The international magazine for the tube and pipe industries

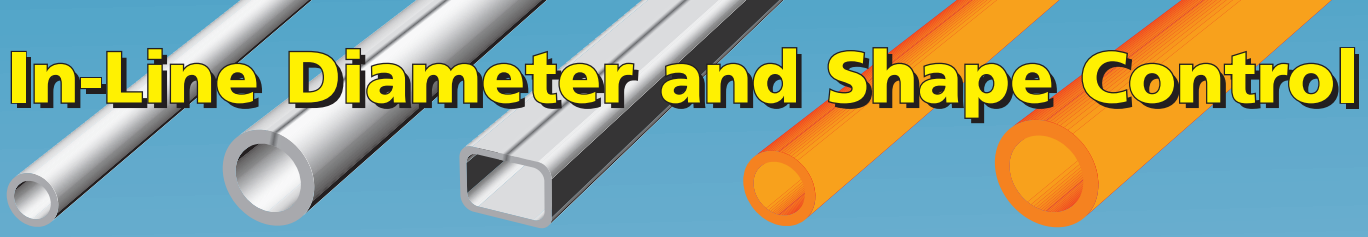
TUBE & PIPE TECHNOLOGY

January 2009 | Vol 22 No 1 | US$33

Zumbach

We Measure Quality

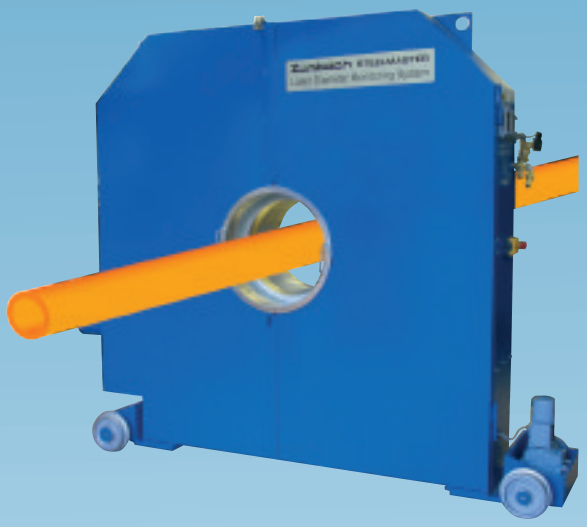
In-Line Diameter and Shape Control



For all Types of Pipe, Tube, Profile – Any Shape

STEELMASTER gauges for hot and cold processes

Hi-speed laser scanning. Measurement of diameter, ovality, height, width and diagonals.



Possible measuring modes

Standard measuring ranges:	60, 100, 150, 300, 500 mm* (2.4, 4, 6, 12, 20 in.)
No. of measuring axes:	1...6
Measuring frequency:	1000/s for each axis
Typical accuracy:	+/- 0.005 ... +/- 0.1 mm (+/- .0004 ... .002 in.)

*Largest product depending on centering

NEW

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PROFILEMASTER® gauges for cold processes

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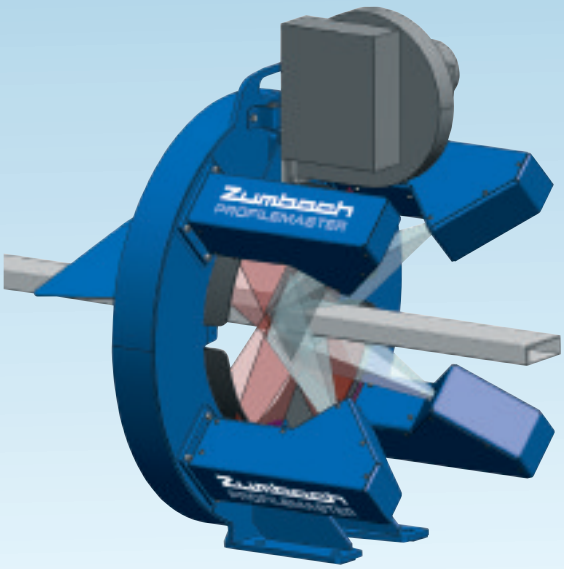

Any shape

Standard measuring range:	25, 140, 300 mm* (1, 5.5, 12 in.)
No. of cameras:	1...6 (standard 4)
Measurable parameters:	length, width, height, diameter, radii, angles
Typical accuracy:	+/- 0.01 ... 0.05 mm (+/- .0004 ... .002 in.)

*Largest product depending on centering

Worldwide Zumbach Customer Service and Sales Offices in:

Switzerland (H.Q.): Tel. +41 (0)32 356 04 00, E-mail: sales@zumbach.ch
Argentina: Tel. +54 (0)11 4701 0774, E-mail: ventas@zumar.com.ar
Belgium: Tel. +32 (0)2 478 16 88, E-mail: info@zumbach.be
Brazil: Tel. +55 (0)19 3849 5008, E-mail: vendas@zumbach.com.br
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France: Tel. +33 (0)1 64 24 46 31, E-mail: ventes@zumbach.com.fr
Germany: Tel. +49 (0)2238 8099-0, E-mail: verkauf@zumbach.de
India: Tel. +91 20 3048 4801, E-mail: joseph@zumbachindia.com
Italy: Tel. +39 0332 870 102, E-mail: zumit@zumbach.it
Spain: Tel. +34 93 666 93 61, E-mail: gestion@zumbach.es
Taiwan: Tel. +886 2 2630 5530, E-mail: zumfareast@giga.net.tw
UK: Tel. +44 (0)870 774 3301, E-mail: sales@zumbach.co.uk
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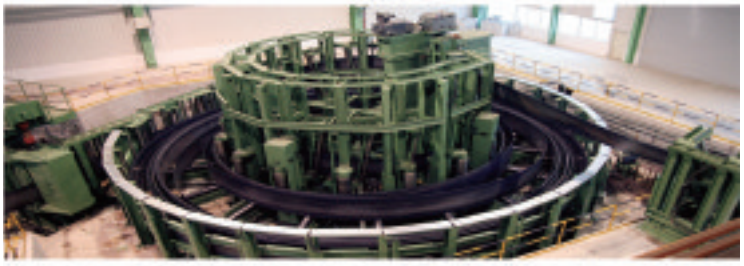
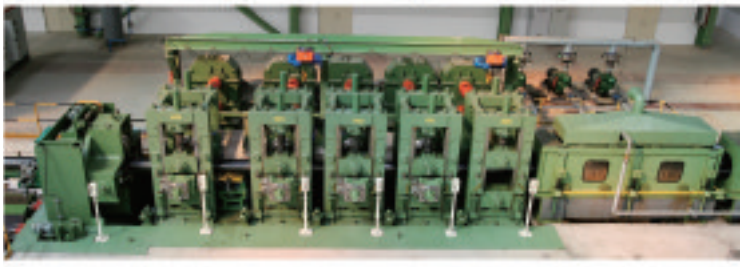
TAYLOR-WILSON

EDITORIAL INDEX

PIPE MILL
ERW/API 8”-26”Ø

DPI, Anshan, China/2008





- ENTRY SECTION
- ACCUMULATOR
- CAGE FORMING
- WELDING SECTION
- SIZING SECTION
- END FACING
- HYDRO TESTER

CAGE FORMING TECHNOLOGY

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- UNIFORM WELDING
- QUICK ROLL CHANGE
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MILLTECH
pm@milltechco.com

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Contents

Separating the random from the predictable

There is currently an interesting piece of trivia doing the rounds that points out each year a democrat has been elected as US president over the last 30 years, a British driver has also won the Formula 1 Grand Prix title. When Bill Clinton was elected in 1992, Nigel Mansell won the drivers championship; in Bill Clinton's re-election year of 1996, Damon Hill took the F1 title. And, of course, the election of Barack Obama as US president coincided with Lewis Hamilton clinching the coveted Grand Prix crown.

But the problem with such happenstance is that it's never clear if there's a tangible link between two sets of facts, or if they just serve to reflect our randomly predictable existence. This reminds me of the economic puzzle about the theatre audience with a higher than average proportion that play tennis. The puzzle poses the question: does the fact that they go to the theatre explain why they also play tennis?

The world is full of unexplained coincidences like these. However, as we head into possibly the worst financial year in history, it should be recognised that this economic mayhem is no coincidence and was entirely predictable (see the theories of economist Nikolai Kondratiev). In the game of consequence, for those many companies that will sadly fail and the unfortunate job losses incurred, the root of the problem lies with gross financial mismanagement and reckless debt accumulation from top to bottom.

Fortunately, what will be a little more reliable in 2009 is the *Tube & Pipe Technology* features program. Next issue we will turn our attention to Tube Russia 2009, *'Clamping, handling and packaging'* and *'Drilling, piercing and punching technology'*. As always, please keep sending your news so that I may help keep our industry informed.

Rich Sears
Editor • Email: richard@intras.co.uk

TUBE & PIPE TECHNOLOGY

The international magazine for the tube & pipe industries

Editor	• **Rich Sears**
Features editor (USA)	• **Dorothy Fabian**
Editorial assistant	• **Christian Bradley**
Production manager	• **Lisa Benjamin**
Design	• **Julie Tomlin**
Sales & marketing	• **Catherine Sayers** *English speaking sales* • **Giuliana Benedetto** *Italian sales* • **Hendrike Morriss** *German speaking sales* • **Linda Li** *Chinese sales* • **Jeroo Vandrevala** *Indian sales*
Advertising co-ordinators	• **Liz Hughes** **Andrea McIntosh**
Subscriptions	• **Liz Hughes**
Accounts manager	• **Richard Babbedge**
Publisher	• **Caroline Sullens**
Founder	• **John C Hogg**

Published by: Intras Publications,
46 Holly Walk, Leamington Spa, CV32 4HY, UK
Tel: +44 1926 334137 • **Fax**: +44 1926 314755
Email: tpt@intras.co.uk
Website: www.read-tpt.com

USA Office (Editorial only): Intras Limited,
272 First Ave, Apt 12G, New York, NY 10009, USA
Tel/Fax: +1 212 614 9266
Email: dfabian@rcn.com

Indian Office: Jintras Ltd,
Subarna (Ground Floor) P21/N, Block A
New Alipore, Kolkata 700 053, India
Tel: +91 33 2407 0701 • **Fax**: +91 33 2407 0700
Email: jeroov@vsnl.com

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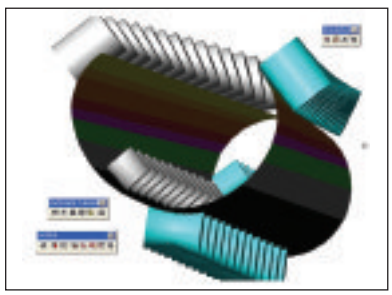
Technical Article



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Fabtech organisers launch exhibition dedicated to Central America's metal fabrication

The Fabricators and Manufacturers Association, International (FMA) and the Society of Manufacturing Engineers (SME), have announced plans to stage Fabtech® Mexico. This new trade show will be held for the first time from 2-4 June 2009 at the Cintermex exhibition centre in Monterrey.

Plans are underway for Fabtech Mexico to be held alongside the established AWS Weldmex (organized by the American Welding Society and Trade Show Consulting), and Metalform Mexico (organized by the Precision Metalforming Association). The joint event is expected to serve manufacturing professionals and related services throughout Mexico and Central America.

In conjunction with AWS Weldmex and Metalform Mexico, Fabtech Mexico will provide the optimal environment for companies to expand their reach into the heart of Latin America's manufacturing community.

Mexico has experienced impressive growth, particularly in the automotive, assembly, heavy equipment, and aerospace industries. Fabtech Mexico will connect buyers in this high-growth market with the latest metal fabrication equipment, services and technologically advanced products they demand in order to be more productive.

"FMA is thrilled to partner with AWS, PMA and SME on an all-encompassing trade show in Mexico for the forming, fabricating, tube and pipe, and welding industries," stated Mr Jerry Shankel, FMA president, *"We fully anticipate this event will grow into Mexico's largest manufacturing exposition, with year-one projections of 300 exhibiting, 60,000ft², and 8,000 professional attendees."*

> ***The joint event is expected to serve manufacturing professionals and practitioners throughout Mexico and Central America***

Plans are also underway to alternate the location between Monterrey in the north and Mexico City

Mark Tomlinson, executive director of SME added, *"The addition of Fabtech Mexico to AWS Weldmex and Metalform Mexico, takes us one step closer to our overall strategic goal of offering a complete North American plan to our customers."*

"The organizers of AWS Weldmex are extremely pleased to co-locate with Fabtech Mexico," said Mr Ray Shook, AWS executive director, *"We expect great success with this new alliance in the Latin American Market."*

Fabtech Mexico will feature a variety of bending and fabrication products, including laser and plasma cutting, coil processing, rollforming, plate and structural fabricating, saws and cut-off machines, tooling, press brakes, shears, punching, robotics, and tube and pipe equipment.

AWS Weldmex focuses primarily on welding and cutting products, including thermal spray, metal finishing and safety equipment. Metalforming products, including tool and die, metal stamping, forming, and assembly equipment, will be on display at Metalform Mexico.

Plans are also underway to alternate the location of the combined annual event between Monterrey and Mexico City. The show organisers are currently taking exhibit space reservations for the 2009 Fabtech Mexico show.

Monterrey – the location of the new Fabtech Mexico event to be held from 2-4 June 2009

Fabricators & Manufacturers Association International (FMA) – USA
Fax: +1 815 484 7701
Email: info@fmanet.org
Website: www.fmanet.org

Rofin-Sinar acquires 80 per cent in Nanjing Eastern Laser

Rofin-Sinar Technologies Inc, Germany, has announced it will acquire 80 per cent of the share capital of China-based Nanjing Eastern Laser Company Ltd (NELC). Rofin-Sinar is a leading provider of high-performance laser beam sources and laser-based solutions.

In one transaction, the company acquired 35.2 per cent of NELC's share capital from Nanjing Sanle Group Co Ltd. In a second transaction, Rofin-Sinar acquired an additional 44.8 per cent of the share capital of NELC from Sida Corporation (USA).

Jointly established by Nanjing Sanle Group Co Ltd (China) and Sida Corporation in 1993, NELC has been on the Chinese laser market for over two decades. The company has maintained a close cooperation with Rofin-Sinar since 1993 and has been authorized since 2004 to manufacture SM CO^2 lasers using Rofin's technology.

The company's product lines largely comprise of high power, fast-axial flow CO_2 lasers, with a power range of up to 3kW as well as NC-based laser processing equipment. NELC has approximately 70 employees and is ISO 9001-2000 certified. NELC will continue to operate as a stand-alone company and market its products through its own sales network to a primarily Chinese customer base.

"We are very pleased to add NELC to the Rofin group, as we have found a reliable partner with long-standing expertise in the manufacture of CO^2 laser technology in the Chinese market," commented Mr Günther Braun, CEO and president of RSTI.

"Becoming a part of such a large company will open up new resources for NELC," added Dr Su-Don Hong, president of Nanjing Eastern Laser Company Ltd.

With 28,000 laser units installed worldwide, the company has production facilities in the US, Germany, UK, Sweden, Finland, Singapore and Japan.

Rofin-Sinar Laser GmbH – Germany
Fax: +49 81 31 704 100
Email: info@rofin-muc.de
Website: www.rofin.com

Nanjing Eastern Laser Co Ltd – China
Fax: +86 025 58742622
Email: sales@eastern-laser.com
Website: www.eastern-laser.com

DIARY OF TUBE EVENTS

2009

JANUARY

10-13 **Tekno/Tube Arabia**
Dubai, United Arab Emirates
Exhibition
Email: alfajer@emirates.net.ae
Website: www.tekno7.info

26-28 **Pipeline Coating 2009**
Vienna, Austria
Conference
Email: sh@amiplastics.com
Website: www.amiconferences.com

MARCH

05-08 **Boru 2009**
Istanbul, Turkey
Exhibition
Email: info@ihlasfuar.com
Website: www.ihlasfuar.com

MAY

05-07 **Shanghai Tube Expo**
Shanghai, China
Exhibition
Email: ndpymq@126.com
Website:www.gangguan-expo.com

12-15 **Tube/wire Russia 2009**
Moscow, Russia
Exhibition
Email: wolfgramc@messe-duesseldorf.de
Website: www.metallurgy-tube-russia.com

26-29 **Citypipe**
Moscow, Russia
Exhibition
Email: citypipe@sibico.com
Website: www.citypipe.ru

JUNE

02-04 **Fabtech Mexico**
Monterrey, Mexico
Exhibition
Email: info@fmanet.org
Website: www.fmanet.org

10-12 **Tubes + Fittings Ukraine**
Kiev, Ukraine
Exhibition
Email: olga@welding.kiev.ua
Website: www.weldexpo.com.ua

OCTOBER

06-08 **Tubotech/Metaltech 2009**
São Paulo, Brazil
Exhibition
Email: cipa@cipanet.com.br
Website: www.cipanet.com.br

13-15 **Tube/wire Southeast Asia**
Bangkok, Thailand
Exhibition
Email: tube@mda.org
Website: www.tube-southeastasia.com

NOVEMBER

02-03 **Pipe & Tube Istanbul 09**
Istanbul, Turkey
ITA conference
Email: info@itatube.org
Website: www.itatube.org

15-18 **Fabtech/AWS Welding Show**
Chicago, USA
Exhibition
Email: information@fmafabtech.com
Website: www.fmafabtech.com

2010

FEBRUARY

10-12 **Tube India**
New Delhi, India
Exhibition
Email: schreiberg@messe-duesseldorf.de
Website:www.tube-india.com

APRIL

12-16 **Tube/wire Düsseldorf**
Düsseldorf, Germany
Exhibition
Email: liedtkeM@messe-duesseldorf.de
Website: www.tube.de

AddisonMckee CEO announces retirement and successor

AddisonMckee's chief executive officer, Mr John Brown, has announced his phased retirement, commencing January 1st 2009. Mr Brown originally joined the business in 1984 and has provided twenty-five years of dynamic leadership.

He played a major role in developing AddisonMckee into the world-class, multi-million-dollar technology manufacturer that is well known across automotive manufacturing, aerospace, shipbuilding, as well as numerous other sectors.

Mr Brown will remain in the group as president of European and Asian operations during an extended interim phase, ensuring a smooth transition and the completion of several ongoing strategic projects.

As part of a carefully planned succession strategy, Mr Joe Eramo, currently president of AddisonMckee in North and South America, will take over as global CEO. This will ensure that AddisonMckee maintains a consistent approach to the market and its rapid growth.

"Since joining our business seven years ago," comments Mr Brown, *"Joe Eramo has demonstrated his leadership abilities and success by guiding the North American division of AddisonMckee to six consecutive years of record sales revenue and been the recipient of two widely recognized lean manufacturing awards. It will, therefore, come as no surprise that I appoint him as my successor."*

The facilities of AddisonMckee-China in Tianjin

Comments Mr Eramo, *"John Brown has been instrumental in the globalization of AddisonMckee and I look forward to the challenge of continuing the execution of our plans for the benefit of our customers and our associates."*

(Top) AddisonMckee's outgoing CEO, Mr John Brown, and (above) New CEO, Mr Joe Eramo

AddisonMckee has also appointed Mr Roger Dutton as general manager of its Chinese operation, AddisonMckee-China. With extensive experience gained working in the Chinese marketplace since 1992, Mr Dutton has the expertise necessary to help drive the next stage of AddisonMckee's expansion into China's domestic marketplace.

A native of New Zealand, a citizen of Australia, and a resident of China, Mr Dutton has worked and studied in Germany, the United States and Hong Kong. Mr Dutton's career has spanned the disciplines of research and development, manufacturing, sales/distribution and services. As a veteran of global business, he has integrated assets and processes from Europe, Asia-Pacific and North America.

AddisonMckee – USA
Fax: +1 513 228 7226
Email: crogiers@addisonmckee.com
Website: www.addisonmckee.com

Brazilian order success for tube pulling equipment

BSA Tube Runner, a leader in pipe bevelling and tube pulling equipment, has been awarded an order for three 'Trident' tube pulling machines. Alumar, the Maranhão Aluminium Consortium, has selected this capital equipment to support ongoing projects at their Sao Luis plant in northern Brazil.

Alumar is one of the largest complexes in the world for the production of primary aluminium and alumina. It is operated by a consortium formed by the world major Aluminium companies – Alcoa, Alcan and BHP Billiton.

BSA Tube Runner is the manufacturer and supplier of a comprehensive range of equipment. This equipment is used in the manufacture, reconditioning and refurbishment of heat exchangers, boilers, condensers and other equipment.

BSA Tube Runner is part of the BSA Regal Group of companies, based in Southampton, UK. Mr David Bennett (Group MD) stated, *"This order demonstrates BSA Tube Runner's position as the foremost manufacturer of this equipment. In these difficult financial times we hope it will provide some stability to our UK based suppliers."*

BSA Tube Runner – UK
Fax: +44 2380 399113
Website: www.tuberunner.co.uk

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Combilift celebrates 10 years of innovation

Combilift Ltd, a leading supplier of long load handling solutions, has celebrated its 10th anniversary with an event that attracted an international crowd to its global HQ in Monaghan, Ireland.

Visitors and key customers enjoyed a full programme of events including helicopter trips piloted by Combilift's technical director Mr Robert Moffett, a display of 'dancing forklifts', and visits to local Combilift customers.

The main event of the day was the launch of a new Combilift model, the Combi-CB. This is a compact model, measuring just 1.5m square (excluding forks). This new product further demonstrates the innovation for which the company has become known.

Explaining the new product launch, managing director Mr Martin McVicar says, *"We noticed that there was a sizeable number of potential clients who handled mainly palletised loads, and just a small amount of long product, so a conventional Combilift was not the answer for them. The Combi-CB enables space saving 4-way handling of both palletised goods and long loads."*

This new model is set to increase Combilift's turnover by €10m during 2009, and create 20 additional jobs, on top of the 200 currently employed. In preparation, Combilift has expanded its premises by 20,000ft² to cope with the additional volume of output.

Attendees at the open day had the opportunity to talk to Combilift engineers and watch the design process in action during a tour of the premises. Visits to the assembly lines gave an insight into the production processes of the wide range of Combilift models available.

Combilift welcomed a crowd of visitors to its HQ in Monaghan, Ireland to celebrate its 10th anniversary

The event saw the launch of Combilift's new Combi-CB model

Visitors had the chance to see the Combi-CB in action at the premises of one of the first customers to sign up for this new model. Maurice Graham Builders' Providers uses a 4t conventional Combilift for handling packs of timber and bundles of steel.

In another area, pallet racking is used for the storage of other products such as pallets of cement and packs of insulated board and panel products. The versatility of the new all-round Combi-CB lends itself perfectly to such a scenario as it copes easily with the palletised goods. It can also be deployed for handling longer products such as boards or pipes when necessary.

Combilift Ltd – Ireland
Fax: +353 47 80501
Email: info@combilift.com
Website: www.combilift.com

HMTL North America name new US market manager

HMTL North America, USA, has named Ms Lisa Sarch as US market manager for HMTL's heat exchanger, boiler and condenser group. HMTL North America is a subsidiary of Heavy Metal & Tubes Ltd, headquartered in Mumbai, India.

Ms Sarch has over twenty years industry experience as a sales representative for welded and seamless tubing in stainless, carbon and alloy in the utility/feedwater heater, nuclear, heat exchanger, boiler, commercial and semi-conductor/high purity markets.

"Lisa Sarch is a dynamic, highly regarded sales professional with wide ranging knowledge of the US market in the areas she will oversee for HMTL," says Mr Robert Love, HMTL North America sales and marketing director.

Heavy Metal & Tubes Ltd is a global supplier of stainless steel, carbon and alloy tube and pipe for pressure and boiler, hydraulic, mechanical and speciality applications in energy and industrial markets worldwide. Founded in 1978, the company has offices in Ahmedabad, and a North American office in Rehoboth Beach, Delaware.

HMTL has nearly one million square feet of production at its twin stainless and carbon/alloy manufacturing facilities in Chhatral. The company is among India's largest tube and pipe exporters with clients in Asia, Europe, Africa, North and South America.

HMTL North America – USA
Fax: +1 302 295 0026
Email: robert-love@heavytubes.com
Website: www.heavytubes.com

Heavy Metal & Tubes Ltd – India
Fax: +91 022 23861799
Email: hitesh@heavytubes.com

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Http://www.hisen.com.tw

Major orders for high-power welders and seam annealers

EFD Induction, Norway, has received three major new orders for its range of high-power welders and seam annealers. The first contract was signed at Tube 2008 in Düsseldorf with Milltech Co Ltd, for an installation at Bhushan Steel Ltd in India.

This contract comprises a 1,800kW dual welder, Weldac 1800, and a seam annealing system for the normalizing (N) process. It contains four seam annealing stations with orbital tracking for a total power of 3,200kW for pipes up to OD 24".

The second contract was signed in late summer with Jiangsu Changbao Desheng Pipe Co Ltd in China. The contract includes a 1,800kW dual-welder, Weldac 1800, and eight seam annealer stations (with orbital tracking) for a total power of 2 x 3,400kW for pipes up to OD 26". The seam annealing installation is designed for a normalizing, quenching and normalizing (NQN) process.

The third contract was signed in early autumn with Tianjin Pipe (Group) Corporation in China. The contract will involve the provision of welding and seam annealing systems for two mills. For the large mill, EFD Induction will provide a Weldac 1,800kW dual-welder and eight seam annealer stations (with orbital tracking) for a total power of 2 x 3,400kW for pipes up to OD 26". The seam annealing installation is designed for a normalizing, quenching and normalizing (NQN) process.

The Weldac 1800 – for API pipes up to 26" OD

For the second smaller mill, EFD Induction will provide a Weldac 1,000kW dual-welder and three seam annealer stations with orbital tracking for a total power of 2,400kW for pipes up to OD 12". The seam annealing installation is designed for a normalizing (N) process.

All the installations have the possibility to run induction welding for the complete production ranges.

EFD Induction as – Norway
Fax: +47 35 50 60 10
Email: knl@no.efdgroup.net
Website: www.efd-induction.com

RathGibson launches new international offices

RathGibson, USA, has launched three new international offices in Mumbai, India, Singapore, and Vienna, Austria. The new offices are intended to provide local real-time support for the company's channel partners and customers. The company is a leading manufacturer of welded, welded and drawn, and seamless stainless steel, nickel, and titanium tubing.

The Mumbai office will provide RathGibson with a significant presence in the financial capital of India. The Singapore office will help facilitate sales to southeast Asia, while the Austrian office supplies additional support to Europe.

In addition to the new offices, six new team members have joined the RathGibson family. Joining the Greater China team is Ms Louisa Zhang, Ms Irene Wang and Mr Sunny Sun. Ms Zhang, the national sales manager for key accounts, is the liaison for all fabricators in the Chinese marketplace.

Serving as technical support manager, Ms Wang manages local customer support and spearheads the regional technical training programs for customers and channel partners. Mr Sunny Sun serves as national sales manager for the chemical market. Ms Zhang, Ms Wang and Mr Sun are based in the Shanghai office and report to Mr Peter Wang, director of business development, Greater China.

Mr Michael Edinburgh will serve as manager of business development in Mumbai, and will focus on meeting the needs of RathGibson customers in India. As an ASEAN regional business manager based in Singapore, Mr Gilbet Boon will be responsible for day-to-day operations, as well as providing the leadership to develop and strengthen RathGibson's ventures in southeast Asia.

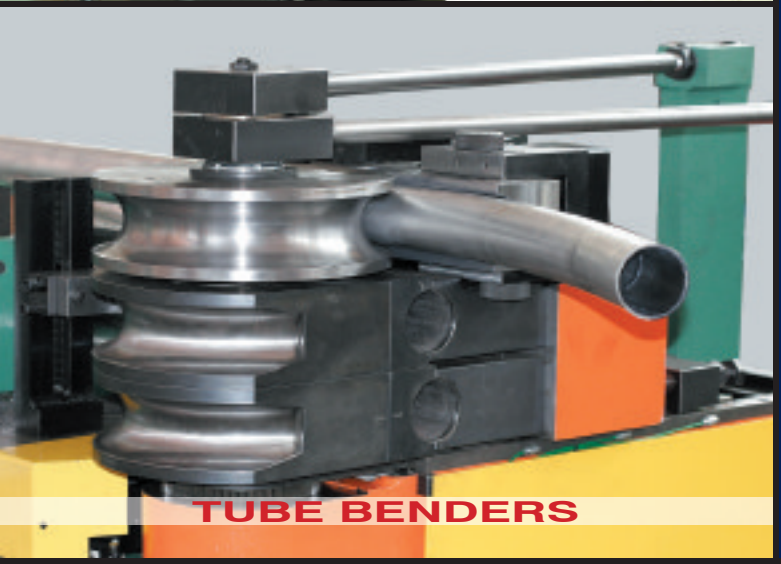
Mr Steve Soroko will serve as RathGibson's first director of business development for Europe. Mr Soroko will manage the European business from Vienna, Austria. He reports directly to Mr Andrew Yeghnazar, vice president of international business development.

RathGibson – USA
Fax: +1 847 276 2471 • **Website**: www.rathgibson.com

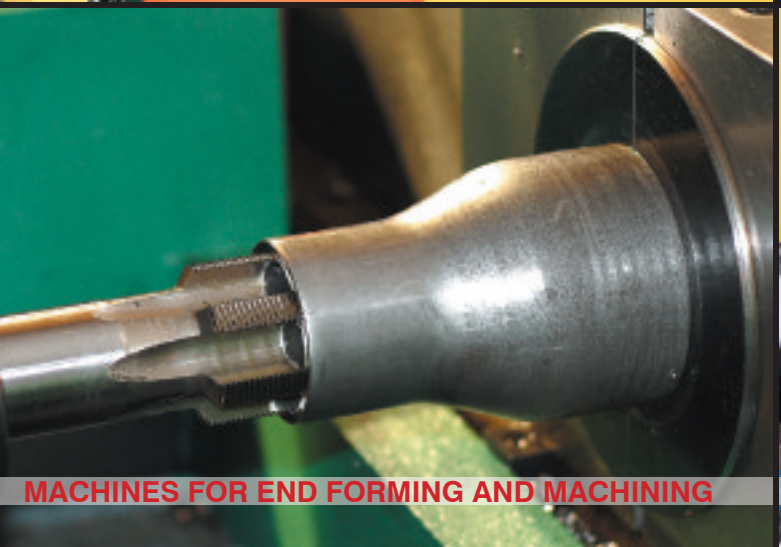
TUBE CUTTING LINES

MEASURING SYSTEMS

TRANSFERS FOR END MACHINING



TUBE BENDERS



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e-mail: ibpexp@pedrazzoli.it
www.pedrazzoli-ibp.com

Tube China 2008 a triumph – visitors and orders in abundance

The 3rd Tube China 2008 met with incredible success, abundant order books and an encouraging outlook for post-fair business. In total, 1,098 exhibitors were in attendance at the four-day event held at the Shanghai New International Expo Centre in Shanghai.

The companies at both trade fairs occupied an exhibiting area of 57,500m². Over 30,000 trade visitors travelled to Tube and wire 2008. A number of visitors came from India, Iran, Korea, Japan, Malaysia, Taiwan, Thailand and Vietnam in the form of visiting delegations. There were also nine provinces and municipalities, and four regional visiting delegations from mainland China.

Country and region pavilions included exhibitors from Austria, France, Germany, Italy, Korea, Spain, UK, and North America. Highly satisfied exhibitors from both tube and pipe and wire and cable praised the excellent business talks and high decision-making competency of visitors.Diversified and professional concurrent forums, conferences, and technical exchanges also attracted a high quality level of trade visitors.

Tube and wire China has experienced a giant leap of interest in recent years and has become the largest wire and tube trade fair in Asia. This success has been a true reflection of the prosperous Chinese market, the foremost producer and consumer of steel pipe in the world.

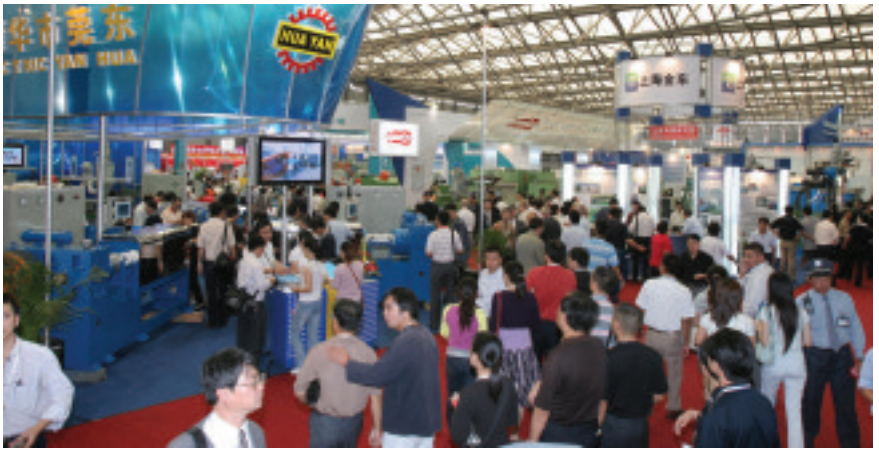
China has a huge number of infrastructure and energy transportation projects currently underway, while there has also been a boom in Chinese automobile manufacture and a high level of post-disaster reconstruction work.

Organised by the Metallurgical Council of the China Council for the Promotion of International Trade and Messe Düsseldorf China Ltd, Tube China will be staged again in September 2010.

Messe Düsseldorf China Ltd – China
Fax: +86 21 5027 8138
Email: press.mdc.com.cn
Website: www.messe-duesseldorf.de

Metallurgical Council of CCPIT – China
Fax: +86 10 65233861
Email: zhong@mc-ccpit.com

Tube China 2008 welcomed over 1,000 exhibitors and 30,000 trade visitors



New sales director and machinery for Roll-Kraft

Roll-Kraft, USA, has appointed Ms Jayne Herak as its new director of sales. Ms Herak comes to Roll-Kraft with an extensive executive background in various areas of sales, marketing and managing capacities. She will work with senior management to continue the upward growth of the company.

In order to further progress, Roll-Kraft has recently taken delivery and installed three CNC machines. Two of these machines are currently operating at the Mentor facility in Ohio. The third machine is located at the Roll-Kraft Ltd facility in Woodbridge, Ontario.

These machines will provide increased efficiency to the process of manufacturing tooling and equipment for the roll forming and tube and pipe industry. In recent months, Roll-Kraft has seen a marked upturn in international business, as currency fluctuations provide opportunities to foreign companies to increase their purchasing power.

