

The international magazine for the tube and pipe industries

TUBE & PIPE TECHNOLOGY



November 2008 | Vol 21 No 6 | US\$33

The background of the advertisement is a blue-tinted photograph of an industrial pipe mill. The mill consists of several large, vertical rollers arranged in a row, with a large, dark blue triangle superimposed over the center. The triangle contains the ADDA FER logo, which is a white stylized 'A' shape with a sunburst pattern below it. The text "ADDA FER" and "MECCANICA" is printed in white below the logo. At the bottom of the triangle, the text "ERW PIPE MILL 6"-14" Ø" and "...ready delivery..." is displayed in white. In the bottom right corner, there is a logo for "Euro BLECH 2008" with the tagline "The World's No. 1" and the dates "21.-25. Oktober 2008 Hannover". Below this, it says "21. Internationale Technologiemesse für Blechbearbeitung" and "HALL 17 STAND B51". In the bottom left corner, there is a small Italian flag and the website "www.addafer.it".

 www.addafer.it

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The World's No. 1
21.-25. Oktober 2008 Hannover
21. Internationale Technologiemesse
für Blechbearbeitung
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Measuring frequency: 1000/s for each axis

Typical accuracy: +/- 0.005 ... +/- 0.1 mm
(+/- .0004002 in.)

*Largest product depending on centering

NEW

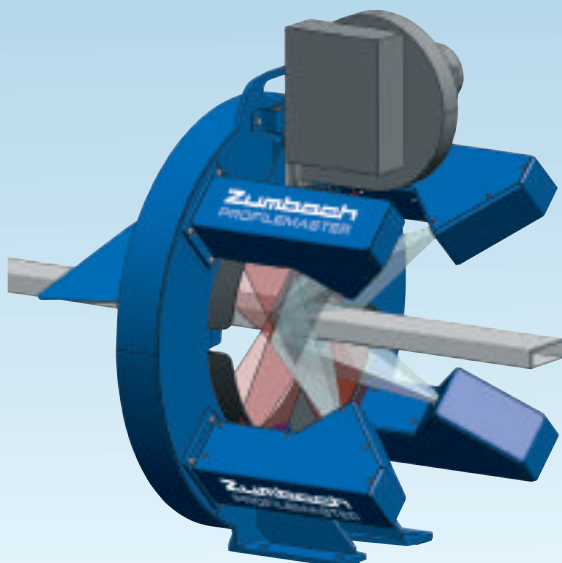
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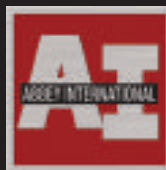
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Patented Quick Change Technology is an innovation that improves efficiency in our mills and testers while our patented COMPASS software provides precise and simple control of our straighteners. We stand ready to meet your tube & pipe challenges ... at any time and in any place around the globe. Where will the future take us? We'll let your tube & pipe challenges be our guide.



Abbey's latest installation in Korea with patented Quick Change System

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Contents

Delivering the best of both worlds

As is expected nowadays with the industrial and economic shift to the Far East, Tube and wire China took place for the third time in September with enormous success. According to the organisers Messe Düsseldorf, the event welcomed over 30,000 visitors to the stands of 1,098 exhibitors.

Feedback from Tube China regarding *Tube & Pipe Technology* again confirmed that there is a strong interest from Chinese readers in gaining access to the magazine's industry and technical news in the Chinese language. It is our mission to give due consideration to all suggestions and ensure that *Tube & Pipe Technology* keeps pace with the changes and requirements of the industry.

Because *Tube & Pipe Technology* is an international magazine that goes out to a wide global audience, the question of multi-language content has always been under review. However, it has generally been accepted that one of the strongest features of the magazine is the amount of news and features packed into each issue. The inclusion of several languages in addition to English would drastically reduce the quantity and flow of editorial, as the process would involve duplication of one story several times over.

This is why the decision has been taken to provide the best of both worlds – print and online, English and Chinese. As of this issue, the main news and feature sections will be translated into Chinese and made available on a special section of www.read-tpt.com. Hopefully, this will become a vital service for both Chinese readers and those international companies wishing to communicate with the Chinese tube and pipe industry.

Over the coming issues, we will be promoting this special Chinese language service to both Chinese speakers and the international industry. And if the Chinese website content is a success, the addition of other languages may follow in the future.



Rich Sears

Editor • Email: richard@intras.co.uk

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The international magazine for the tube & pipe industries

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When you have finished with this magazine please recycle it



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Metal Expo 2008: 11-14 November Moscow, Russia

Now in its 14th year, Metal Expo has become one of the foremost Russian exhibitions for the metals manufacturing industry in Russia and the CIS. Now with an increased level of international support, over 800 companies will exhibit products and machinery at the new Crocus Expo Centre in Moscow.



44

Tube Arabia: 10-13 January 2009, Dubai, United Arab Emirates

The host city of Dubai is a fitting location for Tube Arabia 2009, which takes place for the second time from 10-13 January. An increasing number of audacious construction and engineering projects in Dubai reflects the growing affluence in the region, and the flourishing demand for tube and pipe products.



66

Tube Extrusion & Drawing Technology

The processes of extrusion and drawing are able partners in a highly advanced form of manufacturing. Based on a broad range of materials including PVC, aluminium and copper, product quality relies upon high-calibre equipment including extrusion lines for multilayer PVC pipes, tube drawing dies, and large diameter pipe extruders.



84

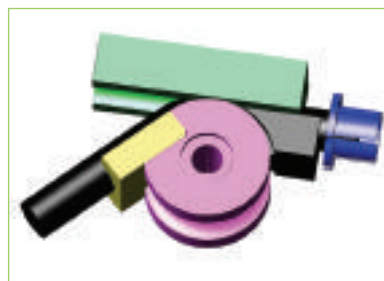
Cutting, Sawing & Profiling Technology

The technology of tube cutting, sawing and profiling covers a widely established field, as demonstrated by the depth and variety of machines on display in this feature. From automatic band sawing and flying profile cutters to the latest in laser cutting, the main aim is currently less cost-per-cut and increased productivity.

Technical Article

124 Bending 'off-fall': minimizing the necessary evil of tube forming

By Mr Lonnie McGrew, vice president of engineering,
AddisonMckee, USA





Venjakob acquires Nutro Corporation

Venjakob Holding GmbH, Germany, has acquired the assets of Nutro Corporation of Strongsville (OH), USA.

The acquisition combines Venjakob's worldwide resources in producing paint, pretreatment, material handling and curing technologies with Nutro's US engineering and manufacturing resources and expertise in custom engineered liquid and powder paint finishing systems.

"Venjakob's purchase of Nutro presents both companies with exciting opportunities," says Nutro's president Mr Barney Klevay. "Nutro gives Venjakob a strong engineering and manufacturing base in the heart of the US industrial market, while Venjakob's product line allows Nutro to extend into new, but allied finishing markets," says Mr Klevay.

Nutro provides custom engineered systems in the automotive, ceramics, electronics

and general industrial markets, specializing in chain-on-edge and highly automated applications as well as UV, infrared and induction heating and robotic technologies.

Venjakob has a global reputation for finishing systems in the wood, tube and pipe, automotive and plastics finishing segments. With over 220 employees, Venjakob has developed from an engineering company to a worldwide system manufacturer of surface and handling technology.

Nutro Inc currently has a staff of 40 employees and offers its products and services worldwide.

 The Venjakob workforce will unite with the Nutro Inc team, which has a staff of 40



Nutro Inc – USA
Fax: +1 440 572 5584
Email: ethinschmidt@nutro.com
Website: www.nutro.com

Venjakob GmbH & Co KG – Germany
Fax: +49 52 42 96 03 40
Email: info@venjakob.de
Website: www.venjakob.de

New Sikora service office in Egypt

Sikora AG, Germany, has opened a new service office in Cairo, Egypt, which offers a new strategic location for the company's service and technical support for the Arabian countries.

The long-term successful partnership between Sikora AG and its Egyptian representative Heavy Industries Services Co (Hisco), formed the basis for the assignment of a professional Sikora service team onsite. The new service office, which is based at the existing Hisco office, will provide on-call technical service support.

Mr Harry Prunk, chairman of Sikora, says, *"Cairo represents an optimum location for our service office. The intensive collaboration with our representative Hisco in Egypt during the last years has proven successful."*

The opening of the service office follows Sikora's strong business performance this year and reflects its progressing expansion.

Sikora Service Egypt – Egypt
Fax: +20 2 22672478
Email: service@sikora-egypt.com
Website: www.sikora.net

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

Interpipe launch new anti-corrosive coating line for oil and gas pipes

Interpipe, Ukraine has opened a new production line at its NMPP mill. The new line gives Interpipe the capacity to produce pipes with an external anti-corrosive 3-layer coating for both seamless and welded pipes up to 530mm for oil and gas transportation. The total investment in the project has reached US\$8.5 million.

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

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

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

Interpipe – Ukraine
Fax: +380 562 389482
Website: www.interpipe.biz



Faro and TeZet combine tube measurement expertise

Faro, Germany, has entered into a new European technology and marketing agreement with TeZet, a Swiss-based tube measurement software specialist.

According to the agreement, TeZet's specialised tube software solution TeZetCAD, will be integrated into the leading portable devices for 3D measurement – Faro ScanArm and FaroArm.

This new joint solution will be available to customers in all major industries for the measurement and correction of tubes of all sizes and forms, including complex geometries of freeform bent tubes. At present, TeZet claims to be the only software globally that can measure and correct freeform bent tubes.

“The agreement with TeZet is very important to us because it allows us to expand our reach into the emerging tube measurement market,” said Mr David Homewood, Faro's area vice president of sales for the UK, France and Distribution.

The agreement enables the measurement of freeform bent tubes with the Faro Laser ScanArm so that tube benders can actually bend tubes by extracting them graphically from CAD drawings. Until now, the only method that allowed measurement of the reproducibility and quality control for freeform bent tubes was traditional laser scanning.

Users needed to collect points and convert the point cloud into polygons or nurbs to generate a tube design on the screen without having any tube data, which is a cumbersome and time consuming process.

TeZet offers a software module for Faro ScanArms that allows automatic calculation of tube data during the scanning procedure. The user no longer needs to use the complex and lengthy method of converting millions of points in order to extract the tube coordinate and bending data necessary for masterpiece inspection and comparison within the production procedure.

TeZet Technik AG – Switzerland

Fax: +41 56 2492878

Email: tezet_leistritz@compuserve.com

Website: www.tezet.com

Faro Europe GmbH & Co KG – Germany

Fax: +49 7150 979744

Email: melanie.pregel@faro-europe.com

Website: www.faro.com

DIARY OF TUBE EVENTS

2008

NOVEMBER

- | | | | |
|--------------|--|---|---|
| 11-14 | Metal Expo 2008 <i>Moscow, Russia</i> Exhibition | ➔ | Email: info@metal-expo.ru Website: www.metal-expo.ru |
| 13-16 | Tube + Pipe Expo 2008 <i>New Delhi, India</i> Exhibition | ➔ | Fax: +44 20 8387 3201 Website: www.tubeandpipe-expo.com |
| 18-21 | Tube & Pipe Central Asia <i>Almaty, Kazakhstan</i> Exhibition | ➔ | Email: info@expocentralasia.com Website: www.expocentralasia.com |

2009

JANUARY

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

MARCH

- | | | | |
|--------------|---|---|---|
| 05-08 | BORU 2009 <i>Istanbul, Turkey</i> Exhibition | ➔ | Email: info@ihlasfuar.com Website: www.ihlasfuar.com |
| 10-13 | TECMA <i>Mexico City, Mexico</i> Exhibition | ➔ | Email: info@tecma.org.mx Website: www.tecma.org.mx |

MAY

- | | | | |
|--------------|---|---|---|
| 12-15 | Tube/wire Russia 2009 <i>Moscow, Russia</i> Exhibition | ➔ | Email: wolfgang@messe-duesseldorf.de Website: www.metallurgy-tube-russia.com |
|--------------|---|---|---|

JUNE

- | | | | |
|--------------|---|---|---|
| 17-19 | Tubes + Fittings Ukraine <i>Kiev, Ukraine</i> Exhibition | ➔ | Email: olga@welding.kiev.ua Website: www.weldexpo.com.ua |
|--------------|---|---|---|

OCTOBER

- | | | | |
|--------------|---|---|--|
| 06-08 | Tubotech/Metaltech 2009 <i>São Paulo, Brazil</i> Exhibition | ➔ | Email: cipa@cipanet.com.br Website: www.cipanet.com.br |
| 13-15 | Tube/wire Southeast Asia <i>Bangkok, Thailand</i> Exhibition | ➔ | Email: tube@mda.org Website: www.tube-southeastasia.com |

NOVEMBER

- | | | | |
|--------------|---|---|--|
| 02-03 | Pipe & Tube Istanbul 09 <i>Istanbul, Turkey</i> ITA conference | ➔ | Email: info@itatube.org Website: www.itatube.org |
| 15-18 | Fabtech/AWS Welding Show <i>Chicago, USA</i> Exhibition | ➔ | Email: information@fmafabtech.com Website: www.fmafabtech.com |

2010

JANUARY

- | | | | |
|--------------|--|---|---|
| 10-12 | Tube India <i>New Delhi, India</i> Exhibition | ➔ | Email: schreiberg@messe-duesseldorf.de Website: www.tube-india.com |
|--------------|--|---|---|

APRIL

- | | | | |
|--------------|---|---|--|
| 12-16 | Tube/wire Düsseldorf <i>Düsseldorf, Germany</i> Exhibition | ➔ | Email: liedtkeM@messe-duesseldorf.de Website: www.tube.de |
|--------------|---|---|--|

Mid-South Control Line now fully integrated into RathGibson

RathGibson, USA, has completed the integration of Mid-South Control Line as a division within its group of companies. Based in Marrero, Louisiana, Mid-South Control Line is a leader in control line and well completion accessories.

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

Mid-South's website and technical literature have been updated to fit RathGibson's corporate standard. Another benefit of the unification between Mid-South and RathGibson is shortened lead times. Mid-South offers control lines in 316L, duplex, super austenitic 825 and nickel 625 alloys.

"The affiliation between the divisions has already created more value for our customers – increasing efficiencies, reducing lead times, and improving responsiveness to customers," said Mr Rick Lore, president of Mid-South Control Line.

The recently completed expansion of Mid-South's warehouse, which added an

📍 *Mid-South Control Line, a division of RathGibson Inc, is located in Marrero, Louisiana*



additional 15,000ft², has been instrumental in improving the flow of product through the facility.

Mid-South serves as a stocking location for well-completion tubing and accessories, delivered to customers operating in the Gulf of Mexico and other parts of the world.

Together with RathGibson, Mid-South has accelerated efforts to reach customers in regions such as the Middle East, Africa, South America, and Asia, particularly China.

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

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

Mid-South Control Line – USA
Fax: +1 504 348 4122
Website: www.controlline.com

Almi Machine Factory wins Productivity Award 2008

Almi Machine Factory, the Netherlands, has been presented with the Productivity Award 2008, awarded by the Royal Dutch Metal Union. According to the jury, the Dutch inventor and producer of pipe notching equipment has improved productivity in the most successful and efficient way.

In the presence of the Dutch Princess Máxima, Mr Raymond Belderink from Almi received the Award from Ms Sybilla Dekker (former minister).

The company was chosen from the 13,000 companies that are members of the Royal

📍 *From left – Mr Raymond Belderink (Almi), her Royal Highness Princess Máxima, Mr Michaël van Straalen and Ms Sybilla Dekker*



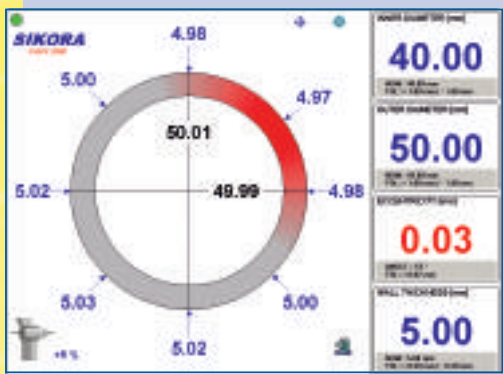
Dutch Metal Union. The Jury stated that Almi made innovative strategic choices and has implemented these choices successfully.

The choices made are a combination of an innovative product strategy and participation of the employees. The statement of the jury praised Almi for the way in which it has implemented the product strategy.

Almi's pipe notching machines are sold worldwide by a large dealer network. The Almi dealers are selected for their ability to offer the highest quality and service requested by the market.

Almi (universal) pipe notchers are high quality machines for notching out a variety of materials and grinding square, rectangular, circular and all other tube sections. The machines are suitable for all material thicknesses and all types of material.

Almi Machine Factory – The Netherlands
Fax: +31 546 564465
Email: info@almi.nl
Website: www.almi.nl



X-RAY 2000 monitor image



X-RAY 2000

The advantages:

- fast centering of the crosshead directly after starting of the extrusion process
- continuous measurement and control of the extrusion line under consideration of the minimum values
- permanent quality control

Quality control and process optimization:

at the extrusion of single and multi layer plastic tubes and pipes

X-RAY 2000 is an attractive on-line measuring and control system for plastic tubes and hoses.

State of the art X-ray technology provides continuous measurement on the wall thickness, eccentricity, diameter and ovality. With the X-RAY 2000 SIKORA presents an exciting measuring system, which is focused on process optimization by providing:

- quality control and improvement
- reduction of start-up scrap
- reduction of material over-consumption
- increased productivity
- approach as simple as a diameter gauge

The technique of transilluminating the tube or hose with X-Rays in two planes of view provides wall thickness measurements without calibration requirements. Reliable measurements are available for multi-layer products with and without fabric reinforcement layers. This unique technique makes wall thickness measurements an operation as simple as a diameter gauge!

With a relatively low investment a return of investment drastically below 12 month can be achieved.

LASER 2000

Check-out also **SIKORA's** range of diameter gauges, which are available for products of 0,1 to 200 mm.

The advantages:

- XY and triple axis diameter and ovality measurement with optimum precision
- MTBF (meantime between failure) > 15 years
- no calibration required

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SIKORA
Technology To Perfection

Tube and wire 2010 to feature new hall allocation

The planned layout for Tube and wire 2010 has been revealed, following the positive news that Metav will not take place alongside the usual exhibit partners. The expanded Messe Düsseldorf showgrounds and absence of Metav in 2010 has meant that there will be a considerably larger exhibit area for Tube and wire, to be held from 12-16 April 2010.

After the excellent results of the two events in 2008, Tube 2010 is expected to attract 35,000 visitors and 1,000 exhibiting companies in a display area of 40,000m². It will take place in halls 1 to 7.

A complete range of products and services will be displayed in these halls, including tube production via processing to machining. The exhibits will include raw materials, tubes and accessories, tube production machinery, process technology tools and auxiliary materials, measurement and control technology, and test engineering.

For the second time, after the successful debut in 2008, pipelines and the area of OCTG technology will be showcased. For the first time, there will be a special show about profiles and profile technology. It will feature machines and systems for the production of profiles and also the final products.

wire will be held in halls 9 to 12 and 15 to 17. The organization of halls 15 through

17 is new; fastener technology will be displayed in hall 15, while parts of hall 16 will be dedicated to the latest processes in the area of spring making.

All applications connected to wire and cable and production machinery will be located in halls 9 to 12 and 16 to 17. wire again expects to welcome about 1,100 exhibitors on a display area of 51,500m². More than 41,000 visitors will gather information about innovations in the sectors of the cable and wire industry.

The exhibit range at wire 2010 will include machines for wire production and finishing, tools, auxiliary materials for process engineering, and speciality wires.

In addition, innovations from the areas of cable, measurement and control technology and test engineering will be presented. Speciality areas such as logistics, conveyor systems and packaging round off the product and services range.

Test engineering and special areas such as warehouse automation, monitoring and control systems will complement the comprehensive range on offer.

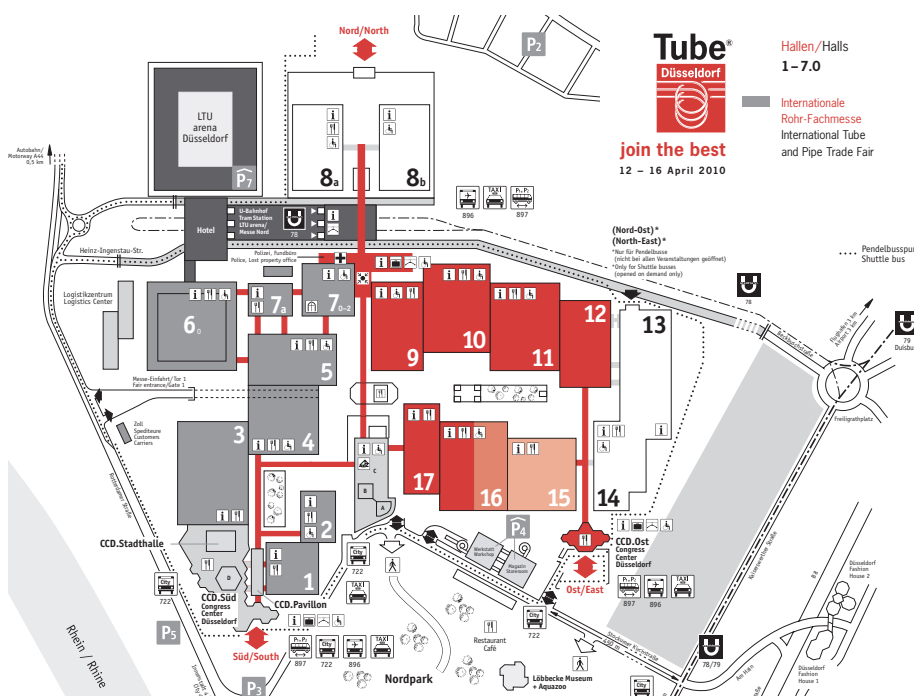
Messe Düsseldorf – Germany

Fax: +49 211 4560 87

Email: hartmannp@messe-duesseldorf.de

Website: www.tube.de

Tube and wire 2010 will take advantage of the expanded exhibit space at the Messe Düsseldorf showgrounds



Centravis and Handy & Harman form strategic alliance

Centravis, Ukraine, a leading international producer of seamless stainless steel tube and pipe, has formed a strategic partnership with Handy & Harman Tube Company, USA. Handy & Harman is a world producer of hi-tech products from stainless tubes.

