion. Here, the selection of

CRA is dependent upon the aggressiveness of the medium. Generally, the selection will be 316L (AWS A5.9 ER316L) or Alloy 625 (AWS A5.14 ERNiCrMo-3). Where it is predicted that the pipe will be transporting fluids that are excessively corrosive (guidelines set out in NACE MR01-75/ISO15156), the bore of the pipe will also be clad.

Generally, the CRA thickness will be 2 to 5mm and normally will not be considered as part of the design strength criteria. The cost of this choice of protection increases the price of the pipe significantly – value greater than 10x the cost of carbon steel can be expected, because the overall cost will include both the additional cost of the application of the lining, plus the extra cost of joining the pipes using a CRA consumable.

However, if the line pipe is located in deep water with very limited access for inspection and potential replacement, then the increase in asset cost is unavoidable. Currently there are no other options. The benefits to the operator of reduced corrosion issues are attractive factors, and include fewer inspections/reduced downtimes; savings in investment in chemical and chemical injection equipment; and overall increase in confidence.

Weld overlay clad pipe

Standard carbon steel pipe can be weld overlay clad using a wide range of CRA consumables. Where 300 series stainless steels have been selected, a buffer layer using an over-alloyed consumable (eg ER309L or ER 309LMo) can be used in order to accommodate the change of composition as a result of the inevitable dilution with the base pipe.

When using 309LMo as a consumable and the effects of dilution are taken into consideration, the resulting layer of CRA

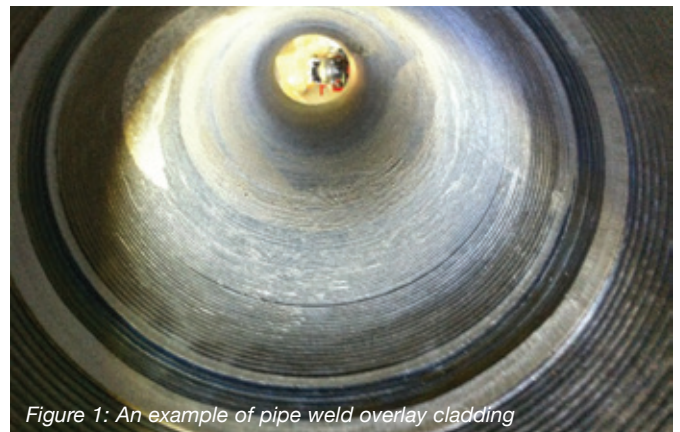


Figure 1: An example of pipe weld overlay cladding



Figure 2: Teledyne ring pair corrosion monitor

will meet 316L composition. When Alloy 625 is used (as it is in the vast majority of clad pipelines), the usual acceptance standard for chemical composition is either 5% Fe or 10% Fe. While this measure does not give an absolute indication of corrosion resistance, it is a good indicator of the quality control mechanism in place during welding – a high level of iron means that the weld has penetrated too deeply into the base metal, causing the higher dilution. It is not a direct measure of corrosion resistance.

Figure 1 shows an example of pipe weld overlay cladding. The component is a riser and, for this application, there were concerns regarding fatigue resistance. As a consequence, the acceptance standard for inspection was reduced to 1mm. The bores were machined smooth and the cladding was tested with dye penetrant and compression wave angle probes.

Pre-production qualification testing will include corrosion testing to ASTM G48 practice A, at 50°C for Alloy 625 and ASTM A262 Practice E for 316L. Cladding is invariably undertaken with the gas tungsten arc process using hot wire addition to the wire consumable.

Post-welding NDT for weld overlay clad pipe comprises visual inspection using video cameras, plus ultrasonic, dye-penetrant inspection. Acceptance standards are extremely tight (UT, Ø1.5mm flat bottomed hole; DP, Ø1.6mm indication). Testing also includes PMI, clad thickness measurement and, in some cases, laser surface recording.

Corrosion monitoring

Corrosion performance within pipes is monitored by means of intrusive devices such as smart pigs, which are intelligent sensing devices that are introduced into a pipeline and usually carried by the product along the length of the pipe. The devices are able to measure and transmit dimensional data regarding the pipe bore, and will highlight heavily corroded areas.

Figure 3: Corrosion monitor during weld



Ring pair corrosion monitoring equipment – such as that provided by Teledyne and manufactured by Arc Energy Resources – is specified when high resolution, real-time metal loss measurement on the full pipeline diameter is required.

Figures 2 and 3 show examples of Teledyne ring pair corrosion monitors – complete and in production. These are good examples of both weld overlay clad and fabricated products.

Arc Energy Resources

Arc Energy Resources' weld overlay cladding services are used by clients in a large number of industry sectors where service conditions require corrosion-resistant properties. The company's weld overlay and weld inlay service offers a reliable and high quality product. The scope of supply includes flanges, elbows, tees, reducers, pipes, dished ends, valves, vessel strakes, heat exchanger tubesheets, fabricated sub-assemblies and various other geometries.

Cladding can be carried out on components as small as 20mm and as large as 4m in diameter. Overhead cranes exist up to 15T, though heavier components can be accommodated.

In addition to the cladding workshops, Arc Energy Resources maintains a radiographic-quality fabrication facility and segregated stainless steel workshop, allowing it to project manage more complex structures such as pressure vessels and spools (both clad and unclad). The company also holds ASME U and U2 stamps, so can provide a full range of services in compliance with the ASME code.

Arc Energy Resources' machine shop provides CNC milling, turning and drilling to tight tolerances. It specialises in flanges, connectors and other subsea components.

In-house NDT incorporates visual inspection, dye penetrant inspection (DPI), ultrasonic testing (UT), magnetic particle inspection (MPI), radiographic testing (RT), dimensional inspection and CNC coordinate measurement (CMM). This, along with in-house procurement, design-for-manufacture, project management and heat treatment facilities, allows Arc Energy Resources to provide a complete one-stop shop for all cladding, fabrication and machining requirements.

Summary

Corrosion continues to challenge the oil and gas industry. The control of corrosion requires a combination of calculation and prediction of likely product content, design of the pipeline, protection of the pipe bore and monitoring of the actual corrosion activity. With a comprehensive combination of these disciplines, successful control of corrosion can be achieved. Arc Energy Resources has over 22 years' experience in the protection of pipeline equipment from corrosion and is happy to discuss solutions to any corrosion problems a client may be facing.

Arc Energy Resources Ltd – UK

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www.arcenergy.co.uk

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