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China's LDP demand to exceed 87 million metres in 2012

A recent study claims that demand for large diameter pipe in China is expected to increase by 9 per cent annually to 87.7 million metres in 2012, valued at 87.8 billion Yuan. The study, 'Large diameter pipe in China' by the Freedonia Group Inc, shows that gains will be fueled by increases in spending on physical infrastructure construction.

The increase in construction will support demand for large diameter pipe in drainage, gas and petroleum distribution, and other uses. Construction of new residential and nonresidential buildings will provide opportunities for large diameter pipe in sewers, water distribution and district heating systems.

Growth in manufacturing shipments, petroleum and gas extraction, and refining is expected to generate demand in the process manufacturing and petroleum and natural gas industries.

LARGE DIAMETER PIPE DEMAND IN CHINA
(million meters)

Item	2002	2007	2012	% Annual Growth 2002-2007	% Annual Growth 2007-2012
Large Diameter Pipe Demand	25.4	57.1	87.7	17.6	9.0
Drainage	6.7	17.8	28.0	21.5	9.5
Storm Sewer	6.8	15.6	24.4	18.1	9.4
Natural Gas	3.8	8.0	12.4	16.0	9.3
Water Distribution	2.1	4.4	6.4	16.7	7.7
District Heating	1.6	3.4	4.8	15.6	7.4
Petroleum	1.2	2.5	3.7	15.5	7.5
Sanitary Sewer	1.1	2.5	4.1	18.6	10.1
Other	2.1	3.0	4.0	7.3	5.7

Demand for large diameter pipe used in sanitary sewer, drainage, storm sewer, and natural gas transportation applications will see faster growth than the industry average. The most rapid gains will be in the sanitary sewer segment, boosted by strong residential construction and initiatives to improve living conditions in the countryside.

Drainage pipe will retain the largest share of the market, with nearly one third of total demand in metres in 2012. Growth will be spurred by increased spending on both building and non-building construction and the need to deliver runoff to existing bodies of water.

Advances will be further stimulated by rapid increases in infrastructural construction because of China's ongoing urbanization. The continuing expansion of infrastructural construction in rural areas will also drive gains as the government addresses a severe imbalance in living conditions between the urban and rural populations.

Concrete, which accounted for 44 per cent of total large diameter pipe length in 2007, will continue to be the leading material. Sales of plastic large diameter pipe are projected to increase at a rate of 11.2 per cent annually through 2012, faster than growth for any other material.

The Freedonia Group Inc – USA
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Website: www.freedoniagroup.com

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Fabtech 2008 hits the jackpot in Las Vegas

Fabtech 2008 and the AWS Welding Show was a great hit at its first showing in Las Vegas, USA. The event welcomed over 12,000 manufacturing and welding professionals on the opening day, with more than 21,000 during the entire three-day event. The show was also the first Fabtech and AWS Welding event to introduce Metalform, a new exhibition for the metal forming market.

Fabtech 2008 has left the building

The exhibition was the first show designed for the USA's west coast and attracted a new audience accordingly, with around 56 per cent being first-time attendees. Thirty-two per cent were from the west coast, and 16 per cent were international attendees – up from 10 per cent compared to the past two years.

"It's clear that our effort to expand the reach of the show for both attendees and exhibitors was successful. We've committed to return in 2012," said Mr John Catalano, show manager from the Society of Manufacturing Engineers.

The response from exhibitors at the show indicates attendees were ready to buy. *"It was a big show for us. We had the largest number of leads from any trade show we've been in going back to 2000,"* said Mr Al Julian, vice president (marketing) of Megafab.

Mr Wes Morgan, global communications director of Thermadyne Industries, said *"The Las Vegas location worked out well for us. The quality of meetings with our distributor customers made the trip worthwhile…. We've already started our planning for Chicago in 2009."*

First time exhibitor Mr Alex Laymon, president of DPSS Lasers Inc was impressed with the serious buyers he met. *"These were people who were well prepared, and came to the show looking for specific solutions to specific problems."*

The 2009 show will take place from 15-18 November at McCormick Place in Chicago, while Fabtech 2010 will be held in Atlanta from 2-4 November.

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Kjellberg inaugurates new welding electrode factory

Kjellberg GmbH has opened a new welding electrode factory in the East-German industrial area of Massen near Finsterwalde. An opening ceremony was held to celebrate the new facility, and hosted 400 guests who enjoyed a tour. The facility was built in just seven months and cost around €2 million.

"We are hoping that this investment for Kjellberg welding electrodes will help to maintain international competitiveness. The new building provides the capacity to increase the production as needed, with our export rate of 30 per cent in mind," said managing director Ms Anett Wenzel.

"The new building is well-equipped and modern. But more important than the best technique are our capable employees. They are the essential basis for the success of Kjellberg electrodes."

Following the ceremony more than 400 visitors used the opportunity to explore the new factory.

The open day gave interested visitors, former employees and colleagues the chance to get acquainted with the production of Kjellberg welding electrodes by demonstrations and a social program.

Kjellberg GmbH – Germany
Fax: +49 2302 661658
Email: j.mueller@kjellberg.de
Website: www.kjellberg.de

The new Kjellberg production site for welding electrodes

Linde enters joint venture with Sinopec subsidiary in China

The Linde Group has entered into a joint venture with Sinopec Fujian Petrochemical Company Ltd (FPCL), a subsidiary of China Petroleum & Chemical Corporation (Sinopec), for the long-term supply of industrial gases to customers in the province of Fujian in south-eastern China. This collaboration will result in a capital outlay of around €100 million.

The joint venture company Fujian Linde-FPCL Gases Company Ltd will be located in Quangang Petrochemical Industrial Park in Quanzhou, Fujian, and will produce and distribute nitrogen, oxygen and argon from that site. Each of the partners, FPCL and Linde Gas (Hong Kong) Ltd, a fully-owned Linde subsidiary, has a 50 per cent share in the new joint venture.

In addition to the liquefied gases business, Fujian Linde-FPCL Gases also intends to set up a local gases centre in Quangang.

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Event News in Brief...

event news in brief...

Pipeline Coating 2009 (www.amiconferences.com) will take place from 26-28 January at the Renaissance Hotel in Vienna, Austria. The conference will provide a global forum to discuss the improvements and trends in pipeline coatings, with debate of current technical issues in failure prevention and market developments.Speakers will include Mr Denis Melot (Total), Mr Andre Koebsch (Petrobras), Mr Mohamed Daoud (Abu Dhabi Co for Onshore Oil Operations), and Mr John La Fontaine (ExxonMobil Development).

The 4th international conference **'Stainless and Special Steels 2008'** was successfully staged from 16-17 October 2008 in Dnepropetrovsk, Ukraine. A selection of leading metallurgical companies from Russia and Ukraine took part in the conference, including Arcelormittal Stainless International, Thyssenkrupp, Sandvik, Tubacex, Centravis, Electrostal, Uraltrubostal, and Uniton.

Pune Machine Tools Show 2009 (www.kmgindia.com) will take place from 19-22 February 2009 at the Auto Cluster Exhibition Centre, Pune, India. The event is organised by KMG Business Technology and sponsored by the ITPO (India Trade Promotion Organisation). The event will have participation of over 300 companies from leading countries including Japan, USA, Germany, Italy, Taiwan and Singapore.

Citypipe (www.citypipe.ru), the 4th international exhibition for municipal piping systems, will be staged from 26-29 May 2009 at the Crocus Expo centre in Moscow, Russia. Exhibits will include pipes and manholes, pipe manufacturing equipment, valves and fittings, pipeline laying and repair, pipeline inspection and trenchless technology. The last event in 2008 welcomed 216 companies from 23 countries in 5,102m^2 of exhibit space.

Fabtec India 2009 (www.fabtecindia.com) will take place from 21-25 January 2009 at the Codissia trade fair complex in Coimbator, India. The exhibition will focus on machinery and equipment used for steel structural fabrication, sheet metal forming and stamping technology, welding equipment, tube and pipe production, fabricating equipment, and painting/coating technology. The event is jointly organised by Codissia and Germany's M/s P E Schall GmbH & Co KG, with sponsorship from the Indian Welding Society (IWS).

FlowExpo (Email: flowexpo.tuiding@gmail.com), the 12th International trade fair for valves, pipelines, fluid engineering and the process industries, will take place from 25-27 March 2009 in Guangzhou, China. The exhibition will showcase a range of products including gate valves, butterfly valves, globe valves, check valves, fittings, pipe expansion joints and connection devices. Other products will include pipelines, pipes, piping, tubing, fittings, hoses, and systems for fluid engineering and processing.

Business News in Brief...

business news in brief...

ThyssenKrupp Metallurgie GmbH (www.tkmet.com) has appointed Metal Trading SARL as its exclusive commercial agent for the sale of primary copper, zinc and nickel in France, Belgium and Luxembourg. ThyssenKrupp Metallurgie GmbH, Germany, is one of the largest metal trading companies in Europe, with an annual turnover of about €1.2 billion. Metal Trading SARL, France, is a privately-held non-ferrous metal trading company.

Trumpf (www.trumpf.com), Germany, has finalised the takeover of **SPI Lasers** (www.spilasers.com) following its shareholders approval of the sale of more than 90 per cent of the company's shares to Trumpf. According to the company, the market for industrial lasers will continue to grow, including fibre lasers for applications in the low power range. SPI Lasers is a manufacturer of fibre lasers and its product range complements Trumpf's product portfolio.

Otto Junker GmbH (www.otto-junker-group.de), Germany, has appointed Dr Hans Rinnhofer as chairman of the board of Otto Junker GmbH. *"With Dr Rinnhofer we have enlisted a proven expert in the technology areas of our group of companies,"* said Mr Klaus K Moll, the chairman of the supervisory board. Prior to his appointment at Otto Junker, Dr Rinnhofer has recently held executive positions as managing director of Maerz GmbH and board chairman of the Austrian Research Centers GmbH in Vienna.

ChTPZ-IPS (www.chtpz-group.ru), Russia, has signed a US$3 million contract with **Zeromax**, Switzerland, to deliver pipeline fittings for the Gazli booster pump station in Uzbekistan. The company, a part of the Rimera Group, will deliver products including tees, caps, flanges, swages and bends. Gazli BPS construction, which started in 2008, will substitute the obsolete station constructed in 1962.

Olympus, USA, has launched a new global website – www.olympus-ims.com – which contains information on ultrasound (UT), eddy current (EC), remote visual (RVI) and high-speed video (HSV) testing products. The multi-language site offers application notes that guide customers to cost-effective test solutions, as well as software downloads, and a PDF library.

Siemens (www.siemens.com) has acquired German company **Innotec GmbH**, an international vendor of digital engineering software and services for the process industry. As a result of the acquisition, the company will become a subsidiary of Siemens AG, assigned to the Industrial Automation Systems business unit.

Coupling starter/screw-on systems for OCTG

PMC-Colinet, a division of Ajax Tocco Magnethermic Corp, is the manufacturer of advanced coupling starter and screw-on machine systems for secure connections in the oilfield. Designed for API and premium connections, these systems use floating spindles to automatically and precisely fit a coupling onto a pipe end for OCTG applications.

The systems have a high-powered motor to screw the coupling on securely, applying and recording the right torque. These systems save time, labour and expense in the customer's application by giving a tight and precise pipe-to-coupling fit – a must for productive execution in the field.

The coupling starter and screw-on machines assure connections for pipe sizes ranging from 1.9" up to 20". The systems are equipped to measure and control torque, turns, stand-off and 'J' dimension metrics. Accompanying operator interface terminals display and store final values and graphical profiles, using PC-based Windows operating systems.

Other technical features include a coupling starter, independently controlled spindle speed, and a hydraulically actuated gripper head and pipe chuck. The coupling screw-on has a variable spindle speed, 75kW (100hp) spindle motor power, and a make-up torque of up to 35,000ft-lbs.

The starter and screw-on systems are among the dozens of pipe-processing systems manufactured by PMC-Colinet. PMC-Colinet's parent company, Ajax Tocco Magnethermic, is a leading worldwide designer and builder of heating, melting and processing equipment for pipe applications.

The coupling starter and screw-on machine system

Specialities include quench and temper lines, annealing furnaces, and heat treatment solutions for seams and welds.

PMC Colinet – USA
Fax: +1 440 944 1974
Email: pmc@pmcindustries.com
Website: www.pmc-colinet.com

PMC Colinet – Belgium
Fax: +32 64 67 32 67
Email: sales@colinet.be

Multichannel tube wall thickness measuring system for PQF mill

Vallourec & Sumitomo Tubos do Brasil Ltda (VSB) has contracted IMS Messsysteme GmbH to deliver a multichannel tube wall thickness measuring system. This system, to be installed behind the PQF extractor mill, will be used to measure tube shells at the exit of its SMS Meer PQF mill.

IMS Messsysteme has been contracted to supply a new measuring system to VSB

In addition to the established 13-channel measuring geometry for PQF mills, which is used for continuous measurement of polygonal wall distributions, the measuring system will be equipped with a high-resolution diameter gauge. A total of 18 laser triangulation sensors will be fitted, which will enable accurate detection of out-of-round flaws and profiling of the tube outside diameter.

The laser-based measuring technology, integrated for the first time in an IMS tube wall thickness measuring system, has already been used successfully for several years at Ovako Steel AB, Sweden, as a standalone measuring system. The sensor and analysis systems are now being integrated in the IMS measuring system in close cooperation with the company LIMAB.

The system can simultaneously measure the wall thickness and eccentricity, outside diameter and profile, temperature and length of tubes in a single compact gauge, avoiding the need to install multiple individual systems.

IMS Messsysteme GmbH – Germany
Fax: +49 2056 975 140 • **Email**: info@ims-gmbh.de • **Website**: www.ims-gmbh.de

From hacksaws to bandsaws

The Hermann Klaeger Company, Germany, is the manufacturer of hacksaw machines, pipe bending machines, and bandsaw machines. Established in 1928, the company has sold over 135,000 machines to date.

The company's range includes band saws with a capacity from Ø 220 to 325mm round, fully automatic bandsaws, fully automatic twin-pillar bandsaws, vertical bandsaw machines, hacksaws (capacity from Ø 200 to 315mm round), ring rollers (universal bending machine, capacity pipe maximum Ø 70), and press benders for pipes up to 2" (available in hydraulic and electro hydraulic versions).

The company sells its machines both to dealers and directly to the end user, and its products are specified in the catalogues of well-known dealers in Germany and other countries.

Hermann Klaeger GmbH – Germany
Fax: +49 7151 369 0380
Email: info@klaeger.com
Website: www.klaeger.com

Specialist in band sawing technology

ITL Industries Ltd, India, is the manufacturer of metal cutting band saw machines. Established in 1986, the company's metal sawing machine manufacturing division designs and manufactures horizontal-type metal cutting band saw machines.

The machine range includes manual, semi-automatic, fully automatic and NC versions. ITL also supply high-speed vertical-type metal cutting band saw machines, including plate saws and tool room application machines. In addition, they supply high-speed hacksaw machines in technical collaboration with M/s Kasto Maschinenbau & GmbH, Germany.

Special purpose sawing machines are available for applications including aluminium slab and billet cutting, silicon slab cutting, graphite cutting, nuclear fuel cutting and tyre cutting.

The company's tube and pipe manufacturing equipment division produces machines for the production of tube, pipe and metal sections. This equipment is used for precision tubes, galvanized pipes, black pipes and API grade pipes. The product range includes tube mills, section mills,

An NC online fly cutoff from ITL

strengtheners, cut-off, accumulators, draw benches, swaging machines, pointing and finishing machines, hydro testers and bundling equipment.

The company is an authorised distributor of Vickers International for hydraulics equipment and components for the State of Madhya Pradesh & Rajasthan. The company also designs, fabricates and assembles hydraulic power packs and skids for custom-built applications.

ITL's customers include steel plants, forging industries, defence establishments, railway workshops, steel tube plants, research organisations and heavy engineering industries. The company exports to regions including USA, Canada, Europe, the Middle East and South East Asia.

ITL has previously designed, developed, manufactured, supplied and commissioned four tube mill plants, and exported to Singapore, Malaysia and South Africa. The company also has 16 installations with various capacities running successfully in India.

ITL Industries Limited – India
Fax: +91 731 272 1110
Email: itlindia@sancharnet.in
Website: www.itl.co.in

Small diameter measuring systems

The Laser 2000 series diameter measuring devices from Sikora are specifically adapted to the increasing demands of the hose and tube industries, and are developed for product diameters from 0.05 to 300mm.

The latest addition to the Sikora family of lasers is the Laser 2003 XY, the smallest of the two-axis-gauge heads. With a repeatability of 0.1µm, it is designed for the measurement of extremely small hose and tubes with diameters from 0.05 to 3mm. The device is equipped with pulse-driven laser-light sources in combination with high-resolution CCD-sensor lines and powerful signal processors.

Laser 2003 XY is the smallest of the Sikora diameter measuring systems

Extremely short exposure times of 0.2µseconds guarantee precision at all line speeds, even if the measuring object is vibrating. The use of the latest SMD technology makes the small and powerful gauge head easy to install anywhere on the production line. There are no optical elements or moving parts in the system to wear or degrade, providing maintenance free operation and optimum reliability. Requiring no calibration, the measuring values remain precise after years of operation.

Sikora AG – Germany
Fax: +49 421 48900 90
Email: sales@sikora.net
Website: www.sikora.net

Introduction of calibrated single scan technology

In-line measuring, monitoring and control systems expert, Zumbach Electronic, has introduced CSS (calibrated single scan) technology, which brings a number of improvements. The most important innovation is that each mirror is individually identified, and its error characteristics are stored in a chip, meaning that each mirror is individually calibrated. Up to 1,200 measurements/s, ie all measurements, are available for further processing.

ODAC measuring heads equipped with the CSS technology are available in 1, 2 and 3 axis models

A high speed processor in the measuring head allows the measuring values to be filtered and analysed depending on the process (speed, product surface, dirt, water, etc), and further processing for minimum, maximum, average, ovality and fault detection can be configured. Over 300 processed data packages/s can then be exported over a data port.

With the new CSS technology, higher measuring and data rates are combined with the robustness and precision of laser scanning. CSS is already available in a number of ODAC® laser heads.

Zumbach Electronic AG – Switzerland
Fax: +41 32 356 0430
Email: sales@zumbach.ch
Website: www.zumbach.com

New multi-directional forklift makes its North American debut

Multi-directional forklift expert Combilift marked its 10th anniversary with the North American premiere of its new Combi-CB at Fabtech Las Vegas 2008. The new Combilift is designed to benefit fabrication companies who may be using standard conventional counter-balance forklifts, reach trucks, side loaders, or electric 4-way forklifts.

The 6,000lb capacity, multi-directional Combi-CB is available in LP gas, diesel and electric, and in lift heights up to 25ft. Its rubber tires give it the advantage of indoor/outdoor capabilities, while a fully enclosed cabin with heater can be offered to accommodate harsh/wet environments.

The truck is suitable for a wide variety of applications, particularly in manufacturing plants where the use of all available shelf space is crucial and safe handling and manoeuvrability is paramount. The 55" wide fork carriage with, optional integrated fork positioner, offers excellent support for handling long products.

The new Combi-CB was premiered at Fabtech Las Vegas 2008

As there is no platform, goods can be stacked directly from the floor up, enabling 100 per cent use of lower storage areas.

The compact size of the Combi-CB allows it to stuff and de-stuff containers and transport the pallets or long loads directly to the warehouse. Combilift will provide potential customers with a proposed layout drawing free-of-charge, to show product storage possibilities when considering the Combi-CB for their operations.

The Combilift has no complicated electronics and is both operator and maintenance friendly, making it an all-round solution for small and large companies operating in tight, closed areas.

As with all products in the Combilift range, it is equipped with all-wheel hydrostatic drive, providing outdoor and indoor capability. It can also operate in semi-rough terrain and even snow.

Combilift Ltd – Ireland
Fax: +353 47 80501
Email: info@combilift.com
Website: www.combilift.com

Combilift USA – USA
Fax: +1 336 378 8842
Email: info@combilift.com
Website: www.combilift.com

New tube end forming brochure

Manchester Tool & Die Inc, USA, has produced new literature featuring the company's tube end-forming equipment and tooling capabilities. The brochure provides details and specifications on OD tube capacities, typical applications and specific benefits for each model of tube end-forming machine, groover, crimper, crimp machine and autoloader.

The company offers standard and custom-built tube end forming machines with OD capacities ranging from 3/16" to 3", and a research and development lab to help meet customers' specific applications. Manchester Tool & Die's manufacturing facility is available for specific machining needs, such as CNC and manual turning, CNC and manual boring, CNC milling, grinding and wire EDM. Steel fabricating services are also available.

Manchester Tool & Die, Inc – USA
Fax: +1 260 982 4575
Email:
edegner@manchestertoolanddie.com
Website:
www.manchestertoolanddie.com

Innovative rotary draw bender

Ercolina, USA, has launched its new Top Bender model TB80, suitable for bending large diameter pipe, tube, squares, rectangular, solids and other profiles.

The machine's operator-friendly touch screen display features auto, manual and simple bend programming modes, as well as system diagnostics and multiple language modes. The LCD counter bend axis and programmable material springback for each bend angle offer greater bend accuracy. A handheld dead man switch controls bend, return and emergency stop functions.

The TB80 features a USB device for unlimited program memory storage; each USB control stores up to 2,048 individual bend programs, with 12 bends per program.

The TB80 is capable of bends to CLR as small as 2D without a mandrel. The machine accepts standard Ercolina quick-change hex mount tooling from 1½" to 3", and an 80mm hex shaft mount is available for larger profiles.

The reinforced steel gear case accepts large radius tooling to 19½" CLR, and a secondary slider tool post expands capacity.

Ercolina's new Top Bender model TB80

The availability of an optional mandrel table will be announced at a later date.

CML USA Ercolina – USA
Fax: +1 563 391 7710
Email: info@ercolina-usa.com
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Rapid and intuitive scanning to test curved parts

Sonatest Ltd has launched its new Wheelprobe™ series of probes. Developed in conjunction with leaders in aerospace technology, with a focus on the increased use of composite materials, the probes enable rapid and intuitive scanning in the testing environment, producing quantitative data on material integrity.

The probes feature a wide, comfortable rubber tyre that is acoustically matched to water, allowing near dry contact, and so produce high quality results without the need for couplant or large quantities of water.

The Wheelprobe range includes three models: a single element model, and 50mm and 100mm array versions. Developed to be used in conjunction with the Sonatest Rapidscan series, they are compatible with alternative NDT industry standard equipment.

The 50mm array Wheelprobe is suited to hand scanning of large, flat or slightly curved parts, covering such areas quickly and efficiently. A central spring-loaded roller ensures consistent contact across the wheel, even when scanning narrow parts. The Wheelprobe is able to provide high quality, high-resolution data due to the incorporated 64 element phased array with 0.8mm resolution and a high resolution positioning encoder.

Sonatest's 50mm array Wheelprobe

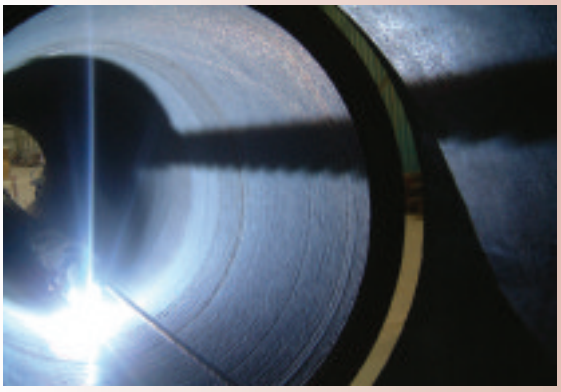
The 100mm tyre has been constructed for very large area coverage and due to its size is best suited to flat horizontal components, but is also adaptable to curved parts.

Industry sectors where the Wheelprobe may be used include aerospace, automotive, marine and composite manufacturing. Adaptable for use by individual operators or as part of a scanning system, the Wheelprobe is suited to advanced material testing, simplifying testing procedures and preparation where there are common requirements for the ultrasonic inspection of composites for porosity sizing, delaminations, foreign body contamination and fibre wrinkling.

Sonatest Ltd – UK
Fax: +44 1908 321323
Email: sales@sonatest.com
Website: www.sonatest.com

Economical cladding based on hot wire TIG welding

Polysoude, France, has developed an economical system using hot wire TIG welding for cladding applications. The technology is designed to address the costly problems of pipelines that transport oil or natural gas according to high speed and high pressure. High quality materials are required to resist sand and other abrasive minerals, or corrosive materials.



Manufacturers of tubes and fittings can improve the inside surfaces of their products by cladding with wear-resistant Inconel alloy

Pipe and pipe component manufacturers improve the inner surface of pipes by a welding technique called cladding. During this operation, the interior of the pipe (made from inexpensive black steel) is reinforced by a layer of Inconel, an extremely resistant material.

Polysoude has become a specialist in this area, with exports to Europe, Asia and the Middle East. Orders for the welding system exceeded several million Euros in 2008.

Polysoude – France
Fax: +33 240 681 188 • **Email**: info@polysoude.com • **Website**: www.polysoude.com

High frequency induction heating system for reduced energy costs

Cheltenham Induction Heating Ltd, an Ambrell company, has announced the expansion of the Ekoheat line of induction heating systems to 135kW, designed to deliver energy savings to the heating phases of manufacturing processes.

Ekoheat technology reduces energy usage, compared to alternative heating methods such as gas-fired ovens and resistive heating techniques. With efficient power conversion and a power factor greater than 0.9, utility demand charges are significantly reduced, resulting in lower monthly energy bills. Flameless, non-contact induction heating also minimises energy waste by focusing energy only on the zone to be heated.

Ekoheat systems are suited to case hardening, high-speed brazing, melting, crystal growing, continuous wire and continuous strip heating. The systems deliver reliable solutions for larger parts of many geometries and compositions. The Ekoheat is designed for the worldwide market, supporting 360 to 520 AC line voltages, and is CE marked.

The user-friendly control interface, available in six languages (English, Spanish, French, German, Italian and Polish), streamlines operator interactions and provides valuable runtime information.

The expansion of the Ekoheat series adds 65kW, 90kW and 135kW units to the existing 15kW to 45kW models, at operating frequencies from 50kHz to 150kHz. Additional models at higher power levels and with a wider range of frequencies will also be available. The range of products is manufactured at the ISO 9001:2000 certified Ameritherm facility.

Cheltenham Induction Heating Ltd – UK
Fax: +44 1242 224146
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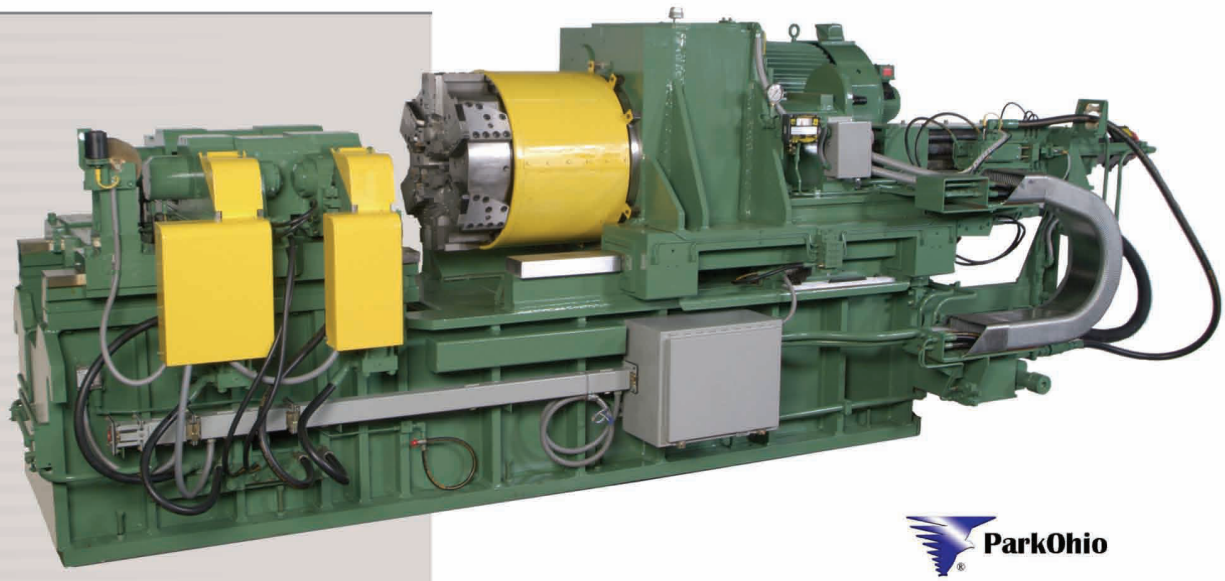

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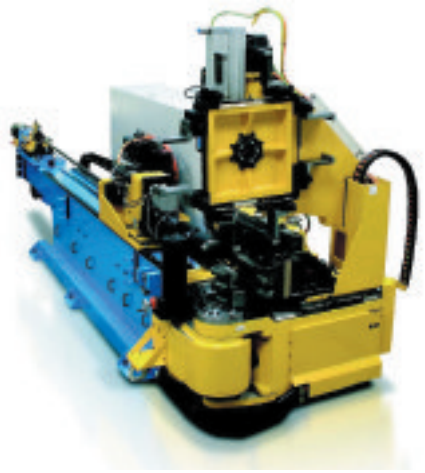
Tube bender with automatic tool changeover

Machine manufacturer Silfax, France, has launched a fully electric CNC tube bender. The SE 9127 is designed for large diameter tubes and piping, and offers a variety of bending height options.

The system is controlled by Siemens control technology, making it suitable for fully automated bending of larger pipes under safe working conditions. The SE 9127 is also the first machine of its type to offer automated tool changeovers, and simplifies fully automated production with a mix of interfaces and cell integration.

The SE 9127 is equipped with nine electric CNC-controlled axes and is capable of bending pipes up to 127mm in diameter. Tool changing is fully automated and the system can be fitted with four top-of-the-range tools for tensioning and gripping pipes with inflections or reduced holding areas.

"*Although it's more effort at first than a hydraulic system, we tension the pipes electrically,*" explained Thomas Rohde, head of systems technology at Silfax, "*but the results speak for themselves: bends are extremely accurate and can be reproduced time after time.*"



The new, fully automated Silfax tube bending machine for wide diameter pipes up to 127mm, with automated tool changeover

The high tension and mandrel retraction force of more than 100kN make it possible to form thick-walled tubes safely, reliably wiping wrinkles. The Z axis is displaced to allow for automatic calibration of the bending height. The system automatically stores programmed bending options and tool data, which can be retrieved at the touch of a button. All processes are controlled by Siemens 840D software.

There is strong demand, particularly in the aerospace industry and in the automotive sector, to bend large diameter, thin-walled tubes safely and accurately. Other areas where every millimetre counts and pipe tolerances must be kept to an absolute minimum include truck exhaust systems and intermediate components used in hydroforming processes.

The new Silfax machine works along seven linear axes down to 0.05mm. During bending and forming it is accurate to 0.05°. To keep cycle times to a minimum, the SE 9127 offers feed rates of up to 30m/min. Bending and twisting can be carried out at up to 62rpm.

The SE 9127 incorporates interfaces for RS232, RS422, and ethernet, making it suitable for connecting to external systems. Integrating cells into bus networks is also easy. The system can be tailored to specific requirements, with options including wiper dies, an automatic mandrel device and machine bed extensions. Silfax is already planning the introduction of its next machine, for pipes up to 157mm in diameter.

Silfax – France
Fax: +33 4 7231 0619
Email: info@silfax.com
Website: www.silfax.com

User, tool and abrasive in perfect harmony

3M has launched three new air-powered metal finishing tools – a disc sander, a die grinder and a cut-off wheel tool, comprising eleven variants. All are equipped with powerful high-output air motors, and are designed to optimise tool and abrasive performance and incorporate measures to increase and enhance operator usability and comfort. These include 360° directional exhausts and 3M's patented Greptile material (on most of the tools), a surface covering manufactured using a micro-replication process pioneered by 3M that provides a more effective grip while requiring less effort from the operator.

The disc sander features a 97° head angle, greatly increasing the ergonomics of the tool, and promoting a more comfortable wrist position for the operator. The tool's easier-handling, lightweight, compact design also generates less vibration, allowing improved overall operator control. The disc sander is available in three variants: two 2" models with different airflow and power ratings (0.33HP and 0.5HP), and a 3" version offering 1HP. The unit's powerful air motor allows jobs to be completed faster, and a smaller head means users can work closer to the surface being abraded, allowing better access, control and visibility.

The disc sander's Quick-Attach system swiftly connects it to 3M's range of Roloc metal finishing consumables. This allows the sanders to be fine-tuned for a wide array of applications, including deburring, grinding, blending, finishing and cleaning. From Roloc coated abrasives and Scotch-Brite discs to everyday general-purpose aluminium oxide discs, users can match the tool and consumable to the application's requirements. A range of back-up pads is available in different diameters and degrees of hardness.

3M's new pneumatic die grinders have been designed to efficiently handle refining, finishing, cleaning and deburring needs on the complex production parts. Four models are available with different rpm ratings (8, 12, 18 and 20,000). All feature a powerful 1HP motor, allowing users to complete jobs quickly, and the unit's advanced ergonomic design gives greater control during operation. Operator comfort is further enhanced with directional exhausts and Greptile grips. A wide range of 3M consumables, including Scotch-Brite brushes and wheels, bristle discs and flap wheels, means that the die grinders are suitable for applications using a wide variety of metals, from basic carbon steel to titanium.

The company's new 1HP cut-off wheel tools share the same ergonomic features as the other models, but also incorporate additional built-in safety features, including a safety lever throttle and a 360° rotatable safety guard. The range consists of four models: 3" and 4" wheel in-line units and 4.5" and 5" wheel right-angle units. Designed to offer performance and dependability, users have a choice of 3M's Cubitron Abrasive grain wheels (available in 3" and 4"), or Inox aluminium oxide wheels (available in 4.5" and 5").