The company will become a principal supplier of mother tubes for Handy & Harman, including the production of special mother tubes meeting additional customer requirements. This agreement was reached at a meeting of the companies held earlier this year.

In 2008, Centravis plans to supply over 300t of mother tubes to Handy & Harman, a figure expected to triple next year. Centravis will ensure this target is met by launching a new tube pressing line and extrusion press (4,400t) at its main industrial site. Complete installation of this new equipment will be completed in the first quarter of 2009.

The strategic partnership between the two companies will also include expansion of the product range of both companies (new steel grades and sizes), cooperation in innovative product development, and joint distribution of tubes produced by Centravis and Handy & Harman.

Joint company entry into the market of North America is among the most important aspects of the cooperation. By the end of 2008, the companies will hold a number of business meetings with the largest metal product distributors in North America. In turn, Centravis will ensure product sales support to Handy & Harman in the CIS markets where the company has a strong market position.

Mr Ilya Shirokobrod, the Centravis director of strategy and business development, states, "North America is a strategic region for our business development. It is in this region that we are gradually intensifying our activities. For the time being, North American countries account for 3 per cent of our company sales and this figure is expected to triple by 2010."

Centravis – Ukraine

Fax: +38 56 373 4846

Website: www.centravis.com

Handy & Harman Tube Company – USA

Fax: +1 302 697 7405

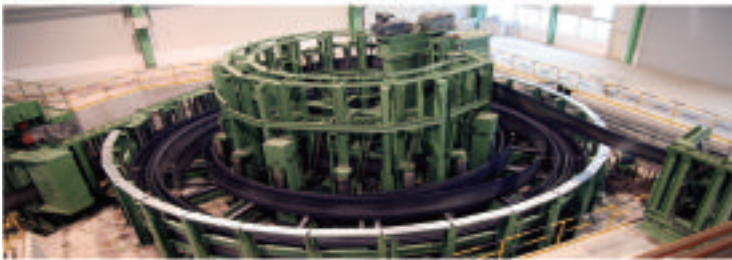
Email: info@handytube.com

Website: www.handytube.com

PIPE MILL

ERW/API 8"-26"Ø

DPI, Anshan, China/2008



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Highly informative first conference on magnetic pulse welding

The joining and forming field gained substantial knowledge and expertise from the first technical conference on industrialized magnetic pulse welding (MPW) and magnetic pulse forming (MPF). Jointly hosted by Pulsar Welding and SLV Munich in Munich, Germany, the event was regarded as an eye-opener by many in attendance.

Around 100 participants attended the conference in July, including a number of significant companies in the automotive, appliance manufacturing and alternative energy fields. The conference success confirms the fast growing interest in industrialized magnetic pulse technology.

⬇ The conference provided in-depth knowledge of magnetic pulse welding and forming, with a number of practical demonstrations



According to Mr Rani Plaut, CEO of Pulsar, "The industry is showing a growing maturity of simulation tool providers and engineering firms. Pulsar's partnership program is rapidly building the infrastructure that users of MP technology require for broadening the existing installed base."

The conference gave a platform to stimulating discussions and practical customer applications. The event had a succession of informative highlights. These included a keynote presentation from Dr-Ing K Middeldorf on 'Trends in joining – value added by welding', and an onsite demo of the MPW process.

Other lecture topics were covered by companies including TI Automotive, TU Dortmund, Labein, Dresden HLD and TWI.

Pulsar is a worldwide pioneer in industrial magnetic pulse welding (MPW)



⬆ In the region of 100 participants attended the conference in Munich, Germany

and forming (MPF). The company's first technical conference on magnetic pulse welding and forming has demonstrated the breakthrough possibilities in the joining and forming industry.

Through its technology and expertise, Pulsar's magnetic cold welding and forming is drastically cutting costs, increasing productivity and promoting a cleaner and greener work environment.

Pulsar Ltd – Israel
Fax: +972 8 942 7746
Email: event@pulsar.co.il
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SLV München – Germany
Fax: +49 89 181643
Email: slv@slv-muenchen.de
Website: www.slv-muenchen.de

Trumpf announce plans to acquire SPI Lasers

Trumpf, Germany, has announced plans to purchase the entire share capital of SPI Lasers, UK. Trumpf believe the expertise and world-class fibre laser technology of SPI will complement the Trumpf brand.

The company expects SPI Lasers to be a centre of fibre laser excellence within the Trumpf Group. The move is expected to place Trumpf in a leading position in the rapidly growing fibre laser sector.

SPI Lasers will operate as a merchant laser business unit within the division of Trumpf's Laser Technology and Electronics. SPI will continue to produce its growing portfolio of OEM and stand-alone fibre laser solutions. The business will operate from the existing facilities in Southampton, UK.

Commenting on the announcement, Mr Peter Leibinger, vice-chairman of Trumpf's managing board, said: "I firmly believe that

both SPI Lasers and Trumpf will benefit from this proposed transaction. While the overall market for industrial lasers is expected to grow further in the future, particular growth is expected in the lower power range, an area in which SPI Lasers' products have already established a strong market presence."

"A broad product portfolio of SPI Lasers in the fibre laser segment would complement Trumpf's existing product and technology platforms and create a stronger combined industrial laser offering."

Dr David Parker, chief executive officer of SPI Lasers added, "We are delighted by this announcement. Whilst we are proud of our achievements to date there is no doubt that with the support of Trumpf we can take the business to a higher level and be a major player in this exciting sector."

SPI Lasers is a leading designer and manufacturer of optical fibre-based lasers that are currently used in a wide range of industries. The current product family is used to mark, weld, and cut materials used in the manufacture of a range of products.

The platform technology being developed to raise laser power levels for use in the macro manufacturing sectors is expected to further widen the markets served by SPI Lasers to include aerospace, automotive and white goods manufacture.

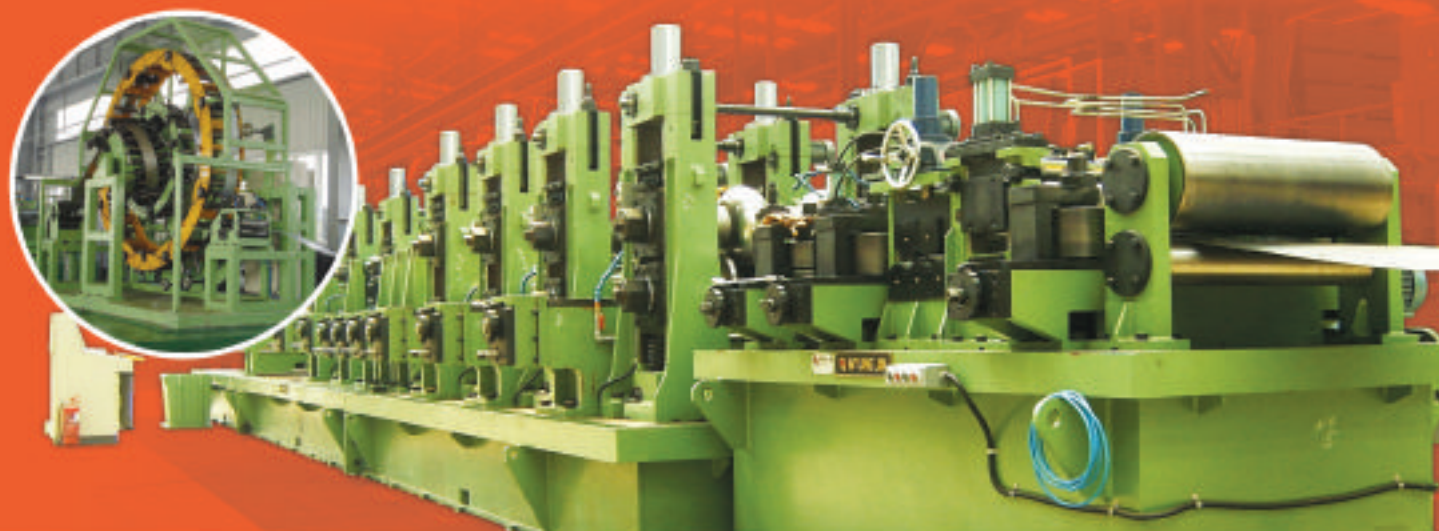
SPI Lasers – UK
Fax: +44 1489 779698
Email: david.parker@spilasers.com
Website: www.spilasers.com

Trumpf Group – Germany
Fax: +49 7156 303 6115
Website: www.trumpf.com

TUBE MILL(ERW)

(1"-24")(API/ASTM)

- Reference : Over 170
- Tube Mill : From Entry to Run-out Table
- Finishing Equipment : End facing & Chamfering M/C, Straightening M/C, Hydrostatic tester, E/T Conveyor, Autopacking System
- Painting Line



Auto packing M/C



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Tube Painting M/C



Factory space save by tube dry elevator

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Battenfeld and Cincinnati united under leadership

Cincinnati Extrusion and the Battenfeld Extrusion Group, both part of private-equity investor Triton's portfolio since the beginning of 2007, have been united under the same leadership.

Mr Wolfgang Studener, managing director of Battenfeld Extrusionstechnik for many

Ⓛ Mr Rainer Kottmeier, managing director of Battenfeld Extrusionstechnik



years, will take over the management of both groups of companies.

With parent companies in Bad Oeynhausen and Vienna, the two groups include American Maplan (USA), B+C Extrusion Systems (China), Extrusion Kempen (Germany), and the Cincinnati Extrusion subsidiaries in Japan and the USA.

Mr Studener's successor at Battenfeld, who will take up his new responsibilities at the same time, is Mr Rainer Kottmeier. Mr Kottmeier was previously general manager of the pipe product group and a member of Battenfeld's management board. The top management of Cincinnati Extrusion will remain in the experienced hands of Mr Walter Haeder.

Mr Studener said, "Our aim is to respond appropriately to the changes in general conditions caused by the economic slowdown, to keep our companies on course and to rally their strength. Towards this end, we will streamline the organizations of both Battenfeld and Cincinnati."

The reorganization of both groups will involve pooling the corporate sectors of strategic purchasing, production, logistics and financial administration. The production of the vital components such as extruder screws and extrusion dies, which requires special extrusion equipment know-how, will remain at the facilities in Vienna,



Ⓛ Mr Walter Haeder, managing director of Cincinnati Extrusion

Bad Oeynhausen and McPherson, USA (American Maplan). An important tool to implement these measures is lean Six Sigma (LSS), which has been applied successfully in Bad Oeynhausen and Vienna since the beginning of 2008.

Mr Studener continued, "In this connection I am very pleased that we have been able to secure the cooperation of Dr Henning Stieglitz, an experienced manager and proven industry expert."

Battenfeld Extrusion Group – Germany

Fax: +43 2252 404 1002

Email: susanne.binner@battenfeld-imt.com

Website: www.battenfeld-imt.com

Cincinnati Extrusion GmbH – Austria

Fax: +43 1 61006 292

Email: berlisg.h@cet-austria.com

Website: www.cet-austria.com

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Vero Software Plc relocates UK head office

Vero Software Plc, a leading supplier of CAD/CAM software to the mould and die sector, has relocated its head office to a new and more spacious location in Cheltenham, Gloucestershire, UK.

The new address also represents the unification of Vero Software Plc together with its subsidiaries Vero UK Limited and Camtek Limited into a single office. The new office provides excellent visitor facilities, room for expansion and is well connected with good road and rail links to London.

Vero creates software for aiding the design and manufacturing process in specific sectors of the industry. These sectors include the design and manufacture of plastic injection moulds, sheet metal stamping dies, progressive dies, shoe moulds, electrode production and others.

These widespread product types are found in a multitude of manufacturing industry sectors such as automotive, electronic, medical, white goods and aerospace. The company has offices in Italy, England, Japan, France, Canada, USA and China.

Vero Software – UK

Fax: +44 1242 542099

Website: www.vero-software.com

Joint spinner block project for MRB Schumag and Outokumpu Pori

MRB Schumag Ltd, UK, has entered into a joint project with Outokumpu Pori Tube Oy, Finland, to carry out refurbishments on their MRB spinner blocks.

The machines have been successfully drawing copper tube in Pori for decades now, and are to be fitted with the latest electrical control systems, allowing Outokumpu Pori Tube to achieve substantial improvements without further machinery investment.

An increasingly popular move for MRB spinner block customers, the merits of electrical refurbishments allow for increased product quality and productivity. Advances in technology provide improved operator and maintenance-friendly software. Key savings are possible by eliminating the need to source old, often obsolete spare parts for ageing equipment, and by reducing machine downtime.

Examples of features of the latest control systems include speed control cameras, auto-crawl, fault diagnostics, and state-of-the-art human-machine interface equipment.

The project marks further progress in the long-standing relationship between MRB Schumag and Outokumpu Pori Tube, where new management has recently taken over copper tube operations.

The proposed refurbishment of the spinner block fleet will inject the latest technology into the trademark longevity of the MRB equipment. This will ensure a modern, cost-effective method of drawing copper tube to allow Outokumpu Pori Tube to continue to exceed market expectations.

MRB Schumag is an established designer and supplier of premium equipment to the global copper tube industry. The company offers a range of the latest electrical and mechanical upgrade technologies to refurbish the hundreds of MRB spinner blocks in operation worldwide.

MRB Schumag Ltd – UK
Fax: +44 1388 771340
Email: sales@mrbschumag.com
Website: www.mrbschumag.com

Major agreement between John Crane and Siemens

John Crane, UK, has announced a major new supplier frame agreement with Siemens AG, Germany. This deal is expected to secure business worth in the region of €10 million over the next two years.

The deal provides for John Crane gas seal equipment to be supplied via Siemens to a range of turbo-machinery applications in the Middle East, Caspian, Asia Pacific and South American regions.

The agreement will also allow John Crane and Siemens to collaborate more closely, leading to the development of innovative new solutions to market requirements.

John Crane – UK
Fax: +44 1753 224224
Website: www.johncrane.co.uk

Siemens AG – Germany
Fax: +49 89 636 52 000
Website: www.siemens.com

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Successful steel tube seminar staged by Confederation of Indian Industry

The Confederation of Indian Industry held a highly successful seminar, titled the Steeltube Partnership Summit 2008, at the start of September. Distinguished speakers from the steel tube industry and user industry sectors gave presentations on a range of topics.

Hosted at the Indian Habitat Centre in New Delhi, the seminar examined the remarkable growth in key sectors such as automotive,

Ⓣ The Steeltube Partnership Summit 2008 was held in New Delhi, India



oil and gas, power, and construction, which have led to tremendous growth prospects for India's tube and pipe industry.

The seminar detailed the shifts in domestic tube and pipe consumption patterns and the future requirements by the user sectors. There was an acceptance that the tube industry in India needs to increasingly adopt the latest available technology.

The seminar discussed the importance of basic raw material. There are shortages of pressure vessel grade steel plates and tubes, while the industry is facing problems of price shifts. Due to inadequate availability of input material and stable prices of raw materials the delivery and commissioning schedules of various projects are being affected to a great extent.

The main areas addressed by the event were the present status and challenges ahead, R&D, regulatory issues and export thrust, bottlenecks faced by the manufacturers and users, and advancement in technology for the tube industry.

Dates announced for Shanghai Tube Expo 2009

Shanghai Tube Expo 2008 received a successful staging last August, with 302 exhibitors from 30 countries and regions. Held in an exhibition area of nearly 12,000m², the event attracted 18,163 professional visitors.

Visitors came from the fields of petroleum, petrochemical, shipbuilding, shipping, water conservation, boiler, power plants, coal mines, construction and household pipe.

Shanghai Tube Expo has been successfully held for four consecutive years since 2005. The event has grown year-on-year in scale and impact, and is now regarded as a platform for international exchanges and cooperation in the steel tube industry. It has become a leading Asian and international event covering the whole steel tube supply chain.

To continue the success of this event, the dates have been announced for Shanghai Tube Expo 2009. The event will be held from 5-7 May 2009 at the Intex Shanghai exhibition showgrounds.

Shanghai Shenshi Exhibition & Convention Ltd – China
Fax: +86 21 52830923
Website: www.mtmexpo.com

Confederation of Indian Industry – India
Fax: +91 11 24 682229
Email: mohit.ganglani@ciionline.org



Specifications: Stainless steel seamless tubes

Standard: ASTM A269/ASME A213 ASME SA213 DIN 17456-J5 G3459 G3463

Size: O.D. 1mm - O.D. 89mm *
 W. 0.2 mm - W. 1.0mm

Length: Standard 6 meters or 20 feet, or customized, extra long tubes upto 26 meters are specially for Heat Exchanger applications.

Surface finish: Mills finish/Polished Surface from 180G to 400G/Right Annealed



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PHI-Tulip makes key appointment and reorganizes sales department

PHI (a division of Tulip Corporation), USA, has reorganized its sales department for tube bending and end finishing machines. This reorganization has been accompanied by the appointment of a new sales manager, Mr Steven Moss.

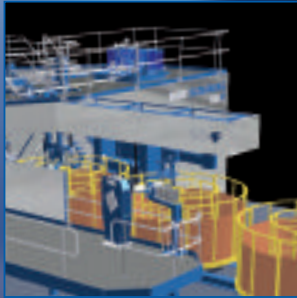
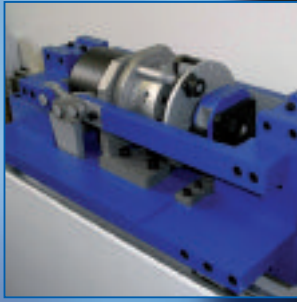
The company has been operating as PHI since 1985, following the purchase of Leonard Precision and Conrac Corporation's machine tool division. As part of a new market strategy, the company plan to add more distributors and representatives worldwide to answer the growing market needs for its machines.

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

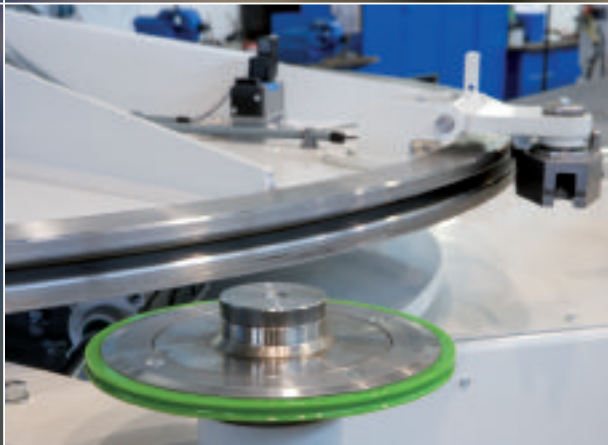
Bending machines are available from small bench-top models to larger machines designed for tubes up to 3" x 0.188 WT, with bend radii as tight as 2 times the tube diameter. Controls range from manual to programmable.

The company, which now also manufactures welders, presses and tooling, aims to take a more proactive role in addressing the market.

PHI-Tulip Corporation – USA
Fax: +1 626 333 3610
Website: www.phi-tulip.com



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Steel Tube Institute and MTS sign safety support service agreement

The Steel Tube Institute of North America (STINA) has signed a strategic services agreement with Multimedia Training Systems Inc, which will provide monthly safety information and video clips for STINA's website. New safety information will be provided every month, while previous months' topics will be archived for easy access.

The agreement is part of the STINA's safety task force mission to help STINA's member companies focus on and improve their safety performance by sharing safety information and best practices. Since being formed in September 2006, the task force has held a series of safety meetings at member company's facilities.

The group has focused on twelve key safety issues that were identified in a survey of safety personnel of member companies. The topics included: head injuries, machine guards, use of robots, modified work programs, mill roll zinc build-up, pinch points, turning tubes and hydro blowouts.

Mr Bill Wolfe, executive director of the Steel Tube Institute, said, "Our agreement with MTS is another step in our safety task force's effort to help members reduce injuries and save lives. Each of the monthly topics will relate to a safety issue relevant to the steel pipe and tube industry."

Each month, a new safety issue will be placed on STINA's website. The focus will be on OSHA topics such as lockout/tagout, and respiratory and hearing issues. The postings on the website will include a video clip and an opportunity to get more detailed information on each topic.

In discussing the benefits of partnering with the Steel Tube Institute, David K Coffaro, president of MTS, said: "This is an opportunity for us to open a positive dialogue with safety personnel throughout the industry. The videos and topics we will be placing on STINA's website will be specific to their industry. Video clips include interviews with injured people; we also have the ability to recreate accidents with animation."

Multimedia Training Systems Inc was founded in 1996 by a group of steel mill safety professionals. The safety materials and videos they provide are industry specific and relate to basic steel making and processing, scrap processing, pipe and tube manufacturing, and rebar production.

The company has assembled a library of more than 74,000 video clips totaling over 1,500 hours of digital footage. They currently serve over three quarters of all US and Canadian steel mills and produce videos in five languages. Among their clients are US Steel, ArcelorMittal, Nucor and CMC. The company provides safety training via DVD, CD and the web.

The Steel Tube Institute was founded in 1930. It sponsors cooperative efforts to improve manufacturing techniques, safety and best practices in the welded steel tubing industry. STINA informs customers and fabricators about the utility and versatility of steel pipe and tubing products.

Steel Tube Institute – USA
Fax: +1 305 443 1603
Website: www.steeltubeinstitute.org

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POWDER CONTROL
 Powder flow measurement

ADJUSTABILITY
 Settings on touch panel

3-Layer and FBE
 or rough coating

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3-Layer and FBE
 or rough coating

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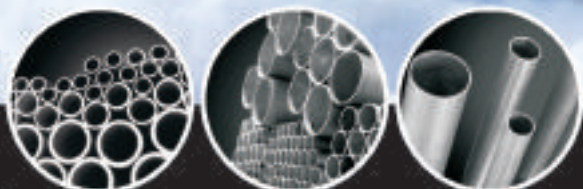
STELLAR TUBE & PIPE GROUP CO.,LTD
ZHEJIANG TSINGSHAN STEEL PIPE CO., LTD

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Add: Qingshan Village, YongZhong, Longwan District, WenZhou, Zhejiang, P.C. China P.C. 325038



Event News in Brief...

event news in brief...