3M Abrasive Systems – UK
Fax: +44 1612 371106
Email: abrasives.uk@mmm.com
Website: www.3m.com/uk/abrasives

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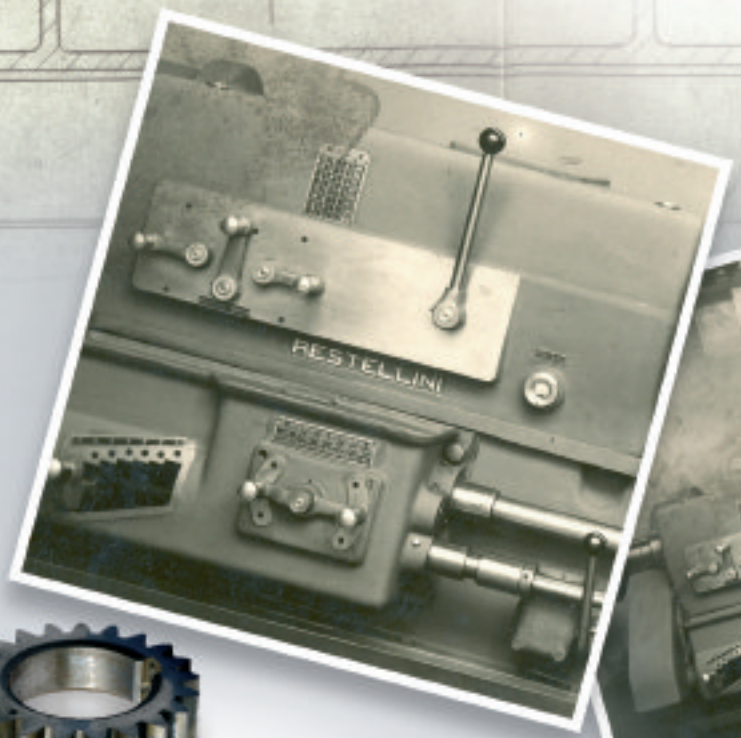

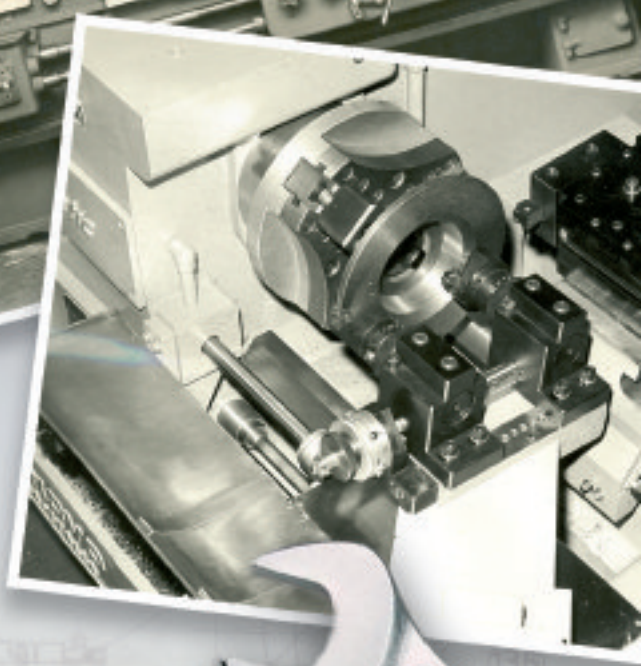

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www.tubetechmachinery.com

Fully automatic roller feed saw

Scotchman Industries, USA, has introduced the CPO 315 roller feed fully automatic cold saw. This machine provides uninterrupted cutting on tubing, solids, and extrusions, and supplies high quality cuts.

The machine is suitable for high volume and long length applications that require very accurate and clean cuts. The CPO 315 RFA is equipped with either a supply table or a full bundle loading attachment.

Both systems allow the saw to automatically load, trim, cut and sort lengths up to 120" (60" is standard) and hold ±0.006 in lengths of material up to 3" in diameter.

With optional equipment, the user can feed directly into a deburring machine or acquire form jaws that can handle thin wall applications without distortion. The CPO 315 RFA saws are available in ferrous and non-ferrous models.

Scotchman Industries Inc – USA
Fax: +1 800 843 5545
Email: info@scotchman.com
Website: www.scotchman.com

The CPO 315 roller feed automatic cold saw from Scotchman Industries

Polyurethane pipeline coating insulation range

Dow Hyperlast, part of Dow Chemical Company, manufactures a comprehensive range of polyurethane pipeline coating insulation products. With 30 years' experience as an international polyurethane systems house, Dow Hyperlast's insulation products protect pipelines and installations in the North Sea, Gulf of Mexico, South East Asia, South America, the west coast of Africa and other parts of the world.

The Dow Hyperlast range of offshore pipeline protection systems provide thermal insulation, corrosion protection, adhesion and impact strength in the harsh underwater working environment. The wide variety of choice when using Hyperlast polyurethane systems allows for selection based on flexibility, hardness, low temperature processing and mould or rotational casting.

The product range includes Hyperlast Syntactic 512, suitable for water depths of up to 250m, and Hyperlast Syntactic DW 512 deepwater products for use at depths

of up to 1,500m and 3,000m. These are backed up by Hyperlast FJ, a fast-curing polyurethane elastomer which has protected over 220,000 field joints worldwide.

Hyperlast PUF rigid foam systems are offered in a choice of compressive strengths with various degrees of open/closed cell content for onshore line-pipe insulation and field jointing, pipe-in-pipe insulation of sub-sea flowlines, and as the field joint infill for concrete weight-coated gas transmission lines.

Systems are available at different densities with particular insulation characteristics according to the level and type of blowing agent included within the formulation. These systems are typically designed to be processed through high pressure meter mixing equipment for cast and spray applications.

In addition to its readily available products, the company regularly formulates custom insulation systems for specialist projects such as manifolds, risers, jumpers, spool pieces, xmas trees and associated sub-sea architecture.

Dow Hyperlast – UK
Fax: +44 1663 746605
Email: help@dowhyperlast.com
Website: www.dowhyperlast.com

Latest order for 18" PQF plant

Yantai Baosteel Pipe Co Ltd, part of Chinese steel group Baoshan Iron & Steel Co Ltd, has placed an order with SMS Meer, Germany, for the supply of an 18" PQF® plant. This order follows the supply by SMS Meer of three plants for the production of tubes from 21.3 to 1,420mm.

The new plant operating with the PQF method (premium quality finishing) will cover the upper end of the size range for the production of seamless tubes, in particular for the high-grade tube segment. The plant is scheduled to go into operation at the beginning of 2010, and will produce 520,000t of seamless tubes per year. The installed maximum power of the key units alone will be more than 80,000kW.

The tubes will have diameters from 244.5 to 457mm, with wall thicknesses up to 55mm. Baosteel will deliver the starting material by sea from its own steelworks to the port of Yantai, directly next to the works.

SMS Meer is to supply all the key components of the mill equipment for the PQF plant, including the media systems and the automation.

The scope of supply also includes project management, supervision of erection and commissioning, and training of operating personnel.

The PQF mill will be equipped with individual roll drive and an all-hydraulic roll adjustment system. In order to ensure constant quality, the whole PQF plant will be monitored and controlled by the Carta® technology system, developed by SMS Meer.

The plant for Baosteel will be the eleventh PQF plant worldwide and the sixth in China that SMS Meer has installed since the market introduction in 2003.

SMS Meer GmbH – Germany
Fax: +49 2161 350 1667
Email: info@sms-meer.com
Website: www.sms-meer.com

Complete automation of pipe extrusion lines

Italian polyolefin pipe producer Wavin has invested in complete automation for extrusion lines, by adding two pipe packaging machines and one picking machine to one of its lines. The packaging machines (Multipack model) and the handling machine (Multipallet model) are produced by Sica, Italy.

Wavin's decision to invest in complete line automation arose from the need to reduce production costs and increase efficiency and line productivity.

Sica Multipack machines create individual pipe packs composed of various layers of pipes, deposited in plastic separator cradles, and then tied together by plastic straps. The system was specially developed for installation in lines producing pipes between 50 and 160mm in diameter and from 500 to 3,000mm in length (plus bell end).

The company's Multipallet machine for pipe handling picks incoming packs, rotates them if necessary, and places them on trolleys in predetermined layouts. The machine also picks separator boards from dedicated magazines and places them between layers, to increase the stability of the stack.

The system is able to process packs varying in width between 290 and 620mm, with a maximum height of 400mm. Maximum productivity declared by Sica for pick up of a single pack and its positioning on the cart is 35 seconds for each pack.

With the introduction of the new system, the operator can achieve complete automation of pipe extrusion lines, with cost reduction, increased process reliability and optimised working conditions.

Wavin has installed packaging and handling machines from Italy's Sica

The new machines have enabled complete automation of the company's extrusion line

Sica SpA – Italy
Fax: +39 0544 81340
Email: info@sica-italy.com
Website: www.sica-italy.com

New concept positioner for welding

Rotolift, from Sideros Engineering, is a hydraulic positioner and handler used for welding and assembly operations. The ergonomic machine has the capability to perform workpiece lifting and lowering, in addition to inclination and rotation.

Rotolift is available in two base models, and in a range of capacities

The workpiece is securely fixed on the horizontal rotary table and handled according to the operator's needs. The machine is designed to improve operator performance and efficiency, and to improve safety conditions. Sideros Engineering claims that production costs can be reduced by 60 per cent, with a consequent production increase.

Two versions of the machine are available, one with totally oleodynamic movement, and one with oleodynamic lifting and inclination and electromechanical rotation. Models are available catering to a range of loading capacity requirements. On request, the machine can be supplied with a bronze 600 or 1,500W rotary mass.

Sideros Engineering Srl – Italy
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Latest model from a frontrunner in rollforming machines

Dreistern has launched a rollforming machine for profile cross sections of up to 23.62" x 7.87" (600mm x 200mm) and wall thickness of 0.197" in (5mm). This machine was launched at the recent Euroblech 2008 exhibition.

Usually machines of this calibre are designed for relatively simple profile geometry and looser tolerances. However, this P3.200 system is completely different as it enables the production of complex profile geometry, with extremely tight tolerances and short changeover times (even for complete product changeovers).

The physical dimensions of this system are also impressive, as it contains nearly 40 forming stands and a cutoff unit for maximum 52ft (16m) long cross sections. This machine can work both continuously and in Start-Stop® operation, providing an unsurpassed flexibility when bringing highly precise punch patterns into the finished profile.

The P3.200 rollforming machine is used to manufacture profile cross sections

The punch patterns task is handled by the cutoff system 'Jumbo'. The 79" x 89" (2.0 x 2.25m) large table surface houses two separate presses. One serves the separation of the profile and the other is used for hole-punching. Alternatively, shears, presses, cutoff saws, or high-speed cutoff saws can be mounted on this table. Due to hydraulic-clamping the changeover takes only a few minutes.

This means that it is now possible to select the optimal cutoff process tailored to each application. Special electro positioning devices provide a fast adjustment for each profile and an accurate cutoff. It is possible to achieve a cutoff accuracy of ±0.024" (0.6mm).

With each cutoff or punching cycle the servo-drive of the machine accelerates an enormous 10 metric tons within a distance of only 7.9" (200mm) to the full rollforming speed.

The technology behind this latest Dreistern machine especially serves the productivity and quality goals of demanding profile manufacturers.

The market for heavy precision profiles is experiencing above average growth. Therefore, it is no surprise that Dreistern's P3.200 can be found at Europe's most successful rollforming companies.

Dreistern GmbH & Co KG – Germany
Fax: +49 7622 391 205
Email: sales@dreistern.com
Website: www.dreistern.com

Europipe commission new crimping press

Siempelkamp, Germany, designs and constructs crimping presses for the production of pipes, specialising in custom built presses with large press capacities. The company has supplied a new crimping press to Europipe, after eleven months of development, four months of construction, two weeks of preliminary testing and acceptance testing.

The crimping press during disassembly at Siempelkamp

As the first of three presses, the crimping press will carry out the initial bending of the edges of up to 50mm thick and up to 18m long sheet metal made of high-strength steel, which will be formed into pipeline pipes by the two downstream presses.

The disassembly of the huge machine took almost two weeks, and five weeks were allowed for the reassembly and start-up of the press. Disassembly and transport were planned and overseen by Siempelkamp. For the construction of the press, Siempelkamp had to reinforce the foundation of its factory workshop.

The largest parts had to be transported on a specially made low-loading truck (with 600 horsepower and 160 tyres) and a ship, because they were too heavy for the highway bridges along the way. The heavy goods vehicle transporting the crossbeam of the new press had an overall load of 355 tons.

Fully loaded, the special transporter truck had a weight of 355 tons

Four heavy-duty cranes were needed to load the crossbeam onto the cargo ship

Fully assembled, the machine has dimensions of 9 x 13 x 16m, and has a pressing capacity of up to 11,000 tons.

Siempelkamp Maschinen- und Anlagenbau GmbH & Co KG – Germany
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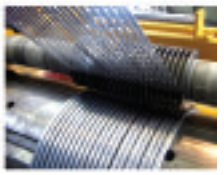


ELMAKSAN

Istanbul Factory

Yeni Mahalle G 10 Sok. No:30 Parsel 205 Buyukbakkalkoy
81530 Maltepe / Istanbul / TURKIYE

Tel : (+90) 216 561 33 00 (10 Lines)
Fax : (+90) 216 311 73 41

www.elmaksan.net info@elmaksan.net

Kocaeli Factory

KOSBAS Kocaeli Serbest Bolgesi No: 18/5 Yenikoy
Arpalı Mevkii 41040 Izmit / Kocaeli / TURKIYE

Tel : +90 (262) 341 38 02
Fax : +90 (262) 341 38 51

Siemens VAI to supply reversing intermediate mill to Italy

Siemens VAI Metals Technologies, Germany, has received an order from Italian long-product producer Acciaierie Venete SpA. The order will involve the supply of mechanical equipment for a new reversing intermediate mill at the company's factory in Mura. The project has a volume of several million Euros and is due for completion in the second half of 2009.

With its headquarters in Padua, Acciaierie Venete, the Italian steelworks group, is an important producer of long products in Europe. The group's annual steel production amounts to around two million metric tons. The company supplies a comprehensive range of round and section products made of carbon and quality steel for construction and other uses. It operates six production facilities in Italy, including the Mura factory in the province of Brescia.

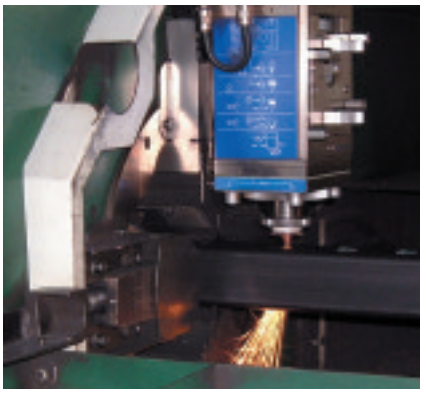
For the long-product rolling line in Mura, Siemens VAI is engineering and supplying the mechanical equipment for a new reversing intermediate mill. This includes two vertical and horizontal rolling stands based on Red Ring technology.

The scope of supply also includes the fluid systems, a total of three spare stands and the engineering for adapting the existing equipment to the new intermediate mill. Siemens VAI will also provide a consulting service for erection and commissioning of the modernized rolling line.

Siemens VAI – Germany
Fax: +49 9131 725074
Email: wieland.simon@siemens.com
Website: www.siemens-vai.com

Laser cutting technology backs ambitious expansion plans

The steel fencing that surrounds the two adjoining sites of IAE, UK, contributes more than just security. The mixture of ornate, mesh and palisade styles is a showpiece for one of the company's main product lines. In addition to industrial fencing and gates, the company's products include a wide range of agricultural and equestrian products. The company has a seven acre distribution area holding around £4.5million of stock.



The latest generation BLM Adige LT712D LaserTube, cutting and profiling steel bar

In the last two decades David Klucznik, the company's chairman, has pushed through an ambitious programme of expansion and, together with son Frank, IAE's general manager, has transformed the company's manufacturing processes.

In its move away from traditional methods, the company has embraced CNC sawing and CNC tube laser cutting and profiling, using equipment supplied by BLM Group UK Ltd, as well as installing robotic welding cells in its recently completed 65,000ft^2 manufacturing facility. The latest development on the new site also provides covered storage for more than 2,500 tonnes of raw material, which is moved throughout the building on eight remote-controlled cranes.

IAE took delivery of its first BLM machine, a TS71 CNC saw, in the mid-1990s, and it is still in use. "*It was a big investment at the time,*" commented Frank Klucznik, "*but we currently sell 3,000 gates a week on just one line and each gate has seven bars. Even then, it was a lot of tube and a lot of cuts needing to be made. After that, my father pushed for the lasers and we bought an LT652 tube laser some five years ago. It did everything we expected it to do and we kept putting more and more work through it. We moved to 12-hour days, then 24-hour operation, and even worked weekends…until we bought our second laser.*"

The Adige LT712D LaserTube installed in IAE's new 65,000ft^2 manufacturing facility can cut and profile tube up to 152mm diameter

The second BLM Adige tube laser, a larger LT712D model, was installed six months ago and sits alongside the LT652 tube laser and a BLM TS72 CNC saw in the new manufacturing facility. With a capacity up to 152mm diameter and maximum tube lengths of either 6.5m or 8.5m, the LT712D features fully automated bar handling throughout the entire sequence of load, measure, feed, cut and unload. The TS72 CNC saw is able to cut four different programmable lengths out of the same bar, and unload the cut tube into four separate locations. Brush deburring, in-line measuring, washing systems and collecting devices are all fully integrated. The TS72 has a capacity of 8-102mm OD, with a choice of cutting length of 1.5m, 3m or 4.5m.

All IAE products, from gates to cattle grids, are hot dip zinc galvanised inside and out to prevent corrosion, using a tank containing 310 tonnes of molten zinc. When the tank was first filled back in 2002, zinc cost around £650 per tonne; today it is around £2,000 per tonne. However, the switch to laser cutting and profiling has enabled larger vent holes to be cut in individual components, allowing more of the molten zinc to drain back into the tank after hot dipping, resulting in overall cost savings.

IAE's new BLM TS72 CNC saw sits between the LT712D LaserTube (right) and the smaller LT652 tube laser

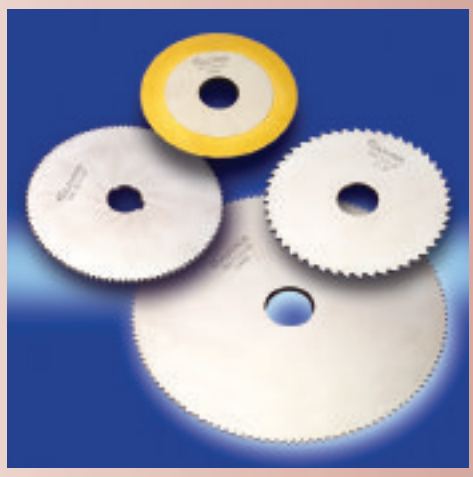
BLM Group UK Ltd – UK
Fax: +44 1525 402 312
Email: sales@blmgroup.uk.com • **Website**: www.blmgroup.uk.com

Solid carbide slitting saws

Caleyron Industries, France, manufactures a range of solid carbide slitting saws for cutting hard materials, available from 20mm to 250mm in diameter.

The saws have a mirror finish and perfect geometry ensuring excellent cutting of tubes, providing clean cut surfaces and close tolerances. The blades allow higher cutting speed and feed rates, high output, and increased tool life.

Caleyron Industries – France
Fax: +33 4 7735 2464
Email: caleyron.ind@caleyron.fr
Website: www.caleyron.com



A selection of blades from Caleyron Industries

Enhanced levels of bender versatility with new CBE range

AddisonMckee, has developed a new range of modular electric/hydraulic tube benders that bring greater levels of flexibility to automotive component manufacturers. Based upon the platform of the company's highly proven DataBend™ range, these latest models – designated the DataBend™ CBE range – can be more easily modified to meet individual user needs.

Mr Christian Rogiers, AddisonMckee's director of global marketing, comments *"By utilizing the DataBend™ platform, through the CBE range, we are able to offer a modular system, with a number of different machine specifications around the same basic structure. Designed to provide the highest levels of customization, CBE tube benders enable customers to specify the precise levels of functionality required for their specific bending processes. In practice, this means that an organization not requiring the most advanced technical features will be able to make impressive cost savings."*

DataBend™ CBE models are available in both 65mm (2.5") diameter and 89mm (3.5") diameter variants. Developed primarily for larger diameter, thin wall 1D bending of automotive exhaust components, the CBE models combine 6 electric servo axes (Y, B, C, X, Z and YP) and 3 hydraulic operations (clamp, pressure die and mandrel).

The standard single radius 89mm OD capacity model has been designed to provide maximum productivity for both OEM, tier 1 and 2 exhaust component manufacturers. In today's cost-conscious market, such manufacturers are increasingly looking for robust, value-priced solutions.

In standard form, the DB89CBE is also supplied with 45kN (4.6t/5 US tons) of boost force, plus the option to upgrade up to 100kN (10.2/ 11 US tons) for more challenging applications. Details of the DataBend™ DB65CBE model will be announced shortly.

Features of the DataBend™ 65 and 89CBE include dataBend™ CNC platform, clockwise bending rotation (and optional anti-clockwise rotation), multi-stack tooling capability, fully programmable boost, and a toggle-operated direct acting hydraulic clamp system. Other features include hydraulic-actuated reaction slide, electric-servo controlled 6-axis capability, automatic mandrel lubrication, and Ladar safety scanner.

Optional modules include programmable position of reaction slide via servo-driven ball screw, a vertical programmable position of follower for true 'multi-radius' applications, and integrated 'cut-off' facility for 'bend and cut' capability. Models are also available with 4.6t (5 US tons) or 10.2t (11 US tons) boost capability.

AddisonMckee – USA
Fax: +1 513 228 7226
Email: crogiers@addisonmckee.com
Website: www.addisonmckee.com

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THE 10th CHINA (GUANGZHOU) INT'L TUBE & PIPE INDUSTRY EXHIBITION

INVITATION

Host

Guangzhou Julang Exhibition Design Co., Ltd
China Iron and Steel Association (CISA)
China Non-ferrous Metals Industry Association
Metallurgical Council of China Council for the Promotion of International Trade (MC-CCPIT)
Guangdong Metal Institute

Organizer

Guangzhou Julang Exhibition Design Co., Ltd

Date: June 23-26, 2009

Venue: China Import and Export Fair Pazhou Complex
(380,Yue Jiang Zhong Road, Guangzhou,China)

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Huanning Road 20,Pearl River New City,
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E-mail: mslwsn@julang.com.cn

International sales successes in large-diameter pipe extrusion

KraussMaffei, Germany, has supplied a line for the production of large-diameter PE-HD pipe (OD 400mm to 1,200mm) to Emirates Preinsulated Pipes Industries (EPPI), Abu Dhabi, United Arab Emirates. The line will be used mainly for the production of PU-insulated pipe used to transport cooling liquid for air conditioning systems in tower blocks.

The extrusion line features a KraussMaffei Berstorff KME 125-36 B/R single-screw extruder with KM-RKW 36 and KM-RKW 38 pipeheads. Both pipeheads can be moved sideways out of the line on tracks.

KraussMaffei Berstorff extrusion line for the production of large polyolefin pipes

PES Productive and Industrial Co, Tehran, Iran has also started operating a KraussMaffei Berstorff line to produce large-diameter pipe. This line is headed by a KME 150-36 B/R extruder and a KM-RKW 39 pipehead. The line achieves an output of 1,700kg/h, producing PE-HD pipe with outer diameters up to 1,600mm.

KraussMaffei Berstorff supplies complete turnkey solutions to produce large-diameter pipe, which are tailored to the specific requirements of individual users. RKW pipeheads are capable of producing pipe with diameters up to 2,000mm and wall thicknesses up to 100mm.

The company's 36 L/D single-screw extruder is capable of an output up to 1,700kg/h. The 36 L/D screw concept provides high output and a gentle, high-performance plasticising process. The longer processing unit delivers a thermally homogenous melt with fillers and pigment perfectly mixed in.

The company's pipe extrusion division is currently experiencing a strong demand from companies manufacturing large-diameter plastic pipes. These products are used in applications such as water supply and district heating networks.

KraussMaffei – Germany
Fax: +49 89 8899 2206
Email: matthias.andreesen@kraussmaffei.com
Website: www.kraussmaffei.com

Stainless steel seamless and welded pipes, tubes and U tubes

Suraj Stainless Limited, India, manufactures and exports stainless steel seamless and welded pipes, tubes and U tubes. The company's product range includes outside diameters from 6mm to 219.08mm with a wall thickness range from 0.5mm to 6mm for welded. The company's seamless products are offered from 6mm to 327.82mm OD with a wall thickness range from 0.8mm to 20mm, in standard lengths up to 30m.

The present manufacturing programme includes production in austenitic grades

TP-304, 304L, 316, 316L, 316Ti, 321, 347 and 310, and ferritic/duplex grades UNS S32760, S31803 and S31500.

Products adhere to various international standards and specifications, including ASTM A-213, A-249, A-269, A-312, A-358, A-688, and equivalent standards in ASME, DIN, NFA and JIS.

The company can supply in lengths up to 30m. U bending of the tubes can be performed according to customers' drawings as per TEMA – C, R and B. The company's plant is approved by national and international third party inspection agencies such as Lloyds, Bureau Veritas, TUV, DNV and SGS, and regularly supplies products under the inspection and certification of these agencies.

Suraj also holds certificates for quality in accordance with AD2000 Merkblatt W0 and pressure equipment directives (PED) 97/23/EC from TUV Nord.

Suraj Stainless Limited – India
Fax: +91 79 27540722
Email: export@surajgroup.com
Website: www.surajgroup.com

Potable water-rated polyurethane coating for pipelines

Chemthane 4200PW is a fast set, 100 per cent solids (Zero VOC), two-component polyurethane spray coating for direct-to-metal (primerless) applications. Manufactured by Chemline, USA, the product is approved in accordance with ANSI/NSF 61 for potable water applications.

Chemthane 4200PW is applied directly to grit-blasted steel. Due to an extremely fast gel time, the spray coating is suitable for applications from 35°F (2°C) up to 120°F (48°C) without special conditioning of the component resins and isocyanates. Chemthane 4200PW produces an extremely tough film at all thicknesses.

Single coat, multiple pass applications produce films from 10 mils to 500 mils without appreciable sag or runs. Chemthane 4200PW may be applied in all positions and to any suitably prepared substrate. The coating is inert and will not hydrolyze, leach, or contaminate to affect the taste of drinking water.

Relatively moisture and temperature insensitive, Chemthane 4200PW can be applied in the most problematic ambient conditions. It is therefore claimed to be a superior coating material formulated specifically for industrial applications receiving attack from contained materials, subsurface hydrostatic pressure, most corrosive substances, and abrasive action.

Chemthane 4200PW is highly impact and abrasion resistant and strong enough to remain intact under all conditions except for major structural dislocations. This product can be used in transitional areas, while it may also be used in interior or exterior applications. It is recommended for repair of other films, and may be applied to ductile iron and other prepared metal substrates.

The special spray coating can be used for the production of in-factory storage tanks, pipelines and structural steel or it can be applied in the field to sheet/bolded steel tanks where downtime is a serious concerns.

Chemline – USA
Fax: +1 314 664 1355
Email: info@chemline.net
Website: www.chemline.net

Launch of new hydraulic wedge mandrel

CRC-Evans Pipeline Equipment, USA, has announced the introduction of a mandrel designed to boost pull-cycle productivity by as much as 20 per cent.

The Advantage mandrel requires only a single bending machine operator, who simply pushes a button on the control panel. The self-powered mandrel quickly and automatically finds its correct position relative to the die without a reach rod, eliminating the guesswork and safety issues that go with standard manual placement. The operator makes the pull, the pipe is advanced, and the job continues.

"*Automatic centring means that the cycle times get shorter and jobs move faster,*" commented Fred Lysak, pipeline equipment division president. "*Setting the pace ahead of the welding crews, especially on long pipelines, means that a contractor can get the pipeline bent and built faster.*"

The chances of wrinkles and buckles at bends are greatly reduced, because the new mandrel's advanced technology ensures that it is perfectly positioned for every pull, enabling accurate, quality bends every time. Since the process is completely automatic, it can be easily and quickly repeated until the bend is complete. With no reach rod involved, loading can be done from either the pin-up or stiff-back end, for greater flexibility of access, improving performance where the right of way is narrow.

CRC-Evans Pipeline Equipment builds and distributes a complete line of pipeline construction equipment, including pipe bending machines, ditch padding equipment, pipe handling and support equipment, pipe facing and bevelling machines, internal line-up clamps, and laybarge and coating plant equipment. The company is a subsidiary of CRC-Evans Pipeline International, a provider of specialised equipment and services for the construction of pipelines.

CRC-Evans Pipeline Equipment – USA
Fax: +1 918 438 0968
Email: sales@crc-evans.com
Website: www.crc-evans.com

Tungsten carbide dies and mandrels

Agir Technologies (Mouton + Rivom), France, is a specialist in the manufacture of tungsten carbide tools for cold metal forming. These tungsten carbide dies and mandrels are manufactured in the company's two workshops.

Agir manufactures a range of tungsten carbide tools for cold metal forming

The company's customers manufacture tubes in different steels and in non-ferrous metals for various applications, from smooth tubes with small dimensions (internal diameter 0.25mm, external diameter 0.33mm), to the largest tubes with an internal diameter of 200mm and external diameter of 300mm.

The most complex shapes are used for gearbox shafts or injection pipes in the automotive industry. The cooling of thermal and nuclear power plants requires specific steel pipes with helical grooved profiles that only a few companies are able to manufacture.

In operation for over 80 years, Agir Technologies also manufactures adjustable dies with carbide blocks for simple profiles (square), and helical mandrels dedicated to the production of copper tubes used in air conditioners. The company has also developed a specific programme to optimise the range of best-suited dies to obtain the final required profile.

Agir Technologies – France
Fax: +33 3 8051 8136
Email: ferret@agir-technologies.com
Website: www.agir-technologies.com

Long and super-slim borescopes for effective inspection

The Gradient Lens Corporation (GLC), USA, has launched a new and longer Hawkeye Pro SuperSlim borescope for easier inspection of defects in deep bores and the narrowest tubes. The scopes give a sharp, clear view of deep, very narrow bores in machined parts, fuel and hydraulic systems, castings, tubing, firearms and other products.

The scopes are available in lengths of 10", 14" and 17". The long Hawkeye Pro SuperSlim borescopes have an outside diameter of 0.110" (2.8mm) allowing inspection of bores as small as $^{1}/_{8}$". They use GLC's patented endoGrins® lens system, which allows them to relay images at a long distance while maintaining image quality. Users can clearly see surface finishes and defects like burrs in deep bores and cross-holes.

The scopes feature a 0° direction-of-view, a 40° field-of-view, and offer a rotating 90° direction-of-view with a mirror tube attachment.

"These new longer scopes offer easy inspection of internal problems in the deepest bores and microscopic holes in components like spray tips and nozzles," said Dr Douglas S Kindred, GLC's president.

For more than 20 years, Gradient Lens Corporation has designed, engineered and manufactured precision optics and optical instruments. The company's offerings include complete lines of Hawkeye precision borescopes, Hawkeye Blue borescopes, borescope accessories and Luxxor lighting and video visual inspection products.

Gradient Lens Corp – USA
Fax: +1 585 235 6645
Email: kindred@gradientlens.com
Website: www.gradientlens.com

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info@saet.it sales@emmedi.it

SAET GROUP

Successfully lubricating pipe joints

Batoyle Freedom Group, UK, is an independent lubricant manufacturing company founded in 1875. The company's AX24 lubricant promotes the quick and easy connection of sealing joints on a wide variety of piping materials. Its main benefit is its suitability for use within pipework systems designed to carry potable water.

Developed at the Batoyle Freedom Group's in-house laboratories more than ten years ago, AX24 is a fully synthetic water-based compound based on complex mixtures of thickeners and esters.

Key to the continued success of AX24 is its very high levels of lubricity, which enables easy coupling of push fit sealing joints. AX24 is easy to apply onto either wet or dry pipe surfaces. Being completely water soluble, it is rapidly flushed away from the joint once the pipe is in use – a characteristic that ensures pipes can be easily disinfected by techniques such as chlorination.

AX24 is formally approved under the WRAS (Water Regulations Advisory Scheme), as a pipe jointing compound for use in contact with potable water. It exhibits low orders of both acute oral and dermal toxicity and incorporates a broad spectrum biocide/fungicide as an in-can preservative to enhance shelf life.

The lubricant is compatible with a wide variety of piping materials, including metal, ceramic and plastic, as well as pipe fitting accessories including common gasket materials such as nitrile rubber and neoprene. AX24 is available in 500ml, 1L, 5L, 25L and 205L containers.

Lubricants manufactured by the Batoyle Freedom Group are exported to more than 50 countries world wide, through a network of local agents and distributors.

Batoyle Freedom Group – UK
Fax: +44 1484 461998
Email: bfginformation@aol.com
Website: www.batoyle.co.uk

Aqueous cleaning machine for large workpieces

Turbex has introduced a new aqueous washing machine for degreasing and cleaning large components. The AS-150 can take a load of 800kg and will accommodate components measuring 900mm high by 1.4m across the diagonal or diameter.

The single-stage, spray wash machine offers a large processing volume for the capital investment. In addition to applications in refurbishment and overhaul, the AS-150 is suited to inter-process cleaning in production environments, such as batch degreasing of machined components and preparing fabrications for welding.

A major advantage is that the cleaning medium is detergent dissolved in water heated to 50-75°C, delivered at 400 litres/min and 4-bar pressure through rotating spray pipes. Problems associated with using and disposing of hazardous solvents are therefore avoided.

In normal operation, the door at the front is lowered with the assistance of two gas springs, one or more components are placed in the work chamber, the door is closed, cycle time and temperature parameters are set on the control and the automatic cycle is started.

An optional lance with its own multi impeller pump delivering 10 bar can be connected directly to the 900 litre tank. This allows the operator, with the machine door open, to manually spray-wash obstinate areas of soil on a component, either before or after the automatic process. Alternatively, the machine can be used as a manual spray booth, without any automatic cleaning.

Apart from the galvanized steel work table, the machine is constructed almost entirely from stainless steel, even the integral 500-micron filter. The installed weight of the machine is nearly one tonne. Acoustic and thermal insulation ensure a good working environment for the operator.

Optional accessories include a steam extraction fan, automatic refill, oil skimmer or separator, and a detergent dosing unit.

A smaller machine in the same series is also available, designated AS-100, for cleaning components up to 950mm across by 700mm high, and weighing a maximum of half a tonne.

Turbex Limited – UK
Fax: +44 1420 542264
Email: john.huntingdon@turbex.co.uk
Website: www.turbex.co.uk

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TÜV İhlas Fuarcılık

Boru 2009: business

More companies, more machinery, and a larger variety of tube and pipe products: Boru is fast securing itself an international reputation as a unique and significant trade show that bridges Europe and Asia.

Just one look at the exhibitor list on page 51 confirms a growing interest from international machinery manufacturers: bookings have already been confirmed by major global companies including Emmedi, EFD Induction, Galllium, Hisen Equipment, Inductotherm, Wafios, SMS Meer, Danieli, Marcegaglia, Tenaris and TMK.

These international companies join the already swollen numbers of domestic plastic and metal tube and pipe producers that form the bedrock of Turkish industry.

While the first Boru that took place in 2005 had a more local flavour, it is now clear that an increasing number of international companies are jumping onboard. To fully qualify Boru's position as a worldwide event, for the first time the International Tube Association has declared its support for the 2009 show.

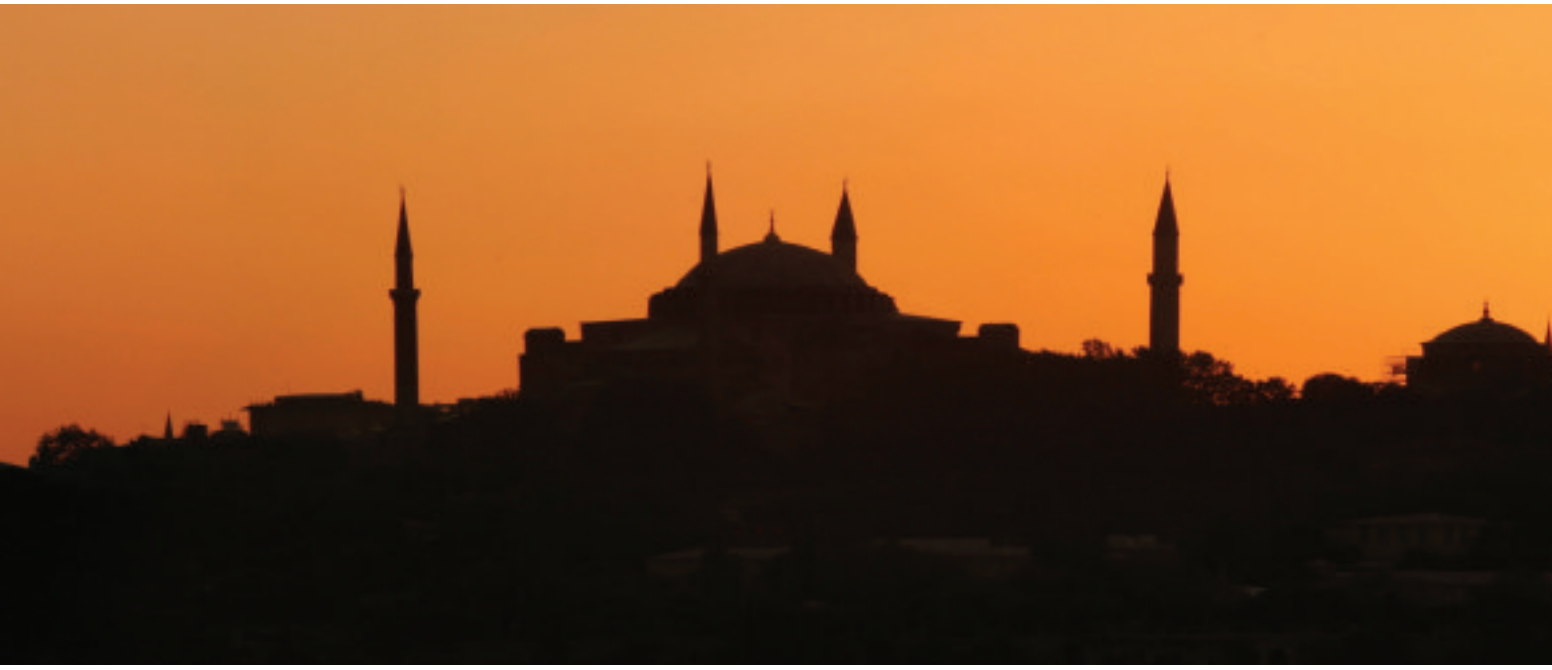
The show has also been give the seal of approval by Turkish governmental offices, including the Turkish Province Bank, TIKA (Turkish International Cooperation and Development Agency), DTM (Undersecretariat of the Prime Ministry for Foreign Trade), and Kosgeb (Small and Medium Size Enterprises Association).

The organisers Ihlas Fuar have revealed that halls 9 and 10 have already sold out, with demand now growing for exhibit space in hall 11.

The final total of exhibitors is expected to be around 250, which will be more than matched by visitor attendance, estimated at around the 20,000 mark from over 30 countries.

This all-round increase on the 2008 event is partially attributed to the absence of a Tube Düsseldorf in 2009. But it is also clear that although the world is currently facing a serious financial crisis, Turkey remains a promising tube and pipe market for foreign investment, with a range of infrastructure projects currently underway.

on the horizon



Website: www.borufuari.com/english

SHOW FACTS

DATES

05-08 March 2009

VENUE

Fuar Merkezi Expo Centre, Istanbul, Turkey (halls 9, 10 and 11)

ORGANISER CONTACTS

Ihlas Fuar Hizmetleri AS
Phone: +90 212 4542080
Email: ilhan.ozturk@ihlasfuar.com
Website: www.borufuari.com/english

SPONSORS

International Tube Association (ITA)
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Turkey: the confluence of trade between Europe and Asia

Turkey's strategic importance is enhanced by its rich history and land areas in both Europe and Asia. At the doorstep of both North Africa and the Middle East, Turkey has historically been perceived and presented as an economic, political, and cultural bridge between East and West. Its geographic boundaries are bordered by no fewer than 10 neighboring countries: Iraq and Syria to the south; Russia, Ukraine, and Romania to the north (via the Black Sea); Iran, Georgia, and Armenia to the east; and Greece and Bulgaria on the west.

Turkey's population of 72.8 million is young and growing. The country is one of the largest in Europe, and its economy is the 16th largest in the world. The US Department of Commerce (DOC) has identified Turkey as one of the ten most promising emerging economies, and a recent World Bank study also declared Turkey one of the ten countries most likely to enter the top tier of the world economy.

Today's Turkey, modern and open to the world, follows a liberal economic policy in accordance with its political structure. Increased investment in Turkey's communications, transportation, and energy networks is a high priority so that the country can meet modern global standards. Foreign suppliers have to assume much of the financial and operating risk, but the potential rewards are great. Sectors where multi-national firms have opportunities in Turkey include aircraft, construction, oil, gas and water pipelines, and automotive.

Turkey's strategic location is a huge advantage for foreign companies that are willing to work with their Turkish partners to establish projects and distribute products into larger regional markets and pursue joint venture infrastructure efforts.

Energy projects – a key to investment

energy projects – a key to investment

A large number of Turkish oil and gas pipelines are either underway or currently in the planning stages:

Baku-Tbilisi-Ceyhan Pipeline

Baku-Tbilisi-Ceyhan (BTC) Pipeline is the first direct pipeline to deliver crude oil from the Caspian Sea to the Mediterranean without crossing Russian soil or passing through the Bosphorus or Turkish Straits. The 1,100-mile pipeline cost nearly $4 billion to build. The line is estimated to have a peak capacity of more than one million bbl/d, and Turkey is expected to earn between $140 and $200 million per year.

Kirkuk-Ceyhan Pipeline

Turkey's port of Ceyhan is also the destination for oil exports from northern Iraq in the Kirkuk-Ceyhan oil pipeline. The 600-mile dual pipeline consists of two parallel lines that have a maximum throughput of around 1.6 million mbbl/d.

Bosphorus Bypass Options

The 17-mile long Bosphorus Straits, only a half mile wide at its narrowest point, is one of the world's busiest shipping lanes. One project that was expected to increase oil transit through the Bosphorus is the Russian-backed Baku-Novorossiysk Pipeline (Northern Route Export Pipeline), a 990-mile pipeline that transports oil from Kazakhstan's Caspian Sea area oil deposits to the Russian Black Sea port of Novorossiysk. The pipeline, built by the Caspian Pipeline Consortium (CPC), delivered up to 650,000 bbl/d of oil (based on 2006 figures).

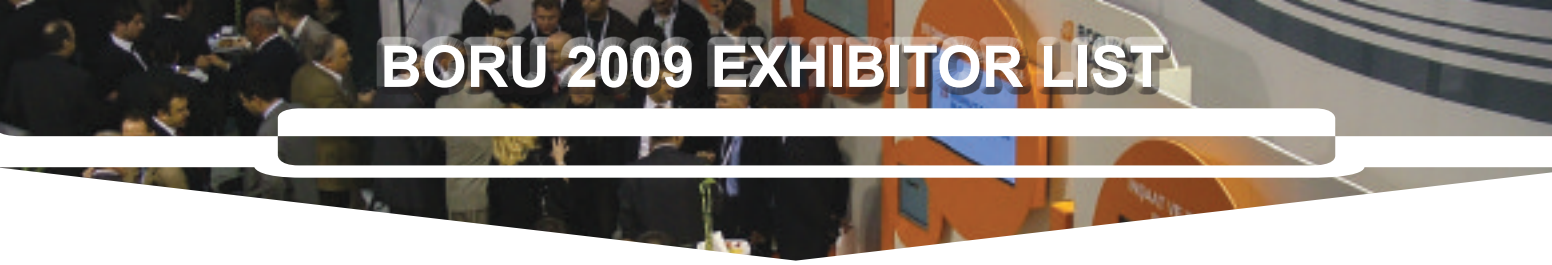
Samsun-Ceyhan bypass

Another project currently underway is the Samsun-Ceyhan bypass, which will transport oil from Turkey's Black Sea port of Samsun to Ceyhan on the Mediterranean coast. Once completed, the pipeline is predicted to decrease tanker traffic on the Bosphorus. The 350-mile pipeline is expected to be fully operational by 2010, with expectations of 1 million bbl/d.

Source – Energy Information Administration: www.eia.doe.gov/emeu/cabs/Turkey/NaturalGas.html

Status of Natural Gas Pipeline Projects in Turkey

Project	Status	Length (miles)	Max. Capacity (Bcf/y)
Blue Stream	In operation	750	565
Iran-Turkey Pipeline	In operation	750	495
South Caucasus Pipeline	Under construction	430	700
Turkey-Greece Interconnector	Under construction	186	407
Nabucco	Proposed	2,050	460-1,100
Egypt-Turkey Pipeline	Proposed	NA	NA



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Messe Düsseldorf Germany	Germany	10E-111
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MM Steel Company	China	10A-104
MOL Istanbul Boru	Germany	9E-112/B
Moody	Turkey	10E-117
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Please note: exhibitor list correct at time of going to press – for updates contact the organizers **Ihlas Fuar via** ilhan.ozturk@ihlasfuar.com

3R Software Solutions
Germany *9-E117*

3R Software Solutions is a partner to many manufacturers of bending machines. The company's software is used extensively in German shipyards such as Blohm + Voss, NSWE, and Aker Warnow, as well as in the automotive and plant construction industries.

The company's Kolli bending simulation, now in its seventh generation, has become a benchmark for collision testing software and can be customised to meet most user demands.

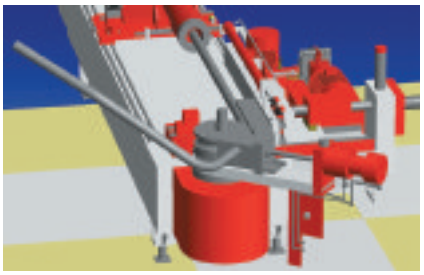
Interfaces to the most common third party programs, including Tribon, AutoCAD, Inventor, Medusa and UniGraphics, are available, and interfaces to other software can be implemented if required.

Rather than forcing the user to select from a list of pre-created models, Kolli 7 includes editor modules for tools, machines and materials. These allow users to create 3D models of the exact machines and tools used in their pipe shop. Special and multi-layered tools can be created in minutes, and modifications and extra features of machines can be included when the model of the machine is created.

The material editor makes it possible to take the special properties of different metals into consideration, such as differences in elasticity (springback values). Isometric display of the tube created by the bending data allows for easy visualisation, and the program independently looks for alternative solutions if a collision occurs during simulation.

Using other 3R programs, like the RoniBase database program or the RoniCAD construction program, the user can create an integrated software framework. Because every program accesses the same database, there are no compatibility problems, since every program uses the same data.

Therefore clients will be capable of streamlining and controlling the entire fabrication process, from planning and construction to quality control. Progress of individual jobs can be checked at any point, so that the operator is always aware of the production status of every item.



3R's Kolli bending simulation software

The features of Kolli, RAMP, RoniCAD and other 3R Software programs are customised for the user, making the programs both easy to learn and comfortable to operate.

Website: www.3-r.de

Birlik Makina
Turkey *9-C100*

Birlik Makina has over 16 years' experience in the design, manufacture, and installation of complete systems for the production of welded tube. The company also supplies profile lines, solid state HF welders, cold saws, slitting lines and cut to length lines.

A tube mill for the production of welded tube

Using the latest technology, Birlik Makina provides turnkey production plants, revamping of existing systems, training of mill personnel, and after-sales service.

Website: www.tunaexim.com

Borusan Mannesmann
Turkey *10-C103*

Borusan Mannesmann Boru is a leading steel pipe manufacturer for applications including construction, automotive, installation, white goods, natural gas and furniture.

The company's products include natural gas pipe, concrete pump pipe, oil pipe, grooved pipe, and spiral welded linepipes for infrastructure projects such as water, natural gas and oil transmission lines. The company also offer industrial pipe and profiles, boiler pipe, construction pipe and profiles (Borusan-Pro) and Borusan SRM pipe. In addition, the range includes PPRC pipes and fittings, PVC-U pipe and fittings, for water and general purpose pipe.

Borusan Mannesmann has factories in Turkey and provides production for the European automotive sector at its Vobarno factory in Italy. The company decided to establish a new factory in Spain, within the framework of its progressive investment plan started in 2006, for the North African, Middle East and European markets.

In parallel with this investment in Spain, all overseas companies, including the cold-drawn pipe facilities in Italy purchased by Borusan in 2001, were united under the main partnership and management of Borusan Mannesmann Boru Inc.

The company exports its spiral-welded linepipes to Algeria, Kazakhstan, USA and Canada, and to more than 100 other countries. The company has successfully accomplished major projects in Algeria, and is strengthening its position in the region with new projects.

Website: www.borusanmannesmann.com

Buhlmann Rohr-Fittings
Germany *9-D115*

Buhlmann is a global supplier of tube, pipe and other materials, with a wide range of product stock and comprehensive service network. The company's whole product range conforms to relevant standards (ie ASTM/DIN/EN), and includes alloy and carbon steel tube and pipe, seamless and welded stainless steel tube and pipe, and flanges in carbon, alloy and stainless steel.

The company can also provide long and short radius elbows, tees, reducers and caps – seamless and welded – in carbon, alloy and stainless steel.

The Buhlmann-Group specialises in providing complete solutions for pipeline construction. As an industry partner, the company can supply plant contractors and companies in various sectors, including the energy, chemical, petrochemical, shipbuilding and mechanical engineering industries.

Website: www.buhlmann.de

Dalian Field Co Ltd
China *10-A104*

Dalian Field Machinery Manufacturing Co Ltd is a specialist in the design and manufacture of a range of machinery. This range includes high frequency ERW pipe mills and other large-scale pipe mills, together with standalone equipment such uncoilers, end-facing and chamfering machines, slitters, hydrostatic testing machines, cut-to-length machines, and scarfing units.

The company holds a number of patents including its ultra-large calibre ERW pipe mill, CFS square/rectangular flexible cage forming pipe mill, CFSR flexible double cage forming pipe mill, and 6-pipe hydrostatic tester. A highlight of its range, the company offers a 500mm x 500mm x 20mm ERW pipe mill for square/rectangular products. According to the company, this is one of the most advanced straight welded tube lines in the world, for which multi patents are adopted and CFS cage forming technology offers an advantage.

Dalian Field's ERW pipe mill for 500mm x 500mm x 20mm dimensions

A benefit of the pipe mill is that no tooling has to be changed when product size is adjusted. A total of 240m in length and weighing 1,200t, the mill has fully automatic control and motorized operation. With 4,000KVA of overall installed power, the pipe mill has the capability to turnout 150,000t/annum. In particular, the pipe mill can manufacture products with a size of over 400mm x 400mm and thickness above 12.7mm.

CFS (cage forming square) technology is a forming method with flexible tooling mounted inside the cage-forming machine, so that the tooling position can be changed automatically or motorized with digital display. This enables the quick and efficient manufacture of products in a multitude of sizes. In this way, the company claims that the cost of operation is lowered by 3-5 per cent, product quality is increased and manual operation is dramatically lowered.

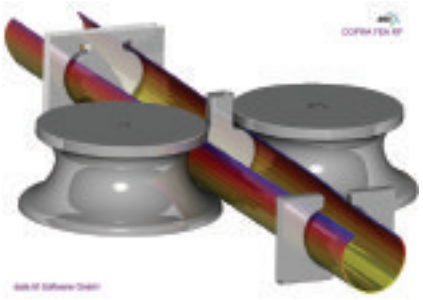
Dalian Field has also pioneered an ERW pipe mill for pipe in the range of Ø 610mm x 19mm/500mm x 500mm x 20mm, which it claims to be the world's largest. This mill is also based on CFS forming technology for square and rectangular pipe manufacture, in addition to CFR for round pipe manufacture. In addition, the tube mill can be supplied with flexible (double cage forming) technology for square, rectangular and round pipe manufacture.

Website: www.asiafield.com

data M Software GmbH
Germany *10-E115A*

data M Software is a software specialist for the rollforming and tube and pipe manufacturing industry. The company will present the new version of its finite element simulation solution for the rollform process Copra® FEA RF 2009. Copra® FEA RF helps the manufacturer to understand the rollform process, trace recurring problems and carry out target-oriented optimisation.

Due to the fact that rollform technology is continually developing, data M sees it as essential to add new possibilities into FEA software. The company believes that this new version has come closer to reality than any other simulation or analysis software.



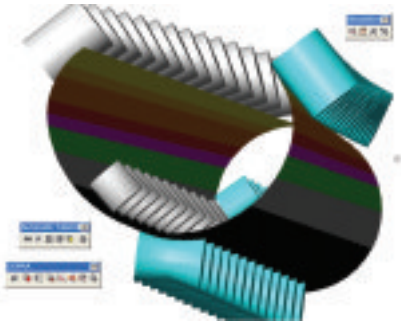
Copra RF now also supports integrated drawing dies

The company has enhanced both the FE Analysis software and also the renowned design package, Copra® RF. One specific feature to have been improved is the handling of cage forming methods.

Copra® CageForming is a straight forming method that enables the possibility to design and model any type of rolling cage. A cage forming system is a continuous forming process by groups (beams) of single simple rolls and additional supporting outer and inner roll tools.

Copra® allows for modelling of various types of straight edge forming systems due to its parametric structure. The lineal beams are either predefined or — if there are single mounted rolls – each roll and respective position is defined in specific database tables. In order to achieve a correct forming result it is important to have a smooth strip entry into the forming cage.

Therefore it is important to optimise both entry passes as well as the position of forming and guiding rolls in the forming line.



The principle of the cage forming (or linear forming) system with modelling in Copra

There are some obvious advantages to perform a mill setup on the computer rather than on the mill by practical trials. These include the possibility to add, edit or remove any cage station (straight edge forming system) within the current tube mill roll tool layout. This is undertaken via the built-in tool browser where the forming lineal can be positioned between the existing forming stations.

Website: www.datam.de

EFD Induction as
Norway *10-E113A*

EFD Induction is a supplier of industrial heat solutions based on induction technology. The company has introduced a patented solid-state concept that promises to significantly boost tube-welding output, with higher efficiency, quality and more uptime.

Weldac solid-state welders come with a 5-year warranty for their inverter modules, with driver cards included. Since its launch

EFD Induction are the manufacturers of the Weldac series of solid-state welders

the Weldac system has become a proven solution, boosting welding productivity at companies worldwide.

Weldac's reliability is based on a robust design and solid components. The IGBT transistor solution makes the Weldac virtually short-circuit proof, with practically no ripple.

Weldac is one of five product families from EFD Induction. Together, these product families enable the performance of almost any industrial heating task.

Website: www.efd-induction.com

Elmaksan
Turkey *9-D101*

With over 25 years of experience, Elmaksan is the manufacturer of an extensive machinery range including pipe and profile lines, cut-to-length lines, slitting lines, multi blanking lines, trapeze lines, open profile lines, slitting knives and spacers.

Elmaksan offers pipe and profile lines and other tube production machinery

The company also offers coil process equipment, automatic packing machines, levelers, rotary shears, multiple cutting units and associated spare parts. Each of these lines can be modified to meet clients' specific production needs.

Elmaksan operates two large facilities, one located in Istanbul (5,000m^2) and another in Kocaeli (22,000m^2), staffed by over 150 people.

More than 80 per cent of the total volume of production is exported abroad to 40 different countries all over the world.

With a constantly expanding product range, the company's machinery is designed, manufactured and supplied according to the highest quality standards.

Website: www.elmaksan.net

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The Leading Manufacturer of High-Technology Tube Production Equipment

Emmedi (Saet Group)
Italy *10-E105*

At Boru 2009, Emmedi (a division of the Saet Group) will present its new 250kW output solid state welder, based on a Mosfet inverter up to 450kHz. The new welder is composed of units including transformer, power supply, welding head, cooling system and control desk. The power supply is a three-phase full bridge thyristor rectifier.

Proper filters are inserted in order to reduce the harmonic components that may affect the welding process. Included in this unit is a system control board communicating with the inverter through optical fibres. The inverter is a current fed type, composed of a number of modules (each power rated at 25kW) connected in parallel: the output oscillating circuit is directly connected to the inverter.

The correct protection (hardware and software) has been implemented both on the single module and on the whole system to limit component failures. The modular structure and complete diagnosis system allows quick and easy maintenance in order to reduce production stops. A special digital control system has been developed for optimum phase locking (and for an efficiency increase) with the possibility to follow the change of frequency due to load variation, at any working condition.

For a quick and cheap solution in case of technical problems and for a reduction of possible onsite intervention, Saet Group offers a special service in remote mode called teleservice. This allows the company's technicians to directly access the welding unit installed at the customer's plant.

Emmedi's new 250kW output solid state welder

Website: www.saetgroup.com

Framag GmbH
Austria *11-C113*

Framag offers state-of-the-art, high-speed carbide circular sawing machines. Features of the sawing machines, which are tailored to specific requirements, include precise cutting quality, low tool costs, high cutting capacity, and robust and durable design.

Framag's KKS800 sawing machine

The range of workpiece dimensions are square from 70mm to 200mm and rectangle 130 x 260mm, in materials including alloyed and unalloyed steel, carbon steel and tempering steel. The diameter of saw-blades is from 710mm to 910mm, with cutting speeds up to 250m/min, and length of cut pieces from 100mm to 600mm.

Website: www.framag.com

Gallium Industries Ltd
India *9-D117*

Gallium is an ISO 9001:2000 approved company with 20 years of experience in design and construction of advanced tube mills and finishing machines. The company's product range is well established in the tube industry and includes high speed forming cold saw cut-offs, automatic bundling machines, multi-tube high-pressure hydrotesters and universal forming mills.

The company's wide range of tube mills offers the latest features including quick change mechanisms, helical gear boxes for distribution of high efficiency power, oscillating type OD based cutting tools, inline straighteners (19 roll), and SG cast stands for excellent damping properties. An online stretch-reducing mill is available for small diameter tubes.

Gallium can also supply double mandrel uncoilers, shear and welders, horizontal accumulators, end facing machines, tube push pointers, draw benches and tube straightening machines.

The company has supplied equipment to 29 countries including USA, UK, Japan, Australia, Brazil, Iran, Egypt, Malaysia, China, Taiwan, Thailand, Oman, Jordan, Zimbabwe, and Pakistan.

Website: www.galliumindia.com

Grind Master
India *11-C103*

Grind Master, India, is the manufacturer of a wide range of machines for metal finishing. Established in 1984, the company exports its machines through MK International, and is committed to providing complete solutions, including tools, machines and processes.

The company manufactures a range of centreless machines, including LMCL models with fixed vertical belt heads, used by furniture manufacturers and fabricators of railing and balustrade. Grind Master also produces the sophisticated FH series, used by makers of stainless steel tube, hard chrome bar and hydraulic cylinder.

Various models are offered, from heavy grinding high stock removal applications to super finishing applications to achieve 0.05 micron Ra. The machines are modular and configured to suit individual requirements.

The design of the pneumatically floating type belt grinding head ensures uniform grinding pressure, even on bent tubes.

Advanced features, such as automatic tube size setting and auto wheel wear compensation, make the machines highly user-friendly and process-controlled, ensuring consistency in finishing results.

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The machines can be used for dry or wet grinding, and use abrasive belts, wheels, sisal and polishing buffs and micro finishing films. Automatic job loading and unloading systems and automatic job transport are offered as options.

The company's automatic centreless belt grinding and finishing machines are used for belt grinding, bright finishing and satin finishing of round tube and pipe. The machine has simple settings to ensure quick changeover between jobs. The floating belt grinding heads are specially designed to accommodate bend and ovality of tubes.

Designed for tube with up to 220mm diameter, the machine is provided with up to 10 heads, while an automatic loader/ unloader is optional. The machines are designed for dry grinding in addition to wet finishing. A wide range of consumables including abrasive belts, flap wheels, non-woven wheels, sisal and cotton buffs can be used in a predetermined sequence for achieving the desired finish. The machine can be offered with an auto tube size setting, which requires only 2-5 minutes of setup time.

Website: www.grindmaster.co.in

Hatboru Co Ltd

Turkey *9-B109*

With over 30 years' experience, Hatboru Steel Pipe Ind & Trade Co Ltd is the manufacturer of industrial steel pipe for water projects and drilling. For over 10 years the company has produced a range of SSAW steel pipes (spiral submerged arc welded), for potable water, petroleum and gas pipelines in addition to construction and piling.

Hatboru's factory occupies 100,000m^2 open area and 15,000m^2 undercover in the industrial zone of Antakya, close to the east Meditteranean seaports. The company has three production lines for spiral-welded pipes and one line for drilling pipes. The company's total annual capacity is 120,000t, with a size range of DN 200mm to 3,000mm.

The range includes gas and petroleum pipes (API 5l), water pipes (AWWA C-200, BS 534, DIN 2460, DIN 1626, TS EN 10217-1), general use purpose pipes (BS 3601, DIN 1626), pile stake pipes (ASTM A-252), and pipe joint pieces (AWWA C-208, BS 534).

Hatboru is a producer of industrial steel pipe for water

The company provides expert coating and lining with advanced technology. This includes bitumen coating and lining (DIN 30673), solvent free expoxy (internal and external), internal and external galvanizing (ISO 1461), polypropylene coating, coal tar epoxy coating, cement mortar lining (AWWWA C-205), and anti-rust paints.

The company has quality certification from TS EN, ISO and API, ISO-14001, OHSAS 18001, DIN and ISO-9000.

Website: www.hatboru.com

Hisen Enterprises Co
Taiwan *9-E112*

Hisen Enterprises Co Ltd specialises in high frequency welding machines that provide power saving, high speed welding, high productivity and minimum maintenance. The company is a pioneer in this field, with continuous developments, innovation and transfer of the latest technology from its partners in France and Japan.

The company manufactures a solid state pipe welding machine that offers a power saving of around 30 per cent compared to the vacuum tube type welders. The solid state pipe welding machine was developed and manufactured as a result of a technology transfer from Japan.

The machine has a compact design that is only around half the size of the vacuum tube type machine. These two factors are significant for customers choosing solid state pipe welders. The welding machine is fully adaptable and can weld small and large pipes, and thin or thick pipes.

Hisen welcomes comparisons of the quality of the weld line with machines from Europe and USA. Hundreds of units of this successful equipment have been sold in just four years.

The company claims to have around 60 per cent of the Taiwanese market, and the machine has been exported to Europe, USA, Asia, and Africa.

Website: www.hisen.com.tw

International Tube Assoc
UK *10-E105A*

The International Tube Association (ITA) is the world's largest association of tube and pipe engineers and its presence will be geared towards offering assistance to tube and pipe professionals. An emphasis will be placed on the membership benefits available, including support services at the major tube shows worldwide and the educational opportunities provided through technical conferences and seminars.

Existing members can ensure they are taking full advantage of the enhanced range of membership benefits. Non-members will be able to meet ITA staff to learn all about what the association can do for them. They can also collect details of the ITA benefits including reduced delegate fees for ITA conferences, free promotional opportunities in the ITAN newsletter, and free visitor entry and hospitality at selected exhibitions.

Members can also gain access to copies of ITA technical conference papers, and large discounts for company promotion on www.tubefirst.com (the comprehensive online material, product and equipment database). In addition, all members receive a free annual subscription to either of the two officially endorsed magazines, *Tube & Pipe Technology* and *Tube Products International*.

At Boru 2009, the International Tube Association will also promote its forthcoming conference for Turkey and the surrounding region, jointly hosted with Ilhas Fuar. The 'Pipe & Tube Istanbul 09' conference will take place from 2-3 November 2009 in Istanbul, Turkey.

Website: www.itatube.org

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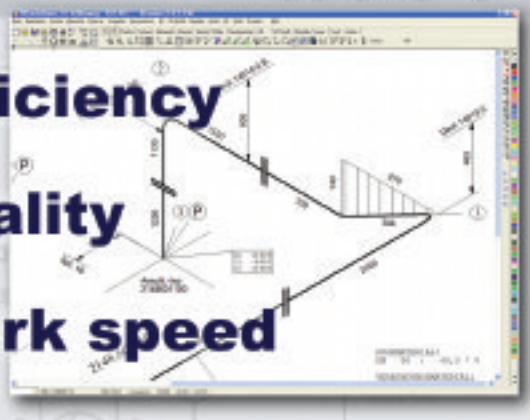

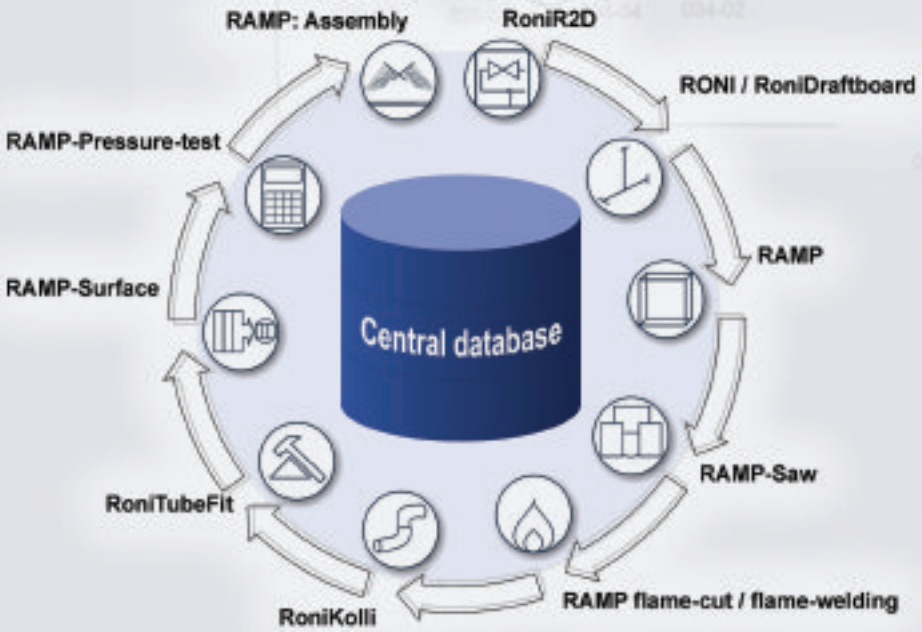

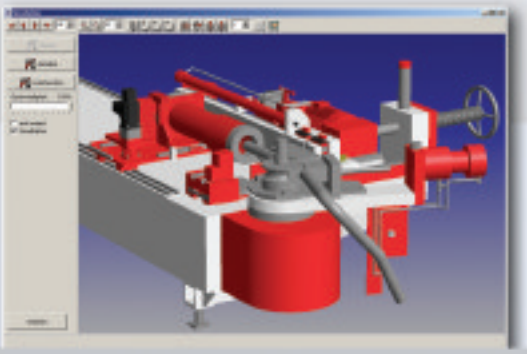

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Petek Boru
Turkey *Stand TBC*

Petek Boru Sanayi is a manufacturer of carbon and stainless steel pipe and fittings, and polyethylene pipe and fittings. Established in 1979, the company's current production capacity of spirally welded tube is 15,000t per year.

The company's manufacturing programme includes spirally welded steel pipes (carbon steel and stainless steel), and carbon steel and stainless steel fittings (including elbows, tees and reducers). Petek Boru also carries out coating and lining of pipes, with techniques including polyethylene coating, fusion bonded epoxy coating and lining, solvent-free epoxy coating and lining, bitumen coating, concrete lining, and thermal insulation. Other services include HDPE 100 polyethylene pipe and fittings, chimney pipe, victaulic pipe, sigur-headed pipe, and threading and coupling.

The company's spirally welded steel pipe production line – which operates

Petek Boru manufactures pipes and fittings in carbon and stainless steel

via continuous online UT (ultrasonic test) control – can manufacture pipes between 8" and 48" (219.1-1,219mm) diameter, with a wall thickness of 3.2-12.7mm. Carbon and stainless steel elbows and reducers between diameters ½" and 8" are produced at the company's fittings unit. All wall thicknesses between sch 5 and sch 80 are stress relieved. For fittings items between 10" and 48" in diameter, the segmented welding (mitre) method is used. Pipes between ½" and 6" in diameter are also threaded and coupled in this unit.

The company has EN 10217-1 and ISO 9001-TUV SUD certifications, and can produce according to ASTM A-53 standards. The company has also started building a new 40,000m^2 facility in Sakarya, Turkey, to increase its production capacity.

In addition to manufacturing, the company sells seamless pipe and fittings, ductile iron pipe and fittings, sewage pipe, irrigation pipe, natural gas and petroleum pipe, boiler pipe, construction pipe, rectangular and square sections, and cold drawn pipe. The company exports 30 per cent of its annual production and sales turnover.

Website: www.petekboru.com.tr

SMS Meer GmbH
Germany *9-C118*

SMS Demag AG is a world leader in the construction of plants for the steel, aluminium and copper industries. The company offers a complete process chain extending from crude iron production right through steelmaking, continuous casting, rolling mill and tubemaking technologies, up to processing and finishing lines for hot and cold strip.