 Quest Offshore will stage the **MCE Deepwater Development Conference 2009**, hosted by Maersk Oil, at the Bella Centre, Copenhagen, Denmark from 31 March to 2 April 2009. This event follows on from the highly successful 2007 and 2008 conferences hosted by BP and Total respectively. With a highly acclaimed technical program, the 2009 show is expected to bring over 1,000 attendees with a completely full exhibition floor.

 **Parts2clean** (www.fairxperts.de) took place for the sixth time from 28-30 October at the new Stuttgart exhibition centre in Germany. The event showcased the products and solutions for cleaning within the production process. Exhibits included cleaning systems, alternative cleaning techniques, cleaning agents, quality assurance/inspection, and handling/automation. Parts2Clean also included Corosave, a show for corrosion prevention.

 The second **EuroLite** exhibition (www.eurolite-expo.eu) closed its doors at the end of June following a successful event at the Salzburg exhibition centre in Austria. The event welcomed 193 exhibitors from twelve countries and 2,143 professional visitors, a 39 per cent increase on the inaugural show. EuroLite offered an overview of software tools, materials, and manufacturing technologies for implementing lightweight design ideas.

 The largest Chinese trade fair for the water industry – **Water China/PVP China** (www.waterchina.merebo.com) – will be held in Canton (Guangzhou) from 4-6 March 2009. The fair comprises the 10th International Water, Wastewater & Water Treatment trade show (Water China 2009) and the 9th International Pump, Valve & Pipe trade show (PVP China 2009). The last event welcomed 386 exhibitors and 8,590 trade visitors.

 **Tecma Mexico City 2009** (www.tecma.org.mx) will take place at the Expo Bancomer Sante Fe in Mexico City, Mexico from 10-13 March 2009. Billed as an international machine tool exhibition, the show expects to attract 500 exhibitors and over 12,000 visitors.

 **The International Symposium on Joining Materials 2008** (www.iws.org.in) will be held from 11-13 December 2008 in Tiruchirappalli, India. A concurrent exhibition – Weld Expo 2k8 – will also be conducted from 11-14 December at the premises of Bharat Heavy Electricals Ltd. The event will deal with the emerging trends in materials and processes.

 **Vietwater 2008** (www.vietwater.merebo.com), a Vietnamese trade show for the country's water industry, will take place in Hanoi from 18-20 November 2008. The show will take place in an exhibition space of 6,000m² in the new National Convention Centre of Hanoi.

TUBE FINNING MACHINE

This machine works on the principle of Roto Advancing mechanism of tube & fins are crimped and wound around the periphery of the tube under high tension.

CAPACITY : Two models are available:

PTF-40: Suitable for Tube OD 9.5mm to 40mm.

Fin Height 5mm to 20mm.

Fin Thickness upto 0.5mm

PTF-100: Suitable for Tube OD 25mm to 100mm.

Fin Height 5mm to 25mm.

Fin Thickness upto 0.5mm

POWER : PTF 40: 2 HP Geared Motor with V.F.D.

PTF 100: 5 HP Geared Motor with V.F.D.

CONSTRUCTION:

BASE: M.S. Fabricated with foundation provision and leveling arrangement.

BODY: Capsule type Roto advancing arrangement of Tube for continuous tube finning and mandrel arrangement for manufacturing of Fin Coil. Adjusting for pitch 2.5mm to 6.00mm.

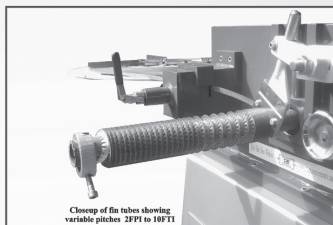
DRIVE: Geared Motor with variable frequency drive for changing speed various sizes of Tubes.

AWARDS :

Mr. L.C. Tolani has received the NATIONAL AWARD for the outstanding SSI entrepreneur on 30th Aug. 2000 at Vigyan Bhavan, New Delhi from the Honourable Prime Minister Shri Atal Bihari Vajpai.

Earlier in 1997 he received the BHARAT VIKAS AWARD from Dr. V. Venugopalachari, the Minister of State for Agriculture (Govt. of India).

Our Team, headed by Mr. L.C. Tolani, Consists of other Senior Directors, G.M. & Works Manager having an experience of 15 to 35 years in the fields of oil seed processing.



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110, Modi Tower, M.T.H. Compound, Indore - 452 004 (India) Phone : +91-731-3942417, 2430399
Fax : +91-731-2430402. Mobile : (L.C. Tolani) +91-98260-47777. (R. Kumar) +91-93294-83690.
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STAR BEND srl

Via Ferretti Torricelli 24 - 25020 Flero - Brescia - Italy
Tel. 030 3583310 Fax. 030 3583309
info@starbend.it www.starbend.it

We produce electronic bending machines without bending hydraulic transmission.

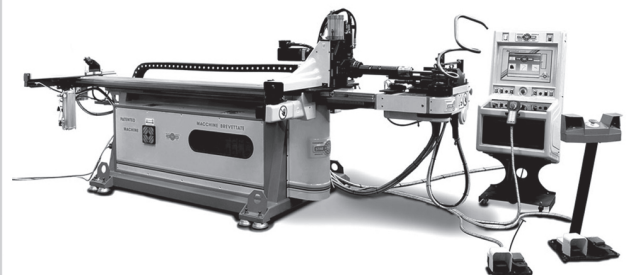
Available in thirteen different size configurations, from the simplest model one axis up to the more complete model 6/8 axis CNC, able to bend seven sizes of tubes from Ø 6x1 to Ø130x8 mm.

This new system, managed by brushless motors, controlled by the latest generation of digital drivers and by the proprietary and exclusive "bending cycles" management software operating in Windows environment.

This ensure a line of machines with the most reliable performance, purchasing costs and managing costs.

Exclusive patented Star Bend design allows the machine to be entirely modular in the maximum range of updating and to interface with any other bending machine; they allow to interact with measurement centre laser 2, by work station remoting or by modem with tele assistance.

A Star Bend machine is one of the most modern, innovative and advantageous solutions to any bending problem.





Business News in Brief... business news in brief...



Elcometer (www.elcometer.com), UK, has changed its name to Elcometer Limited, a decision taken to reflect the company's global position and reinforce its brand. Elcometer has been a market leader for over 60 years in inspection equipment for the coatings industry, with design and development of new products. In recent years, Elcometer has added several new product ranges to its extensive catalogue.



Linde Group (www.linde.de), Germany, has reported stable sales growth of 12.9 per cent (€6.256 billion) in the first half of 2008. The company has continued to improve profitability, increasing operating profit by 15.4 per cent to €1.258 billion. Linde's operating margin rose by 40 basis points compared with the prior year period to 20.1 per cent.



Rafter Equipment Corporation (www.rafterequipment.com), USA, has added Mr Mark Prasek as vice-president of sales and marketing. Mr Prasek will direct the sales and marketing efforts for the company. He has spent the last sixteen years in the tube and pipe industry working for both Yoder Manufacturing and EFD Induction. Rafter Equipment manufactures tube and pipe mills, roll forming machines, cutoff machines, auxiliary and other related tube and pipe mill machinery.



Sandvik Materials Technology (www.smt.sandvik.com), has appointed Mr Tom Clifford as its new account manager for the UK's southern area to advise customers on the company's complete product offering. Mr Clifford has worked in sales for a number of years with building product and plumbing systems specialists.



Kemppi (www.kemppi.com), Finland, has signed an extended sponsorship deal with the Force India Formula 1 team for the 2008/2009 F1 World Championship seasons. The company's CEO Mr Anssi Rantasalo attended the British Grand Prix test day at Silverstone and met the Force India team principal, Dr Colin Kolles.



Technip, France, has acquired **EPG**, a specialized engineering company in the oil and gas and petrochemical sectors. This acquisition will broaden the range of services offered to the clients of Technip and EPG, which will be renamed Technip-EPG BV. Based in the Netherlands, EPG is specialized in plant modifications with 35 years of experience.



Hypertherm (www.hypertherm.com), a provider of plasma metal cutting, has appointed a new regional manager for distribution sales in northwest Europe. Mr Magnus Olsson will be responsible for distribution sales in the UK, Northern Ireland, Scotland, Scandinavia and Germany.

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- ASTM A-240: STAINLESS STEEL SHEET
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Metal Expo 2008:

The Russian metals market has never been easy for international companies to master and perhaps remains the last market to be fully understood and deciphered. In such a vast geographical expanse as Russia – which covers over 17 million km² and boasts an abundance of natural resources such as oil, gas and minerals – the metals market is always going to be a highly lucrative business. The products and manufacture of tube and pipe, wire and cable, sheet metal, strip and coil, bar and slabs, are all bound up in an enormous melting pot of the Russian industry.

Tube and pipe producers in Russia are integrated in a very tight network, with the Development Fund of the Tube Industry of Russia (FRTP) overseeing a large number of the main companies including TMK, United Metallurgical Company (OMK), ChTPZ Group, and the ESTAR Group. It is for this reason that successful companies have learnt the key to doing business in Russia lies in commitment, tenacity and stamina.

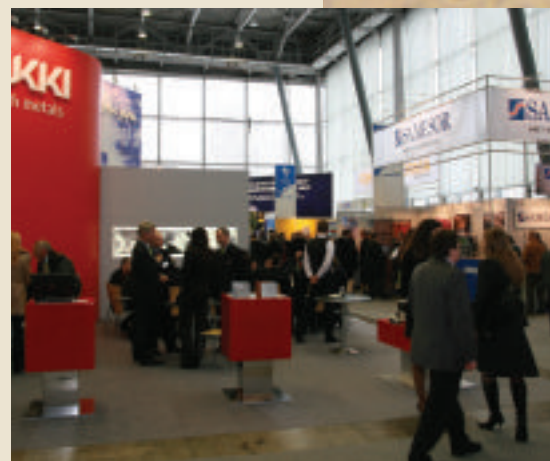
One of the best ways to maintain a presence on the Russian market is by attending exhibitions. Now a regular feature on the industry calendar, Metal-Expo 2008, Russia's 14th international industrial exhibition, will be held on 11-14 November. Taking place in halls 5, 6, 7, 8 and 11 of pavilion 2, the visitor attendance is expected to be in excess of 35,000. The event will provide a great opportunity for companies wanting to either put in an appearance or enter the Russian market for the first time.

This year's event will be the first held in the ultra-modern Crocus Expo Centre, setting the show up for the most successful in its 14-year history. Organisers Metal-Expo JSC has already confirmed the attendance of over 800 metals related companies – including a considerable number of Russian and CIS tube and pipe companies. Mr Alex Yakovenko, Metal Expo's international department director, recently told *Tube & Pipe Technology* that the event has received the highest ever level of international interest.

Metal Expo 2008 is sure to be a primary networking arena for international and Russian steel makers and consumers, who want to take advantage of the expected 15 per cent average annual growth in the Russian metals market over the coming years.



This year's event will be the first held in the ultra-modern Crocus Expo Centre



the lucrative business of Russia's metals manufacturing



SHOW FACTS

DATE

11-14 November 2008

VENUE

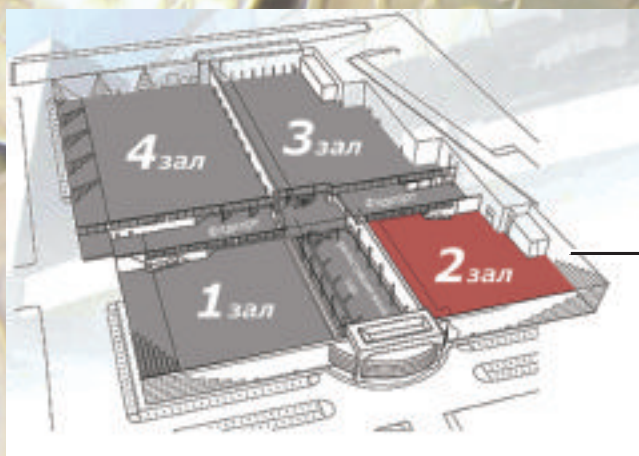
Crocus Expo Centre, Pavillion 2,
Moscow, Russia

ORGANISER CONTACTS

Metal Expo
Fax: +7 495 901 99 66
Email: yakovenko@metal-expo.ru
Website: www.metal-expo.com

EXHIBITS

- Tube and pipe (ferrous and non-ferrous)
- Billets
- Profiles and long products
- Raw materials for the steel industry
- Production equipment (eg welding, cutting)
- Scrap collection and recycling
- Transport & logistics
- Research & Development (including nanotechnology)



Online process analysers for automated high volume quality control

Tube and pipe manufacturers use many different metals and alloys in production lines. To eliminate liabilities, avoid material mix-ups and meet customer requirements, they must compare products against acceptable alloy specifications.

Particularly in the aerospace, petrochemical, nuclear and other demanding industries, the consequences of processing or fabricating with the wrong alloy material can be catastrophic, resulting in product failure, personal injuries, fatalities, liability claims and eventual loss of business. To protect their business, high volume manufacturers need a fast, non-destructive method that checks each piece prior to shipping.

Fox-IQ online tube analysers from Innov-X Systems offer these capabilities in an easy to use and reliable solution. The compact system integrates easily with existing or new processes, and provides continuous online measurements to optimise processes for increased productivity and improved product quality.

The systems perform fully automated online analysis for 100 per cent high-volume process control. X-ray fluorescence (XRF) is a proven analytical technique commonly

used to quickly and non-destructively perform multi-element analysis on solids, liquids and slurries – for example to verify alloy grade and chemistry.

The rugged process analysers are designed and engineered for 24/7 operation in the harsh industrial environment of manufacturing plants. They can endure high levels of vibration, electromagnetic and acoustical noise. They offer a combination of speed, accuracy and cost effectiveness, with worldwide service. Long-term service contracts are available to assure high levels of system up-time.

The Fox-IQ systems have several modes of operation. Pass/fail mode is designed for high-throughput alloy sorting and quality control. All sorting is done by comparing a sample to an operator-selected reference fingerprint. The system will provide a pass or fail result in just a few seconds.

The system comes with a standard reference library of common alloy fingerprints, and users can add their own



ⓘ The Fox-IQ online tube analyser features a compact design, allowing it to be integrated into most existing operations

(up to 300 more) using a simple, one-minute procedure. Once the unit has been taught a fingerprint, it will not need periodic recalibration.

Positive material identification (PMI) quickly identifies an alloy in seconds by matching the spectral signature of the unknown sample to spectral signatures of reference standards stored in the library.

The chemistry of the alloy is then calculated using stored elemental assays, with the identified grade as reference standard. Specific materials can be simply and quickly added to the library.

Analytical mode utilises a fundamental parameters (FP) algorithm to determine elemental chemistry. The FP calibration is done at the factory, and requires no user setup or recalibration. The FP method used in analytical mode is suitable for applications that require analysis of proprietary or uncommon alloys, monitoring chemistry of tramp elements, and a monitoring chemistry during processing. The analytical mode can identify an unknown material in approximately 5 seconds, with increased precision for longer test times.

The Innov-X Fox-IQ system consists of three major industry hardened components. The probe head assembly (PHA) contains the x-ray tube, detector, and front-end digital signal processing electronics. The PHA can be pre-calibrated, and its modular design allows exchange in minutes.

The electrical interface assembly supports an external sample trigger input, and provides a pass/fail indicator signal that can be used to trigger a 'kicker' or other line equipment like PLCs to accept or reject the sample, based on the analysis result. The user interface computer runs Innov-X PC

CNC bending directly from CAD to bender

Winton Machine, USA, has introduced its newest rotary draw-bending machine. The RD30eCNC is an economical and easy-to-use 3-axis CNC rotary draw bender.



ⓘ The RD30eCNC 3 axis CNC rotary draw bender

This PLC driven machine offers an optional PC interface that enables the user to import a STEP file right from CAD directly to the bender without typing in a single data point. This capability not only saves time but also cuts down on programming errors.

Winton's eCNC line of mandrel benders is suitable for job-shops and OEMs, providing an increase in productivity, reduced cycle time, and improved quality. The series consists of 20mm, 30mm, and 50mm machines with a tubing range from 1mm OD to 50mm OD.

An optional PC interface allows for programming and data storage.

Winton Machine Company – USA

Fax: +1 770 831 6459

Email: gwinton@wintonmachine.com • **Website:** www.wintonmachine.com



software to control the instrument, analyse samples, manage results and interface with external devices through RS 485 or TCP/IP.

The system includes automatic operation so no operator intervention is required, while a robust industry hardened design requires minimal maintenance. It is possible to monitor up to 25 elements simultaneously from P to U – from ppm to high percentage levels. Other features include remote diagnostics, integrated standardisation for automatic analyser QC and performance verification, and minimal downtime, as pre-calibrated probe head assemblies can be exchanged in minutes.

The compact design will fit into most existing operations with minimal infrastructure changes. The system has low power requirements, needing only 110/220V, and uses a low cost, low power x-ray tube, eliminating the regulatory headaches of a radioactive source.

Innov-X Systems also supplies portable and handheld alloy analysers for pass/fail and PMI verification.

Innov-X Systems – USA
Fax: +1 781 938 0128
Email: foxiq@innovx.com
Website: www.innovx.com

Expert in tube mills upgrades finite element analysis system

Roll-Kraft, USA, has upgraded its system for finite element analysis, in response to increased demand for such services from both the rollforming and tubing industries. The update includes the integration of a new, high-performance, dual-processor computer. Upgrading the Copra RF FEA software from Data M Software is designed to take advantage of the new computing power.

The new release of the FEA software has increased functionality. An engineer can designate which roll passes are driven and non-driven, as well as define the line speed and account for friction in the tooling. The program is also able to simulate non-symmetrical, formed-up welded profiles.

Early tests have resulted in a calculation time reduction of approximately 75 per cent, compared to the previous FEA system. The increased capacity will allow Roll-Kraft to use the FEA more effectively during the design phase of the project.

The improvements in both speed and functionality will benefit customers in several ways. The decrease in calculation time will permit the running of more simulations of various tooling design concepts during the engineering phase, in order to develop the best possible solution for producing an accurate profile. This will, in turn, decrease the amount of time a set of tooling spends in the testing phase. The addition of the rotating rolls, line speed, and friction functions will better allow the prediction of possible surface condition problems in the finished product.

With many industries switching to lighter, stronger materials and more complex profiles, the need for a scientific approach to tooling design has become necessary. Roll-Kraft often uses the FEA system in an R&D role, and collaborates with existing and potential customers to determine the feasibility of rollforming these advanced materials and products.

Roll-Kraft – USA
Fax: +1 440 205 3110 • **Website:** www.roll-kraft.com

Innovative inline bright annealing system

Elind SpA, Italy, is the manufacturer of complete solutions for induction heating applications. These applications include rolling mill operations, hot forging, and heat treatment such as hardening, tempering, annealing and heating of tube and pipe.

Following its experience in the field of stainless steel tube annealing, Elind has developed an innovative inline bright annealing system for work on TIG and laser welding stainless steel tube mills. The equipment is composed of three main sections: heating, soaking (available on request) and cooling.

The concept of modularity is applied on all three sections of the equipment that can be tailored to the needs of the end-user and easily improved in field in terms of number of inductors, power and cooling section length. The heating and soaking sections are composed of one or more inductors driven by a generator with an output power ranging from 50-500KW.

The generator is based on a high efficiency IGBT inverter of the latest generation, which is able to work within a wide range of working frequencies. The cooling section has been designed for achieving the best results in terms of short cooling time and to make fast and easy the change of tooling. Both inductors and cooling section are assembled onto a movable water-cooled frame that can easily be removed from the tube mill in case annealing is not required.

Stainless steel tube is heated up to the annealing temperature (which is maintained for a while if the soaking section is used), and subsequently cooled down. The entire process is performed in a pure hydrogen atmosphere for keeping the surface of the tube clean and bright.

The equipment is extremely safe due to special seals fitted at the input and output areas, together with a sophisticated gas management system.

A temperature control system ensures a constant annealing temperature even in cases of possible feed variations of the mill.

The standard equipment is supplied complete with a separated cooling unit and an operator control panel.

Elind SpA – Italy
Fax: +39 011 95 72 502
Email: info@elind.net/indirizzo
Website: www.elind.net

 Elind offer a new inline bright annealing system



New inverter power source for automated robot welding

Wilkinson Star Limited, UK, has launched a number of new welding and plasma cutting products for automated and robot welding. These products include the Sound TIG AC/DC 4560/T inverter based synergic pulsed robot power source for use in automated TIG welding.

This 400V 50/60Hz power source, complete with water cooling unit, is specifically designed for interfacing and use with most branded industrial robots. It can also be used as a stand-alone unit for TIG and MMA welding. It has a 13.3kVA at 100 per cent input power, and is rated 320A at 100 per cent duty cycle and 360A at 60 per cent duty cycle, with an infinitely adjustable current range between 10-360A.

The power source can be supplied to operate with a continuous consumable TIG (cold) wire supply using a wire power supply kit installed in the power source. It also includes a WF4-R3 (TIG) standard 4 roll wire feed unit and a 15kg wire spool holder, both of which are easily attached to the robot. An analogue interface suitable for all industrial welding robots is also available, enabling the user to access all the system's TIG welding parameters.

A robot simulator is also available as an option, so that a complete test of the communications between the robot and the power source's robotised TIG welding system software can be carried out. To monitor all the welding parameters, an



Sound TIG AC/DC 4560/T robot power source from Wilkinson Star

analyser is also available so that data can be downloaded using a USB connection to a PC.

Wilkinson Star Limited – UK

Fax: +44 161 727 8297

Email: steve.murray@wilkinsonstar.com

Website: www.wilkinsonstar.com

Successful commissioning of latest profile measuring system

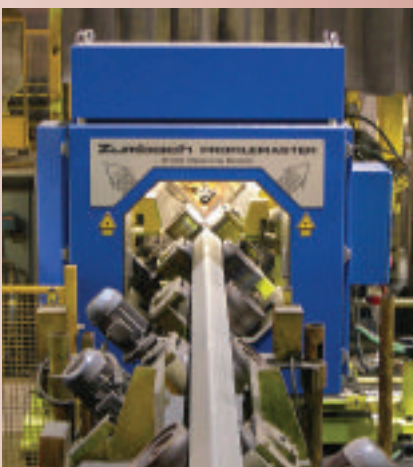
As a pioneer of online measurement, Zumbach Electronic manufactures a comprehensive range of non-contact, online measuring and control instruments.

The company's technology is in use worldwide for such dimensional parameters as diameter, thickness, and eccentricity. It is also used for out-of-round and physical or electrical parameters like expansion, capacitance, and dielectric strength. One or more parameters of a production line can be monitored simultaneously.

Earlier this year, the Profilemaster® SPS 300-N4 measuring system was successfully commissioned at Ascométal, France. The system has been designed for use in harsh environments in the steel and metal industry.

The measuring unit is equipped with 4 CCD camera/laser modules. It measures the complete profile of round and square billets up to 200mm. The measurement takes place in the section of the final quality control (cold measurement).

The same design is also earmarked for use under hot conditions where it is equipped with additional cooling and purging devices. The Profilemaster system is available in multiple designs, depending on the requirements of the customer and product. The systems are best suited to the continuous measurement monitoring of dimensions or even the complete cross-section of profiles made of metal, plastics or rubber.



Zumbach's Profilemaster® SPS 300-N4 measuring system

Zumbach Electronic AG – Switzerland

Fax: +41 32 356 0430

Email: sales@zumbach.ch

Website: www.zumbach.com

State-of-the-art production facility for stainless steel tubes

Quality Stainless, India, is a manufacturer of welded stainless steel tube and pipe, using its own cold rolled stainless steel coils. The company's two product divisions, tube/pipe and coil/strip, are ISO 9001:2000 and AD-2000 W2 certified under Lloyds Register and TUV. The products are manufactured as per DIN, EN, ASTM, JIS, SS and ISI standards.

The company's product range includes sizes from ½" to 4" OD, and ½" to 6" NB, thicknesses from 0.5mm to 4mm, and grades including 304/304L, 316/316L/316ti, 321, 439/409, 430, low Ni grades and duplex.

Testing facilities include eddy current, hydro testers, UTM, hardness test, intergranular corrosion, microstructure and other mechanical tests.

The company has a large customer base in industries such as heat exchangers, pressure vessels, food processing and beverage equipment, dairy industry, power turbines, chemical and pharmaceutical, automobile, oil and gas, and other general engineering industries.

Quality Stainless Pvt Ltd – India

Fax: +91 11 2625 2633

Email: tapasvi@qualitygroup.in

Website: www.qualitygroup.in



- HONEST
- EFFECTIVE
- PERFORMANCE

CNC PIPE END FINISHER

COUPLING STARTER & SCREW-ON

CROP & SPLIT CUT-OFF

BEVELER

DRIFTER

PROTECTOR APPLIER

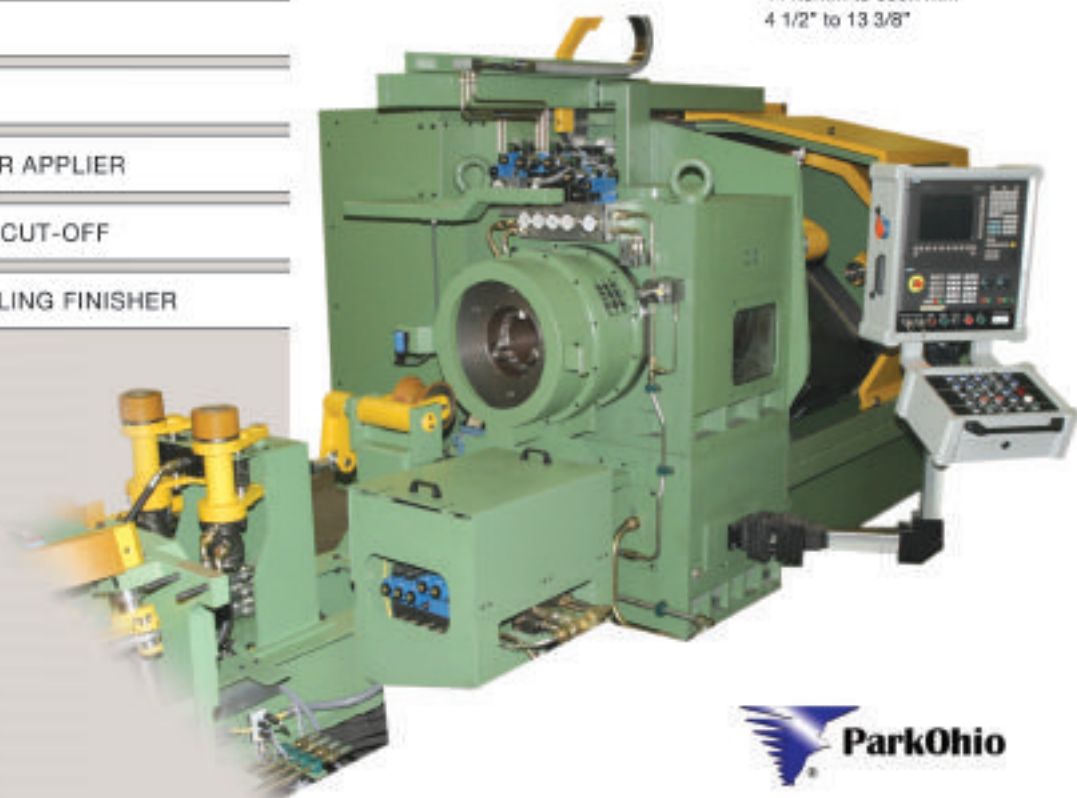
COUPLING CUT-OFF

CNC COUPLING FINISHER

MODEL

RPP13-3

114.3mm to 339.7mm
4 1/2" to 13 3/8"



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IN TUBULAR FINISHING
TECHNOLOGIES



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Instrumented drop weight tear testing

The drop weight tear test (DWTT) has been in use for over 40 years, as a practical laboratory-scale way of ensuring that steel used in the manufacture of linepipe is not subject to brittle failure when in service. It is one of a battery of tests that assess the suitability of steel for a particular application. Another is the Charpy V-notch (CVN) test, from which the upper shelf energy (USE) has commonly been used to measure the ductile fracture resistance.

Since the introduction of DWTT, materials have moved on. In particular, demands for high operating pressures of linepipes and larger diameters have driven the development of higher strength steels. Forty years ago the work that led to the drop weight tear test was carried out on X52 steel (360MPa yield strength).

Improvements in thermo-mechanical processing have yielded improvements of approximately 10,000psi per decade, to the point where the state-of-the-art is now X100 steels, and the use of X120 steels is being considered. This development in material technology has placed substantial demand on conventional test techniques and the relevance of some results has been drawn into question.

Since a DWT tester represents a significant investment both in terms of capital cost and operator training, it is important that any equipment being specified now should have the flexibility and the capacity to cover developments in test methodology and the mechanical properties of materials for the expected service life of the apparatus – ten years or more.

Avoidance of brittle behaviour in pipeline steel is of paramount importance to manufacturers. Originally materials were characterised by the so-called Athens test, a full-scale burst test consisting of a test section about 200m in length pressurised with natural gas. The need for a practical, laboratory-scale test was recognised, and subsequent work (notably by the Batelle

Memorial Institute) resulted in the drop weight tear test, which was adopted by the American Petroleum Institute (API) in 1965 as recommended practice 5L3.

The DWTT involves cutting a full-thickness specimen from the wall of the pipe and putting a notch in it to act as a stress raiser. The test specimen is supported at either end, then hit in the centre, on the edge opposite the notch, by a hammer attached to a falling weight, breaking it into two.

The broken surfaces are then inspected, and the percentage of the surface that shows 'shear' (or ductile) fracture, as opposed to 'cleavage' (or brittle fracture) is assessed. As a quality assurance test, this is usually done at a single specific temperature, and a minimum percentage shear area (commonly 85 per cent) is used as the pass/fail criterion.

The original Batelle work, and investigations done since (at Centro Sviluppo Materiali in Rome amongst other institutions), have shown good correlation between DWTT results and the results of burst test up to at least X100 grades of steel. Further work on even tougher grades remains to be done.

While being a well-founded, widely used test, there are a number of minor problems with the DWTT. The first is that it is rather labour-intensive, and determination of the percentage shear area is a process that is difficult to automate. Another difficulty that has been observed is that some highly ductile steels show abnormal fracture appearance, which leads to difficulty in applying the minimum shear area criterion.

An instrumented DWT tester augments the basic apparatus by measuring the force that the hammer applies to the specimen to break it. From this measure of force (as a function of time), displacement and energy curves can be obtained. Significantly, it is possible to identify the point on the force curve where crack initiation occurs, and from this calculate separate values for initiation energy and propagation energy.

Such an apparatus has the potential to circumvent both the problems described, since it has been shown that a relationship exists between the transition temperature for DWTT crack



Drop weight tear tester with 25,000 joule capacity

propagation energy, and the transition temperature for 85 per cent shear area. It will probably be quite some time before these observations feed into international standards, but there is scope for the in-house use of these test methods.

The Charpy V-notch test USE has been utilised as a measure of ductile fracture resistance and has provided good service. However, with the introduction of high strength steels the applicability of this test has been called into question, and research has shown that Charpy energies above 150J are not representative for ductile fracture resistance. The trouble with using the Charpy test for high strength specimens is that the crack initiation energy is very high compared to the total test energy: sometimes it is greater than the available impact energy, and the specimen simply bends instead of cracking.

To address this problem, researchers have turned to looking at ways of extracting energy measurements from the DWT test, since this uses more representative sample sizes. An associated benefit is being able to use a single test to determine two material properties.

Pendulum DWT testers provide a simple way of measuring the total energy absorbed by a specimen. They are successful up to a point, but when used with very high strength steels suffer from the same failing as the Charpy test: with a single measurement it is impossible to separate the plastic deformation, crack initiation and crack propagation contributions to this value.

Fracture surfaces of tested specimens





Instrumented DTW testers readily provide this type of data, and crack propagation energy can be directly derived from test results. As an aside, work done by Pohang University in South Korea has demonstrated that while Charpy USE has a very weak correlation with DWTT propagation energy, it has a very strong correlation with DWTT initiation energy, supporting the hypothesis that for high strength steels almost all the energy in a Charpy test goes into initiating the crack.

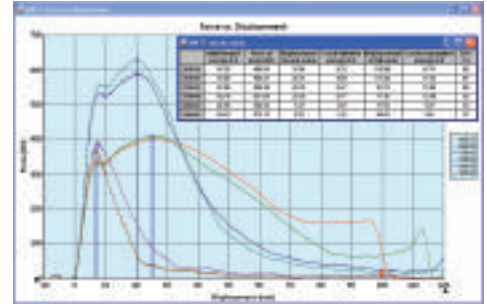
The breakdown in the usefulness of Charpy USE as a predictor of fracture toughness has led investigators, since the 1980s, to look towards more theoretical approaches based on fracture mechanics variables. These variables include crack-tip stress or strain, crack-tip opening displacement or crack-tip opening angle (CTOA), and crack-tip force or energy release rate. Important work at the Centro Sviluppo Materiali in Rome, amongst other institutions, has concluded that the most appropriate variable for modelling stable crack growth is the CTOA at a specified distance from a crack tip, or CTOAsc.

There are a number of ways of measuring CTOA, one of which is direct measurement

using a high-speed video camera. A well known indirect method is the two-specimen CTOA test or TSCT. This uses absorbed energy values for multiple DWTT-like specimens with different notch depths to derive the CTOA value.

Work at Pohang University in South Korea and others has shown a strong correlation between CTOA and DWTT propagation energy (specifically, a linear relationship between the propagation energy and $\sin[2 \text{CTOAsc}]$). Although more work needs to be done to validate this relationship for a range of materials and specimens, this work suggests that it is possible to make a measurement of CTOA, an important material parameter, using a single specimen in an instrumented DWT tester.

Of course, instrumenting a DWT tester is not a trivial matter: the forces that are generated when impacting high strength steel samples with thicknesses up to 50mm can exceed 1 MegaNewton: not only do these forces have to be measured accurately at high bandwidth, but the compliance of the apparatus needs to be low enough to make these measurements meaningful.



DWTT results

The drop weight has to be precisely guided to ensure that the hammer is kept perpendicular to the plane of the impact. Considering that on higher capacity machines the total impact energy is 100,000J or more, and over its lifetime the apparatus must endure tens of thousands of such impacts, the design represents a challenging combination of heavy engineering and precision.

This article was supplied by Nick Osborne, technical director of Imatek Ltd

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Aqueous cleaning machine for large workpieces

Turbex, UK, has introduced an aqueous washing machine for degreasing and cleaning large components. The machine is ideal for use in repair and maintenance shops serving transport depots, railyards and marine workshops.

Branded the AS-150, it can take a load of 800kg and will accommodate components measuring 900mm high by 1.4m across the diagonal or diameter.

According to the company, a 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 is 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 worktable, the machine is constructed almost entirely from stainless steel, even the integral 500-micron filter. The installed weight of this high quality machine is nearly one tonne, giving an idea of its robustness. Acoustic as well as 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.



 The AS-150 aqueous washing machine from Turbex

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

Turbex Limited – UK
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Two new heat treatment furnaces for Tenaris

Tenova LOI Italimpianti, Italy, has successfully started up two new furnaces for pipe treatment, one at TenarisTamsa, Mexico and the other at TenarisSiderca, Argentina.

At Tamsa, Tenova supplied one hardening and one tempering furnace to treat 70t/h of pipes in the diameter range 114.3mm to 406.4mm. At Siderca, the company supplied one hardening and one tempering furnace for 42mm to 180mm diameter pipes at a production of 55t/h.

Both contracts, covering engineering work, supply of the advanced technology plant components, technical assistance to the erection and start-up, were awarded to Tenova LOI Italimpianti (formerly Techint Technologies Furnace Business Unit), which had already revamped other Tenaris Tamsa and Siderca furnaces, increasing their productivity to 70 per cent.

Tenova designs and supplies advanced technologies, products and services for the metal and mining industries. The company operates through a network of 30 companies based in 16 countries.

Tenova LOI Italimpianti – Italy
Fax: +39 02 4693026
Email: tenova@tenovagroup.com
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Automated mill setup system

T & H Lemont, USA, is set to introduce a new mill setup automation system, available for retrofitting of any existing mill. The system will use patented absolute encoder technology to achieve repeatable, highly accurate setups.

A colour touch screen interface is used to select the mill setup from a menu of product specifications, based on previously stored setups. The operator enters an ID specific to the pipe or tube size. The screen shows nominal rim gaps in addition to actual rim gaps as entered from previous production data for that tubing size. The stands will automatically adjust to those locations at the touch of the screen, with each stand being represented on the touch-screen.

The operator can make minor adjustments, if required, from the touch-screen in 0.001" increments. Once the best setup is achieved, the data can be stored as the new product specification. The system is capable of storing 100+ unique mill setups.

The absolute encoders retain position information with 'power off', and never require a 'zero-out' procedure. For example, if an adjustment is made manually while the system is shut down, at power on, the system will recognise the new position. In place of expensive servo motor drives, the system features standard AC vector drives to replace manual adjustment of the driven stands.

The system includes as standard an ethernet interface and web server for optional data acquisition. Benefits of the system include faster set-up, and reduced material waste due to setup errors during start-up. A complete mill adjustment can be accomplished automatically without the use of hand tools. Once one section of the mill has been retrofitted, the scalable system can be expanded at low incremental costs.

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Inductive heating plant for 56" Ø pipe bends

SMS Elotherm, Germany, has received an order from Tectubi Raccordi SpA (Allied Group), an Italian producer of pipe bends, for a 'Hamburg method' inductive heating plant for the production of pipe bends. With inductor power inputs of 2,400kW and 1,600kW, the plant is claimed to be the world's most powerful of its type. Commissioning is scheduled to start at the start of 2009.

The scope of the order includes the equipment for preheating the still straight pipe section, plus two medium-frequency infeed units for heating the bent pipe section. In addition, the order covers three sets of inductors for the production of pipe bends with diameters from 36" to 56".

The heating plant will be designed for bends of standard steel and austenitic grades, and will be able to process pipes with wall thicknesses of up to 60mm. The power input of the first inductor amounts to 2,400kW, while the bent inductor will be rated for a maximum power input of 1,600kW.

The transistorised converters will be equipped with SMS Elotherm digital control,

and be connected to the PLC via Profibus facilities. Two temperature cameras installed at the inductor outlets provide the data for power setting as a function of the pipe feed motion.

The Hamburg method for the production of pipe bends involves pushing pipe sections over a mandrel which has the curvature required for the finished pipe bend. The feed-forward movement is accomplished by means of a hydraulic press. The pipe is heated in two zones. Preheating is accomplished in the straight part of the inductor without any material deformation or forming, while the bent inductor serves to heat the pipe to the desired final temperature. It is here that forming takes place.

Heated to final temperature, the pipe is pushed over the mandrel by the press, and thus takes the shape of the mandrel. This method requires the mandrel to be heated before production starts, which is



Fabrication of a 24" pipe bend with inductive heating

undertaken by means of the bent inductor and the associated medium-frequency infeed unit. This method is suitable for an array of materials.

After forming, the wall thicknesses are nearly identical over the complete pipe. In addition, the cross-section of the pipe bend maintains the circular contour of the starting pipe.

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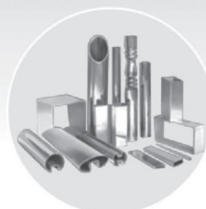
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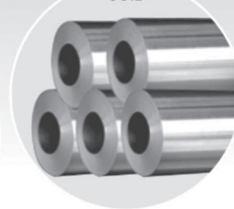


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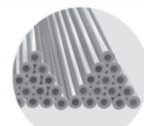
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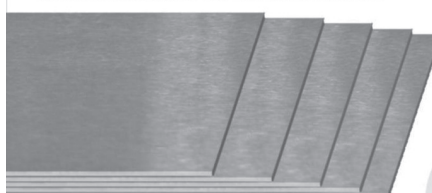
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New phased array scarf monitoring system

GE Sensing & Inspection Technologies, USA, has introduced a weld profile visualization system using phased array technology. The new scarf monitoring system provides a real time, online, accurate picture of both the inside diameter (ID) and the outside diameter (OD) profiles of scarfed ERW pipes during the manufacturing process.

Due to the capability of monitoring ID and OD, it is possible to affect real time control of the scarfing process by identifying events such as tool drift and edging as they occur. This can achieve significant reductions in scrap.

Scarfing is a process used in pipeline manufacture that moves a smoothing tool along the weld as it is made. This tool follows the electric arc welding machine and smoothes the surface of the weld on both the ID and OD. The tool may get worn

or slip, resulting in roughness of the weld surface.

These surface defects could affect the subsequent flow of any fluid in the pipe or could provide a point of weakness. The scarf monitoring system follows this tool and identifies any surface faults virtually immediately so that corrective action can be taken and minimal pipe length lost.

The heart of the new system is the ultrasonic phased array transducer, which electronically simulates the scanning action required to provide the weld profile information. The resulting information is then fed into GE's field-proven UTxx digital flaw detection platform. This incorporates standard or phased array flaw detection channels and all the associated processing electronics to give a complete scarf monitoring and flaw inspection package.



Based on phased array technology, the weld profile visualization system is used for scarf monitoring

In operation, the transducer test head assembly is mounted so that it is directly above the weld line. The mill coolant acts as the ultrasonic coupling medium. The transducer test head then uses its phased array elements to monitor the inside and outside diameter of the weld as it is being cut, at a scanning rate of up to 300 profiles/sec. Transducers and shoes are available to monitor tubes from 50mm up to 500mm in diameter and typical coverage is ± 25 mm from the nominal weld centre line.

Inspection data is displayed in a true-to-scale cross-sectional profile at one or multiple monitor screens. High and low limit alarms provide warning of weld profile deviation. Intelligent dynamic software averaging techniques minimize the possibility of false readings.

The weld profile visualization system features all-electronic setup for ease of use and repeatability. It can be installed within feet of the weld station, depending on local temperature conditions. As a result, it operates both as a process control system as well as a quality control system. It can be combined with a flaw detection system and it allows inspection traceability through a built-in data logger, which records minimum and maximum thickness readings across the weld area and strip thickness.

GE Sensing & Inspection Technologies
– USA

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Email: amanda.fontaine4@ge.com

Website:

www.geinspectiontechnologies.com

Tube measuring interface processor gets smaller

Sikora, Germany, has launched the Ecocontrol 600 – its smallest available processor system that can be especially adapted to individual line conditions for highest productivity within hose and tube production. This processor follows on from the successful premium display and control systems Ecocontrol 1000 and 2000.

Ecocontrol 600 offers one serial interface for the connection of a Sikora measuring devices such as Laser 2000 or LED 8025 XY. In addition, two digital contact measuring values are used to work with the Lump 2000 detector, reading neckdown and lump.

The measuring values are displayed numerically and graphically on a clear 8.4"-TFT-monitor. In addition, there are graphical length-related trend diagrams for all values combined with a graph of the distribution of the single values (statistical distribution curve). There is also a statistic with the minimum, maximum value, the mean, standard deviation, Cp and Cpk values. The operation is menu-driven via touch-screen.



Ecocontrol 600: economic processor system with strong performance

Hose and tube production requires perfection of all line components and does not permit any compromises of the measuring technology. Consequently, Sikora combines the Ecocontrol 600 with a Laser 2000 for the diameter measurement in two or three measuring planes, or the LED 8025 XY for the measurement of the diameter and eccentricity of transparent products.

Ecocontrol 600 is used in combination with Lump 2000 for the detection of neckdowns and lumps, and fulfils the highest requirements for quality control and helps to significantly reduce costs. Drive data is easily transferred to a line PC via an ethernet-interface or a USB flash. A printer provides a hard copy of the production quality.

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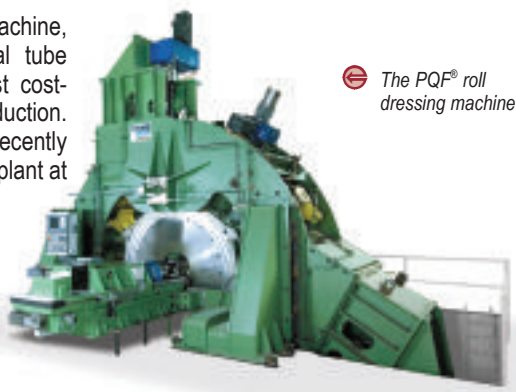
PQF® roll dressing machine

With its new PQF® roll dressing machine, SMS Meer is offering international tube producers a further tool for highest cost-efficiency in seamless tube production. A PQF® roll dressing machine has recently been built for the 18" seamless tube plant at TPCO (Tianjin Pipe Corp), China.