Within the structure of SMS Demag AG, SMS Meer was established from the former

'Tube and Copper Plants' business unit of Mannesmann Demag Metallurgy. In 2001, the 'Long Product Rolling Mills Division' was integrated into SMS Meer, and in 2003, SMS Meer became part of the 'Tube, Long Product and Forging Technology' business area of the SMS Group.

The product range of SMS Meer essentially consists of: manufacturing plants and automated finishing systems for seamless and welded steel tubes (diameters from 4-1,800mm), hydraulic presses such as open-die forging presses and powder presses, and casting and rolling plants for sections, wire rod and bar steel. This is in addition to casting and rolling plants for extrusion billets, strips, wire rod, anodes and tubes made from non-ferrous and precious metals, plants for the production and further processing of aluminium billets and slabs as well as plants for the recycling of aluminium.

Website: www.sms-meer.com

TMK
Russia *9-B101*

TMK is a leading Russian producer of pipes used in the oil drilling sector, the chemical and petroleum industry, energy and construction companies, machine-building factories and auto manufacturers. The company is an umbrella organisation for the four largest pipe manufacturers in Russia: the Volzhsky Pipe Factory, the Seversky Pipe Company, the Sinarsky Pipe Factory and the Taganirogsky Metallurgical Factory. In addition, TMK operates two companies in Romania – the Artrom Pipe Factory and the Resita Metallurgical Factory.

TMK's annual production capacity is 3.7 million tons of pipe

TMK is a holding company that also includes a trading house for Russian and CIS sales, TMK Global AG for international exports, and the TMK-Transportation company. TMK's head office is in Moscow with affiliate offices, including those of the trading house, located in Switzerland, USA, Azerbaijan, China, Kazakhstan and Germany.

The company's yearly production capacity is circa 3.7 million tons of pipe. Its products meet international standards including API, ASTM and EN\DIN, with quality control systems approved by ISO 9001 and API Spec Q1 standards.

TMK – Russia
Website: www.tmk-group.com

TMK Global – Switzerland
Fax: +41 43 888 73 01

UFUK Inc
Turkey *10-C115*

UFUK Pipe Industry and Trading Inc is a manufacturer of spiral welded steel pipes. The company operates manufacturing facilities that comprise 46,000m^2, with 36,000m^2 outdoor area and 10,000m^2 indoor area.

These spiral welded steel pipes are used for natural gas, petroleum and water pipelines as well as piles for ports and construction. UFUK performs its spiral welded steel pipe production in accordance with the API 5L, DIN, BS, AWWA, UNI, ASTM, NFA, EN and TS standards. The pipes can be coated with epoxy, bitumen, cement mortar, polyethylene, polyurethane and polypropylene.

Website: www.ufukboru.com.tr

Yu-Nion Machinery Co
Taiwan *9-E119B*

Yu-Nion Machinery Co Ltd is a leading tube and pipe machinery manufacturer. The company's high quality machinery and equipment is designed for the tube and pipe industry and steel processing industries.

The Yu-Nion range includes tube mills for ERW carbon steel/stainless steel pipe, slitting lines, cut-to-length, hot rolling mills, and forming machines. The company can also provide finishing lines and complete plant equipment.

Website: www.yunionm.com.tw

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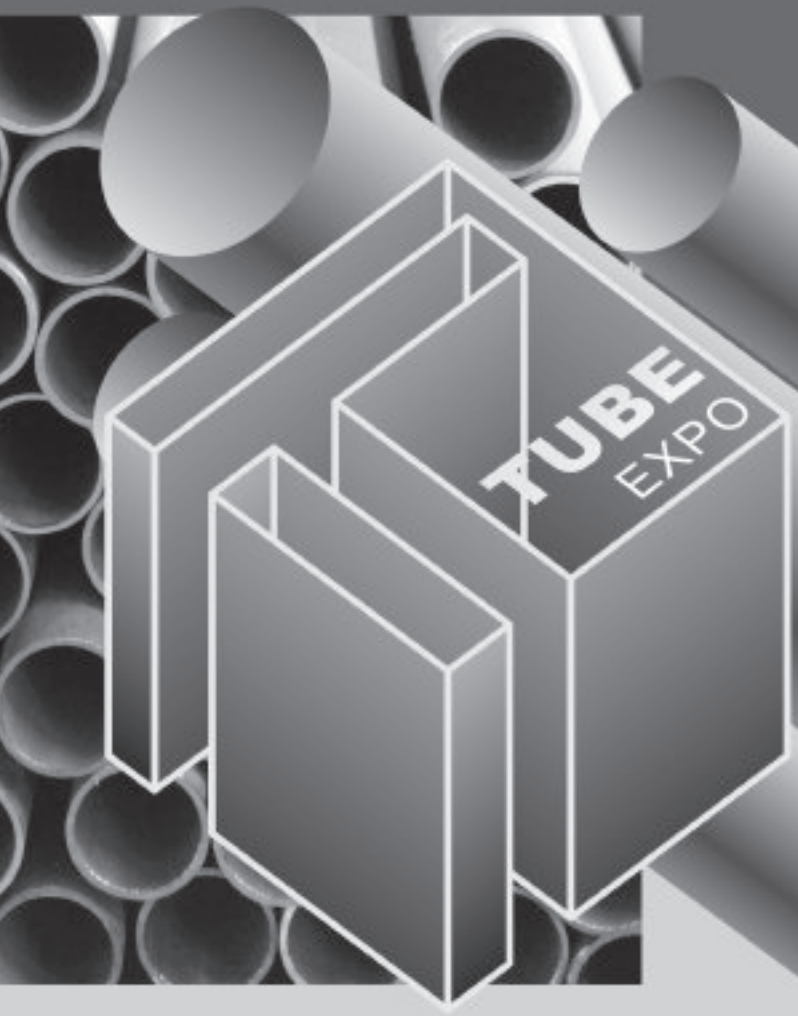

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OPEC cuts its production quotas – but to what effect?

Leaders of oil-rich countries watched for months as world oil prices tumbled more than 50 per cent from their all-time high of $147 a barrel in July 2008 to $64 a barrel in mid-October. With prices at their lowest level in more than a year, the Organization of Petroleum Exporting Countries announced a 1.5 million barrel per day (bpd) production cut as of 1 November. Writing from Paris in Time, Vivienne Walt saw this as meaning *"crisis for OPEC",* whose 13 members account for about one-third of the world's total oil supply and whose production quotas hugely influence world prices.

"Despite the speed of the oil boom, the price crash has jolted OPEC countries, which appear to have assumed that high prices were here to stay," wrote Ms Walt. Nigeria and Iran both set their national budgets according to prices of about $80 a barrel, and Qatar's expectation has been $90 a barrel (*'What's Behind [and Ahead for] the Plunging Price of Oil,'* October 24).

"Producers very quickly got used to $100-plus prices," Julian Lee, senior energy analyst with the Center for Global Energy Studies in London, told Time. *"They thought of it as normal and justified. They seem to have very short memories."*

Ms Walt warned of more worries ahead for OPEC deriving from a possible slowdown in China, whose soaring economy this decade has sent oil prices rocketing and helped set off a scramble for new oil exploration and drilling in developing countries from Ecuador to Angola. These economies have surged along with oil prices. Without China's continued thirst for new oil, Ms Walt observed, the OPEC production cuts will have limited impact.

- With demand for oil off 10 per cent worldwide, what pushed prices down more than 50 per cent? One of Time's respondents – Francisco Blach, head of commodities research at Merrill Lynch in London – pointed out that the demand and price relationship, while reciprocal, is not one-to-one: small demand swings can cause large price swings. Ms. Walt noted that the unraveling of oil is the other side of the credit crunch. She wrote, *"Banks, investment banks, and speculators have pulled money out of oil futures, further driving oil prices down. That's one reason why prices have fallen far faster than demand."*

Intent on prominence in energy, Russia looks to forge cross-border relationships

As reported by Itar-Tass, the major Russian news agency, Libyan leader Muammar al-Gaddafi said in Moscow on 1 November that his North African country would enhance cooperation in the oil and gas sector with Russia, the world's leading energy exporter. *"We consider cooperation with Russia in the oil and gas sector as very timely at this moment,"* Mr Gaddafi was reported as saying during talks with Russian President Dmitry Medvedev. *"Moreover, we have common approaches to oil and gas policy."*

Russian oil and gas giants Gazprom, Tatneft, Tatneftegeofizika, LUKoil, and Stroitransgaz are already active in Libya. Their operations range from geological surveying, offshore exploration, and development to oil refining and pipeline building. Gazprom, the world's largest extractor of natural gas, is also known to be discussing with Libya the construction of a pipeline to stretch from that country to Europe. If it is built, such a pipeline would further consolidate Russia's control over energy supply to its European customers.

By no means is Russia confining its energy outreach to Africa. In mid-October, an eight-member group of Gazprom senior executives, led by CEO Aleksei B. Miller, visited Alaska to discuss the participation of the gas export monopoly in various energy projects in that American state. The high-level delegation met in Anchorage with local authorities and with Mr Miller's counterpart James J Mulva, of the Texas-based oil company ConocoPhillips, to consider gas production and transportation in Alaska, which shares a maritime border with Russia.

While it provided no details of the types of projects discussed, Gazprom presented itself as an eager and able prospective partner. *"[We have] accumulated vast experience in exploring hydrocarbon deposits, and building and operating gas pipelines . . . in the Far North,"* Gazprom said in a statement. *"[Our] experience will be relevant in realizing similar projects in Alaska."*

At a shareholder meeting in Moscow in June, senior officials of Gazprom had said that the company was seeking to take part in a consortium to build a natural gas pipeline from Alaska to Canada. Gazprom had earlier expressed interest in a pipeline project alongside ConocoPhillips and British oil major BP to carry natural gas from Alaska's North Slope to the lower 48 states of the US.

- The 13 October meeting in Anchorage, which included several close associates of Russia's prime minister Vladimir V Putin, took place a scant three weeks after Alaskan governor Sarah Palin – the running-mate of Senator John McCain in the US presidential election just over — cited her vigilance against Russian incursions into Alaska as a foreign policy credential. In a 25 September television interview Ms Palin said, *"As Putin rears his head and comes into the air space of the United States of America, where do they go? It's Alaska. It's just right over the border. It is from Alaska that we send those out to make sure that an eye is being kept on this very powerful nation, Russia, because they are right next to, they are right next to our state."*

- 28 October found the Russian business executives back in Moscow for the opening of a Russia-China business conference at which the two countries would reach agreement on building an oil pipeline from the Siberian town of Skovorodino to the Chinese border. Mr Putin and his opposite number, prime minister Wen Jiabao, watched as officials of China's state energy major CNPC and Russia's state pipeline monopoly Transneft signed the deal.

  The pipeline – which would be a branch of the main East Siberia-Pacific Ocean trunk pipeline now under construction – is to have a capacity of 15 million tons of oil per year, officials said. At the border with China the pipeline is to be linked to the existing Chinese system, with the oil hub of Daqing in northern China as an ultimate destination.

  The length of the pipeline is projected at only around 44 miles, but China's prime minister placed it in a larger context of Chinese-Russian relations. *"We should deepen cooperation in the energy sphere,"* Mr Wen said. *"Long-term cooperation will help economic development and stability on world markets."*

Canadian oil sands development is stymied by rising materials costs, weakening oil prices

Royal Dutch Shell PLC, Europe's largest oil company, is delaying a planned expansion of a major oil sands project in northern Alberta, Canada, joining other major Canadian oil sands developers who are cutting back on spending in response to soaring costs and weaker oil prices. The Canadian Press (CP), Canada's national news agency, reported that, despite reporting a 22 per cent jump in net profit for the third quarter, Shell on 30 October said it would hold off on a decision to expand the Athabasca oil sands project near Fort McMurray.

The British-Dutch company will go ahead with an initial expansion at Athabasca to raise output there from 155,000 barrels per day (bpd) to more than 250,000 bpd by the end of 2009. The further expansion, now shelved, had production of 500,000 bpd as a goal. After excavation at the mine, the ore is processed and its tar-like bitumen content liquefied with the use of solvents. This is transported by pipeline to the Scotford Upgrader refinery near Edmonton, where the bitumen is converted into synthetic oils and later into a variety of fuels.

As reported by the Calgary Herald (4 November), other Canadian oil sands producers with uncertain prospects include Petro-Canada, which may have to postpone the upgrader portion of its 140,000-bpd Fort Hills project. The company said the price had risen by 50 per cent, to $21 billion, from a year-earlier estimate. Suncor Energy has delayed its $20.6 billion Voyageur expansion by a year. And partners Nexen Inc and Opti Canada Inc have put off a decision on the twinning of their $6.1-billion Long Lake integrated thermal oil sands project.

Elsewhere in oil and gas . . .

- China National Offshore Oil Co (CNOOC) announced 28 October that its net oil and gas output in the third quarter of 2008 rose by 15.2 per cent over the same period of 2007. As reported by Xinhua, the official press agency of the People's Republic of China, the state-owned producer said that its unaudited total revenue was $4.5 billon for the quarter, representing a year-on-year increase of 69.1 per cent. This was achieved on total net daily oil and gas production of 549,589 barrels of oil equivalent (BOE) in the quarter, including 480,857 BOE per day offshore China and 68,732 BOE per day overseas. For the first nine months of 2008, China's largest offshore oil producer reported unaudited total oil and gas revenue of $12.4 billion with a year-on-year increase of 65.3 per cent, a reflection of the soaring price of oil worldwide over that period.

- Legislation moving through Mexico's Senate and Chamber of Deputies is intended to halt and reverse the sharp drop in the country's production over the last five years. The new laws would free the state-owned oil monopoly Petróleos Mexicanos from many government controls and allow the company greater flexibility in the signing of contracts. The hope is that a more nimble Pemex can find and produce more crude oil.

  In 2008, Pemex's crude oil output dropped 10% through late October; exports had fallen even faster, by 18 percent. Mexico has slipped from its position as the second-largest supplier of crude oil to the United States, after Canada, to fourth place. Mexican critics of the proposed legislation claim that it does not address the main problem: the barriers to private investment that have closed Mexico's oil industry away from foreign capital.

- Andy Inglis, chief executive of BP Exploration and Production, said 18 October that world reserves are sufficient to support expected consumption of oil and gas for 40 years and 60 years, respectively. Speaking at Rice University, in Houston, Texas, Mr Inglis said: *"The really big strategic issue for all oil and gas companies is matching the earth's resource endowment on the one hand, with the capability – technology, skills, and know-how – required to bring those resources to market on the other. I think it is true to say that we may have reached a period of 'peak capability,' at least in the short term."*

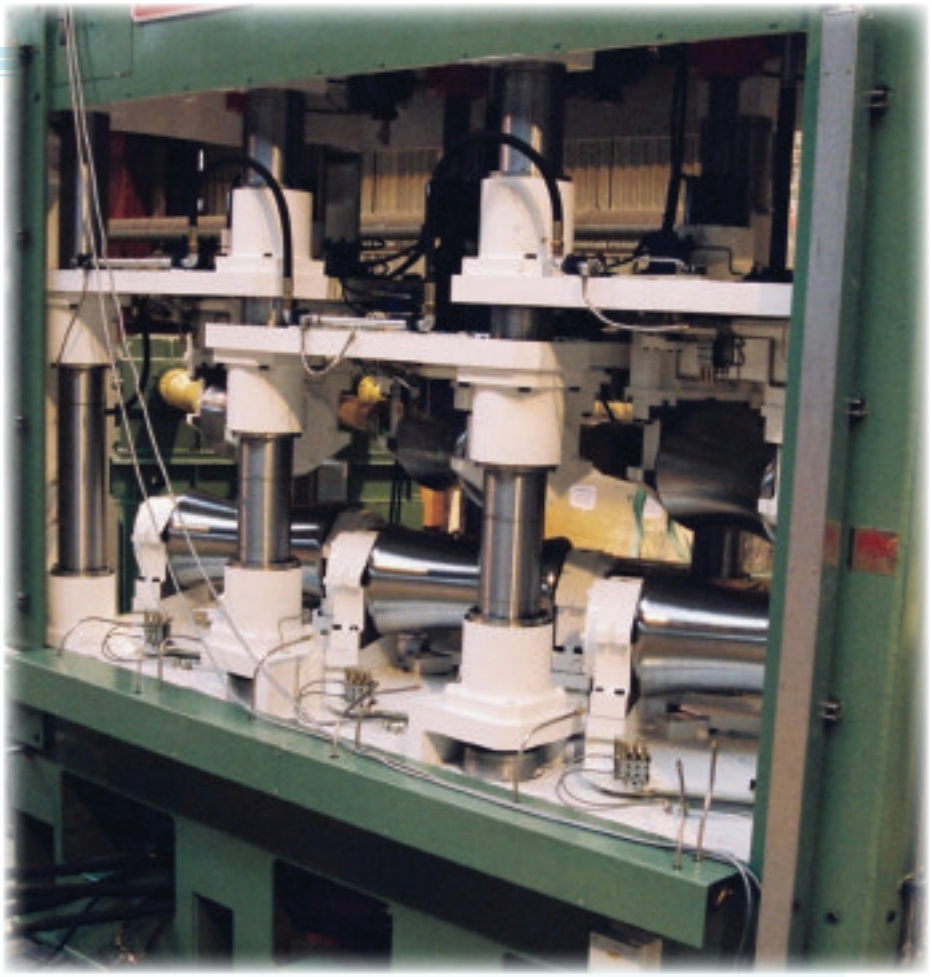
  As reported 18 October by Ian Forsyth in the Aberdeen (Scotland) Press and Journal, the BP energy expert warned that, for international – and, increasingly, national – oil companies, new resources are harder to reach and tougher to produce. Lying at greater water depths, under conditions of higher temperature and pressure, these resources call for complex drilling and completion designs. *"Bringing them into production is going to be difficult,"* said Mr Inglis. *"It will require that capability gap to be filled."*

- To strengthen its presence in Asia's fast-growing liquefied natural gas market, British gas producer BG Group has agreed to buy Australia's Queensland Gas Co for US$3.4 billion. The Australian company said on 28 October that BG will pay an 80 per cent premium to Queensland's last traded price and will take energy retailer AGL Energy's 22 per cent stake in Queensland, with AGL to receive $723 million.

  In other news of Australia, Woodside Petroleum, which produces about 40 per cent of the country's oil and gas, is being urged by the government of East Timor to support a plan to base a multi-billion-dollar oil and gas plant in that impoverished nation rather than in the Northern Territory city of Darwin, as proposed by Woodside. East Timorese plans call for a pipeline and petrochemicals facility to process oil and gas from the Greater Sunrise field, an offshore deposit estimated to be worth up to $90 billion. The field lies in waters claimed by both East Timor and Australia, and the licensing agreement stipulates that neither country may develop the field without authorization from the other. The two nations moreover must finalize a development plan within five years (Mercer Report [Sydney], 31 October).

Photo courtesy of Witt Gas

Straightening & Finishing Machinery



Bronx/Taylor-Wilson manufactures a range of 6 and 10 roll straightening machines (see page 72)

Straightening and finishing are critical functions of tube making on two counts: as important contributors to the quality of the product; and by virtue of their position in the production cycle.

In a high-speed operation, problems are unwelcome at any time. In an industry in which profit turns on productivity, they are best discovered at the feedstock stage.

As it happens, there are challenges enough at the end of the line. Expectations for finishing grow continually, especially in the pharmaceutical and chemical processing industries that require a mirror finish on the interior of tubing.

It is no longer sufficient for tube finishing methods to deliver a smooth, blemish-free surface with a high-gloss polish; they must also satisfy stringent government-mandated health, safety, and environmental concerns. Operations such as buffing may now require the installation of operator safety devices. Harder-to-grind metals call for customized polishing sequences and belt lineups. Polishing the inside diameter of very long tubes is still a daunting assignment.

Ravni technology for a prime finish on steel, copper and stainless steel tube (page 80)

As their customers' requirements mount, so do the demands that tube makers place on themselves: for achieving perfect surfaces in fewer steps and in less time. The development of new machinery – for straightening, grinding, sanding, and polishing – keeps pace with both sets of clients.

'World's smallest' computer driven precision tube straightening machine

As the outside diameter of tube gets increasingly smaller, the difficulty in rotary straightening slowly increases. Historically, tubes with outside diameters below 0.080" (2mm) have been extremely difficult to straighten on rotary straightening machines.

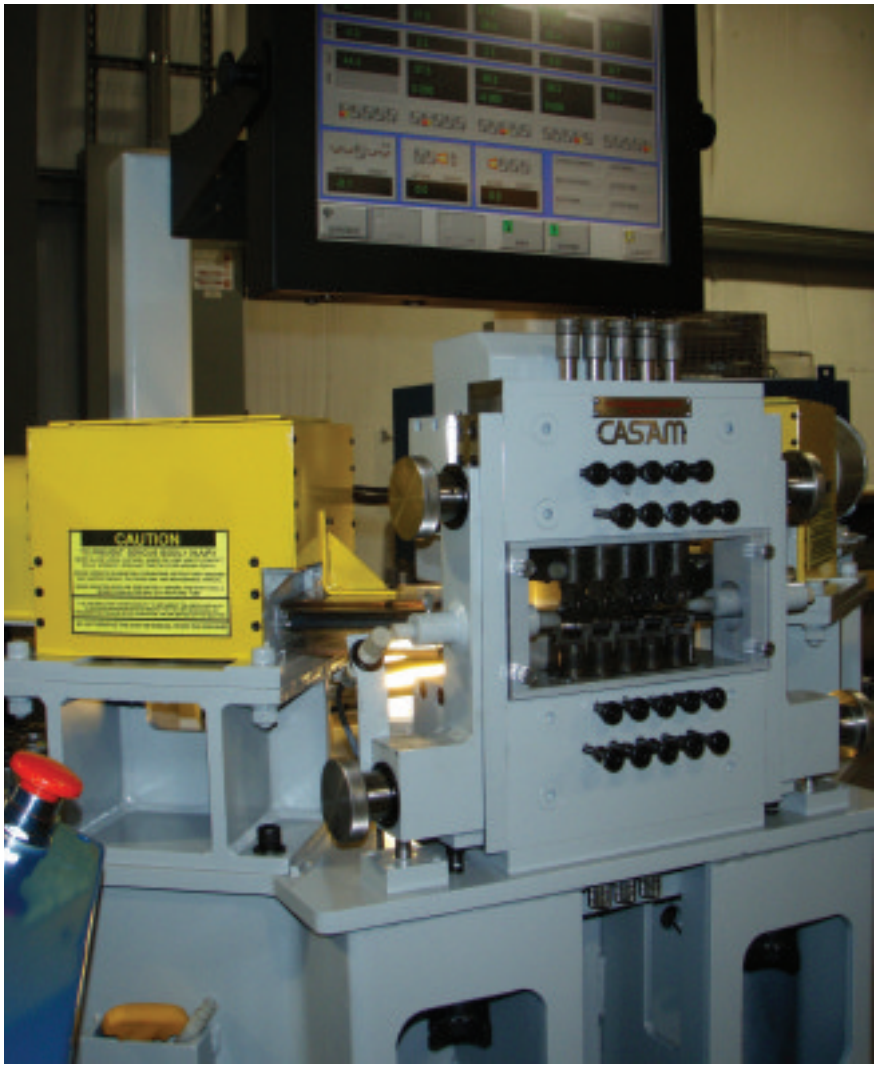
Tubes less than 0.60" (1.5mm) have been straightened on manually operated devices including a device commonly known as a 'whizzer'. All such devices have never really been controllable and at best produced inconsistent tube straightness.

Over the years, other machinery designers have made unsuccessful attempts at designing a conventional rotary tube straightener to handle tubes down to 0.040" (1mm) tube OD. Makers of stainless steel tubing used in the medical industries have been searching for a machine to precision straighten very small and thin wall tube for many years.

Turner, USA, has long been known for the design and manufacture of straightening machinery that includes a unique approach or feature. For a number of years Turner has continually reviewed the possibility of adding a miniature precision straightener to its range. In 2005/2006 Turner engineered improvements to two small tube diameter straightening machines made by competitors, which resulted in a definitive improvement in their capability.

In late 2006, a respected company approached Turner and requested the consideration of the development of a precision straightener to handle high yield, thin wall stainless steel tube down to 0.040" OD. A decision was finally made to proceed with a project to design and develop a fully computer controlled miniature 10 roll precision rotary straightening machine. As a result, the company launched the Turner model 911.25 10 roll Casam I machine with digital tube pressure sensing system.

Turner has developed the model 911.25 tube straightening machine



Following development of the machine, components were tested and software engineers established Casam software (computer aided setting and management). This software advanced the resolution of the system by a factor of 10 to enable very small roll position changes and allow monitoring and recording of the pressure applied.

The finished model 911.25 machine was powered up in January 2008 and undertook its first trials. The ability to set roll positions with extreme precision was proven within the first day or two of machine testing.

The measurement of the pressure being applied by each pair of rolls with digital tube precision was more accurate than had been expected. It proved to be totally necessary to control the tube as it was threaded up and run through the machine.

The Turner auto-acceleration drive system enables very accurate and easy tube thread-up into the 5 pairs of machine rolls. It also enables the ejection of the tube end from the machine at the end of the fully automatic straightening cycle.

The machine is configured with 5 pairs of driven rolls. As per common practice, the rolls can be adjusted in height and angle to enable tubes of different diameters to be accommodated.

The roll to tube pressure sensing is accomplished by strain gauges fitted into the base of the machine. Extremely accurate roll RPM's are achieved by two AC vector drives with unique control that ensures the tube is maintained on the centreline of the machine.

The new model 911.25 10 roll Casam I precision straightening machine is capable of straightening tubes from 0.040" (1mm) up to 0.100" (2.5mm).

Turner Machine Company Inc – USA
Fax: +1 330 332 5871
Email: rpage@turnermachineco.com
Website: www.turnermachineco.com

Advanced deburring systems enable higher productivity

RSA GmbH & Co KG, Germany, is a specialist in cutting and deburring systems for tube and pipe manufacturers. The company has recently supplied a Turnamat deburring system to a manufacturer of agricultural machines that uses hydraulic tube products.

During pre-production of hydraulic tubes, the company had previously used a file to remove outside burrs and a spot facer to remove inside burrs. However, the company now uses the Turnamat deburring system to carry out these procedures with far more efficiency.

Using this machine, a high performance brush operates as a tool. In addition to the rotating movement, the high performance brush makes a second rotation: it turns on its own axis. This second rotation assures complete deburring of the tube and section edges without having to turn the workpiece manually.

According to the agricultural machine manufacturer, the advantages of the system are the reproducibility of deburring results, simpler handling for the operator, and a drastic reduction of the deburring costs. It is possible to reduce the deburring time per end face from 30 to 4 seconds. Based on the daily production of about 700 workpieces, the amortization period for the machine was less than 2 months.

In many areas of pre-production, especially within the automotive supply industry, where high quantities are reached, the method of deburring with high performance brushes is well-established. The necessity of a perfect quality and highest assembly simplification do not permit deburring methods that are dependent on the qualification of the operator.

The Turnamat deburring system is suitable for unwieldy workpieces such as bent tubes. Inside and outside burrs are removed reliably in one work process without having to turn the workpiece manually

The deburring principle: in addition to the rotation of the brush, the workpiece turns on its own axis. Normally, the deburring time is about 3 seconds also in case of complex workpieces

RSA has developed different fully automatic deburring systems, especially for high quantities. However, there is much potential for rationalization in this area, with improved interlinking of different working steps. The direct interlinking of deburring systems with preceding saws from other suppliers, or the interlinking of cleaning modules, can lead to lower processing times.

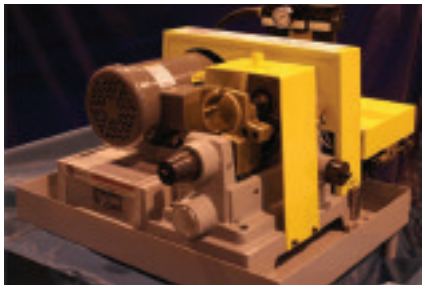
RSA GmbH & Co KG – Germany
Fax: +49 2351 995 300
Email: tiemo.krause@rsa.de
Website: www.rsa.de

RSA Ltd – UK
Fax: +44 1952 580511
Email: rsa.gb@rsa.de

New tube and rod end-finishing machine

Manchester Tool & Die Inc, USA, now offers the Pines model 660 tube and rod end-finishing machines for fast and simultaneous deburring, ID/OD chamfering, and facing.

The model 660 tube end-finishing machines



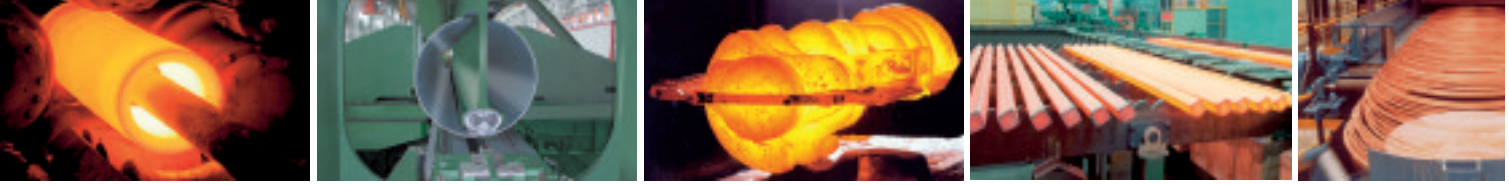
Model 660 includes two models, a manually operated and an air operated machine, for finishing up to 1,500 ends per hour and 1,875 ends per hour respectively.

These end-finishing machines offer cost savings by freeing lathes and other machines on a wide range of work. Model 660 can also increase production and improve accuracy compared to abrasive belts, deburring wheels and similar methods.

Changeovers are easy and can be completed within minutes with four sets of tools covering a $^{5}/_{16}$" to 2" diameter range.

Eight spindle speeds are available from 760 to 3,920 RPM and the maximum stroke is 1 $^{1}/_{4}$". These end-finishing machines are easy to operate and come with a variety of accessory equipment and tooling options.

Manchester Tool & Die Inc – USA
Fax: +1 260 982 4575
Email:
edegner@manchestertoolanddie.com
Website: www.manchestertoolanddie.com



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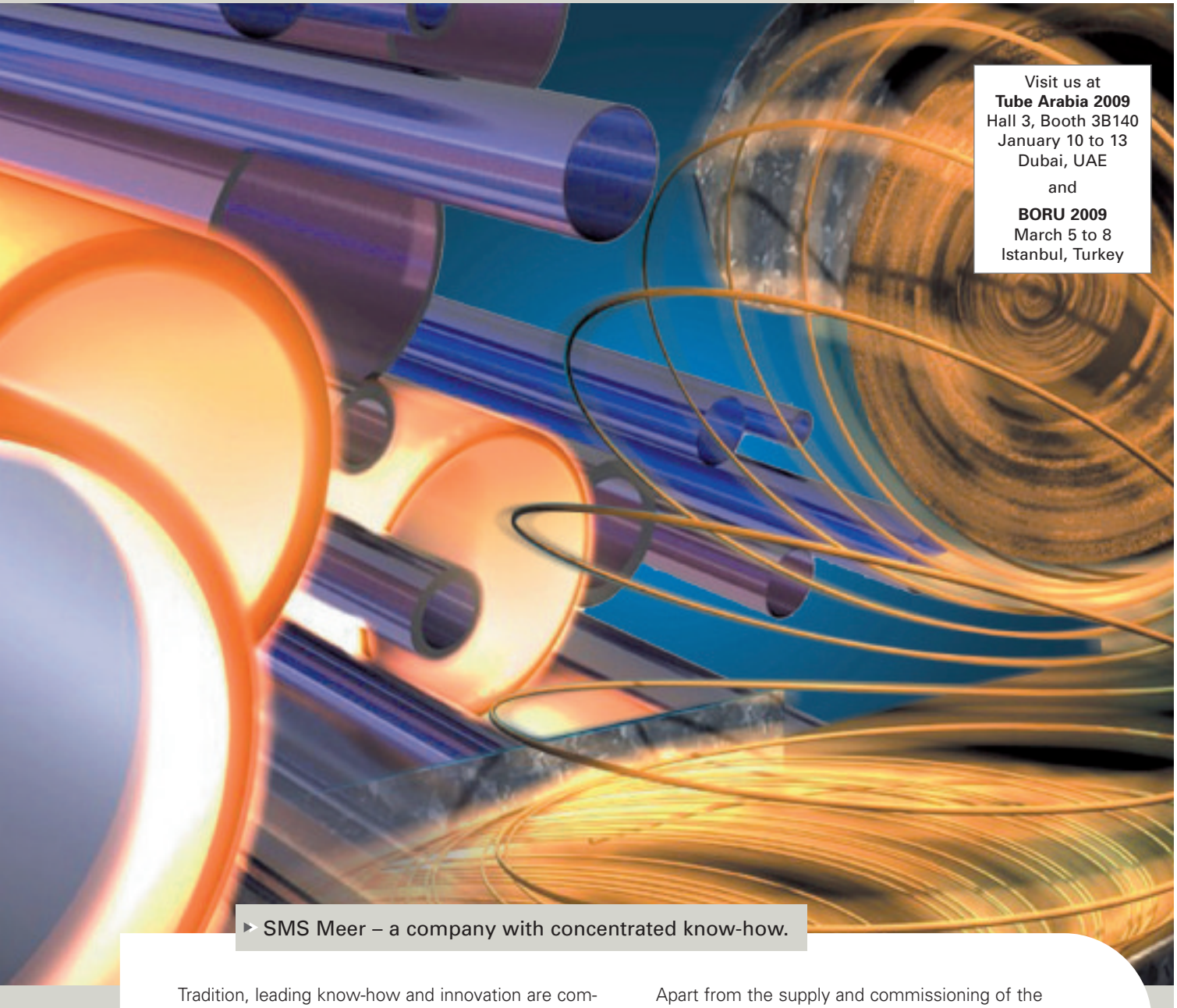

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Phone: +49 (0) 2161 350-0
Fax: +49 (0) 2161 350-1667
E-mail: info@sms-meer.com
Serviceline24@sms-meer.com
Internet: www.sms-meer.com

SMS GULF FZE
Regional Representation Office
Dubai Airport Free Zone
Building 4A, Office G16
P. O. Box 54 795
Dubai, UAE
Phone: +971 (0) 4 2045010
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MEETING your **EXPECTATIONS**

Expert in straightening technology consolidates global reach

Bronx/Taylor-Wilson supplies the world's leading pipe producers with advanced finishing technology to ensure a competitive advantage in the global marketplace. The company has manufactured, delivered and installed machines to countries including Russia, China, Brazil, Germany, United States, Japan, Ukraine, Kazakhstan, Canada and the UK.