The machine is designed for dressing the roll grooves of the three rolls in the PQF® mill cartridges with the rolls assembled in the cartridge.

The aim of this development is to eliminate the time-consuming work of removing the rolls from the cartridge for single roll dressing on a standard lathe. It is also designed for reinstalling the rolls in the cartridge and roll position checking in a dedicated calibrating stand.

The benefits of this roll dressing machine are time reduction, cost reduction (as there is less manpower required), overall space reduction in the roll workshop, and absolute precision of the roll grooves for optimum tube tolerances.



The PQF® roll dressing machine

The roll dressing machine mainly comprises a horizontally displaceable tool head (carriage) with 3 CNC axes. It also has a rigid housing arranged in a vertical plane into which the cartridge with the three assembled rolls is inserted and aligned for machining by means of hydraulic cylinders.

The housing contains the three roll drives to provide the necessary roll machining speed (with automatic control of power and torque), and the electro-mechanical device for adjusting the position of the three rolls.

A linear transducer detects the roll position and transmits the data to the PQF® hydraulic capsule control system.

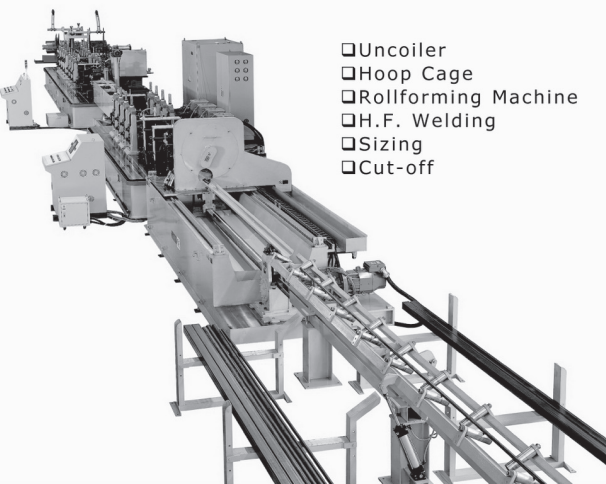
Machining is performed individually for each roll using different tools and in several passes, for roughing and finishing of the roll groove and shoulder profiles.

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Controle Mesure Systemes (CMS), a manufacturer of eddy current inspection systems, provides a full range of equipment for the inspection of wire and bar, tube and pipe, plate, sheet and automotive parts. The company's products can be used online and offline, and meet quality standards such as API, ASTM and DIN.

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Bullet cleaning system for condenser tubes

Tube Tech International Ltd, UK, has employed technically-advanced methods to achieve high standards of condenser cleanliness at the Fiddler's Ferry Power Station, near Warrington, UK.

The company's contract for the operation at the power station gave it a dual role – the cleaning of two condensers and inspection of one.

Two of the main condensers at the power station were operating at reduced efficiency as a result of deposits on the inside of the tubes. Cleaning is a huge task in itself as there are a total of 81,480 tubes (40,740 in each condenser).

An additional function for Tube Tech technicians was to check the tube-wall thickness of one condenser and to establish if any required replacement or plugging. It was vital that downtime be kept to a minimum, as the turbines were undergoing overhaul and the condenser cleaning operation was being carried out at the same time as other work.


Tube Tech employed a combination of a new Conco condenser bullet cleaning system and Tube Tech's own Rotaflex. In this operation, metal scraper bullets are propelled down the tubes using high volume water, removing the offending deposits on

their way. This was followed by eddy current inspection, in which an electromagnetic probe measured tube-wall thicknesses and highlighted any excessive wear.


The benefits of the Conco bullet system include uniform cleaning of each tube and a high level of safety, as no high-pressure water is used. The system cleans effectively, resulting in extended tube life through improved surface conditions. Tubes cleaned with this method are claimed to have a better vacuum and an improved heat transfer rate.


The power station reported increased output accompanied by cost savings through lower fuel consumption. American Electric Power (AEP) was able to report lower CO₂ emissions through less fuel being burnt. Checks on the tube walls revealed that none needed replacement, and the cleaning and inspection operation was successfully completed within agreed time scales.


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Completion of technical reconstruction at Ukrainian tube works

Khartsyzsk Tube Works (KhTW), Ukraine, is carrying out a major technical reconstruction of its manufacturing facilities, with the building of a new line in its no 2 welding workshop.

Preparatory construction work began in March/April 2006, and all equipment has now been installed in the welding workshop.

The new line contains a milling machine for plate edge trimming from Linsinger, Austria, and a three-roller mill, post-forming machine and tack-welding machine from Haeusler, Switzerland.

Using this equipment, the company can manufacture pipes which correspond to all modern requirements, in particular gas pipes of 1,220mm and 1,420mm in diameter (48" to 56") from steel grade up to X80 with one longitudinal seam. The total cost of the investment project is close to UAH 130 million.


The tube works includes two new mills for welding inner weld seams on large diameter pipes. The supplier of this equipment was Uhrhan & Schwill, Germany, an expert in electroarc automatic welding.

The new mills provide welding of the inner seam by three arches on pipes of Ø406-508mm and by four arches on pipes of Ø508-1,422mm, with wall thickness from 6mm to 40mm.

A new non-destructive ultrasonic control unit (SNUL-Echograph 1155-3L-1Lm-1T) from Karl Deutsch, Germany, has also been put into operation. The system allows the achievement of welded seams on pipes 406mm to 1,422mm in diameter, with wall thickness from 6.3-40.7mm.

Khartsyzsk Tube Works – Ukraine
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Email: marketing@ukrpipe.com.ua
Website: www.ukrpipe.com.ua



 Khartsyzsk Tube Works has recently undertaken a major reconstruction project

A complete range of lubricants for tube applications

Condat specialises in the development of chemical products, including a wide range of industrial lubricants. The company's range dedicated to tube covers the applications of hot and cold forming for tube and bar in rolled, drawn, formed or extruded processes.

The extensive product range is designed for all metals, carbon and stainless steel, aluminium or copper as well as alloys. It includes graphite coatings, non-reactive pre-coatings, soap reactive coatings, dry soap powders, soluble lubricants, neat oils, greases and pastes, surface protection products and degreasing products.

 Lubricants from Condat



Condat was among the first companies to develop a complete range of non-reactive coatings and to offer its customers an environmentally friendly alternative to conversion coatings (zinc phosphate, oxalate) for carbon and stainless steels.

For tube drawing of stainless and carbon steel, Condat offers Supralub 35. This coating is applied directly onto the bare metal surface, without any previous surface preparation such as zinc phosphate. The eco-friendly, soap-based product does not contain any solvents or heavy metals, and does not produce any waste, such as zinc phosphate sludge.

The company has also developed a specific lubricant for carbon welded tube. Vicafil TF 498 A is a soluble lubricant with very low dilution ratio, high filtering ability and good stability. It provides improved protection against corrosion, reduction of gumming deposits, clean working environment and strong detergent properties. Vicafil TF 498 A combines an extended 'in service' life with the ability to be used as a unique lubricant for the whole process.

In order to replace mineral base technology for aluminium tube drawing, Condat has developed a fully synthetic lubricant: Vicafil TFH 1644.

The first goal of such a product is to enable degreasing during heat treatment, reducing the cost of the process. Its low viscosity avoids excessive drag out of the lubricant, and so reduces consumption. It also eliminates the need to use trichloroethylene or other degreasing chemicals, thereby completely removing the degreasing stage, saving time and increasing productivity.

Residual left upon the tube after heat treatment is close to zero and no stains remain on external or internal surfaces. For aeronautic grades, TFH 1644 provides temporary protection. The formulation of the product has been engineered to be chemically stable and user friendly, to avoid irritation risks.

The technologies used in Condat lubricants are also found in tube drawing and forming processes, including specific applications such as pilgering, or final products such as seamless tubes.

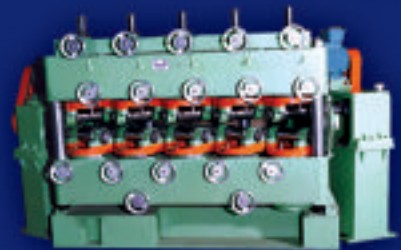
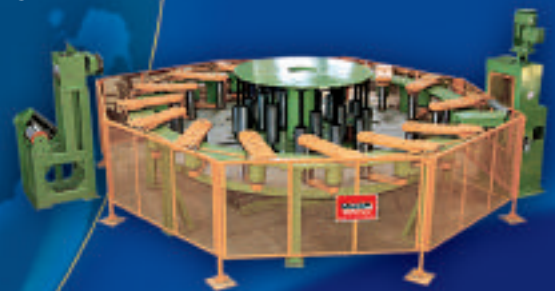
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 - Tube Threading Machines
 - Tube Push Pointing Machines
 - Single/Triple Tube Draw Benches
 - Single/Triple Tube Hydro Testing Machines
 - Tube Bundling Machines
- ▶ Rolls for Tube Mills and Roll Forming Lines



GALLIUM INDUSTRIES LTD.

Plot No. 117, Sector-59, Faridabad-121004, INDIA

Ph.: +91-129-2309933, 2309934, 4150117 Fax: +91-129-2309619

Email: mktg@galliumindia.com, galium@sify.com, gallium@del2.vsnl.net.in



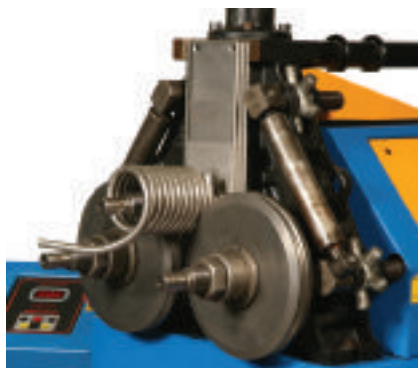
Bending at 20 per cent faster speeds

Ercolina's CE40MR3 angle roll is capable of bending a wide range of tube, pipe and profiles to a centre line radius (CLR) as small as four times diameter of the workpiece. The model is designed to operate in a vertical or horizontal position and includes foot pedal for hands-free operation.

The CE40MR3 has a capacity of 2" schedule 40 pipe or 2" angle iron, with bending speeds claimed to be 20 per cent faster than competitive machines. A universal tooling set, included with each machine, adjusts easily to most material profiles.

The machine features programmable touchpad controls with digital centre roll positioning, to increase repeatability. Threaded drive shafts allow fine adjustment of tooling without spacers, and the side roller system adjusts as necessary to create a helix effect in the workpiece.

Standard CE40MR3 machine features include patented two-speed centre roll for rapid centre roll positioning, in-line gear reduction in oil bath to provide high power



Ercolina's CE40MR3 angle roll

transmission efficiency and forged roll shafts which are precision ground and fitted for maximum performance and minimal deflection. The machines have a heavy-duty structure and rigid components with high section modulus ratings. An optional anti-twist correction system is available for angle iron 'leg in' applications.

CML USA Ercolina – USA
Fax: +1 563 391 7710
Email: info@ercolina-usa.com
Website: www.ercolina-usa.com

Wide range of centreless finishing machines

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 process.

The company manufactures a range of centreless machines, including low cost 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





BHANDARI FOILS AND TUBES LTD
 An ISO 9001:2000 Company Certified by LRQA

MANUFACTURERS OF STAINLESS STEEL COILS / FOILS, TUBES / PIPES, PIPE FITTINGS

| | |
|--------------------|---|
| Pipes / Tubes | <ul style="list-style-type: none"> ➤ Outside Diameter: 3/8 to 40" ➤ Wall Thickness: 0.5 to 16 mm |
| Coils / Foils | <ul style="list-style-type: none"> ➤ Thickness: 0.08 to 4.00 mm ➤ Width: 5 to 525 mm ➤ Finish: CR, 2D, 2B, BA |
| Grades / Standards | <ul style="list-style-type: none"> ➤ Grades: 201, 202, 301, 304, 304L, 310, 316, 316L, 316Ti, 317L, 321, 409L, 410S, 430, 904L ➤ Standards: ASTM, AISI, DIN and Any other International Standards |
| Pipe Fittings | <ul style="list-style-type: none"> ➤ Size: 1/2" to 8" ➤ Material: Carbon Steel & Stainless Steel |

WORKS & HEAD OFFICE
 Plot No. D1-D4, Phase - I, Industrial Area, A. B. Road, Dewas - 455 001 (M.P.), INDIA.
 Phone : +91 7272 258202, 258203, 259160, 259161
 Fax : +91 7272 258663 E-Mail : sales@bhandarigroup.in
 Website : www.bhandarigroup.in

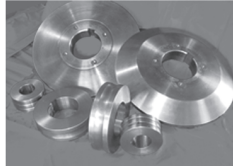
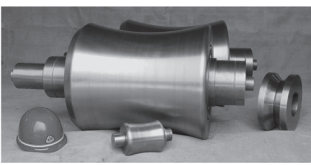
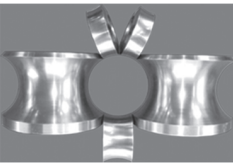


SiFang China

Shandong Province SiFang Technical Development Co., Ltd

The Popularization Center of High Chromium Alloy Roll of Productive Force Promotion Center of National Metallurgical Industry

High chromium alloy straightening rolls are widely used in cold and hot straightening towards seamless pipes, welded pipes, H-steel and other section steels. Applications in large-scale metallurgical enterprises in China, as Tianjin Pipe (Group) Corporation, Shanghai Baosteel Group, Laigang Group and Shougang Group, have proved that the technical level and service life of high chromium alloy roll has reached advanced world level. Being used in cold roll forming steel and welded pipe machines like 24" ERW butt welded pipes and 500mm rectangular pipes, high chromium alloy roll have been proved with its technical level and service life reaches that of products such as D2 and H13 of America, X155CrVMo121 of Germany, SKD11 and SKD61 of Japan. High chromium rolls have been supplied to many of our overseas customers and got good feedback.

Address: University Science & Technology Park of Jinan High-Technology Industrial Development Zone No. 750 of XinYu Road, Jinan, Shandong Province, P. R. China.
 Postal Code: 250101
 Tel:+86-531-88876609 / 88876629 / 89701611 Fax:+86-531-88876693
 Website: www.cnsdsf.com Email: sdsf@vip.163.com

tube size setting and auto wheel wear compensation, make the machines user-friendly and process-controlled, to give consistency in finishing results.

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 from one job to another. The floating belt grinding heads are specially designed to accommodate bends 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 is available with an auto tube size setting, which requires only 2-5 minutes of setup time.

Grind Master Machines Pvt Ltd – India

Fax: +91 240 2376205

Email: sales@grindmaster.co.in

Website: www.grindmaster.co.in

New anti-corrosive line for oil and gas pipes

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

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

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

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

Interpipe – Ukraine

Fax: +380 562 389482

Email: press-office@interpipe.biz

Website: www.interpipe.biz

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 www.t-drill.fi

New grinding machine for seamless pipe manufacturer

Corus Northern Engineering Services (CNES) has built and installed a large grinding machine for Wyman-Gordon Ltd, a manufacturer of seamless pipes for the offshore oil, gas and power generation industry, based in Livingston, Scotland.

The new grinding machine, which measures 19m in length by 2.5m wide and 4.5m high, weighs approximately 70 tonnes and has a 16m travel for the grinding heads. The machine will supplement the company's original grinding machine, which is more than 40 years old and will help to reduce lead times for process pipe.

The new grinding machine will be used to grind the outside diameter of seamless pipes, which vary in length from 5m up to 12m, with diameters from 200m up to 1,200m (as long as the weight does not exceed 15 tonnes). The grinding machine grinds the outside casing to give a smooth, flat finish to the pipe.

Wyman-Gordon manufactures a range of class 1 rotating parts for military, civil and industrial gas turbine applications.

These products include gas turbine engine shafts, structural and landing gear forgings for military and civil aircraft, as well as manifolds, sphere tees, valve bodies and seamless pipes for the offshore oil and gas industries. The new machine is part of a significant capital investment expansion project at the company's Livingston site. The plant boasts one of the world's largest 'clam shell' furnaces, which is used to heat treat the seamless pipes.

The CNES machining workshops in Scunthorpe are equipped with heavy duty cranes, lifting gear and machining facilities required to carry out the new grinding machine build. The majority of the new machine (in terms of weight) is in the rails and travelling beam, which had to be lifted in one piece, and so heavy duty lifting gear was required.

John Backhouse, business development manager, offshore and energy at CNES said, "Our engineers had to manufacture the new grinding machine from the original drawings. The existing grinding machine includes both metric and imperial



ⓘ CNES has installed a new grinding machine for Wyman-Gordon

components and so CNES also had to cope with a mixture of original imperial drawings and new metric ones to build the machine."

Corus Northern Engineering Services – UK

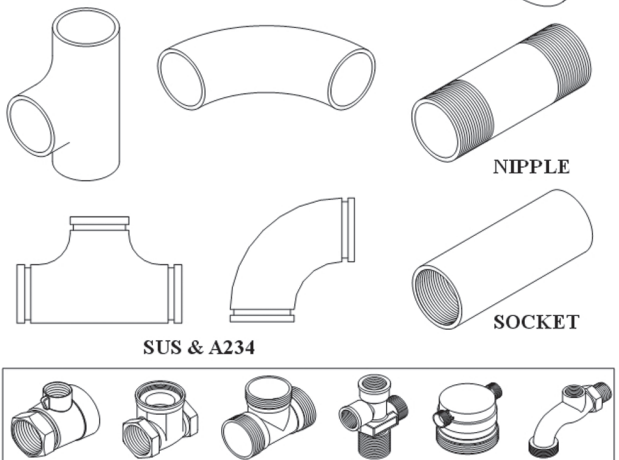
Fax: +44 1642 404726

Email: cnes@corusgroup.com

Website: www.corusnes.com

Our product lines:

- ⊗ Forming machines of butt-weld pipe fitting.
- ⊗ Beveling machines for pipe fittings.
- ⊗ Pipe end bevelling machine for prefabricated pipe plant.
- ⊗ Pipe fittings for fire protection , petro-chemical & pulp industry , etc.
- ⊗ Auto threading m/c for socket & nipple.
- ⊗ Transfer machine & special purpose m/c.



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 Website: <http://www.taiwantrade.com.tw/hansum>
 E-mail: bevform@ms23.hinet.net

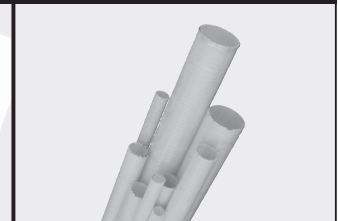
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Fiberglass pipes for impeder core



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Advanced range of tube laser vision systems

Meta Vision, UK, is a leading supplier of laser vision systems to the tube and pipe sector. In recent years, Meta has had particular success in helping to improve the quality of output from both longitudinal and spiral pipe mills worldwide.

There are three main variants of Meta's VistaWeld system for pipe mills. Firstly, the VistaWeld provides mill control functions for spiral pipe mills. Secondly, the dual head VistaWeld system is designed for offline welding stations on spiral mills. Finally, the multi head VistaWeld MDK is used for UT guidance.

VistaWeld is an advanced system for spiral pipe mill control. The well-proven system has been installed all over the world on both one-step and two-step mills in the last ten years. Continuous advances have brought the system to the point where advanced mill control functions can also be offered.

With the rise in popularity of two-step mills, a special variant of VistaWeld specifically for the offline welding stations of two-step spiral mills has been developed and proven. Meta's unique three-stripe laser sensor provides unrivalled performance and reliability, in combination with special software and functions for the ID welding head.

Meta has also perfected the application of multi head laser vision systems for tracking

weld beads. One to four laser sensors can be connected to a single PC control and used to keep each UT head positioned correctly on the weld bead.

This reduces the number of false indications and frees the machine operator to concentrate on the UT signal – not on keeping the probes centred on the weld bead.

Meta already has many successful tube and pipe mill installations in China, including some with the most prestigious companies in the business. It looks forward to developing its presence in the important Chinese market. Meta is currently strengthening its support organisation within China to further improve its service to its customers.

Meta Vision Systems Ltd – UK
Fax: +44 1865 887901
Website: meta-mvs.co.uk



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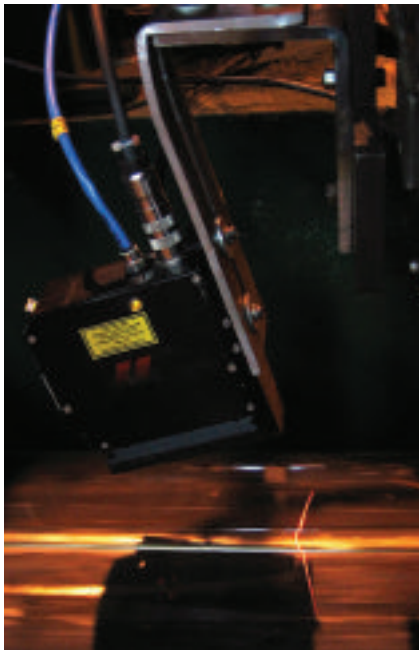
Slit Widths:
15mm upto 710mm

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Welded Stainless Steel Tubes:
10mm OD upto 102mm OD

Welded Stainless Steel Pipes:
½ inch NB upto 6 inch NB in SCH 5, SCH 10, SCH 40

 Meta's LaserStripe system



Quality Stainless Pvt. Ltd.
 Near 7, Industrial Development Colony,
 Hissar - 125005 (Haryana), INDIA
 Phone : +91-1662-220249, 220250
 Fax : +91-1662-220330
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Grand Designs: Tube Arabia 2009



Dubai is fast becoming known as the centre of innovation and engineering,

with projects including the breathtaking Palm Deira island and recently announced plans for the 1km high Nakheel tower. Already regarded as a haven for business and industry, the United Arab Emirates has clearly affirmed its aim to become the high-tech destination of the future.

With such lofty ambitions to partner the already excellent facilities and hospitality, Dubai was always going to be an ideal location for a major tube and pipe exhibition. The first Tube Arabia held two years ago was a notable success, with over 110 exhibitors and a large number of visitors from the Middle East, Europe and China.

Tube Arabia will take place for the second time from 10-13 January 2009 in halls 3 and 4 of the Dubai international exhibition centre. It will again be joined by the established 9th Tekno event, which is geared towards the region's machinery, metalworking and machine tools industry.

The event will occupy a total exhibit space of over 9,000m² with expectations of more than 350 exhibitors from 28 countries. It is clear that against such a backdrop of lucrative business and ingenuity, Tekno/Tube Arabia will serve as a powerful platform for the demonstration of an impressive range of tube and pipe products and machinery.

○ SHOW FACTS ○

DATES

10-13 January 2009

VENUE

Dubai International Exhibition Centre
(halls 3 & 4), Dubai, United Arab Emirates

ORGANISER CONTACTS

Messe Düsseldorf GmbH
Phone: +49 211 4560 900
Email: infoservice@messe-duesseldorf.de
Website: www.messe-duesseldorf.de

Al Fajer Information & Services
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Email: alfajer@emirates.net.ae
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| | | | |
|--|-------------|---|----------------|
| Abbey International Ltd | USA | MRB Schumag Ltd..... | UK |
| Aleman Machines OHG | Germany | MultiMasz Sp z oo..... | Poland |
| Angel Pipes & Tubes | China | Multimetals Ltd | India |
| Artyomovsk | Ukraine | Nexans Deutschland | Germany |
| Arvind Anticor Ltd | India | Ningbo Intelligent | China |
| Asian Tubes Limited..... | India | Ningbo United Steel Products..... | China |
| Asmag UK | UK | Nortec Maschinentechnik GmbH | Germany |
| AWS Schäfer Technologie GmbH | Germany | Officine MTM | Italy |
| Baofeng Steel Industry Co Ltd | China | Olimpia 80 srl | Italy |
| Beijing Hillhead International | China | Oto Mills SpA | Italy |
| Borsen Boru Sanayi | Turkey | Plastico Trading GmbH & Co KG | Germany |
| Bronx/Taylor-Wilson Ltd | USA | Powermaster Engineers PVT Ltd | India |
| Camu srl | Italy | Powermaster Middle East (FZE)..... | UAE |
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| CIMCO/UPC | China | Prestar Precision Tubes Sdn Bhd | Malaysia |
| Conros Steels Pvt Ltd | India | Qiqihaer Haoying | China |
| Cortinovis Machinery SpA..... | Italy | Reza Zadeh GmbH..... | Germany |
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| EMAG Gruppen..... | Germany | Schierle Stahlrohre KG | Germany |
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| ETCO (China) | China | Schuler AG | Germany |
| Euroolls SpA | Italy | Shanghai Jingxiang Science and | China |
| <i>Eurowire Magazine</i> | UK | Shanghai Tianyang Steel Tube Co Ltd | China |
| FDM Fachverband des Maschinen und Werkzeug Großhandels | Germany | Shenyang Debang Stainless | China |
| Felss GmbH..... | Germany | Sictra Srl..... | Italy |
| Froch Europe BV | Netherlands | SKET Verseilmaschinenbau GmbH | Germany |
| Guangzhou Hongda | China | SLS Scorodite Pvt Ltd | India |
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| Hebei Guangde Stainless Steel Valve Industry Co..... | China | Smaco (M) Sdn Bhd..... | Malaysia |
| Heinisch Werkzeugmaschinen GmbH | Germany | SMS Meer GmbH..... | Germany |
| Henan Hong Feng..... | China | Sociedad Anonima de Ingenieria y | Spain |
| Huludao Steel Pipe | China | Stark India Toolings Pvt Ltd | India |
| Huzhou Xinyaohua Stainless | China | Steel Tech..... | China |
| Iljin Light Metal Co Ltd | South Korea | Superinox International Sdn Bhd..... | Malaysia |
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| Intras Ltd | UK | Tianjin Baolai International..... | China |
| Ito-Sin (Deyang) | China | TPS-Technitube | Germany |
| International Wire & Machinery Association (IWMA) | UK | Tsingshan Holding Group..... | China |
| Jiangsu Chengde Steel | China | <i>Tube Products International Magazine</i> | UK |
| Jiangsu Guoqiang Zinc-Plating..... | China | <i>Tube & Pipe Technology Magazine</i> | UK |
| Jiangsu Wujin Stainless Steel..... | China | Upcast Oy | Finland |
| Jiangyin Jieda | China | Vollmer Italia srl | Italy |
| Jiaxing Zhongda | China | Wenzhou Huicheng Stainless Steel Co Ltd | China |
| Jinxi Steel Pipe Co Ltd..... | China | <i>Wire & Cable Asia Magazine</i> | UK |
| Julia Utensili | Italy | WST Stein Werkzeugmaschinen GmbH | Germany |
| Maschinenfabrik Liezen and Gießerei GmbH | Austria | Wuxi Fastube Industry Co Ltd..... | China |
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| Lixue Steel Pipe Co Ltd..... | China | Zelezárny Veseli as..... | Czech Republic |
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| Messe Düsseldorf GmbH | Germany | Zhejiang Jianli Enterprise Co Ltd | China |
| Metallurgical Council of CCPIT | China | Zhejiang Pengye Stainless Steel..... | China |

Please note: exhibitor list correct at time of going to press – for updates contact Messe Düsseldorf via infoservice@messe-duesseldorf.de



Abbey International Ltd USA

With over 100 years of experience, Abbey International Ltd is a source for equipment used in the welded tube and pipe industry. The company designs and builds new pipe mills, tube mills, slitting lines, draw benches, entry coil handling, exit tube handling, cutoff equipment, and other related systems.

Abbey International, the leader in pipe mill technology, is also within the Bronx International group. Combined, Abbey and Bronx have one of the largest ranges of ERW mills and pipe finishing equipment available.

Abbey International's patented Quick-Change System® is one of the industry's best innovations. This patented system delivers changeovers in as little as 15 minutes and features continuous, automatic and roll rack systems depending on roll size.

Through partnership with Bronx/Taylor-Wilson, the premier builder of finishing equipment, Abbey offers first-class equipment for tube and pipe manufacture, including turnkey processes and individual machines.

Website: www.abbeyintl.com

Arvind Anticor Ltd India


Arvind Anticor Limited, India, is a manufacturer and exporter of acid pickling tanks made from extremely corrosion resistant polypropylene thermoplastic. The company's acid pickling tanks are custom designed according to size and weight of load such as tube, pipe, wire coils, bars, rods and structural steel.

Anticor PP tanks are used for pickling, degreasing, electro-plating, rinsing, fluxing, anodising, passivation, pre- and post-treatment and metal surface treatment. The tank is constructed from polypropylene thermoplastic, a material that is highly corrosion resistant. In addition, the tank is housed in a steel structure frame for mechanical reinforcement, covered with fibreglass.

The tanks are designed and engineered on the 'Rita' tank building software module. All areas of design, calculation, costing and calculating PP tanks are geared towards maximising the benefits of advanced material over conventional alternatives such as brick lining and fibreglass lining.

Benefits include cost saving, impact resistance, corrosion resistance, mobility, minimal weight, leak proofing, environment-friendly, fume free, increased longevity and zero maintenance.



 A PP tank with steel support, fume exhaust slot and integral ducting

Anticor tanks are designed, manufactured and tested according to German Welding Association DVS 2205 for safety and longevity. The tanks are manufactured with certified life of chemical resistance.

Anticor's facilities are equipped with butt fusion welding, hot gas extrusion welding technology and hydro-thermo radius forming technology.

In addition to butt fusion technology, Anticor has developed radius instead of a right angle corner at the bottom of tank. This effectively reduces the weld joint at the welded corner radius, thus providing sound mechanical strength. Anticor weld joints are tested as per German Welding Association DVS 2203.

The company's tank fabrication technology offers better performance, higher efficiency, higher productivity, lower rejection, zero failure and an environmentally friendly atmosphere.

Welding quality is confirmed by a 3-point bend test, and a specimen seam is subjected to a test of tensile and impact resistance properties. Leakage testing is carried out prior to dispatch by hydro, vacuum and spark test.

Anticor pickling tanks are supplied with accessories such as nozzles, heating/cooling coils, integral suction ducting for

fume exhaust, integral slope for drain, lifting mechanism, and top lid cover.

Website: www.picklingplant.com

Baofeng Enterprise China

Baofeng Enterprise is a large stainless steel manufacturing group with four interrelated branches. Established in 2002, the company has an annual production capability of 30,000t of austenitic steel and 10,000t of stainless steel pipe.

The four branches of the company are Wenzhou Baofeng Special Steel Co Ltd, Baofeng Steel Industrial Co Ltd, Lishui Baofeng Welded Pipe Co Ltd and Wenzhou Baofeng Perforation Co Ltd.

In 2006, the company's total output was valued at over 1,000 million Yuan. The company's products can found in a host of applications including oil and gas, chemical factory, power plant, food factory, nuclear power station, smelting, aerospace, papermaking, shipbuilding, environmental protection, heat exchanger, water resources, and electricity.



 Baofeng is a manufacturer of stainless steel tube from Ø 6-630mm

The product range includes bars, quadrate tubes, rectangular tubes, seamless stainless steel tubes (Ø 6-630mm) and welded tubes with a diameter of over 114mm.

These products are manufactured in accordance with standards including GB, ASTM, JIS, DIN and EU.

Baofeng products are exported to south Asia, Middle East, USA and EU.

Website: www.wzbftg.com

Borsen Boru Turkey

Borsen Boru, Turkey, is a distributor of stainless steel pipes, valves and fittings, and a manufacturer of TIG welded stainless steel pipes. The company is the Turkish representative and single distributor of Ham-Let for valves and fittings, as well as Alfa-Laval for sanitary flow equipment.

Since January 2006, the company has manufactured TIG welded stainless steel pipes in its own facilities, and uses manufacturing processes such as trichathode TIG welding, outside and inside bead removal, in-line bright annealing, straightening, surface finishing and tube-end deburring.



Borsen Boru manufactures TIG welded stainless steel pipes

Borsen Boru's test laboratory is an important part of its quality assurance process. The company's production line uses two eddy current systems. The first test system is used to detect defects of incomplete welding; the second is used to test whole pipe sections after the annealing process.

The company is focused on continuous quality control and improvement. Some of the standard tests in its new non-destructive and destructive quality control test laboratory include chemical analysis



Borsen is also a distributor of stainless steel pipes, valves and fittings

by spectrometer, surface roughness test, hardness test, tensile test, shear strength test, flattening test, flaring test, reverse bending test and hydrostatic test.

Stainless steel tubes produced by Borsen have a producer test and analysis report according to EN 10204/3.1. Steel grades used include 304, 304L, 316L and SAF2205 (1.4462). The outside diameter range for pipes is 19-76.1mm, with wall thickness from 0.5-4mm, tolerance of D4/T4, and length tolerance of 3-12m.

Website: www.borsenboru.com

Bronx/Taylor-Wilson USA

Bronx/Taylor-Wilson, founded in 1896, is a global leader in the manufacture of metal finishing equipment solutions.

The company's product portfolio includes bar, section, rail and profile straightening machinery. In addition to this, the name Bronx is synonymous with its tube straightening machines, both in 6 and 10

roll versions, plus hydrostatic pipe testing machines, rotary pipe cut-off and end facing equipment material handling and other ancillary finishing equipment.

With more than 3,500 global installations since 1911, Bronx/Taylor-Wilson has a worldwide team of design engineers, sales executives and support staff with offices in Asia, Europe and the US. From new or retrofit milling to finishing and complete line-integrated solutions, the company is committed to continuously improving efficiency, productivity and quality.

The company created the first fully automatic, in-line pipe tester and the first straightener integrated inline with a cooling bed. Innovations include software that improves equipment performance and its patented Compass automation system (computer-aided setting system). Compass provides precise and simple machine control via a menu-driven software interface.



Bronx/Taylor-Wilson is a manufacturer of metal finishing equipment, including straightening machinery

This range includes speciality machinery designed for the finishing of long products, including heavy beams, channels, rails and angles plus equipment designed in particular for the OCTG finishing industry. Heavy duty straightening machines are available that can automatically process hot pipes and pipes with upset ends.

A highly advanced partner to Bronx, Abbey International is a manufacturer of a wide range of tube mills. The mill sizes range



Defining Extrusion

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ⓘ A six roll straightener from Bronx/Taylor-Wilson

from 3" to 26" diameter. The company currently has many international projects in industries including oil and gas, automotive, and construction.

Website: www.btwcorp.com



At Tube Arabia 2009, data M Software 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 the FEA software. The company believes that this new version has come closer to reality than any other simulation or analysis software.

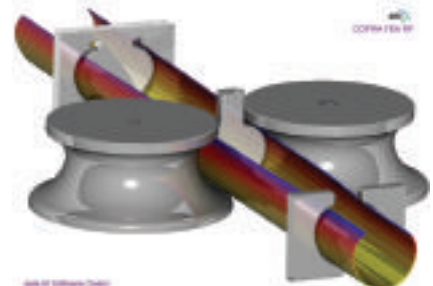
The company has enhanced both the FE Analysis software and also the renowned design package Copra RF. One specific feature to have been improved is the handling of cage forming methods.

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 a 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.



ⓘ Copra RF now also supports integrated drawing dies.

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

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



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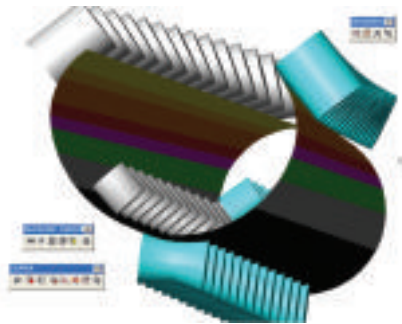
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The principle of the cage forming (or linear forming) system with modelling in Copra



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.data-m.com

DB Engineering (P) Ltd India

DB Engineering manufactures forming rolls under the Atlas brand, together with tube cut-off blades and alfa shears.

The company's roll manufacturing shops use state-of-the-art manufacturing equipment, including CNC machining and turning centres, bore, OD and profile grinding machines, and finishing and polishing machines.

The heat treatment shops have atmosphere-controlled furnaces with automatic controls and recording of heat treatment processes, and a metallurgical lab.

DB Engineering has comprehensive in-house design facilities, including special computer software that aids the building of designs to customers' requirements.

The company's inspection facilities include the testing of steel, computer simulation of designs to locate stress and wear areas in production, and the checking of accuracy and consistency of profiles, surface finishes and dimensional tolerances.

Website: www.skberi.com

Eurolls SpA Italy

Founded in 1997, Eurolls SpA is a leading company in the production and design of rolls, made of steel and sintered materials.

The Eurolls capacity covers rolls for tube mills up to 24". With customers located worldwide, the company has a capacity to produce an average of four thousand rolls per month, together with steel rolls and tungsten carbide rolls for different applications.

Eurolls subsidiaries – which include Eurolls de Mexico, Eurolls do Brasil, and Iber Eurolls in Spain – are fully equipped for wire and tube rolls production and regrinding and are able to guarantee a quick and full response.

Eurolls also offers advice on refurbishment of tube mills and training of customer personnel.

Innovative equipment for roll polishing, heat treatment facilities and a sintering plant were incorporated into the company's production programme last year. The control of each step of production, starting from the entry of raw material to the final dimensional control of each piece, is the primary concern of the ISO 9001 certified company.

Website: www.eurolls.com

Guangzhou Hongda China

Founded in 1988, Guangzhou Hongda Steel Co Ltd is a specialist manufacturer of steel tube and pipe.

The company's main product is stainless steel tubes, while the company is also able to produce a range of other pipes, particularly seamless carbon steel pipes.

The production range for stainless steel is OD from 4mm to 325mm and wall thickness from 0.5 to 15mm. The available size for seamless carbon steel is up to 18".

Website: www.hongda-steeltube.com

IMEC Tubes Italy

IMEC Tubes develops and produces tube processing lines, using more than a decade's experience to offer turnkey solutions for tube finishing, handling and bundling.

The company analyses specific production requirements and develops custom-built layouts, offering a new series of patented machines to provide safe and efficient solutions.



IMEC Tubes produces custom-built solutions for tube finishing, handling and bundling

IMEC's product range includes scarfing, rolling, brushing, end facing, storage, bundling, coiling and quality control (air-water and eddy current). A highlight of the company's range and one of its latest designs is the patented permanent magnetic inside bead system.

The system does not need a generator or tow-bars, and activates and de-energises magnets using an electric input.

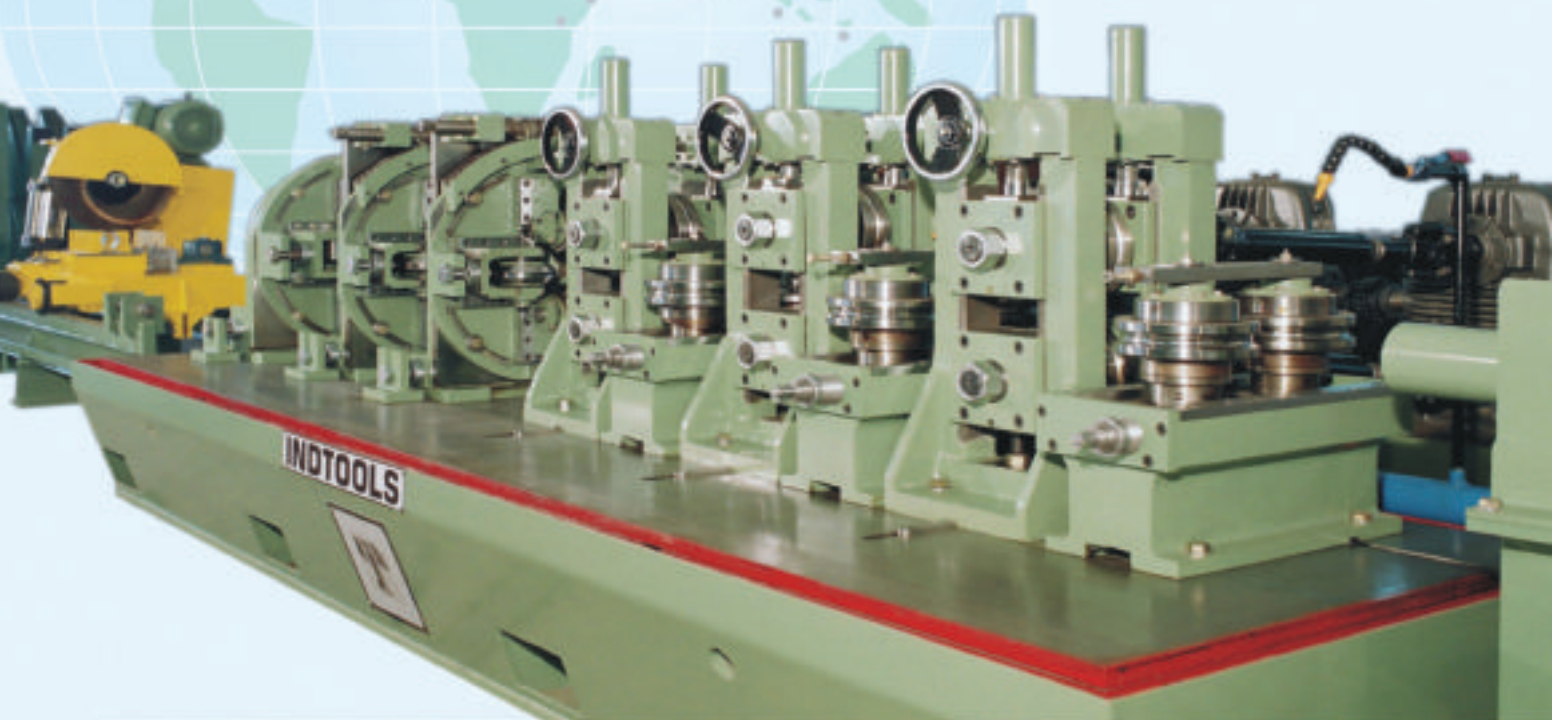
This ensures operator safety, avoiding problems with the magnetic field, and allows rolling on small ID tubes.

Website: www.imec-tubes.com

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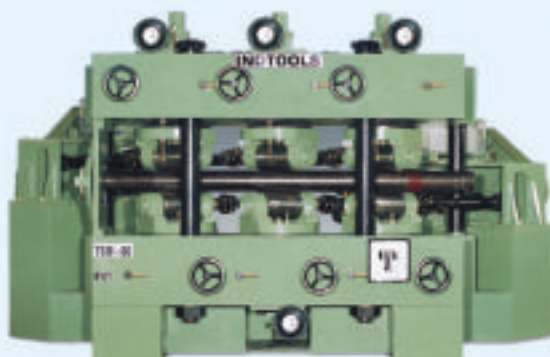


Cutting Machine

ITL, a trail-blazer in High Speed Sawing Technology has commendably established itself in domestic and global markets as a dependable 'Cutting Solution Provider' and in its strive, ITL has achieved yet another milestone by introducing to the country High Speed Circular Sawing Machine, keeping pace with 'Time and Technology'.

Productivity example :

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International Tube Assoc UK

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*.

Website: www.itatube.org

Jiangsu Guoqiang Ind China

Jiangsu Guoqiang Ind Co Ltd offers a main product range comprising of ERW pipe, GI pipe, guard rail and HR coil. The company

has an annual capacity of 600,000t zinc-plated products and a substantial amount of rolling steel strips.

With its products supplied to both the domestic and international markets, Jiangsu Guoqiang operates a 1,300m² production area, with more than 2,000 employees.

Website: www.jsqg.cn

Julia Utensili Srl Italy

Julia Utensili Srl is a leading manufacturer of HSS circular saws for the tube processing industry. These circular saws are produced in high-speed steel with either 5 per cent molybdenum or 5 per cent cobalt, according to the strictest run-out tolerances.

The aim is to achieve the highest cutting output irrespective of steel grade hardnesses 500N/mm², 800N/mm², 1,000N/mm² and 1,400N/mm².