With technical support staff additions in Europe, North America and Asia, Bronx now covers the globe to ensure that its customers receive the service and technical expertise necessary to keep finishing floors running at peak efficiency. The finished goods produced on Bronx/Taylor-Wilson equipment have first-rate capacity, productivity and tolerance.

With over 100 years of experience, the company's range of machines serves applications including processing of cold or hot pipes (over 600ºC), thin or thick walled tubes of over 50mm, and low or high yield strength alloys of over 1,000MPa.

Bronx claims to have been the first to have incorporated a straightening machine inline with the cooling bed. The company's innovative approach has led to the installation of over 1,000 straightening machines worldwide. Since 2001 alone, the company has delivered nearly 100 new straightening installations, with demand currently high for the company's straighteners and hydrostatic pipe testers.

Interpipe, a leading producer of API pipe in the Ukraine, has recently awarded several large projects to Bronx.

One order was for a heavy duty API quality 6CR9 series pipe straightener for hot rolled carbon and alloyed steel tube and pipe with plain ends, used in cold and warm conditions in accordance with API 5CT specification up to P110 grade. The outside diameter range is 73.02mm to 177.8mm with a maximum wall thickness of 22mm and a length of 14,000mm.

Bronx was also awarded a contract by Interpipe for a 6CR11 straightener for API 5CT product. This machine can handle throughput with a maximum diameter of 377mm, a wall thickness of 25.4mm and length of 15,000mm. In addition, Bao Steel in China awarded Bronx orders for two 6CR11s along with a 6CR12 to meet the demands of its finishing floor.

A Bronx rotary straightener, recently delivered and installed

The company has also recently commissioned several additional straightener projects across the globe, including a 10CR9 at Sinara and a 6CR11 at Volzhsky (both in Russia), a 6CR9 at Vallorec&Mannesmann in Brasil and a 6CR9 at V&M in France. Bronx is currently involved in the design of two special straightening machines for the Russian railroad industry.

In addition to the recently received contracts and installations for straighteners, Bronx has also won several orders for its hydrostatic pipe testers. One such order is for an API 5CT pipe tester for the Almetievsk Pipe Plant in Russia, designed for products up to 219mm OD at a pressure of 40MPa and/or 245mm OD at pressure not more than 32MPa.

In terms of supplying multiple products for finishing floor integration, Ipsco recently contracted Bronx for installation of a rotary straightener, end facer and a hydrostatic pipe tester for 2-$^{3}/_{8}$" to 7" products. Ipsco has recently completed its new finishing floor in its Baytown, USA facility.

Bronx International Inc – USA
Fax: +1 330 244 1961
Email: sales@btwcorp.com
Website: www.btwcorp.com

Bronx International Inc – UK
Fax: +44 870 442 2989
Email: europesales@btwcorp.com

The company has delivered and installed almost 100 new straightening installations since 2001

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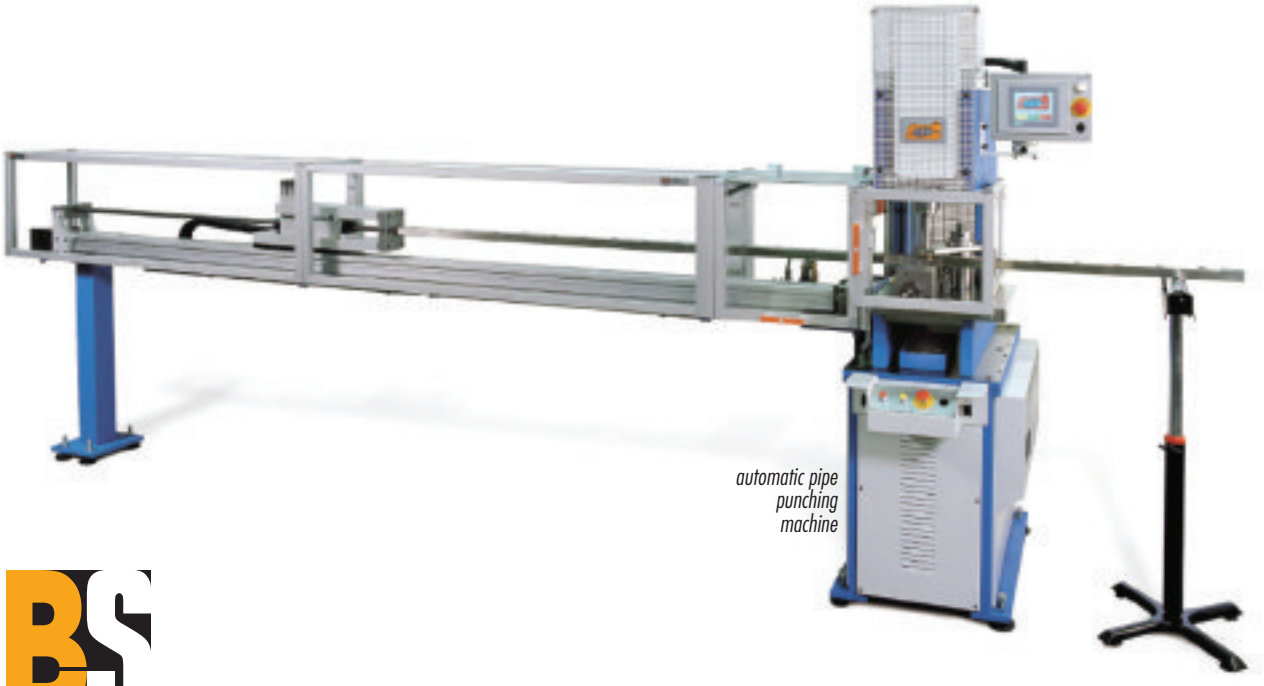

automatic pipe punching machine

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Latest generation of advanced straightening machines for seamless tubes

Reika, Germany, has received a number of follow-up orders from leading European tube mills following its development of straightening machines for the tube industry. The tube market has become more competitive in recent times and there has been a growing demand for precise tube straightening.

The development of 6 and 10 roll straightening machines has involved higher machine-tool accuracy and compact design. Reika machines are equipped with special features for seamless tubes to fulfil the actual and future market requirements.

Reika's tube straightening line for seamless tubes

The machine features include high straightening accuracy, high throughput, high rigidity, wear compensation, automatic setup, noise reduction, environmental protection and easy maintenance. The setup times are drastically reduced because of the automatic, self-learning control system.

The straightness accuracy has been drastically improved in comparison to conventional machines on the market. Therefore the centreline distances of the rolls have been reduced and special roll geometries optimized to improve this feature.

The 3D block frame design with finite elements has been developed using state-of-the-art Catia CAD systems. This technology is known from the automotive industry to maximize rigidity.

The machines are totally enclosed and compact to fulfil the market demands of noise reduction and no emissions to ensure environmental protection. Wear of the rolls is minimized due to the individual roll drives. In addition, free access into the working room without disturbing columns is beneficial for maintenance and operation.

The central clamping of the roll carriers is wear free and secures the precise angular and vertical adjustment without any play. All adjustment and guiding components are completely protected from scale, dirt and water. Therefore no corrosion or excessive wear can damage these precise adjustment elements.

In addition, Reika has been awarded with international contracts for complete finishing lines for seamless tubes. The rotary cut-off machines at the heart of the lines are able to cut individual tube lengths according to the varying ingoing lengths. In addition, test results from the NDT sections and sample cutting are being considered for the cutting process.

The customer experience of these lines provides material savings of between 2-3 per cent per year in comparison to standard layer saws. The current tool cost/consumables can also be reduced by the use of simple standard carbide inserts – the savings are up to 80 per cent of carbide sawing blades.

Reika GmbH & Co KG – Germany
Fax: +49 2331 969036
Email: info@reika.de
Website: www.reika.de

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Indexing table transfer machines for comprehensive finishing

Wolf Maschinenbau AG, Germany, manufactures indexing table transfer machines for 3-sided machining of pipe components from middle to high production rates. The machines can be used for pipes of Ø 1-13mm from coil, and up to Ø 26mm from bars, as well as workpiece lengths from 1-200mm (240mm).

In combination with the Wolf bar feeder, it is possible to achieve capacities of up to 70 pieces/minute (140 pieces/minute). In addition to frontal machining (ie surfacing and chamfering), other operations can be applied on a maximum of 15 unit heads such as longitudinal turning, undercutting, thread cutting, slotting, cross-drilling and non-cutting forming operations.

Wolf machines have a compact and modular construction, with short cycle times assured for economical production. In addition to small space requirements, the TSM 280 indexing transfer machines are highly flexible with high performance in middle to long production runs.

The TSM 280 indexing transfer machine

The TSM 280 provides a large spectrum of different machining operations, the application of various tools, and an infinitely variable controllability of all machining spindles. PLC or CNC controlling of the TSM 280 is possible for a maximum of 15 unit heads.

Due to short setup times and an easy access of working with respect to the tool area, the machine concept allows a continuous and efficient application. It is possible to machine with spindle drive capacities of up to 2.2kW.

After an easy modification, the modular construction of this machine type enables long production runs with variable workpiece and tool adaption. The possibility of multiple usages gives an additional advantage to this machine.

The central element is the vertical clamping disk with 8 resp/16 hydraulically operated clamping positions. The clamping of extra long parts is performed by means of a double clamping disk. The control of the machining units can be undertaken by the user via cams, hydraulically or via NC axes.

A range of products can be finished using operations including turning, undercutting, thread cutting, slotting, cross-drilling and non-cutting forming

The requested sawing units for the separation of the workpieces are powered with up to 3kW. The most commonly used machining units are milling units, cross-drilling units and undercutting units.

Wolf Maschinenbau AG – Germany
Fax: +49 71 35 93 6 98 66
Email: inge.peters@wolf-maschinenbau.de
Website: www.wolf-maschinenbau.de

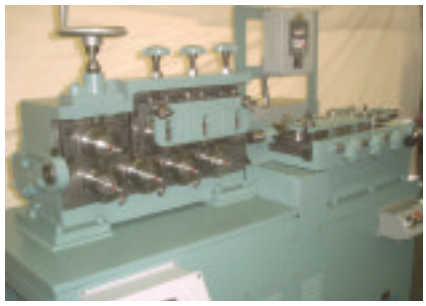
Gear driven straighteners with 8 vertical and horizontal rolls

Shuster-Mettler Corp, USA, is a leading manufacturer of tube, wire, and shaped stock straighteners. The company has developed a series of self-feeding and high-speed straighteners used in the tubing industry to straighten inline or from coils.

The Shuster models 2GRS, 3GRS, 4GRS, and 5GRS gear driven tube and bar straighteners do not rotate the material during the straightening process. Instead they use 8 vertical rolls and 8 horizontal rolls to straighten and feed the tubing. The 4-straightener models cover thin wall tubing in OD sizes from 0.125" (3.2mm) to 3" (76mm).

The straighteners can be manufactured for speed ranges to meet user requirements up to a maximum production rate of 1,000ft/min (300m per minute). Machines can also be manufactured to user specified pass-line height.

For continuous straightening, a single motor and AC inverter drive is used on all GRS machines. A servo drive is also available on these machines for feeding precise lengths into a press or other inline equipment.



Shuster-Mettler is the manufacturer of a series of tube straighteners, including the 3GRS model

The company also manufactures a complete line of non-powered 2 plane roll type tube straighteners. Twenty-one models are available covering thin wall tubing sizes from 0.045" (1.1mm) to 1.875" (47.7mm) OD.

Shuster-Mettler Corp – USA
Fax: +1 203 562 8525
Email: vetracer@snet.net
Website: www.shustermettler.com

New deburr for bent tubes and mitre cuts

Kent Corporation, USA, has launched a new automated deburring machine for bent tubes and mitre cut ends. The Rotoburr L machine has a wide face wire brush that spins while the head rotates. This double action offers quick and consistent deburring of the part without having to hold or rotate the part.

The part is pneumatically clamped into a fixture, and is then automatically indexed in front of the brush face via an operator-friendly push button station. The Rotoburr L is suitable for cell type operation and can be automatically loaded via arobot.

The machine can handle a wide range of products up to 5" OD, and can be supplied with an optional variable speed brush head to optimise brushing results on ferrous or non-ferrous material.

The Rotoburr L from Kent Corporation

Kent has machines in stock capable of processing free samples for evaluation.

Kent Corporation – USA
Fax: +1 440 237 5368
Email: deanc@kenttesgo.com
Website: www.kenttesgo.com

Volume production of bar or tubular components

Sinico, Italy, is well established in the volume production areas of automotive components, heavy duty construction equipment, building, domestic appliance components and general engineering.

Precision cutting to length of solid bar and tube, plus simultaneous double-end multi-operation machining, can be achieved using a range of Sinico CNC machines. This range provides capacities from 5mm to 120mm diameter and length ranges from 20mm to 800mm.

Bar and tube in 4m, 6m, 8m or 9m lengths can be loaded into the magazine that feeds the material automatically into the first stage of precision cutting to length by circular HSS or tungsten carbide blades.

The cut piece is automatically transferred by a high-speed rotary indexing turret to the simultaneous double-end machining operations, which can range from a basic face and chamfer to turn, bore, drill, tap and threading operations.

Tooling is provided by the Sinico 'quick change' system. CNC machine settings can be made through the Siemens touch-screen.

Sinico SpA – Italy
Fax: +39 0444 644808
Email: info@sinico.com
Website: www.sinico.com

Advanced range of high-speed rolls and straighteners

Witels-Albert, Germany, is involved in the design and manufacture of an advanced range of rolls, straightening machines and associated equipment. This equipment is used to guide, straighten, preform, postform and feed process materials.

The company continually aims to address the constantly evolving production environments, greater use of automation, tightly integrated sub-processes, increases in production speeds, new materials and advanced business strategies.

The company has a wealth of knowledge covering all aspects of the straightening and transportation of process materials geared to the latest applications.

Witels-Albert aims to use its expertise to ensure the straightening process is treated as an independent sub-process, which is influenced by upstream and downstream processes.

The CS Easy IV roll straightener for processing 5-15mm tube

The company believes that pay-off from a reel and feeding are sub-processes that can have a positive or negative impact on the straightening process.

There are process interfaces at the feed and delivery points of a straightening unit or system, while the interface parameters can be objectively identified.

The Witels-Albert range includes the HS series of high-speed rolls and straighteners. Technical features include PO position counters that ensure defined and reproducible settings for straightening rolls, and the CS semi-automatic tube straightener adjustment system.

The CS Easy IV roll straightener, which is used to process 5-15mm tube, can generate defined roll settings at the press of a key.

The company's customers have to supply top quality process materials and products, which can be produced at the lowest possible cost within tight tolerances using highly stable processes. It is therefore vital that guiding, preform, postform, straightening and feeding processes are seen as more than ancillary processes.

Witels-Albert GmbH – Germany
Fax: +49 30 723 988 88
Email: info@witels-albert.com
Website: www.witels-albert.com or

Witels-Albert USA – USA
Fax: +1 410 228 1813
Email: info@witels-albert-usa.com
Website: www.witels-albert-usa.com

Automatic line for tube straightening and cutting

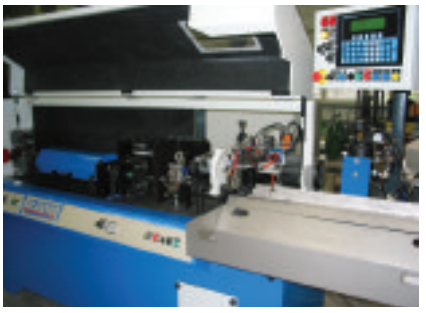
Ravni Technologies, France, is the manufacturer of the MDC10-TU-CFS automatic cutting line capable of straightening and cutting steel tubes, copper tubes, stainless steel tubes, and alloy materials. The machine operates with coils in a diameter range of 3-10mm.

The standard line includes a single or double motorized encoiler synchronized with the machine, two feeding stations with rollers or caterpillar, a rotating straightener and a slitting saw cutting unit. The straightness of the cut tube is in the region of 0.1mm and 0.2mm/m.

The MDC10-TU-CFS machine for automatic straightening and cutting

The feeding speed and straightener speed are synchronized. All components of the line, operated by a programmable touch-screen, are designed to take advantage of this synchronization.

All the tools can be changed very quickly and the straightener is equipped with two preset cassettes allowing changing of tools without upsetting the regulations. A flying cut is available on all models.



The machine's feeding and straightener speed are synchronized

Ravni provides the service for the installation, training and setup of the machine all over the world.

Ravni Technologies – France
Fax: +33 477 90 58 65
Email: info@ravni.com
Website: www.ravni.com

Comprehensive solutions for tube processing

Imec Tubes SpA, Italy, develops and manufactures tube processing lines, offering turnkey solutions for applications in tube finishing, handling and bundling.

The company's in-line finishing products include the SBM150 square brushing machine, RBM120 and RBM180 round brushing machines, and the SM170 scarfing machine.

Each machine is assembled following a patented system that divides the working area from the moving parts, ensuring minimal maintenance.

The MDC10-TU-CFS machine for automatic straightening and cutting

The company's newest solution is the patented permanent magnetic inside bead system.

This machine does not require an electromagnetic generator or tow-bars. It allows small OD tube beading at speeds up to 20m/sec with double rolling.

Imec Tubes also manufactures equipment for trimming, chamfering, blowing, eddy current, PMI, hydraulic testing and packaging.

Imec Tubes SpA – Italy
Fax: +39 0543 483374
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From the **AMERICAS**

Election Day plus one

American industry contemplates the future under a more regulation-minded administration in Washington

"Rising Democratic power in Washington is likely to usher in a drive for tighter financial regulation, increased social spending, and more labour-friendly policies amid a more challenging climate for business."

This happens to be taken from the Wall Street Journal. But, on the morning after the historic presidential election of 2008 in the United States, it was a fair statement of the thinking across a broad swath of American industry. President-elect Barack Obama heads a Democratic Party that also enjoys a decisive majority in both houses of Congress (56-40 in the Senate, 254-173 in the House of Representatives).

Business leaders and lobbyists interviewed by the WSJ's Elizabeth Williamson expressed are hoping that this phalanx of Democrats does not portend higher taxes in the midst of the current economic decline, nor the erection of significant new barriers to trade (*'Business Braces for Cooler Climate,'* 5 November).

Ms Williamson cited the defence sector, still fighting in November to raise the Pentagon's base budget to 4 per cent of gross domestic product in 2008, from 3.4 per cent in 2007, as an industry nervous about a Democratic Congress. *"Profits and sales are at or near peak levels,"* she wrote. *"[And] future Pentagon spending is expected to come under pressure because of broad budget issues and the likely drawdown of troops in Iraq."*

The oil industry also faces challenges, what with Democrats committed to aggressive efforts to curb oil consumption and put the US on track to reduce emissions of greenhouse gases. At the same time, Ms. Williamson found that hostility to proposals to cap emissions *"is giving way to efforts by industries – ranging from power to information technology – to profit from a green tilt in government policy."*

Accordingly, the expected congressional legislation to require businesses to pay for the right to emit carbon dioxide under a so-called cap-and-trade system is a concern to coal and oil companies, but a potential boon to others. The Wall Street Journal noted that executives of the German conglomerate Siemens AG, with $20 billion in US revenue and 70,000 US employees, said they hope to boost their power-generation, wind-power, and nuclear-services businesses if the US adopts carbon caps.

What appears to worry business interests most, wrote Ms. Williamson, *"is the possibility that a Democratic Congress and a Democratic White House will shift the balance of power between employers and unions back in favor of unions, after two decades or more in which unions have been in retreat."* Principally, what business leaders want Washington to do is take action to revive the economy. Clay Jones, who heads Rockwell Collins Inc (Cedar Rapids, Iowa), is also chairman of the board of governors of the Aerospace Industries Association. Mr Jones told the Wall Street Journal, *"What we've got to do is very efficiently and frequently go up there and make sure they understand what our case is."*

'Offshore drilling' is the mantra. What is the reality?

Stabilizing the US economy must be the first concern of the Obama White House. But the incoming president is on record as saying that energy is *"the most important issue that the [US] future economy is going to face,"* and he is widely expected to tackle that issue promptly. The Houston Chronicle believes that exploration, efficiency, and new fuels will be high among Mr Obama's priorities.

The Texas newspaper also looks for an early push by the new administration to resurrect an energy package that stalled out in the current Congress. That plan would force oil companies to renegotiate offshore royalties (*'Obama likely to tackle energy early on,'* 8 November).

The Chronicle's David Ivanovich wrote, *"Some other Obama priorities – including higher fuel mileage requirements for cars and trucks and creating a trading mechanism to cap greenhouse gas emissions – will almost surely wait until later in the term."* As for Mr Obama's call, during the run-up to his election, for a windfall profits tax on the oil companies, Capitol Hill experts are sceptical that this will ever happen.

Congressional staffers and lobbyists say that Mr Obama and Democratic leaders will have to decide – probably by March – what new offshore areas they may be willing to open up for oil and gas drilling. But the Houston Chronicle observes that the extent of the incoming president's commitment to opening new areas offshore remains an open question. *"[He] has repeatedly argued that the nation cannot drill itself out of its energy woes,"* wrote Mr Ivanovich. *"And he has joined with other Democrats in insisting oil companies drill on the 68 million acres where they already hold leases but are not actively working, a proposal drilling proponents dismiss as largely meaningless."*

It could be argued that offshore drilling is meaningless. The Interior Department has estimated recoverable reserves off US coasts in now-banned areas at only about 19 billion barrels of oil. Americans consume some 20.6 million barrels a day – about 60 per cent from foreign sources. Opening the as-yet-untapped US coastal areas to drilling might support about 920 days, or 2.5 years, of consumption at current rates. Moreover the American Petroleum Institute, the oil industry trade group, estimates that – if the coastal waters were all opened to exploration – it would take at least seven and probably 10 years before any benefits were apparent.

And major environmental groups contend that the increased supply would not much benefit the American consumer. Carl Pope, executive director of the Sierra Club, told the McClatchy Washington Bureau last June, *"It would take a decade to bring new leases into production, and then they would only line the coffers of the oil industry."*

McClatchy also cited Deron Lovaas, senior energy analyst at the Natural Resources Defense Council, to the effect that – even if billions of barrels of oil were available offshore – drilling would put the US in control of only a fraction of the world's supply. Thus energy independence is not within reach for the United States.

Mr Lovaas said, *"We are just not blessed in this country with enough resources for [coastal drilling] to make a big difference."*

- An interesting slant on the Obama accession was contributed by Red Cavaney, a Washington-based executive with ConocoPhillips (Houston), who suggests that the new president has a 'Nixon-to-China' opportunity on energy. The Chronicle recalled that President Richard M Nixon's credentials as a fervent anti-communist *"gave him political cover for making historic overtures in 1972 that warmed US relations with communist China."*

  Mr Cavaney, a former head of the American Petroleum Institute, took note of perceptions that Mr Obama shares the jaundiced attitude of fellow Democrats toward the oil industry. This might enable him to forge the kind of consensus on energy issues that has eluded policymakers, notably his predecessor George W Bush who began his career in the oil business in Midland, Texas, in 1975.

The economy

IMF: the United States is leading the world into recession

Together with many private economists, the International Monetary Fund (IMF) believes that the US economy will probably contract in the last quarter of 2008 and the first quarter of 2009, meeting the traditional criterion for a recession: a growth rate of 3 per cent or below for two successive quarters. The last recession in the US was in 2001.

The IMF, in its World Economic Outlook released 8 October, also forecast world economic growth to slow to 3.9 per cent in 2008 and to decelerate further to 3 per cent in 2009, marking the worst showing since 2002. An independent organization based in Washington, the IMF is comprised of 185 countries pledged to work together promote global monetary cooperation.

"The world economy is now entering a major downturn in the face of the most dangerous shock in mature financial markets since the 1930's," said the report, which was released just prior to a pair of top-level gatherings in Washington: the IMF-World Bank annual meetings, and a meeting of the finance ministers of the Group of Seven industrialized nations (G-7).

The IMF also offered these projections of slowed year-on-year economic growth:
Germany: 1.8 per cent in 2008, down from 2.5 per cent in 2007
France: 0.8 per cent, down from 2.2 per cent
Britain: 1 per cent, down from 3 per cent
Canada: 0.7 per cent, down from 2.7 per cent
Japan: 0.7 per cent, down from 2.1 per cent

In marked contrast to these estimates, the IMF said it looked for global powerhouses China and India to see growth in 2008 of 9.7 per cent and 7.9 per cent, respectively. While impressive in the East-West context, these rates would still mark regression from the blistering performances of 2007.

The IMF expects Russia's economy to be another such success story: growth of 7 per cent in 2008, down from 8.1 per cent in 2007.

In Latin America, Brazil's booming growth is expected to cool a bit to 5.2 per cent in 2008, from 5.4 per cent in 2007. Mexico's economic growth will likely slow to 2.1 per cent, from 3.2 per cent the previous year.

The neighbours

What does the 'economic Pearl Harbor' in the US mean for Canada?

Columnist David Olive, who writes about business and political issues in the Toronto Star, posed that rhetorical question and commenced to answer it. Despite Canada's close proximity to the epicentre of America's worst financial crisis since the Great Depression of 1928-1932, Mr Olive declared, Canadians are *"in surprisingly good shape, all things considered."* ('Why Canada may dodge US crisis,' 4 October).

Clearly of the same mind, Canadian prime minister Stephen Harper had said the day before: *"The economic and financial mess in the United States is disastrous. The policies have been irresponsible. We've made different choices in Canada. We are not bailing out companies in Canada."*

Companies were being bailed out in the US, and without any guarantee that the $700 billion rescue mission mounted by Congress would arrest the credit crisis and the threat it holds of triggering a global recession. In the view of Warren Buffett, the legendary American stock-picker and designated wise man, the state of affairs south of the Canada-US border constitutes *"an economic Pearl Harbor."*

The rosier prospects in Canada rest primarily on that country's stronger job market and healthier banks, which cushion the effects of a stock market susceptible to oil-industry gyrations. Despite tumbling commodity prices and the recent plunge of Toronto's benchmark Standard&Poors/TSX index to its lowest level in more than two years, the Star's Mr Olive was able to claim that the wider Canadian economy was doing well.

He wrote: *"The well-publicized loss of manufacturing jobs, concentrated in Central Canada, amounts to 353,000 jobs since 2002. But in that same six-year period, Canada generated a net increase of 1.5 million new jobs, and not only in relatively low-paying . . .sectors but professional, scientific, and technical services as well. Average hourly wages were $20.41 in 2007, up from $17.66 in 2002. And unemployment figures for Canada and the United States are going in opposite directions. The Canadian jobless rate for September was 6.1 per cent, down from 7.5 per cent in 2002. The US unemployment rate also is 6.1 percent, but that's up from the 4 per cent to 5 per cent range earlier in the decade."*

And Canada's good news goes on:

› While Canadian housing prices have retreated in various areas, the declines are far from the 30 to 70 per cent drops experienced in the hardest-hit US markets (California, Florida, the Midwest), where foreclosures resulting from defaults on subprime loans are concentrated and have created a glut of unsold houses.

› The Canadian banking sector is sound, having for the most part resisted the packages of US subprime loans on offer at the top of the US housing market. Canada has stricter rules on capital ratios that banks must maintain and a higher level of regulatory scrutiny of banking than the United States.

› Household debt is high in both countries, but a stronger job market in Canada makes that less of a worry there than in the US.

As if all this were not enough, Canada is the sole member of the Group of Eight industrialized nations to have registered successive federal budget surpluses over the past decade. As such, it is much better positioned than the other G-8's to provide fiscal stimulus if its economy should falter.

Short of a global recession, 'relatively healthy' Latin America can expect to withstand the fiscal unrest to its north

Reporting from Rio de Janeiro in the New York Times, Alexei Barrionuevo supplied an early appraisal of Latin America vis-à-vis the fiscal turmoil spreading from the US to Europe, awakening fears of global recession and sharp curbs on development in many of the world's fastest-growing economies (*'Emerging markets find they aren't insulated from the tumult,'* 7 October).

Many economists expect that the regulatory reforms undertaken to shore up the Latin American banking sector in the wake of previous

crises make the region's banks more resistant to failure than their American and European counterparts. But, according to Mr Barrionuevo, that *'relative health'* is inspiring little faith in the stock markets.

Illustrating his point, Brazil's Ibovespa plunged 15 per cent on 7 October, closing down 5.4 per cent for the trading day. Argentina's Bolsa de Buenos Aires fell 6 per cent. Even Chile, the region's most stable economy, had one of its largest one-day drops in years. The country's IPSA exchange dropped 6.02 per cent. Its IGPA exchange fell 4.89 per cent.

Even so, Mr Barrionuevo deems the region to be more resilient as a result of *'nightmarish memories'* of previous financial crises: Mexico barely snatched from the jaws of default in 1994; Brazil watching its currency, the real, tumble 43 per cent in early 1999 after the government abandoned a policy of defending it.

"This decade," Mr Barrionuevo wrote, *"Brazil, Mexico, and Chile, in particular, have saved wisely during a broad-based commodity boom. They have reformed their financial institutions with stronger regulations and, in the case of Brazil especially, diversified their trade to be less reliant on the United States economy and more on Asia's."*

Now, this prudence enables Latin American countries, in varying degrees, to tap reserves and stabilization funds to help ensure that the higher cost of borrowing does not affect their exporters. The governments of Brazil and Chile have already pledged themselves to free up funds for key industries.

- Some Latin American countries (among them Venezuela, Ecuador, Argentina), having saved less, will have less flexibility. One of the Times's respondents – Alfredo Coutiño, a senior economist with Moody's, the credit rating agency – said that the global credit tightening could make it more difficult for Argentina to renegotiate billions of dollars in outstanding debt and stave off a fiscal crisis in 2009. But, he noted, because the country has been shunned by international investors, capital flight is less of a concern. *"Latin America is in a much better macroeconomic position now,"* Mr Coutiño said. *"But in the past few weeks [to early October] the movie has changed, and now Europe is involved. Two of the three main global locomotives for growth are suffering. If we face a global recession nobody can escape."*

Automotive

Still harder times lie ahead for US and Canadian auto makers, parts suppliers

Seeing no recovery in the key US vehicle market until at least 2010, JD Power and Associates believes that the global market may experience an *'outright collapse'* in 2009. Jeff Schuster, executive director of automotive forecasting for the influential marketing information services firm, emphasized the broad reach of the crisis.

"While mature markets are being impacted more severely than emerging markets, no country or region is completely immune to the turmoil," Mr Schuster said on 9 October.

Citing general economic stress and growing concerns about credit availability, Power (Agoura Hills, California) forecast US sales dropping by another 400,000 cars and light trucks, or 3 per cent, to 13.2 million units in 2009.

What the gloomy outlook might mean for Canadian suppliers to the auto industry was addressed by Gerald Fedchun, president of the Automotive Parts Manufacturers' Association of Canada. He said flatly that many companies – already contending with higher energy and commodity costs, stiffer offshore competition, and a soaring currency that makes exports more expensive – would not survive.

"Particularly smaller ones that rely on the US simply won't be able to make it if they have to wait that long," Mr Fedchun told the Toronto Star, in reference to the JD Power prediction that any pronounced recovery in the global auto market lies at least 18 months down the road.

"So many are already at risk or on the edge," Mr Fedchun told the Star's business reporter Tony Van Alphen, in the struggling industrial city of Windsor (Ontario) – across the river from Detroit. *"We had expected it would be ten months to a year before things would turn around, but 18 months would be far more than they could take."* (*'Auto Sector May 'Collapse','* 10 October).

Mr Van Alphen, noting that Canada exports more than 80 per cent of its auto output and 60 per cent of parts production to the US, wrote that auto makers in Canada have been scheduling more weeks of downtime and cuts in shifts. He reported that Ford and Toyota canceled new shifts before they started. And General Motors Corp. plans to phase out production altogether at a truck plant in Oshawa.

In other automotive news . . .

› General Motors has said it may sell its ACDelco parts business, based in Grand Blanc, Michigan, as part of an effort to raise as much as $4 billion through asset sales. Merrill Lynch has been hired to assist in the possible sale, GM said in a statement 23 October. The largest US auto maker may also shed its medium-duty truck business, its Hummer brand, and a parts plant in France.

› Daimler AG, the world's largest maker of heavy vehicles and the largest German company by revenue, on 14 October announced plans to eliminate its Sterling truck brand and shift production from the US to Mexico, actions that will cut some 3,500 jobs in Canada and the United States. According to the Canadian Auto Workers union, which represents employees at a Sterling factory in St. Thomas, Ontario, about 1,300 workers will be let go when the plant is closed in March. Stuttgart-based Daimler will also move production of most Western Star brand trucks from Portland, Oregon, to Santiago, Mexico, in June 2010.

Andreas Renschler, who heads Daimler Trucks, said that about 88,000 heavy trucks had been idled in the US since January 2008, an indication of a significant and perhaps permanent change in the industry. *"It would be bad leadership to ignore today's economic realities,"* Mr Renschler said in a conference call with analysts and the press, reported in the New York Times (15 October). *"It's a whole new game now."*

In brief . . .

Ending 81 years of operations, Linderme Tube Co (Euclid, Ohio) ceased production on 1 October – the outcome, according to company president William Haag, of a decades-long slippage in the domestic metal pipe industry. As reported in the Cleveland Plain Dealer (2 October), the main factors cited by Mr Haag were the increasing use of plastic pipe for many construction applications and increasing availability of inexpensive copper and aluminium tubes made in China.

Linderme's assets have been sold to Small Tube Products Co, which planned to ship the metalworking machinery and inventory to its headquarters plant in Altoona, Pennsylvania. The Linderme acquisition represents its first expansion.

The buyer, Small Tube, founded in 1947, is a producer of precision drawn, small diameter, thin wall copper and specialty alloy tubes, with customers worldwide. It was itself spun off, in March 2008, from Wolverine Tube Inc (Huntsville, Alabama), which had owned it since 1994.

Also from the Plain Dealer (3 October), Republic Special Metals Inc (Canton, Ohio) was reported about to break ground on a new speciality steel manufacturing plant near Youngstown. Construction on the $64 million plant is expected to take from a year to 18 months. Michael Owens, the vice president of sales and marketing, said that the North Jackson plant would supply products for the aerospace industry. At its Canton facility, formerly owned by Republic Engineered Steel, the company produces both VAR (vacuum arc remelted) and ESR (electro slag remelt) steels and alloys in ingots, semi-finished billets, and finished bar stock.