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Tube Products INTERNATIONAL magazine has an international circulation of 5,000+ readers, providing an excellent targeted marketing platform from which to launch and sell your tube products to buyers and end users throughout the industry.

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The standard blade range is Ø 160-620mm with thicknesses ranging from 1-5mm in variable increments and with different tooth forms. These comprise the popular 'Bw' (alternate), special BR (chipbreaker) and VBR (variable).

An ever-growing number of special thin kerf blades are also available to meet the innovative requirements of the tube processing industry.

These blades – like all standard saws – are readily available with different surface finishes (HP-Grind and Vapo) or special PVD coatings (TiN, TiCN, TiAlN, CrN).

Website: www.julia.it



These plants are designed for sawing of stainless steel, ferrous and non-ferrous material in the form of billets, tubes, profiles and plates.

The custom-made solutions are used for specific applications such as tube or profile layers, billets or plate sawing plants.

Each machine is intended to utilise carbide tipped saw blades, which guarantee an accurate cut and high capacity with less costs and long tool life time.

MFL supplies sawing machines for round materials and tubes from 30-800mm in diameter. The saw blade diameter, which is used for cutting of 800mm in diameter, is 2,200mm. The biggest square dimension that can be cut with MFL sawing machines is 720mm.

MFL has developed a layer sawing machine with a layer width of 1.5m, which is used for cutting tubes, I- and U-beams, sheet pilings and angles. This big layer width is a unique worldwide development. In addition, MFL supplies sawing machines for cutting aluminium plates, coupons and other samples for material inspection.



MFL is a leading manufacturer of cold circular sawing plants

worldwide supply of equipment based on a standard design.

Maschinenfabrik Liezen and Gießerei GmbH (MFL) is a leading manufacturer of high power cold circular sawing plants, with

The company's customers are mostly from the European and Asian markets, comprising of precision and seamless tube manufacturers.



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For manufacturers of railway rails, MFL offers a special kind of sawing machine, the combined rail sawing and drilling machine. This machine cuts and simultaneously drills holes into the rail, which guarantees very short cycle times for the cutting and drilling process.

MFL is an experienced supplier for sawing applications and delivers turnkey plants as well as single machines for the modernisation or increased performance of tube production.

Website: www.mfl.at

customers, working in partnership with these customers to layout and develop technologically advanced and cost-effective tube mills.

The company returns to Tube Arabia following a highly successful show in 2007. The company has received many enquiries from the Middle East region as a result of increased demand for inner grooved commercial/ACR copper tube. For this purpose MRB Schumag will present its renowned spinner blocks, inner grooving lines, and tailored tube and basket handling solutions to the industry.

Whether developing completely new tube mills, increasing capacity or looking to diversify product mixes, MRB Schumag provides a range of innovative solutions. In collaboration with its established partners in the industry, the company can offer a turnkey solution for the complete copper tube mill.

MRB Schumag Ltd – UK
Website: www.mrbschumag.com

Schumag AG – Germany
Website: www.schumag.de

Part of the Schumag Group, MRB Schumag is a global leader in the design and supply of premium equipment to high-volume copper tube producers. With over 50 years of experience, the company has a substantial reference list of blue chip

With over 30 years' experience, MTM SpA is internationally renowned for its experience in designing high-quality tube mills and related equipment and tooling.

The company will present its programme of machinery especially designed to produce precision tubing of high tensile alloys.

The company will introduce the Comby, its new orbital flying cut-off machine. This is a state-of-the-art solution for cutting heavy section tube, either round or shaped, in carbon and stainless steel, by a quick and effective cold saw process.

The range covered by the Comby series is from 63mm to 219mm OD and from 3mm to 12.7mm wall thickness. The Comby orbital flying cut-off machine benefits from MTM's 30 years of experience.

The carriage is accelerated by a reliable rack and pinion system (AC or DC driven),



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while the cutting process is constructed from two combined electrical axes, as with other milling-machines.

The cold saw can be operated either by HSS or TCT blades, as in the whole range of MTM flying cut-off machines. There is no gap between the two blades, due to a reduced blade diameter.

The Comby models allow high productivity and low running costs whenever burr-free cutting is necessary.

The first Comby units are already operating with excellent results.

Website: www.mtmmachinery.com

Read this magazine online @:
www.read-tpt.com

Multimetals Ltd India

Multimetals Limited is a manufacturer and exporter of seamless extruded drawn copper and copper alloy tubes. The company supplies applications including heat exchangers, nuclear and thermal power plants, shipbuilding and repairs, petroleum refineries, sugar plants, defence establishments, and air conditioning and refrigeration.

The product range includes tube and pipe manufactured from copper, capillary, cupronickel, admiralty brass, aluminium brass and other brasses, together with bare, low fin and U-bend tubes. Other products include copper-alloy rods, profiles and alloys such as aluminium and manganese bronze, naval brass, cadmium and tellurium copper.

The company, which exports to all developed countries, has won 11 Indian export excellence awards in the last 13 years.

Website: www.multimetals.in

Nexans Deutschland Germany

Nexans Deutschland GmbH is the manufacturer of a new universal welding machine, branded the Uniwema®650. This machine is capable of manufacturing corrugated stainless steel pipes up to an OD of 650mm and a wall thickness of 3mm. Prior to the development of this machine, the biggest Uniwema machine was limited to an OD of 400mm.



Nexans has developed a new universal welding machine for LNG applications

The new machine was designed as a solution to today's onshore and offshore LNG (liquefied natural gas) transfer and terminal applications. The LNG industry requires vacuum-insulated, flexible, stainless steel pipes with an outer diameter of up to 16". Environmental and safety aspects currently play the most important role in the increasingly sensitive LNG market.

The well-proven technology of the split clamp caterpillar capstan – in combination with the Uniwema corrugation technology – will be used for this world biggest continuous forming, welding and corrugating machine. Nexans is in the position to deliver any length of corrugated pipe systems up to an ID of 600mm.

Depending on transportation restrictions, a typical length of one pipe section is from 55m up to 350m. The drive system of the split clamp caterpillar capstan comes in the form of a hydraulic system, while the electrically driven corrugation unit is synchronized to the capstan speed.

Welding is performed through the company's patented and ASME approved Polyarc process.



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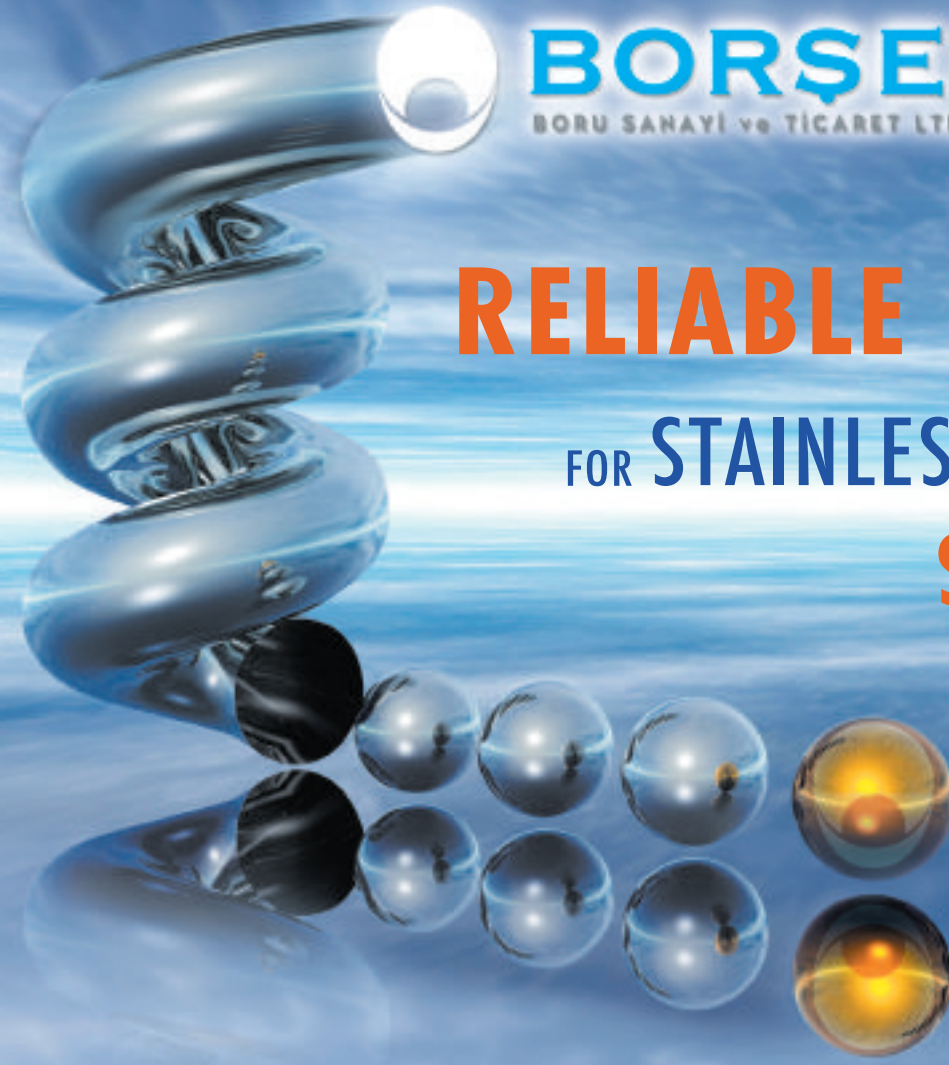
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Benefiting from advanced Uniwema technology – claimed to be the only technology capable of continuously producing 16" and 20" flexible metal pipes – onshore and offshore LNG terminals will be able to avoid excess-gas burning of the resource of natural gas.

Website: www.nexans.de



Olimpia 80 Engineering designs and constructs complete mills for the production of welded tubes. The company is able to offer both individual pieces of equipment and complete lines, suitable for any TIG, laser and HF welding, and for materials such as stainless steel, carbon steel, titanium, copper and other non-ferrous materials.

The company can also provide a wide range of equipment for strip handling, tube cutting, inline bright annealing, and inline or offline tube finishing. One of the company's

latest developments is a satin and mirror polishing machine for round, square or rectangular tubes.

Olimpia 80 can also supply turnkey systems, personalised solutions, and provide complete after-sales technical services and personnel training.

Website: www.olimpia80.com



Oto Mills is involved in the design and construction of machines that produce top quality tube at very high production rates. The company has more than 25 years experience in the design, manufacture, and installation of tube mills. With a full catalogue of solutions for carbon and stainless steel applications, the company offers an extensive tube mills range.

At Tube Arabia 2009, Oto Mills will show its latest developments and innovations in



Oto Mills is a complete supplier of tube mills

complete tube mills and electronic controls for mill operations.

The progress includes the latest innovation in entry lines, advances in tube and pipe mills, flying cut-offs, and software for the complete online troubleshooting on tube and pipe mills.

In addition, Oto Mills provides measuring systems for scrap reduction and quality control, complete plant manufacturing execution control, and an automatic warehousing system.

The Oto Mills capability includes complete systems for the production of welded tube and/or profiles, turnkey production plants, revamping of existing systems, training of mill personnel, after-sales service, and electronic/automation technology.

Website: www.otomills.com

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Richardson Electronics

Smaco
Malaysia

Smaco manufactures a complete ERW pipe mill line for API/ASTM pipe and structural hollow section (up to 16" diameter). This includes mill entry equipment, forming/sizing mill, cut-off and rolls. The pipe mill system includes specialized testing equipment to meet API specifications. This comprises ultrasonic testing, internal weld bead scarfing (with cutting depths monitoring), weighing, length measuring, stencil paint marking and pin stamping.

The company's finishing equipment also includes end facer, hydrotester, straightener, and threading machine, complete with a pipe transfer and handling system. These machines are of heavy-duty construction with proven technology that ensures reliability at all levels of mill operation.

Website: www.smaco-intl.com

SMS Meer GmbH
Germany

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.

The product range of SMS Meer essentially consists of manufacturing plants and automated finishing systems for seamless and welded steel tubes (diameters from 4 to 1,800mm). It also includes 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 of 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

TPS-Technitube GmbH
Germany

TPS-Technitube Röhrenwerke GmbH is a privately owned company operating modern production mills and stocks for various tubular products.

With more than 30 years' experience, the company offers a range that includes seamless tube and pipe, heat exchanger and boiler tubes, hydraulic

and instrumentation tubing, U-tubes, and OCTG (tubing, casing, drill pipe, pup joints, crossovers and nipples).

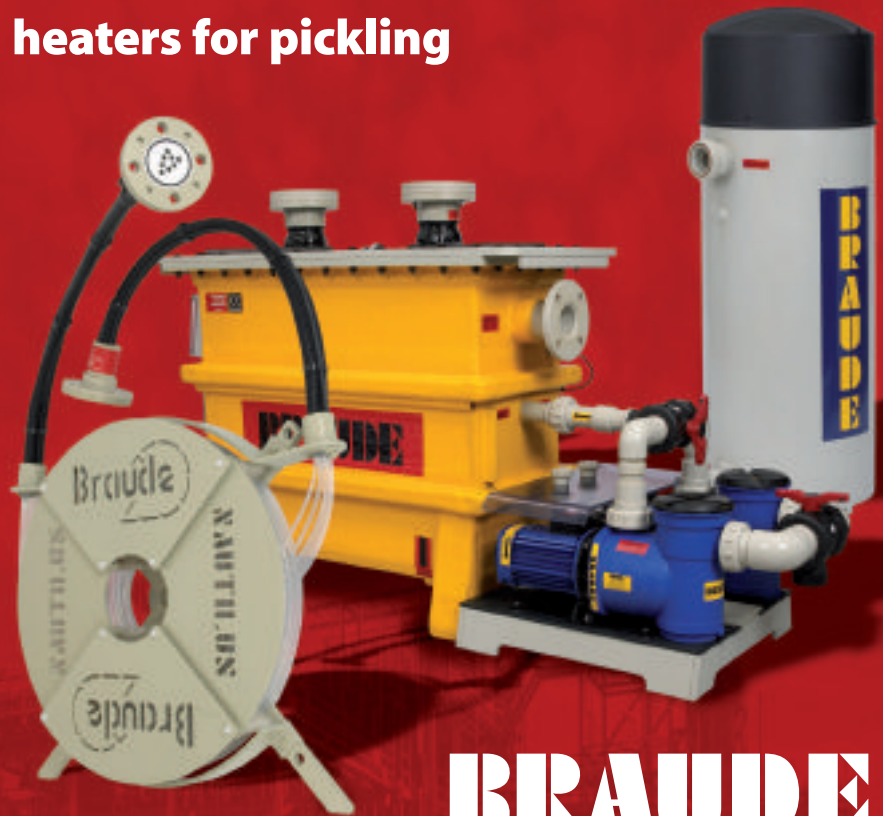
The company also manufactures finned tubes, studded tubes, fittings, flanges, and forgings.

The products are supplied in a range of materials, including carbon steel, alloy steel, stainless steel, nickel alloys, titanium, non-ferrous, brass, copper nickel, and aluminium.

Website: www.tps-technitube.de

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Tube Products International UK

Tube Products International magazine is published for tube and pipe product end-users, buyers and specifiers of metal, plastic and composite tube and pipe materials, products and fittings. Published every quarter, the magazine has an international circulation of 5,000 readers who are registered buyers, stockists, agents, specifiers, distributors and users of all kinds of tube, pipe and hollow products, materials and accessories.

TPI reports on the latest corporate and economic industry information, and features new technological advances in materials and tube and pipe products and ancillaries available within the tube and pipe industry around the world.

The regular quarterly worldwide circulation of *Tube Products International* is further increased by bonus distribution of free copies at all the leading international tube and pipe trade fairs around the globe.

With every issue, new readers and buyers subscribing to the magazine ensure that the magazine is a compulsory publication for marketing campaigns and advertising schedules of both tube and pipe producers and suppliers of tube and pipe materials.

Website: www.read-tpi.com

Tube & Pipe Technology UK

Tube & Pipe Technology is the international trade magazine for the tube and pipe industries, published six times a year in the English language. Covering the production, processing and utilisation of tube and pipe, each issue provides coverage of essential industry news, personnel changes and technology and product updates.

The magazine includes regular topical columns such as 'From the Americas' – an economic and industry report on North and South America, a variety of technical features, and in-depth articles highlighting

the latest scientific information and manufacturing solutions. The magazine has a worldwide circulation of over 12,000, distributed to managers, buyers, technologists, engineers and specifiers in over 100 countries. Working in partnership with the International Tube Association (ITA), *Tube & Pipe Technology* is sent out to all ITA members.

The magazine is also available as an online ezine, which reaches even more worldwide readers, with selected content available free to all and the entire digital version available on subscription. Readers of the ezine can click on hyperlinks to be sent directly to websites, while advertisers are able to incorporate video-movies into their adverts.

Visitors to Tube Arabia 2009 can pick up a free copy of the latest edition at the *Tube & Pipe Technology* stand, together with information on subscription, advertising and the ezine. Information will also be available on *Tube Products International*, the new magazine for the world of tube and pipe products and materials, read by producers, buyers and end-users.

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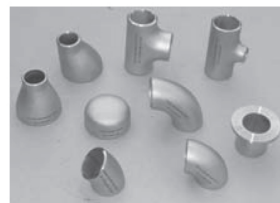
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Specifications

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



Inspections

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



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The Georgia-Russia war and the geopolitical shift in the Caucasus

"With Iran's declaration that it opposes the construction of any undersea pipelines in the Caspian Sea on 'ecological grounds' and thus will block any delimitation of the seabed that allows for it, and Azerbaijan's decision not to back the West's push for the Nabucco gas pipeline, Moscow can claim its first major political victory" from the Georgia-Russia war in August.

This is the stark analysis of *Times Topics* blogger Paul A Goble, who is director of research and publications at the Azerbaijan Diplomatic Academy. Earlier, he served as vice dean for the social sciences and humanities at Audentes University in Tallinn and was a senior research associate at the EuroCollege of the University of Tartu. While in Estonia he launched www.windowoneurasia.blogspot.com, to which he is a regular contributor.

Mr Goble observed that the Russian government will now have full and uncontested control over pipelines between the Caspian basin and the West that pass through Russian territory. *"That does not mean, of course, that Moscow now has effectively re-established its control over the states of this region,"* he said. *"All of them have other interests besides oil and gas. But it does mean that Russia has won a major victory. And the West, which all too often in recent years has focused on oil and gas alone, has suffered a major defeat."* (*'Moscow's big victory on pipelines,'* 5 September).

On 4 September, Mehti Safari, Iran's deputy foreign minister, told journalists that Tehran opposes the construction of any undersea

pipelines in the Caspian because *'this can bring harm to the ecology of the sea'*. Exporting countries can send their gas out via either the Russian Federation or Iran. Given the existence of *'such possibilities'*, the Iranian diplomat asked, why harm the delicate ecosystem of the Caspian?

Why, indeed? Mr Goble saw Tehran as signaling its willingness to thwart the stated goal of the US and some Western European

➤ **The Russian government will now have control over pipelines between the Caspian basin and the West**

countries for any prompt completion of the Nabucco pipeline that would transport natural gas from Turkey to Austria via Bulgaria, Romania, and Hungary. And, he noted, because Washington opposes the flow of hydrocarbons from the Caspian basin out through Iran, *"Tehran's action in fact makes it likely*

that many oil and gas exporting countries in the region will now choose to send more or even all of their gas and oil through the Russian Federation, a longstanding geopolitical goal of Moscow's."

■ The sudden geoeconomic and geopolitical shift in Russia's favour in the Caucasus was made manifest during US Vice President Dick Cheney's brief visit to Azerbaijan on the first leg of a tour that included Georgia and Ukraine. Mr Goble writes that, according to Russian media reports, this did not go well, beginning with Mr Cheney's 3 September reception at the airport in Baku by lesser lights of President Ilham Aliyev's administration. Mr Cheney was then let cool his heels before his meeting with Mr Aliyev, from which he emerged sufficiently dyspeptic to skip a ceremonial dinner held in his honour.

President Aliyev has expressed his commitment to *'a balanced foreign policy'* that navigates between Moscow and the West. But, as duly noted by Mr Goble of the Azerbaijan Diplomatic Academy, now that Moscow has recognized the two breakaway republics of Abkhazia and South Ossetia as independent states, that balance is rather different in the vicinity of the Western-backed energy corridor intended to bypass Russia.

"The game has changed," he wrote, probably without much fear of contradiction.

[The state-run Azerbaijan Diplomatic Academy opened in March 2007 for fast-track training of staff for the country's many new embassies abroad. The school is headed by a former Azerbaijani ambassador to the US and attracts faculty and lecturers from leading Western institutions.]

Global review discloses total oil investment was flat last year

Outlays by the world's oil and gas companies for exploration and development projects totalled \$402 billion in 2007 – unchanged from 2006, according to the annual upstream performance review published 4 September by corporate advisors Harrison Lovegrove & Co Ltd (London) and oil and gas research firm IHS Herold Inc (Norwalk, Connecticut).



Photo courtesy of Thyssenkrupp Stahl AG

Oil & Gas News

As noted by senior staff writer Paula Dittrick of the *Oil & Gas Journal* (8 September), capital spending varied widely by region, with lower levels of investment in the West offset by gains in regional spending elsewhere. The review showed Asia-Pacific investments having risen on China's increasing natural gas demand and rising demand for liquefied natural gas (LNG) in the rest of Asia. Upstream spending in Russia and the Caspian region soared 58 per cent upon higher acquisition activity and development spending.

In contrast, conventional oil and gas spending in Canada last year plunged by nearly \$30 billion from 2006. Analysts saw rising royalty rates in the province of Alberta and new Canadian royalty trust legislation as contributing to lower overall upstream investment in Canada by more than 25 per cent. In the US, substantially lower acquisition activity contributed to a 9 per cent decline in 2007 upstream spending compared with 2006.

"Higher prices drove a 10 per cent increase in revenue to \$931 billion [worldwide]," said Robert Gillon, IHS Herold senior vice president. "But cost pressures have been unrelenting, with lifting costs rising by 17 per cent and government take up 5 per cent to \$253 billion, or 51 per cent of pre-tax profit. As a result, net income edged up 2 per cent to \$246 billion, which is a record result but is far from the heady advances of the prior three years."