Alcoa closed down production at its Rockdale, Texas, aluminium smelter as of 30 September, in response to overall market conditions and *'uncompetitive power supply'* to that smelter. In June, the Pittsburgh-based aluminium producer, the world's largest, idled three of six operating potlines at Rockdale, representing approximately 120,000 metric tons per year (mtpy) of production. Curtailment of the remaining aluminium smelting at the plant means the loss of another 150,000 mtpy as a result of ongoing local power supply issues. Alcoa said it will continue to operate the aluminium atomizer in Rockdale, as well as its anode operations there.

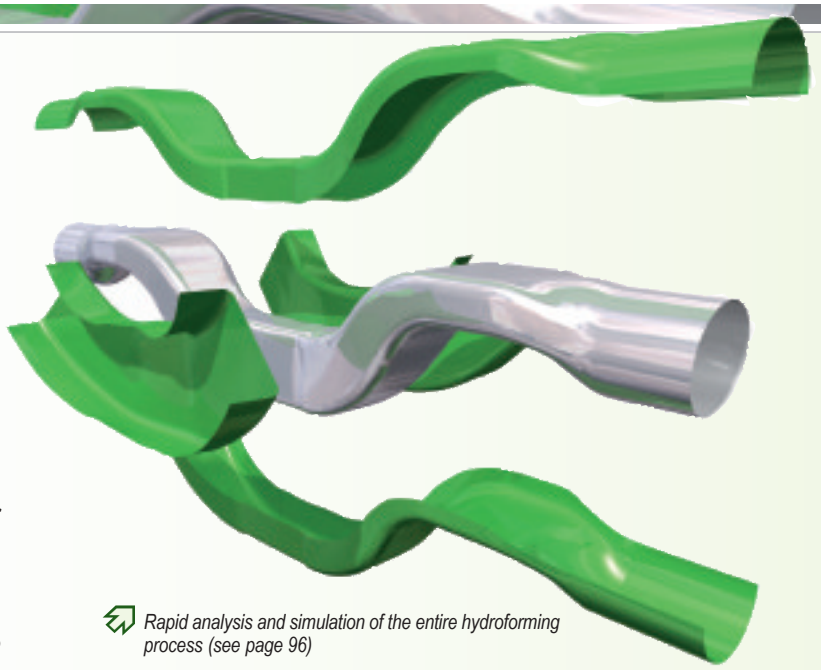
The Canadian Pacific Railway has gained approval from US regulators to take control of the Dakota, Minnesota and Eastern Railroad Corp., raising the possibility of a third railroad accessing lucrative coalfields in the western United States. The $1.5 billion acquisition, first mentioned in 2007, reportedly would not decrease competition in the North American rail industry; nor would shippers lose the option of competitive services.

But the Surface Transportation Board – the successor agency to the US Interstate Commerce Commission – said in October that it will evaluate the potential environmental effect of increased coal shipments if Canadian Pacific should pursue Dakota, Minnesota's plan to extend track into Wyoming's Powder River Basin. Calgary-based Canadian Pacific agreed to pay $1.48 billion including assumed debt for the US railway company, which is based in Brookings, South Dakota.

Dorothy Fabian, Features Editor (USA)

Software for Design, Production & Management

Software for tube and pipe manufacture is an exacting tool for exacting people, never more so than when it is employed in the service of management. This is the area of rapid advances and importunate new requirements, many of them imposed from some distance beyond the perimeter of the plant.

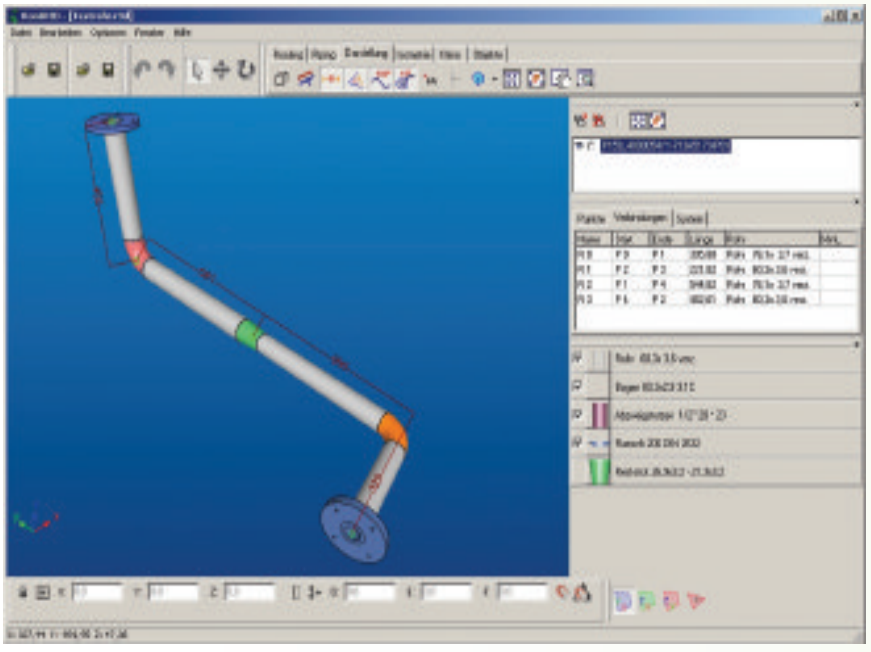


Rapid analysis and simulation of the entire hydroforming process (see page 96)

The watchword of the hour is energy conservation. To tube makers, the wise use of energy is not an ideal but standard operating practice to which the right software makes an invaluable contribution.

An online software tool introduced in November provides a case in point. It offers an overview of the plant's major energy-consuming systems and a cost analysis of energy purchases. It enables plant personnel to monitor energy use minute-to-minute, and to quickly identify opportunities for savings. It includes an energy intensity spreadsheet and a carbon footprint calculator. It has a trouble-shooting feature that remedies minor user errors.

Roni3D software aids the user in visualizing tube and pipe production (see page 90)



For good measure, this sophisticated software also confers citizenship of a globalized world: it provides Chinese language support for every program.

Nothing has been left out of this software except what is unnecessary, and that has been ruthlessly excluded. In tube and pipe manufacture, energy conservation is a serious concern and a practical necessity.

Fortunately, software development has proceeded in parallel with that necessity; and its products are as advanced as the industry they have been created to serve.

Cutting-edge software feature facilitates lasers for tube measuring

Non-contact tube measurement has been integral to the international tube market for around 35 years, with the non-contact fork setting a high standard for tube measurement. Since then infrared and laser beams have also been introduced and combined in many similar procedures for generating points in crosslines to calculate tube data.

Laser technology has also been utilized effectively in the CAD world, with use of geometric parts and processing through software that takes millions of points to generate surfaces.

Tubes treated as geometric parts are created out of 2 half shells or as linked up cylinders and bends in some construction software, to be recreated and reassembled to display the design of the scanned object on the screen. However, this technique has had its drawbacks as tubing needs a completely different algorithm, and no tube data is present in these results.

TeZetCAD was created as specialised tube software that generates tube xyz data during the scanning of a tube. It converts it into bending data in the same process. The scanning procedure for long tubes with lots of bends, or small tubes with small diameters, has always been very time consuming.

For this purpose, Tezet introduced the cutting-edge LaserLine feature in the TeZetCAD software, which allows the laser to do its work as a facilitator in tube measuring. A synthesis between the current laser technology and the traditional non-contact fork evaluation – combined with TeZetCAD – is a highly effective new mode of operation in tube measurement.

The technology is extraordinarily quick, with one laser line at the A-End and only two laserline measurements on one cylinder. Of these two laserline measurements, there is only one at the beginning of the straight and one at the end of the straight, continuously repeated on each straight until the B-end. This is known from the non-contact fork 'tak, tak' method – with real time xyz and bending data output.

TeZetCAD claims to produce the only software that provides this LaserLine feature, which works with Faro V3 features and the MicroScribe with MicroScan. These miniaturised measurement systems offer high performance technology. For instance, a 3D Linelaser is available with 2 workspaces – one for smaller tubes and one for larger diameters (eg the MicroScribe measuring device with the MicroScan-3DLinelaser).

Tezet's brand new calculation algorithm enables lasers to measure according to the 'tak, tak, tak' method

TeZet Technik AG – Switzerland
Fax: +41 56 2492878
Email: tezet_leistritz@compuserve.com
Website: www.tezet.com

Simple and effective design retrieval for engineering applications

CADFind Sketch and Search can identify 2D and 3D engineering drawings from a sketch and 3D CAD solid modelling environments. It has now been released in a version that allows users to build custom applications to meet specific business and engineering requirements.

The CADFind retrieval process is very simple and enables a company's wealth of past designs, including those only held in 2D formats, to be checked as a designer creates or modifies parts in a 3D CAD system. The software allows the user to search, retrieve and use geometrically similar parts from a database, based on a customer drawing, simple sketch and 3D models.

"I have used various versions of CADFind over the last three years," says CAD designer Mr Tom Tanner. *"I've found it to be a great time-saving tool for doing my design and drafting work as it's easy to use and its automation means there is not much technical input required from me."*

The most innovative element of the new programme is the facility to incorporate CADFind's unique searching and database capabilities into customized stand-alone or web applications. The new application programming interface (API) is unique to CADFind and is claimed to be unavailable in any other standard commercial package.

An example of the use of this API technology can be seen in a research website developed with Aston University to explore the way designers use graphical search systems. The website – http://camac.aston.ac.uk – allows users to search an online database using a CAD sketch or 3D model.

This collaboration will help Applied Search Technology Ltd continue to create innovative products that reflect the market requirements as closely as possible.

"We are currently working on several different formats of the software that can be used by designers in many different industries," says Dr Doug Love, research director of the company behind CADFind applied search technology.

"We want to bring in modifications such as 'cleaning-up' tools, better integration with CAD software and different ways of uploading parts – all to make the process of part retrieval easy and less time-consuming for the designer."

A workable demonstration program of CADFind is available to download.

Applied Search Technology Ltd – UK
Fax: +44 121 260 6003
Email: sales@astltd.com
Website: www.sketchandsearch.com

Pipe workshops in flux: systems for CAP, CAD, CAM, CAQ and PPS

In the field of tube and pipe construction, modern electronic control systems are becoming increasingly common. In order to take advantage of these digital systems, it is essential for all departments to consistently use a common, unified interface, in order to ensure integrated communication.

Such methods include CAP (P&I diagrams and planning), CAD (design, coordination), CAM (machine control, production control), CAQ (quality control), CAE (calculations and engineering), and PPS (process organization, human resource optimization, and basic data management). The individual areas are not clearly defined, and often overlap.

The main aim with this software is automatization of the work process with consideration of machine costs and utilization. Such software also assists in reducing costs for the supply and transport of material to the workplace.

The known problem areas for tube and pipe production are delivery times for special materials, internal flow of material, internal transport, storage of fabricated parts, design changes, backflow of modifications, and inflexible structures.

In the field of tube and pipe production the problems are often so complex, that the development of a global strategy to satisfy all demands is simply not realistic and feasible.

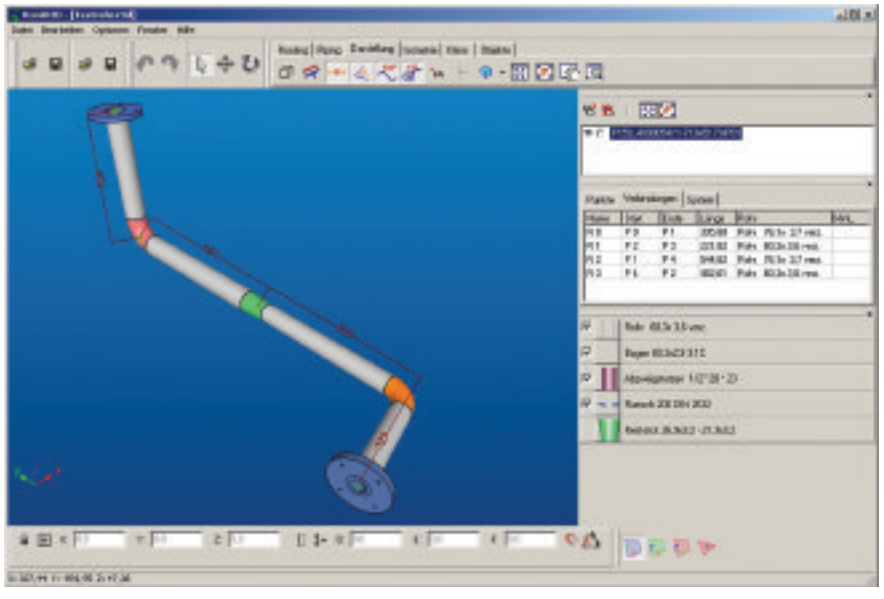
3R Software Solutions, Germany, offers a centralized software solution, which concisely illustrates the potential synergy of all production areas. This allows the user to react economically, prevent errors, and quickly make the right decisions.

The programs offered by 3R Software Solutions have been developed to meet specific demands.

They offer a high amount of flexibility and adaptability, with increased work speed, quality and reduced training time. The cost reduction resulting from these three points should not be underestimated.

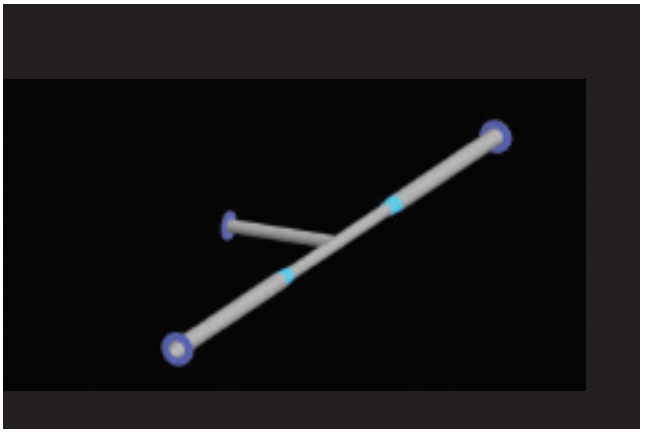
The reliance on separate individual systems can seem like a cost-effective solution, but often proves to be a mistake, since it can result in a number of new problems. One consistent and unified system, covering everything from design and planning to construction and fabrication, makes the development of suitable interfaces unnecessary, while also ensuring exhaustive knowledge.

Roni3D is used to exactly position fittings and tube, flanges and bends



One central database allows every application to access the information of all other applications.

3R Software Solutions attempts to streamline the systematically similar or unchanging processes, and determine the exact requirements of a tube and pipe shop.



RoniCAD is compatible to all currently common database systems

The company offers Roni2D, which is a P&I diagram system used for the development and rough planning of process facilities.

During creation of P&I diagrams the basic dimensions, type of fittings and tube material (including diameter), are selected from a database. Due to the integration into this centralized database the client can, even in this early stage of the process, have access to a multitude of information that could require weeks to be derived from an Auto-CAD drawing (for example). This time reduction can be a great advantage especially when it comes to the tracking of modifications and changes.

The system automatically assigns tube and fitting numbers according to the user's input within fractions of a second. A manual preparation of an index might require great investment with every modification or change, and the risk of error during numeration could not be eliminated. When the client uses the created diagrams, there is automatic creation of lists for parts and fittings.

A number of systems are used to further utilize the information derived from the P&I diagrams. Since this information can be stored in a centralized database, no interface is necessary. Data redundancy, which can be both storage intensive and prone to mistakes, is generally avoided. 3R Solutions provide Roni3D for user-friendly system coordination of tube and pipe production.

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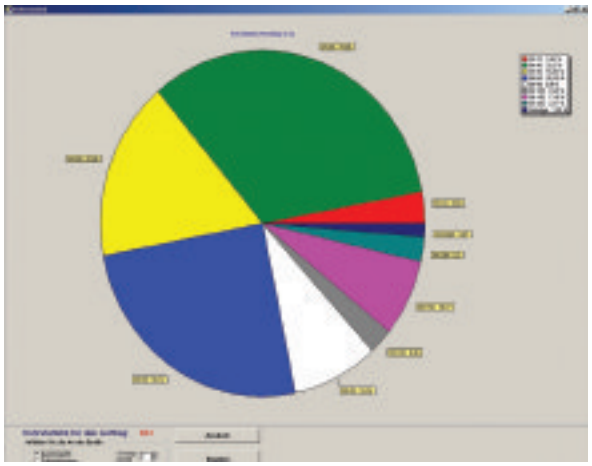


Ramp software undertakes entire work preparation for industrial tube production

In contrast to known 3D-systems, whose features are not streamlined towards special requirements, the user of Roni3D can confidently coordinate 3D tube and pipe. The spatial geometry of the tube can be added using various import interfaces.

Since the system, like all 3R-systems, uses a centralized database, the client can load entire schematic drawings and use them as coordination templates. The client can use Roni3D to exactly position fittings and tubes, as well as add flanges and bends. Every 3R data element exists as a 2D schematic symbol, a 3D symbol, and an Iso-symbol.

A 3D volume model can be displayed at any point during the design phase. The addition of the Kolli software allows the client to perform a producibility analysis of a tube's isometric image during the design phase, using the machines and tools that are available in the tube shop. All necessary data to fabricate an isometric projection is calculated automatically.

There are import interfaces to load and edit tube drawings from several large systems (eg Unigraphics™, Tribon™, NupasCadmatic™).

These isometric drawings undergo a logic test, so that deviations and inconsistencies can immediately be recognized and displayed. RoniCAD is compatible with all currently common database systems. It is available both as a network client and an individual version.

In order to manage fabrication control, the company offers Ramp software for work preparation. This software can carry out the entire work preparation for industrial tube production, with work packets created by using filter functions as desired. For each fabrication step and selected work station the user has the option to create part lists, drawings and worksheets including all relevant fabrication information.

Ramp features process optimization, so all transferable CNC files are automatically made available, while worksheets for the stations are created and sorted efficiently. The software also includes process tracking and expediting, based on both the date structure of the job numbers and the calculated times for each isometric image. Completion notices can also be generated at each individual workstation, while the current stage of the fabrication process can be determined and visualized at any time. It is therefore possible to eliminate bottlenecks or planning mistakes at an early stage.

The Ramp software also analyzes human resource management and usage, with different ways to determine work time and usage rates. For each single work step (eg welding or bending), a time value can be entered for each element or tube in the database. These values are calculated using company-specific internal processes. Ramp is also capable of deriving and statistically analyzing all material data and part counts from the database using freely selectable filters.

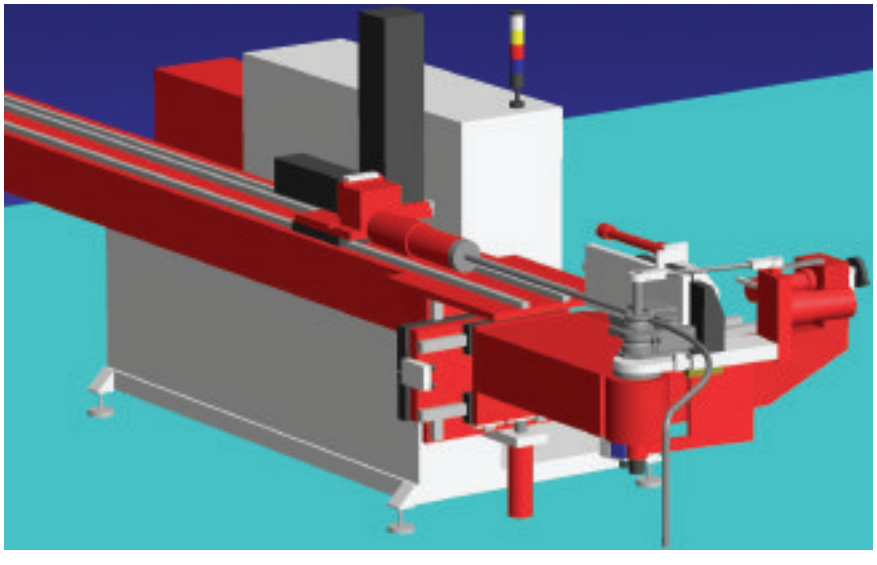
Kolli is a bending simulation designed to test the producibility of individual tube and pipe. As a subprogram of RoniCAD or as standalone software, Kolli offers solutions for the bending process of given tubes, so they can be fabricated.

Starting with version 7, Kolli includes a machine editor, a tool editor, and a material manager. This is important as the local setting and conditions of each tube and pipe shop have to be displayed individually, in order to perform an exact producibility analysis.

The machine editor is software with an intuitive user platform, which allows the user to measure new machines as necessary. The tool editor is designed to accurately represent the tools for various machine types. The material manager allows the input of material traits, since these have a determining impact on springback values and the 'actual' cutting length.

Using a selected bending machine, Kolli determines if the tools required to fabricate a tube design are available. It also establishes what machine sequence is needed to ensure a successful bending process, without collisions of the tube with machine or external collision sources (ie the floor or workstations). Kolli also supports bending of tubes with flanges, with calculation of the flange rotation during bending. Each bending step can be displayed as a 3D-image.

Producibility testing of individual tube and pipe with Kolli bending simulation



3R Software Solutions – Germany
Fax: +49 2381 688 273
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MoveInspect uncovers hidden characteristics in dynamic processes

In order to sustain its own competitive capability, every company has to meet the challenge to develop products within shorter periods, and manufacture them at lower costs. In doing so, the inspection of parts with respect to their motion and deformation behaviour plays a decisive role.

It is important to establish in which situations the object is deformed unintentionally during production. It is also vital to establish how an element behaves under load. Another key issue is the stability of the material used, and its fracture point. Aicon's new measuring system MoveInspect attempts to address all of these issues.

MoveInspect captures dynamic processes three dimensionally and analyses them regarding the geometric changes. For this application, Aicon has developed a special camera bar that is equipped with digital cameras and offered in different versions. The high-end version is able to conduct tests with no time limit at a frequency of 500Hz.

MoveInspect captures dynamic processes three dimensionally

For each measuring epoch, the MoveInspect software determines the 3D coordinates of object points, the 6 DoF coordinates of solid bodies, and the speed of the points or solid bodies. Two modes are available to analyze the measurement: the offline-mode (ie later) and the online-mode (ie during the measurement in real time).

The integrated magnifier function allows for the visualization of the slightest movement. This is also possible in case of highly frequent processes with long observation times, ie when the data volume is very high.

The results of the dynamic measurements are displayed in a clear and descriptive manner. They may also be exported to external analysis software such as DIADem. MoveInspect can be synchronized with other systems using standard interfaces. Thus, it also supports the control of dynamic processes.

Aicon 3D Systems is one of the world leading providers of optical camera based 3D measurement systems. The company develops and distributes systems for the business areas of inspection and testing as well as car safety and tube inspection. With Aicon's latest products for automated test and process control, the company enters new worldwide market fields.

Aicon 3D Systems GmbH – Germany
Fax: +49 531 58 000 60
Email: guenter.suilmann@aicon.de
Website: www.aicon3d.com

PipeData-Pro software for piping engineers

Zeataline, UK, is the developer of the unique PipeData-Pro computer program that uses an 'Active-Page' system to increase efficiency in piping engineering offices. Widely used by piping engineers, the software lightens the burden of 'looking-up' standard ANSI/ASME piping information, and provides design aids and criteria.

The program is bought and used by individuals and major corporations such as Bechtel, WorleyParsons, Jacobs, MW Kellogg, Fluor, JGC, Shell and Mobil. It has been reviewed by the committee members of ASME B31 mechanical design committee, ASME B31.3 committee, MSS-SP-97 committee, and several other committees to 'right justify' ASME codes with ISO to properly metrify US standards.

Mapped versions of PipeData-Pro's data are used in several well-known 3D modelling applications including those of Bentley, Aveva and Alias. Alias is the company behind Isogen, Spoolgen and I-Sketch. A valuable asset in the piping engineers inventory, PipeData-Pro povides free retrieval of accurate dimensions, weight and design data. Introduced in 1996, components and design tools have been continually developed and users have increased rapidly. The program now benefits from a global presence.

PipeData-Pro's original interface is maintained through the versions to help the intuitive retrieval of information. Data can be found by navigation using the dropdown menus or by a search utility. Display units can be set to inches or millimetres and weights to pounds or kilograms.

The software is periodically updated to remain compliant with changes in piping specifications, design criteria and MS Windows operating systems. Data and functionality are also added at regular intervals. These incremental additions and enhancements are available as intermediate updates to registered users.

Much of the content of PipeData-Pro has been added through request and feedback from users in the oil, gas and chemical piping engineering industry. This keeps PipeData-Pro fresh and current for now and into the future.

Since 1983, Zeataline has been an independent supplier of software products to the piping design and engineering communities operating from its offices in London and Houston.

The company works with multi-national design consultancies, construction companies, academic institutions, government agencies, as well as small businesses, individuals and component suppliers and manufacturers.

With thousands of users worldwide, PipeData-Pro, Pipedata.com and the Pipedata bulletins provide a unique opportunity for component suppliers and manufacturers to network with other like-minded businesses. This has led Zeataline to develop pipedata.com corporate services, which includes branded software, source data and custom software.

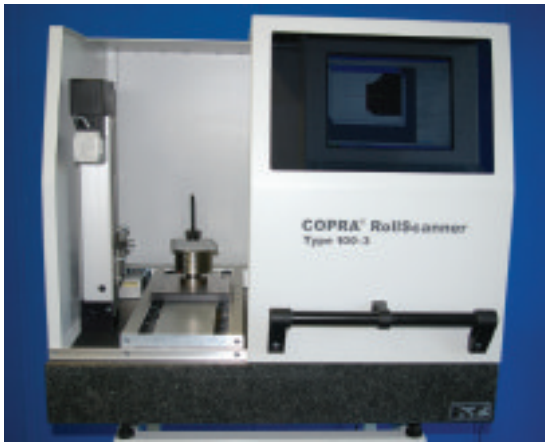
Zeataline Projects Ltd – UK
Fax: +44 208 563 7943
Email: management@zeataline.com
Website: www.pipedata.com

Expanded geographical reach for roll tool quality inspection technology

For the first time in India, data M Software has introduced a roll tool quality inspection machine to the tube and rollforming industry. data M Software India Pvt Ltd, based in Bangalore, is now offering Copra® Rollscanner technology for the Indian market including sales, training and scan services.

The Copra Rollscanner roll tool contour quality inspection machine has already achieved great success in Europe. Using the Copra RollScanner, deviations on the roll tool contour can be detected by comparing scanned results with the designed contour. Drawing of the scanned contour and deviation reports are generated automatically.

The state-of-the-art Copra® Rollscanner roll tool contour quality inspection machine



Based on several years of R&D, Copra RollScanner has evolved to become a quick and simple roll tool quality inspection machine. Unlike other machines available in the market, Copra RollScanner has been developed specifically for the tube and rollforming industry.

The system ensures non-contact and continuous measurement with minimal human interference, thereby achieving the highest possible accuracies. In the rollforming industry, it is usually necessary to maintain the roll tool quality within the desired tolerance in order to produce quality products. However, in reality the rolls are subjected to maintenance by reprofiling without the knowledge of deviations that have occurred due to wear during production.

It is often assumed that an accurate template can verify the quality of the roll tool contour. However, a template can only match and cannot measure the deviation in the contour. Thus, the resulting quality is more visual without being logical.

The Copra® Roll tool database management system provides the additional capability of recording roll tool data. The user must first scan all the rolls in the shop floor inventory and put them into the database. The user can then track identical rolls from various projects, check the reuse of scrap rolls, and accurately generate the roll drawing.

Profile measurement comes as an added feature with the scanning enhancement option. Therefore, inspecting the profile quality is also improved.

data M Software GmbH – Germany
Fax: +49 8024 640 300
Email: datam@datam.de
Website: www.datam.de

Software solution for the entire hydroforming process chain

AutoForm, Switzerland, offers software solutions for the die-making and metal forming industries along the entire process chain. They range from stand-alone modules for small and midsize companies to complete, integrated multi-module systems for large companies.

Due to a complete integration of all AutoForm software modules, concepts and results from earlier phases can be easily and directly used in later phases. This enables users to benefit from the power of simultaneous engineering, which optimizes time, cost and quality, thereby maximizing efficiency and productivity.

The use of AutoForm software improves reliability in planning, reduces the number of tryouts and tryout time, and results in higher quality part and tool designs that can be produced with maximum confidence. In addition, press downtime and reject rates in production are substantially reduced.

The worldwide release of AutoForm Hydroforming version 4.2 shows once more the innovation of AutoForm. The software AutoForm Hydroforming is a solution for the rapid analysis and simulation of the entire hydroforming process. It is used by part designers, process engineers and tool/die makers to evaluate hydroforming tool designs and process layouts.

Based on AutoForm's clear and logical methodology, the user is guided step-by-step from the import of CAD geometry until the generation of the completed tools. The highly intuitive software provides handling of single and multiple parts. Several parts can be imported, copied, arranged and tipped relative to each other.

After arranging the parts they can be connected to build a chain. Therefore, it is possible to analyze several part arrangements and also different part combinations in the shortest time without using CAD software.

AutoForm Hydroforming software also provides an automatic cross-sectional part analysis including automatic filleting of sharp edges, automatic and manual part tipping, automatic creation of the addendum and inner fills, and generation of the separation surface. These features enable a rapid die and process design.

Other features include export of complete surface data, generation of the bending line, automatic tooling concepts for tryout simulations, high accuracy of bending and hydroforming simulations, and fast design of multiple tooling concepts.

Automatic design and positioning of all required bending tools and steps can be undertaken prior to hydroforming. This means that the time-consuming manual definition of bending tools and of the bending process in a CAD system is no longer necessary.

Increasing complex part geometries often requires the preform forming step after the bending and before the hydroforming process. AutoForm Hydroforming provides a stage concept definition for the hydroforming process, starting from bending and preforming to hydroforming. AutoForm Hydroforming includes the definition of preforming tools without using CAD.

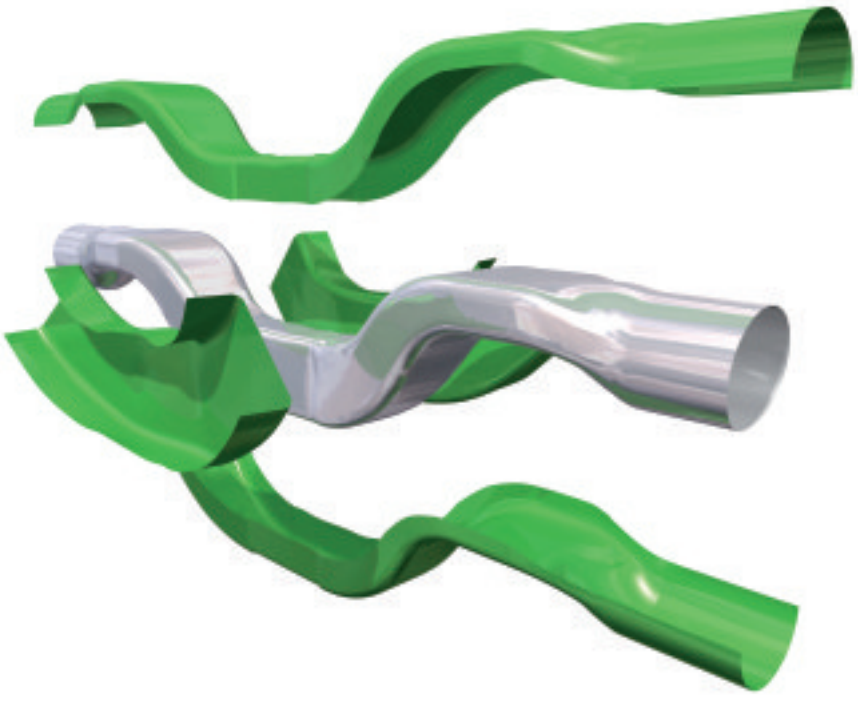
There is also support of complex semifinished products such as conical tubes and profiles, as well as tailor welded tubes with varying wall thickness and/or material properties. These features lead to improved part quality, increased process reliability, reduced tooling costs and shorter development time.

With over 200 employees, AutoForm is recognized as the leading provider of software for product manufacturability, tool and material cost calculation, die face design and virtual process optimization.

All of the top 20 automotive OEMs and most of their suppliers have selected AutoForm as their software of choice. Besides its headquarters in Zurich, AutoForm has offices in Germany, The Netherlands, France, Spain, Italy, USA, Mexico, India, China, Japan and Korea. AutoForm is also present through its agents in more than 15 other countries.

AutoForm Engineering GmbH – Switzerland
Fax: +41 43 444 61 62
Website: www.autoform.com

Autoform's hydroforming software provides handling of single and multiple parts



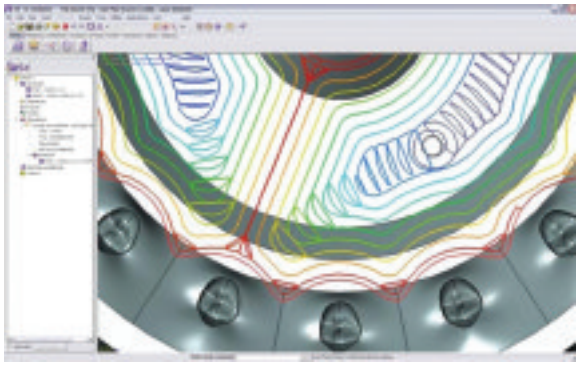
CAD/CAM machining technology increases overall milling efficiency

VX Corporation, USA, is a developer of CAD/CAM solutions for industrial designers, engineers and CNC programmers. The company's technology enables speedy design with fully integrated, accurate manufacturing.

Using a blazing fast hybrid-modeling engine, engineers can take advantage of the speed of solids with the flexibility of class A surfaces. Designers can create, modify, visualize, document and machine a vast array of parts and assemblies.

The company develops SmoothFlow™ machining technology that reduces milling time and extends tool life with optimal material removal. Traditional CNC programs do not automatically compute tool loading, which requires programmers to make conservative cuts at slower feed rates to avoid excess tool wear and breakage.

SmoothFlow™ machining technology



These measures often increase cutting times and escalate tooling costs. CNC operators often try to compensate by dialing in higher or lower feed rates in an attempt to improve the overall process.

Frequently, these same tool paths use sharp 90º moves that increase wear and tear on the machine, resulting in maintenance downtime.

VX has introduced version 13 of SmoothFlow™ technology, to machine cavities and pockets safely and efficiently by maintaining constant material removal during roughing. This extends tool life and reduces machine wear and tear. Higher feed rates are possible without the risk of tool breakage by reducing the radial pressure on the tool spindle, essential for optimizing the efficiency of HSM machines.

VX SmoothFlow technology helps reduce polishing time while maximizing machine tool efficiency. SmoothFlow™ motion is softly contoured with corners and tight areas safely milled without full width cuts which prevents tool and spindle overload.

All of these factors are critical for unattended machining to achieve extended tool life and reduced milling time. VX SmoothFlow gives programmers the confidence to boost productivity with ideal feed rates and cutting technology.

VX Corporation – USA
Fax: +1 321 676 2181
Email: mmg@vx.com
Website: www.vx.com

New digital surface profile gauge with advanced software control

During preparation of pipelines for protective coating applications, an assessment of the profile height is important to the surface preparation procedures. For many years, mechanical gauges have been used to measure the profile peak-to-valley height and the operator has been required to assess a group of readings to determine the typical value.

Elcometer Ltd has introduced a new digital surface profile gauge and accompanying software with the capability to display running statistical values for the profile height readings. The Elcometer 224 digital surface profile gauge uses the well-proven method described in ASTM D 4417 (method B).

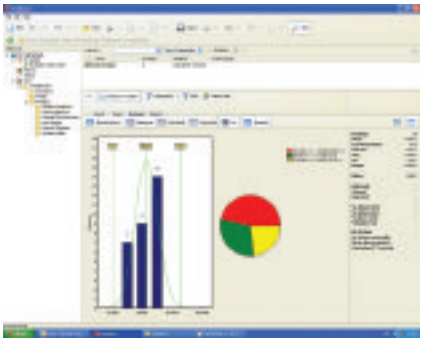
A pointed tungsten carbide tip locates the bottom of the valleys of the profile. A measurement is taken of the distance to the reference flat surface formed by the foot of the gauge. Prior to use, the tip is aligned to the foot by placing the gauge on a flat glass slide; the gauge is set to read zero.

The digital surface profile gauge is available in two versions – Standard and Top. The Standard version displays the running statistical values, in either metric (microns – µm) or imperial (mils) units but does not have memory for the readings. Now with Bluetooth™ wireless communications, the Elcometer 224 Top version has a memory for up to 50,000 individual readings in up to 999 batches.

Both versions have a range of 500µm (20 mil) and can take readings at a rate of more than 40 readings per minute with an accuracy of ±5 per cent of the reading or ± 5µm (0.2 mil) – whichever is the greater. The method requires that an average of 10-15 readings are taken over a 15cm^2 (6") area.

The Elcometer 224 Top version can upload readings taken on site to a PC running the ElcoMaster Software™. The software supports Bluetooth communication for up to 7 different Bluetooth enabled gauges at the same time. It also supports RS 232 communication for all gauges with this data output format.

ElcoMaster features include creation of professional reports in seconds with export to spreadsheets, text files, PDF or JPEG files. A wide range of standard reports include individual measurements, statistics, histograms, individual line or bar charts, log normal, and pie charts. It is possible to fully customise reports using the ElcoMaster™ report designer tool.



A screenshot of the Elcomaster software

In addition, digital photographs can be assigned to an individual batch of data, allowing the inspection area to be shown in the reports. ElcoMaster Software provides powerful tools for analysis, management and reporting of readings data uploaded to a PC via the Bluetooth link or using the RS232 cable.

This article was supplied by JF Fletcher, technical support manager, Elcometer Ltd.

Elcometer Limited – UK
Fax: +44 161 371 6010
Email: sales@elcometer.com
Website: www.elcometer.com

Latest TruTops software for fabricating excellence

Trumpf Inc, USA, a producer of fabricating machinery and lasers used for industrial production technology, has released a new version of its TruTops software. User friendliness is the focus of the new version, with improvements including a new user interface, increased productivity through product data management, a more efficient nesting processor, and the elimination of redundant data management.

TruTops software was created specifically for Trumpf fabricating equipment, including TruTops Laser (for 2D laser machines), TruTops Punch (for punching machines) and TruTops Bend (for press brakes). "*The latest version of the TruTops software package helps the customer to maximise the potential of their Trumpf machines,*" commented Mr Steffen Kutz, TruTops software manager.

The company has also developed software programs designed specifically for processing tube and profiles (TruTops Tube), for 3D laser processing (TruTops Cell) and for CAD (TruTops CAD).

Trumpf provides comprehensive services for the installation and application of its software, including hotlines and tele-diagnostics, regular updates at a fixed price, training and a customer portal with useful tips, and customisations to the standard software.

Trumpf Inc – USA
Fax: +1 860 255 6424
Website: www.us.trumpf.com

Designing tube mill rolls: state-of-the-art software technology for optimization of cage forming systems

By Mr Albert Sedlmaier, managing director, Data M Software, Germany,
and Mr Anton Skripkin, project engineer, CSoft, Russia

Introduction

The development of a new set of tube mill rolls and the following production of accurate tubular sections might seem without serious considerations. However, there can be problematic hurdles such as down times of the tube mill, installation, startup and try-outs of roll sets.

Internal strain and work hardening in the roll formed material might cause poor welding conditions or deformation of the end-product. For a number of years, data M Software GmbH, Germany, has been offering a virtual process chain for the design and validation of roll tooling for tube welding lines.

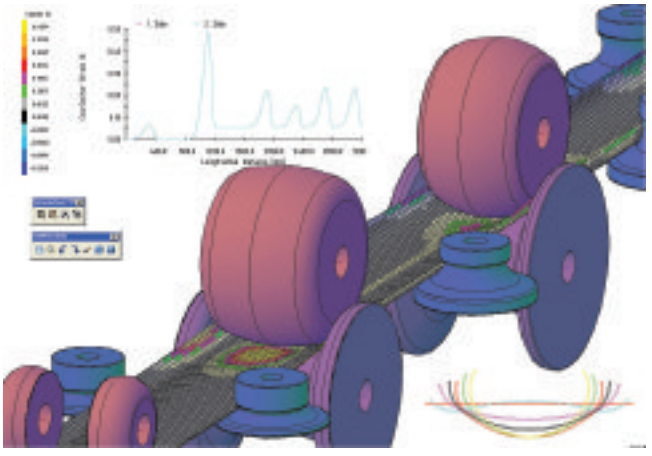
The Copra® RF (roll forming) software program family supports all steps in the development of open or closed profile cross-sections. This includes the design of the final cross-section to be produced, the definition of the various shaping steps (passes or flower), and the generation of technical documentation (ie production drawings, parts lists, CNC programs), and later inline quality control of profile cross-sections and roll tools. The latter works with optical instruments developed especially for the application (Copra® RollScanner and Copra® LaserCheck).

This article describes how to perform a state-of-the-art roll tool engineering for the production of longitudinally welded tubes. It shows how to analyze and optimize a tube mill with integrated straight edge forming stands using advanced finite element computer simulation.

How to design tube forming rolls on the computer?

In the past, the only way to create a properly functioning roll set was through practical experience and extensive trials on the machine. Today there is an alternative with effective design- and analysis software, which speeds up this time-consuming and costly process. Both the so-called 'flower pattern' and the roll tools are designed in Copra's tube mill software module.

The 'flower pattern' is the sequence of all subsequent tube forming steps; it is very important to properly define the 'flower patttern' as it influences the final tube quality. The material is formed at every roll station; this is the case not only for the intended method with round tube but also in a longitudinal direction due to the rollforming process. This can cause longitudinal strain and may, if the material gets strained beyond its linear elastic limit, inappropriately influence the material properties through effects like local work hardening.



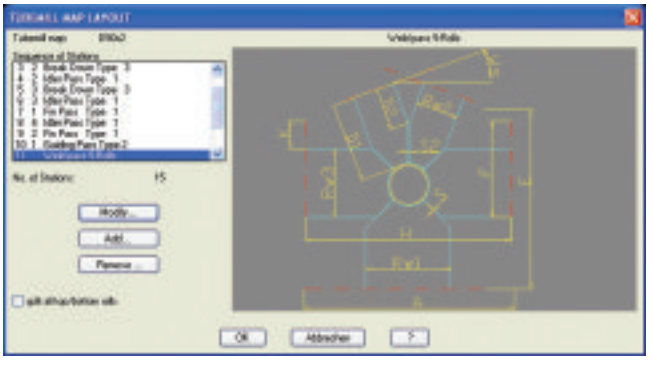
Picture 1: *Copra® DTM (deformation technology module) calculates longitudinal plastic strain values resulting from the rollforming process in the tube mill*

The principle of forming a strip into a tube in a tube welding line is shown in picture 1. A special software program can be used to determine the longitudinal strain values, taking into account the influencing parameters defined by the roll tool layout.

The Copra® tube mill software module is a dialogue driven software program that allows a parametric flower- and roll design for tube mill rolls. It is important to know that the software does not stipulate any specific tube mill or design strategy. It is completely free to define any forming strategy the designer wants to develop and is not restricted to any specific tube mill concept. This is important, as there is no 'global' valid strategy for making tubes. The method to be used always depends on the specific mill, material and tube data.

In a first step the user defines a certain tube mill and therefore selects a number of standard forming stations from a catalogue (picture 2).

Picture 2: *Mill definition in Copra® tube mill roll design software*



The catalogue contains all standard types of roll tooling – from forming stations down to the calibration passes. The user can also modify each station according to specific requirements and even include auxiliary tools like drawing dies or additional 'forming shoes'.

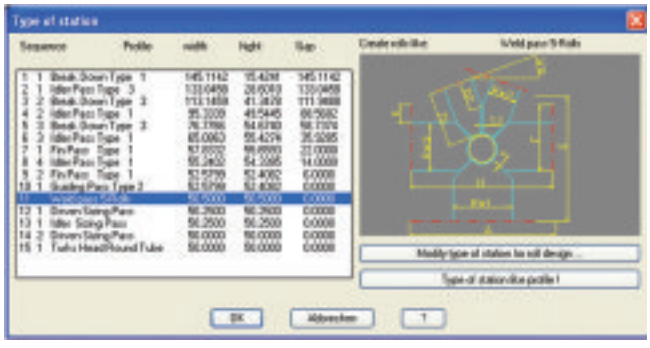
The proper forming strategy is defined by the design of the 'flower sequence'. This is nothing other than the actual knowhow of tube making. At this stage all the angles, radii, length compensations, dependencies, and additions for welding, calibration, and strip guiding have to be defined. In addition, certain company specific strategies or rules like ovalities have to be taken into account and defined at this stage. In the Copra software respective values are either calculated or taken from a number of tables. The user defines both methods so every company can develop specific strategies and store knowledge in the database for future use.

The definition of the tube welding line (machine) and respective roll tooling method operate in the same way. Descriptive parameters such as diameters, dependencies, relieve angles, and gaps, are taken either from company specific tables or are calculated by integrated formulas (picture 5).

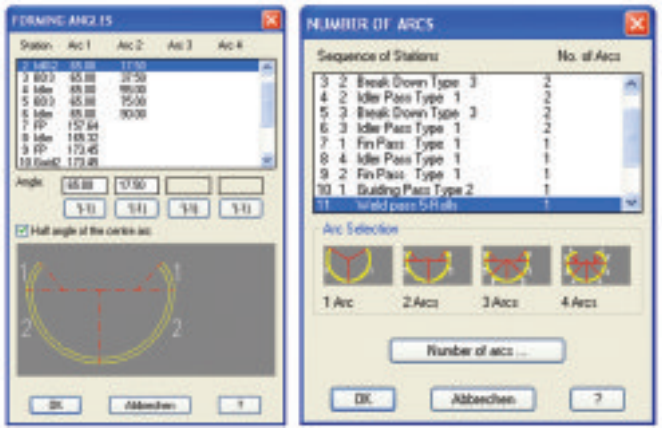
Simple investigation of various forming strategies

Both flower and rolls can be easily adapted by the parametric system of the Copra tube mill design software. The user simply changes either the values of respective forming angles or even the

Picture 3: *Selection of fine- or welding station during the definition of tube mill stations (Copra tube mill software module)*



Picture 4: *Definition of the so-called 'flower pattern'*



Picture 5: *Machine- and roll tool definition based on company specific standards or from built-in formulas*

chosen forming strategy. The decision whether to make use of the single arc forming method or a double radius forming strategy can be undertaken by a single mouse click.

The user can also compare the influence of different forming methods in the break down stations like standard edge bending versus W-forming – just by the press of a button (see pictures 6 and 7).

What is a cage forming system?

A comparatively new feature of Copra is the possibility to design and model any type of rolling cage – often referred to as the straight edge forming method. A cage forming system is a continuous forming process by groups (beams) of single simple rolls and additional supporting outer and inner roll tools.

This linear forming method can virtually be compared with 'forming a tube by pulling a sheet of paper through a funnel', based on a scenario where there is no entry and exit. Of course, steel does not behave like paper.

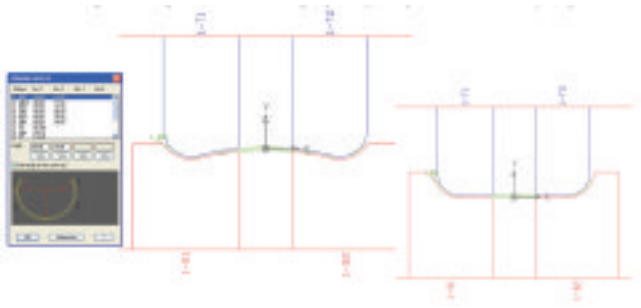
It is necessary to enter a somewhat pre-formed tube into the 'cage' and retrieve the round but so far non-welded tube segment from the cage and enter it into fin passes and welding stations. As a cage forming system is no 'funnel', the number, size and position of all the forming and supporting rolls have to be optimized as well.

A new way to determine the correct setup parameters for a cage mill

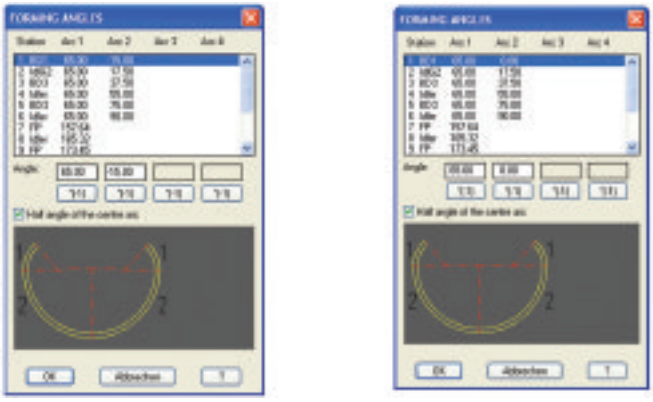
Copra allows for a modeling of various types of straight edge forming systems due to its parametric structure. The lineal beams are either predefined or – if there are single mounted rolls – each roll and respective position is defined in specific data base tables.

In order to achieve a proper forming result it is important to have a smooth strip entry into the forming cage. Therefore it is important to optimize both entry passes and the position of forming- and guiding rolls in the forming line. Such tasks have to be undertaken by 'trial and error' and are usually quite time consuming and pretty costly.

A straight edge forming cage for a large diameter mill can easily reach a length of 12m or more – holding 4.5 to 10 tons of material.



Picture 6: *The parametric roll design on Copra®. It is possible to switch from the W-forming method (upper roll stand) to the standard edge bending method (lower roll stand) by changing the inner arc from 15° to 0° (see also picture 7)*



Picture 7: *Changing the inner arc (number 2) of station No 1 from 15° to 0° results in a different forming method (see also picture 6)*

In other words, every setup tryout costs at least several tons of material and keeps the mill out of production until the final adjustment parameters of the cage rolls have been determined. In some cases the optimum is never achieved due to time restriction.

Copra® FEA RF software technology offers a total new way to determine an optimum setup of a cage mill by means of finite element analysis of the forming process. It offers the positioning of the cage tools based on the flower design or forming shape. There are easy input dialogue boxes for designing the cage tools and references for proper positioning. There is also a 3D collision check available where the user can verify if roll tooling and sheet strip match.

There are some obvious advantages to perform a mill setup on the computer rather than on the mill by practical trials:

- The software allows checking of existing mill setups for possibilities to improve the whole process
- There is a substantial time and cost saving by offline simulation and verification. The mill does not need to be out of operation during these investigations.
- There is improvement of quality and forming stability during the tube making process because FE analysis helps to understand the forming process.

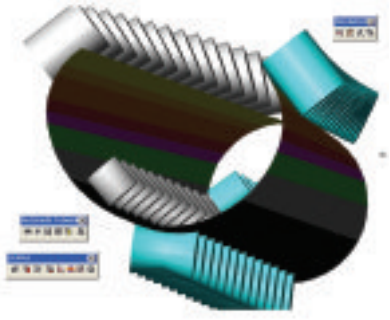
By using the software, it is possible to add, edit or remove any cage station (straight edge forming system) into the current tube mill roll tool layout using the built-in tool browser, where the forming lineal can be positioned between the existing forming stations. The cage beams are defined in a spreadsheet-like manner where every cage beam is treated as an independent part. Once such a forming lineal has been defined in the software database it can be re-used in any other design project.

The finite element simulation model is created automatically by means of Copra FEA RF, taking into account the boundary conditions already defined during the design and layout process.

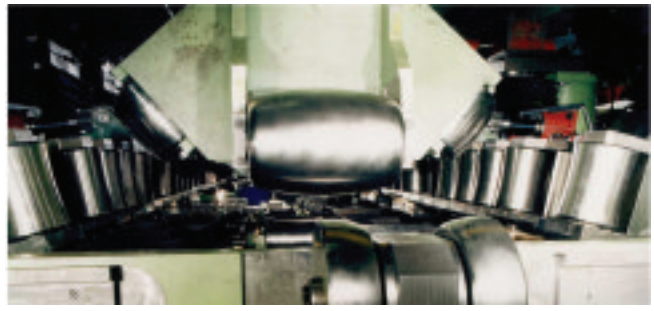
What happens in the forming cage?

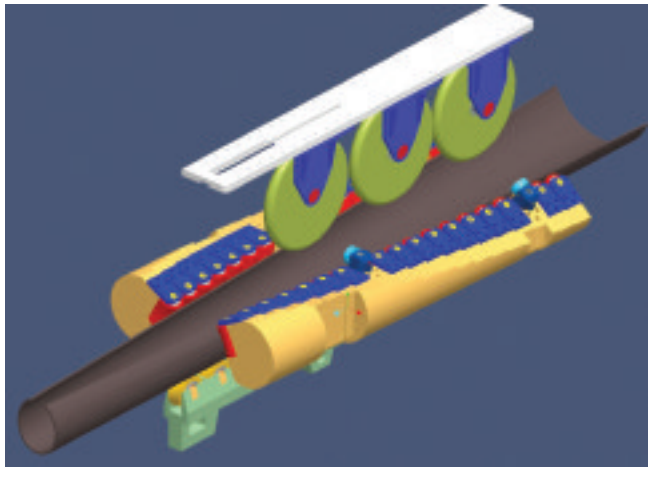
Copra FEA RF allows the verification of the forming process and especially the evaluation of what happens with the material inside the cage. In the straight edge forming method, the material is normally guided at its strip edge and at the lower rolls only. The remaining portion is formed by a kind of 'air bending' with the target to get the tube shape formed in the most natural manner. The aim is to avoid any unnecessary forces working on the coil that may cause disruption to the process.

The inner rolls are the only way to form from 'inside' the tube. They usually exist at a limited number of positions and determine whether the tube is leaving the forming lineal in a high- or flat oval shape.



Picture 8: *The principle of cage forming (or linear forming) system. Pictures courtesy of SMS Meer (SMS Group) and its modelling in Copra*





Picture 9: *A feature of Copra is the possibility to design and model any type of rolling cage – often referred to as straight edge forming method. Using this feature, respective rolls are not just modeled but also transferred to Copra's integrated finite element software package Copra® FEA RF and simulated respectively*

However, in some cases the tube forming process does not happen as expected due to areas with reduced forming and punctiform force distribution. Copra® FEA RF allows for a detailed evaluation of the forming process in a rollforming line or a tube mill. This includes, of course, the straight edge forming method.

The user is able to create and look at cross sections at any desired position and compare between designed (intended) and simulated (produced) cross sections. It is possible to check for strip edge damages or waviness. An integrated report generator allows the user to document discoveries and ideas by means of screen shots, videos or comments in order to discuss these issues with colleagues and customers.

The user also gets detailed information on stresses, strains and forces occurring during the tube making process. It is possible to evaluate any displacement of the formed strip and achieve extremely important information about what is actually happening in his tube mill. This possibility had previously been unfeasible. The computer simulation allows the user to look 'inside' the mill and extract respective information. This is impossible if a mill operator has to do some troubleshooting on the tube mill without knowing what is going on in the roll cage.

Another aspect that is decisive for a successful computer simulation is the accuracy of the Copra EA RF software program and the comparability of results with the real production process. Various benchmarks performed at the author's company as well as some industrial companies (tube producers, machine builders and steel companies) are comfirming the high accuracy of this software program.

A practical example

The objective is to investigate if a 24" tube can be formed on a cage forming mill that is actually designed to produce 20" tubes – and to determine the achievable tube quality.

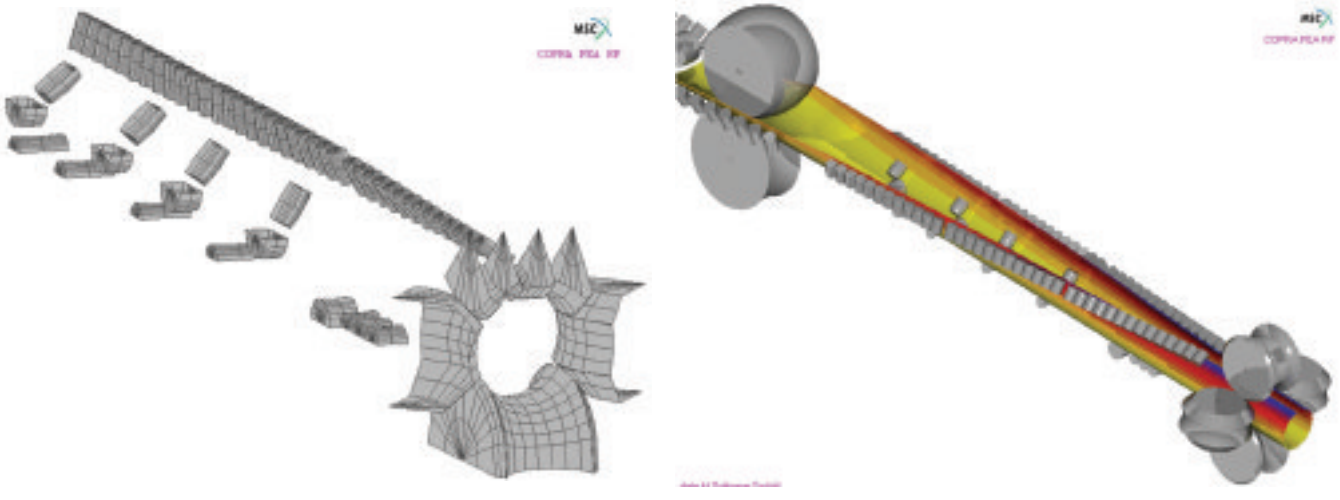
The material to be used is S355 (ST52) with a minimum wall thickness of 7.5mm and maximum of 21mm. The investigations described below were performed on the minimum wall thickness as this is the most sensitive dimension with regard to waviness effects. The maximum wall thickness, however, was taken for a final verification of roll tool adjustment and resulting forming forces.

A forming cage for such a 24" tube is usually not shorter than 12m. However – as the cage available was limited to around 7m, several investigations and trials have to be undertaken. The way to solve such a project is carried out in some 'optimization loops'.

It is essential to start with a certain design based on the designer's practical experience and analyze the forming process by means of finite element computer simulation. This determines any critical situation or material behavior. In this instance, it was decided to determine the optimum alignment of the tube in height. In other words, to define the optimum so-called downhill strategy.

The target to achieve a 24" tube formed successfully on this mill could be achieved. A linear downhill strategy would have been one of the obvious solutions but was not possible due to the subsequent fin passes following the roll cage that were aligned to a constant tube bottom line. However, to predict the result, the distribution of the final individual cross sectional lowering along the cage was totally different. It is clear that any expert would have guessed this from experience.

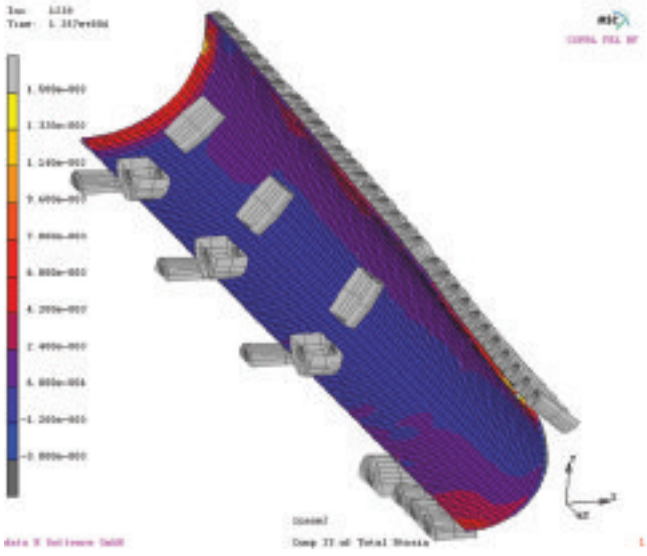
Picture 10: *Automated creation of the FEA model by means of Copra FEA RF*



In the first step, the flower pattern and respective roll tool design was created (picture 12) and various downhill strategies were investigated (picture 13, 14).

The following step was to verify each rollforming (tubemaking) process and investigate the respective performances. It showed that there were no optimum results from either the 'linear downhill strategy' (or constant centre of gravity), or the strategy according to minimized longitudinal strain values. The latter showed that these processes do not match the 'natural forming' behaviour (which is essential in the straight edge forming method due to high amount of air bending), with regard to tube diameter, thicknesses, forming length and material.

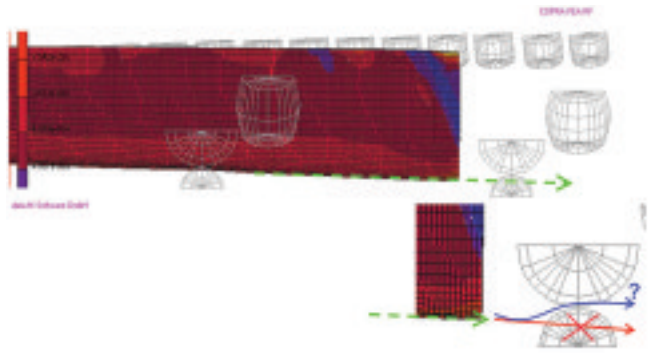
Picture 11: *Copra FEA RF allows for a detailed evaluation of the forming process of the tube forming method – including straight edge system*



Picture 12: *The standard design of roll tooling with Copra (tube mill module, cage design functions) with constant centre of gravity*

Picture 13: *Downhill forming according to 'minimum longitudinal strain' values*

Picture 14: *Linear downhill forming method*



Picture 15: *Vertical cross sectional cut through the cage forming section. The green arrow indicates the direction where the 90° bent tube tends to move to. The blue arrow shows the route of the tube according to the cage roll positions*

However, the 'linear downhill' method showed problems where the tube leaves the cage forming section and enters the subsequent fin stations. It was discovered that there was a constant bottom point of tube profile.

Picture 15 clearly shows that this effect already starts within the cage. The picture shows a vertical cross sectional FE drawing at a position where the tube is already formed to a 90° angle. The tube has already got such a stiffness that is cannot be pushed upward any further in order to run smoothly into the following bottom roll in the forming cage without getting damaged. Instead, the forming was set to take place 'on top' by means of the upper rollers and a kind of 'free and natural' bending, while the forming cage would be aligned accordingly.

As a conclusion we ended up in a combination of both methods – a linear downhill strategy in the beginning and a style of uphill forming in the second part of the cage in order to achieve a smooth and natural forming. It has to be pointed out that the bottom rolls are supposed to bear only low forces and contribute to the forming process in a minor way.

data M Software GmbH – Germany
Fax: +49 8024 640 300
Email: datam@datam.de
Website: www.datam.de

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Fax: +7 495 913 2221
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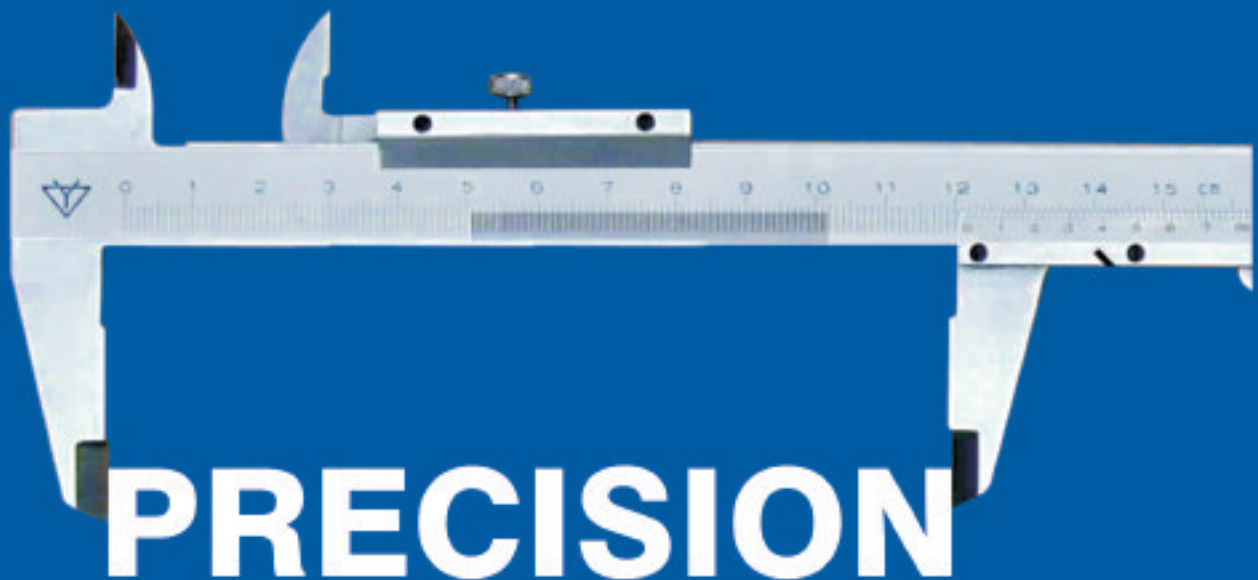

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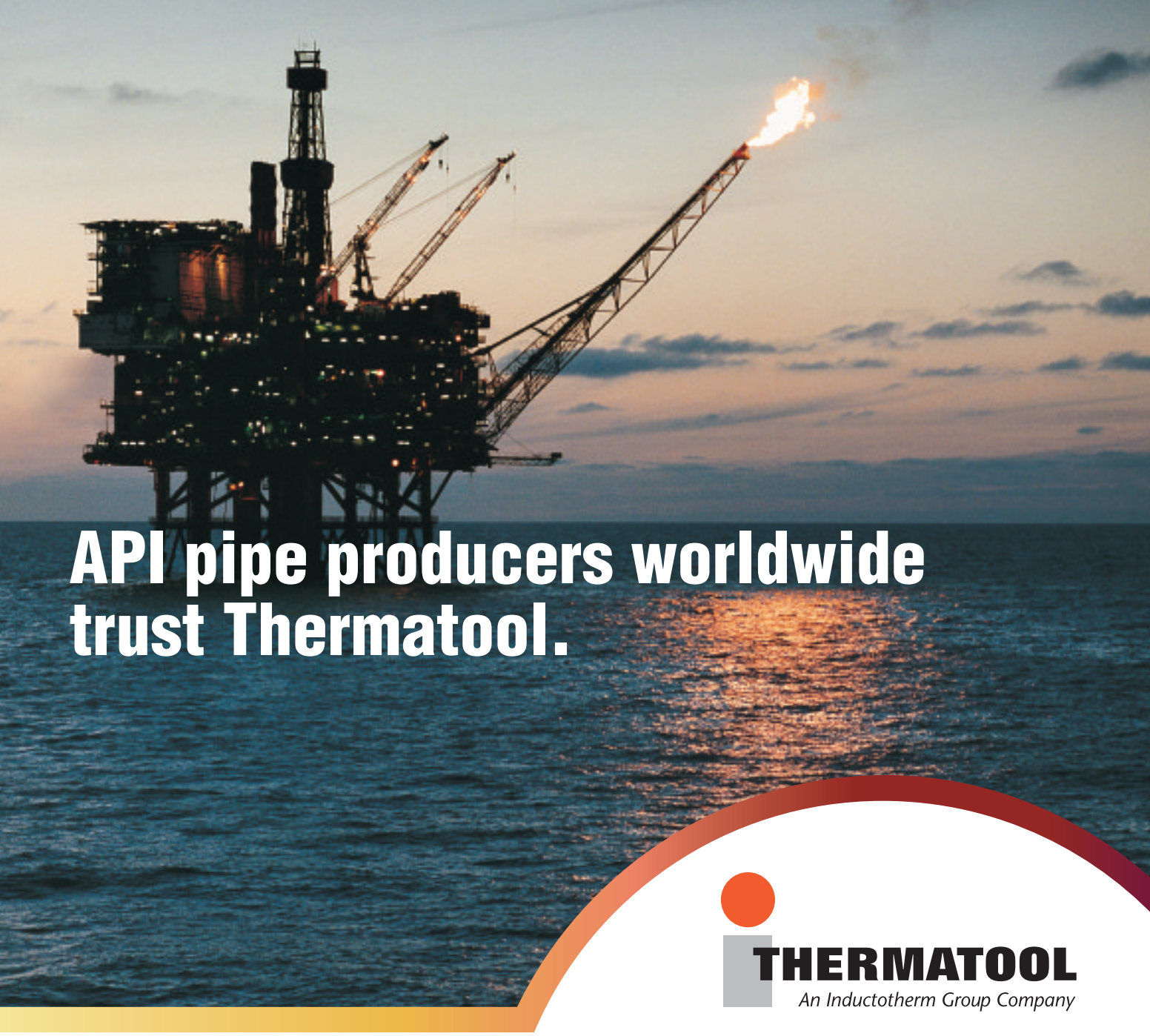

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