Iraq cuts Western oil companies loose, signs a contract with China's CNPC

An Iraqi plan to award six contracts to Western oil companies has been withdrawn, participants in the negotiations said on 10 September. Hussain al-Shahristani, the oil minister of Iraq, told reporters at a summit meeting of OPEC in Vienna on the previous day that talks with Exxon Mobil, Chevron, Shell, Total, BP, and several smaller companies for one-year deals had been broken off. Finalization of the contracts, which were announced in June, was said to have dragged on for so long that the companies could not fulfill the work within the stipulated time frame.

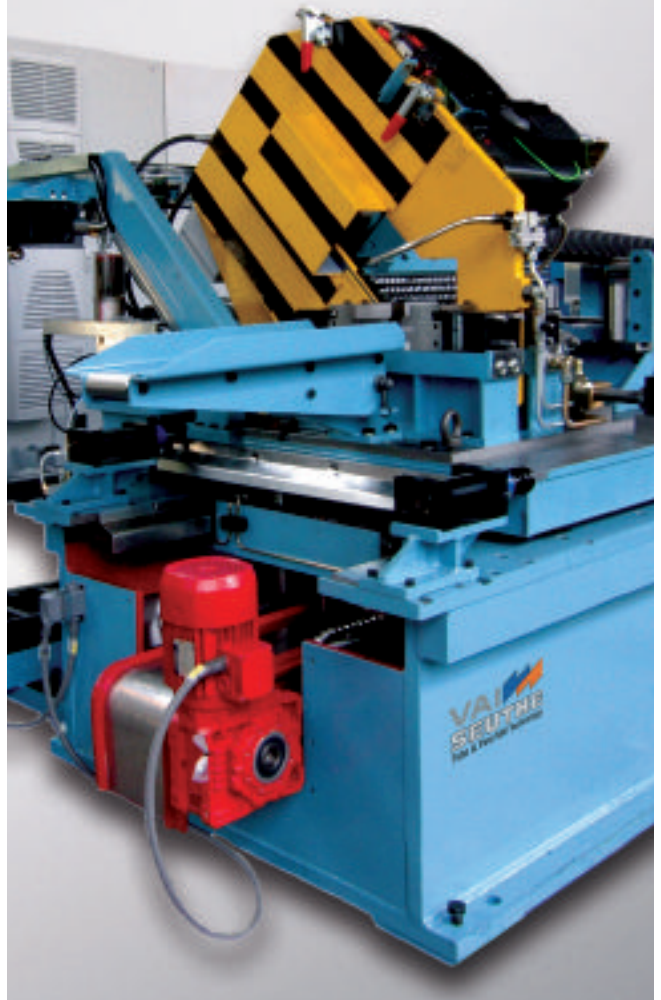
The six no-bid deals, which would have been the first major oil contracts with the central government in Iraq since the toppling of Saddam Hussein in 2003, were for work to raise production from existing oil fields by half a million barrels a day. While not especially lucrative by industry standards, the contracts were valued for offering a toehold in Iraq at a time when oil companies are being shut out of energy-rich countries around the world. The companies will be eligible to compete for future contracts, but in open bidding.

The award of the contracts had come under sharp criticism from several US senators on grounds that they could undermine the efforts of Iraqi Kurds, Sunnis, and Shiites to reach agreement on a hydrocarbon law and a revenue-sharing agreement. This criticism was conveyed to Mr Shahristani by the American Embassy in Baghdad in late June, whereupon the deals were delayed.

A spokesman for the Iraqi Oil Ministry said on 14 September that Iraq had signed its first major oil deal with a foreign company since the fall of Saddam Hussein's regime. The contract, with China National Petroleum Corp, could be worth up to \$3 billion and would allow CNPC to develop an oil field in southern Iraq's Wasit province over about 20 years, Oil Ministry spokesman Assim Jihad said in Baghdad.

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The Chinese company will provide technical advisers, oil workers, and equipment to develop al-Ahdab oil field, providing fuel for the al-Zubaidiya power plant in Wasit, southeast of Baghdad, bordering Iran, Mr Jihad said. Once development begins, the field is expected to start producing at the rate 25,000 barrels per day of oil, and at an estimated constant rate of 125,000 bpd after three years.

Iraq currently produces about 2.5 million barrels per day, 2 million bpd for export, Mr Jihad said. That is close to levels before the US-led war that toppled Saddam in 2003, but below the levels prior to the Persian Gulf War in 1991.

Iraq's Cabinet must approve the contract, but Mr Jihad told CNN World News that this would happen soon and work could start within a few months.

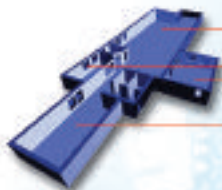


Photo courtesy of Radlyne

Elsewhere in oil and gas . . .

■ The Organization of Petroleum Producing and Exporting Countries (OPEC) announced 12 September that Indonesia has officially left the group. The withdrawal, which former Indonesian oil minister and OPEC secretary general Subroto said originated with Jakarta, not the organization, was taken out of differences over the price of crude oil. "OPEC wants a high oil price, while Indonesia wants a lower price," Subroto told Reuters. "That is the reason for Indonesia's withdrawal."

In a statement, OPEC said it "regretfully accepted the wish of Indonesia to suspend its full membership" and expressed a hope that the Asian nation, a net importer of oil in recent years, would rejoin the organization.



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Oil & Gas News

Royal Dutch Shell on 11 September announced that the Shell-operated Perdido Regional Development Spar had arrived in the ultra-deep waters of the Gulf of Mexico and was being secured to the seafloor in about 8,000ft of water. An element of Shell's most ambitious deepwater offshore oil and gas development ever, Perdido will be the world's deepest oil development, with the deepest drilling and production platform and subsea well anywhere. It is slated for start-up towards the end of the decade, with production estimated at up to 130,000 barrels of oil equivalent per day.

The massive steel spar, which on installation will be nearly as tall as the Eiffel Tower and weigh as much as 10,000 cars, was constructed in Pori, Finland, and shipped 8,200 miles to Ingleside, Texas. Perdido will be secured in place by nine chain-and-polyester rope mooring lines, spanning an area of the seafloor roughly the size of downtown Houston. Shell, the 35 per cent shareholder, is operator of the Perdido Regional Development Spar on behalf of partners BP, of Britain (27.5 per cent), and Chevron, of the US (37.5 per cent).

In other news of Royal Dutch Shell, its wholly owned subsidiary Shell Canada Ltd on 19 August announced having gained approval for its offer to purchase all of the outstanding common shares of Duvernay Oil Corp, also Canadian. Duvernay's principal activities are exploration, acquisition, development and production of, with natural gas and crude oil operations in northwest Alberta and northeastern British Columbia. In approving the acquisition by Shell, the Minister of Industry determined that the transaction is likely to be of 'net benefit to Canada' for purposes of the Investment Canada Act.

Hurricane Ike and its predecessor Gustav, which struck Louisiana, took less of a toll of the US this year than their counterparts of 2005, Katrina and Rita. But the effect on the oil and gas industry was severe enough. Most of the oil and gas platforms in the Gulf of Mexico had been out of commission for two weeks before Ike made landfall in Texas on 13 September, starting as Gustav made its way into the Gulf in late August. About half of the 26 refineries in Texas either closed or curtailed production; and, after Ike, it would be at least a week before the cluster of refineries around Houston could resume operations.

Refiners have yet to estimate the full cost of the two hurricanes. Between them, the big storms interrupted about 97 per cent of oil production and 93 per cent of natural gas production in the Gulf. The region – with some 3,000 offshore oil and gas platforms and 22,000 miles of pipelines in the direct path of tropical hurricanes – accounts for about 25 per cent of the oil and 15 per cent of the natural gas produced in the US.

Total Exploration & Production Nederland BV on 10 September announced first production from the K5F field of its gas development project in a block of the Dutch Continental Shelf northwest of the Dutch coast. Yield was reported at approximately 45 million cubic feet of gas per day, with a step-up to 90 million cfd expected within months. K5F is believed to be the first project ever to be operated by means of all-electrically activated subsea technology ('Christmas trees') instead of with standard hydraulic equipment. The innovation is said to promise reliability and environmental benefits as well as enhanced capability in deep water, including the frontier areas of the North Sea in which Total is active. Total is operator of the K5F field in an all-Dutch partnership with Dyas, Goal Petroleum, and Lundin.

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SEAM WELDING FITTINGS DIMENTIONS : N.D : 26" ~80"

WALL THICKNESS AREA : 2MM TO 100MM

STANDARD:

ASME : ANSI B16.9, ANSI B16.28, MSS-SP-75

DIN : DIN2605, DIN2615, DIN2616, DIN2617, DIN28011

SGP : JISB2313

EN : EN10253-1, EN10253-2

MATERIALS:

ASME : A234 WP8, A234 WP1, A234 WP5,

A234 WP9, A234 WP11, A234 WP12, A234 WP22,

WP91, WP92, A420, WPHY42, WPHY52, WPHY60,

WPHY65, WPHY70, WP304, WP304L, WP304H,

WP316, WP316L, WP321, WP347, WP347H

DIH : ST37.0, ST35.8, ST45.8, S235JR, P235GH,

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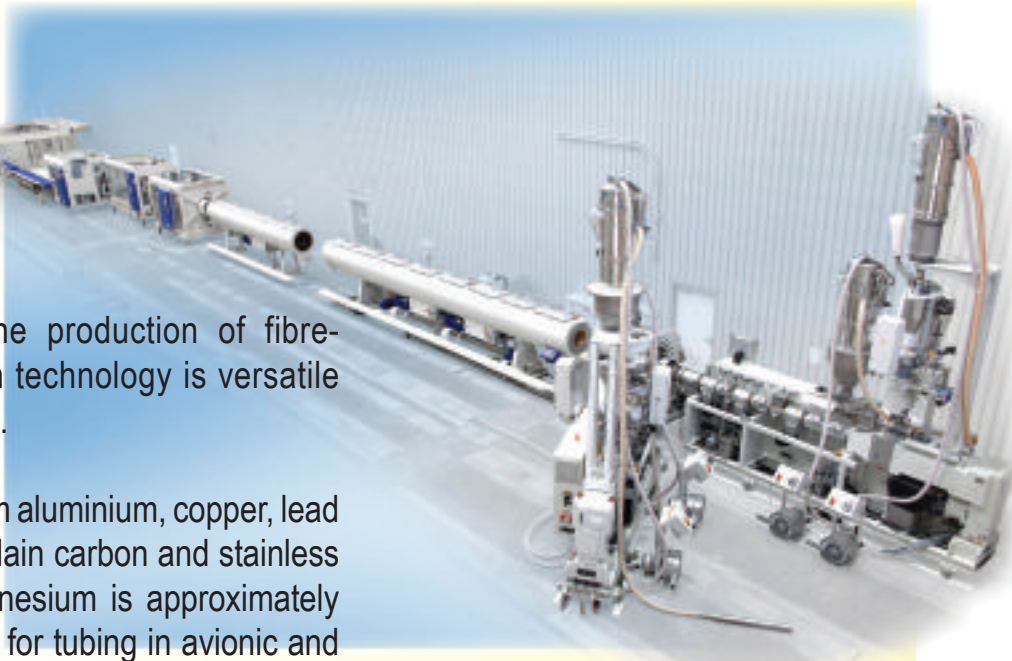
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Tube Extrusion & Drawing Technology

Even exclusive of the multitude of polymers that can be extruded into plastic tubing, and of the remarkable 'pultrusion' process for the production of fibre-reinforced tubes, extrusion technology is versatile to an extraordinary degree.

Tubing may be extruded from aluminium, copper, lead and tin, magnesium, zinc, plain carbon and stainless steel – even titanium. Magnesium is approximately as extrudable as aluminium for tubing in avionic and nuclear applications. Molten lead may be used in place of billets on vertical extrusion presses.



 The foam-core pipehead series, from KraussMaffei Berstorf, includes two twin-screw extruders (see page 68)

Hot extrusion or cold extrusion? Either method yields superb results; and the products are readily mass-produced and cut to length, economical, and lightweight. Tube extrusion does it all.

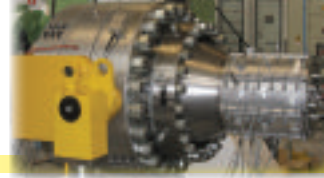
And tube drawing does the rest, also supremely well: sizing and re-sizing, reducing, changing inside and outside diameters and wall thicknesses, satisfying custom requirements for close dimensional control and smooth and ultraclean surfaces. Drawing is the method of choice for refinement of the grain structure and enhancement of the finish.

 Battenfeld supply large-diameter pipe extrusion lines up to 2,000mm in diameter (see page 70)



Drawing is the method of choice for refinement of the grain structure and enhancement of the finish.

Tube extrusion or tube drawing? To judge from the performance history of these highly evolved companion processes – as complementary as any in the tube making business – the probability of satisfaction is excellent with both.



Advanced extrusion line for multilayer PVC pipes

Costruzioni Meccaniche Luigi Bandera, Italy, has recently supplied the latest extrusion line for multilayer PVC pipes to a leading European manufacturer of plastic pipes.

The state-of-the-art line is characterized by the new counter-rotating twin-screw extruders and a specifically designed extrusion head.

This unit is just one part of a larger supply which includes other lines for the production of PVC and HDPE pipes with different range diameters and production capacity to satisfy the building industry.

The line is designed for rigid PVC (layers A and C) and foam PVC (layer B), with an output of 1,000kg/h and diameter range of 250-500mm.

The line is fitted with a dosing system for the extrusion of the middle layer (foam PVC) with dedicated design to satisfy the need of this application.

The line includes extrusion units including a counter-rotating twin-screw extruder 2B 125 28 L/D (middle layer B with foam PVC), and Nr 2 counter-rotating twin screw extruder 2B 65 28 L/D (layers A e C Rigid PVC).

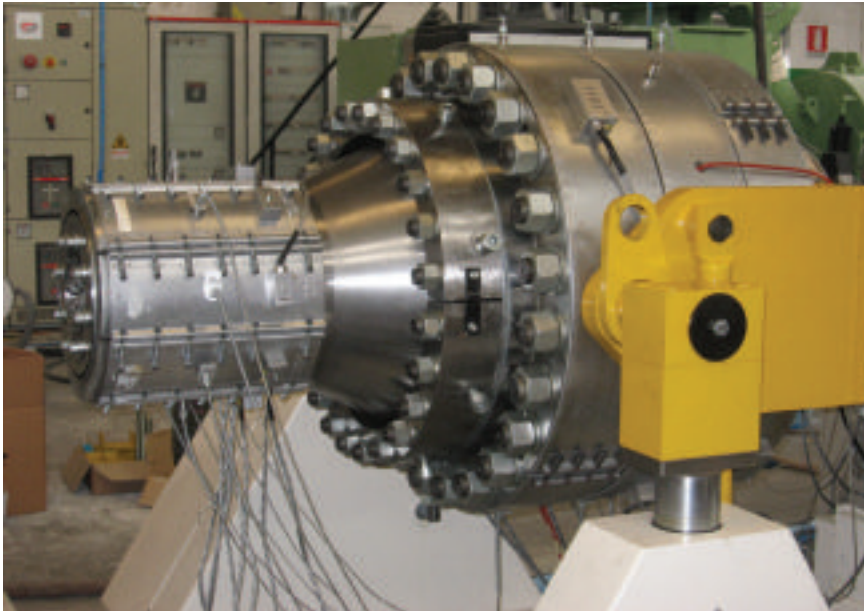
For efficient operation, the line features a calibration tank with automatic control of vacuum level, and spray cooling tank. In addition, the line incorporates a haul-off unit (with 6 caterpillar) for synchronization of the speed from the main operator control unit.

The line is rounded off with a planetary cutting unit with cutting disc, automatic belling machine, and a line supervisor with industrial PC and colour graphic display.

Established in 1947, the company has built a large knowledge base in different plastic material, with particular attention to plastic pipe application. The company supplies over 200 extruders each year, supported by a technical team of highly experienced engineers.

Costruzioni Meccaniche Luigi Bandera SpA – Italy
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⚠ An extrusion head for pipe with a maximum diameter of 500mm



Extra heavy-duty caterpillar haul-offs for effective extrusion

Gillard, UK, has extended its range of precision caterpillar haul-off and take-off machines. The new machines are extra-long belt versions of the Gillard 'work-horse' range. The extended belts are now available in lengths of either 1,500mm or 1,800mm. Belt widths are either 225mm or 300mm.

⚠ Gillard's new machine has longer belts for less pressure on extrusions



The company claims that the longer belts enable higher tractive efforts to be achieved with considerably less clamping pressure on the extruded products. This avoids distortion and damage, particularly to thin-wall products.

The new caterpillars also feature an updated drive package with direct drive AC servo motors powering the belts. Two digital servo drives are used in master/slave configuration for optimum speed control.

The top belt is designed to 'float' over any lumps or bumps created during the start-up of the extrusion line. The entire top boom is suspended on two air cylinders at either end. This allows the belt to automatically raise and lower itself over the lumps while maintaining an adequate grip on the extrusion.

The machines are fully guarded to the latest CE standards. Gillard offers a wide range of options to enable users to customise the machine to their needs.

Peter Gillard & Co Limited – UK
Fax: +44 1684 290330
Email: cgillard@gillard.co.uk
Website: www.gillard.co.uk



Excellence in tube die drawing technology

Baloffet, France, is one of the largest worldwide manufacturers of a complete range of diamond dies. The company claims to ensure higher productivity, lower maintenance, high-quality surface conditions, diameter accuracy, and optimum technical characteristics for tube and pipe.

To manufacture tubes on a bullblock, the company advises the use of diamond dies to guarantee consistency of the tube's final diameter. When manufacturing on drawbenches and wire drawing machines, PCD dies are used for a longer die life and a better return on investment.

The Baloffet range includes natural diamond dies from 6µ to 2.5mm, mono-

crystalline dies from 6µ to 0.5mm, and polycrystalline (PCD) dies from 50µ to 28mm. The company also provides compacting, stranding and special shape dies, along with extrusion tooling (guides and dies), and repolishing equipment.

The ISO 9001-2000 company offers a range of services including repolishing, training of operators/technicians at Baloffet or at the customer's plant. Baloffet is a forerunner in manufacturing innovation (drilling, forming, sizing, polishing), and expert product control.

Established in 1870, the company has several subsidiaries: Baloffet Die Corporation USA (since 1904), BDWD UK



 Balloffet's range includes PCD and diamond dies

(since 1925), Balloffet GmbH (since 1996), and a worldwide network of agents.

Baloffet – France
Fax: +33 4 74 35 79 01
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Website: www.balloffetdie.com

Innovative PVC foam-core pipeline delivers impressive performance

Raw material costs can account for as much as 90 per cent of the manufacturing cost of plastic pipe. Targeting the cost-saving potential in this area, KraussMaffei Berstorff has made it a high priority to develop machines and systems that reduce raw material consumption while maintaining highest pipe quality.

KraussMaffei Berstorff's foam-core pipehead series is headed by two twin-screw extruders (KMD 90-36 B/R and KMD 75-36 B/R) plus a

completely reengineered multilayer pipehead (KM 3 LRK 43). The line can produce PVC foamcore pipe with 400mm diameter and 11.7mm wall thickness at a rate of 900kg to 1,000kg per hour.

Foaming reduces the density of the pipe's core layer to as little as 0.6kg per cubic decimetre. This has the effect of reducing the total density of the 3-layer pipe by up to 30 per cent – with proportionate savings in material costs. A typical application

for PVC foam-core pipe is pressure-less wastewater pipe.

KraussMaffei is world market leader in machines and systems for plastics and rubber processing. With its three divisions – injection moulding technology, extrusion technology and reaction process machinery – KraussMaffei is a premium partner for the plastics and rubber processing industries worldwide.

KraussMaffei Berstorff GmbH – Germany
Fax: +49 89 8899 3092
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 KraussMaffei Berstorff has recently supplied this complete extrusion line for PVC foam-core pipe to a Russian customer





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Extensive range of extrusion equipment

Battenfeld Extrusionstechnik GmbH, Germany, offers a wide range of products for virtually all areas of semi-finished product manufacturing.

With its specialization in turnkey solutions, the company aims to solve all interface problems by offering perfectly matched solutions from start to finish. Battenfeld offers specific machinery – covering the entire pipe spectrum – depending on the dimensions and material to be produced.

In the area of large-diameter pipe extrusion lines, Battenfeld is a global market leader with a share of around 70 per cent. The company expects the pipe extrusion

equipment market to remain stable at a high level, due to the strength of plastic pipes as convenient products for plant irrigation, fresh water transportation and wastewater disposal.

The Battenfeld range of extruders and complete production plants provide state-of-the-art automation and control. The company is a leading supplier of complete extrusion systems for the production of PVC pipes, with output rates of 50-1,500kg/h and pipe diameters from 10-1,200mm.

The company supplies complete extrusion lines for PE and PP plastic pipes, with output rates of 50-2,500kg/h and pipe

diameters of 10-2,000mm. Battenfeld also offers extrusion machines for large-diameter PO and PVC pipes with diameters up to 2,000mm. These machines provide advantages such as single source and perfectly matching line components, excellent reliability and less downtime.

A high-solution-line for polyolefin pipes is equipped with a fully automatic dimensional change system. This enables dimensional changes in pipe diameters within minutes in steps from 32mm to 400mm pipe diameter. Other benefits include higher productivity, higher flexibility, no die melt gap adjustment, and use with existing dies.

Battenfeld offers extruders, extruder combinations and complete extrusion systems for corrugated PVC and polyolefin pipes. The main applications include sewage water (high stiffness despite low weight), drainage (polyolefins, very flexible), cable protection, and insulation.

The company provides extrusion equipment for a range of other products including polyolefin spiral wound pipes, PE-X pipes, pipes for drip irrigation, polyolefin multi-layer pipes, aluminium composite pipes, PP foam core pipes, and steel pipe jacketing.

Battenfeld Extrusionstechnik GmbH – Germany
Fax: +49 40 765 00 686
Email: wagner@pwmarketing.de
Website: www.bex.battenfeld.com

⚠ Battenfeld Extrusionstechnik is the global market leader in large-diameter pipe extrusion lines up to 2,000mm in diameter



Latest PVC-O pipe production equipment

Molecor Tecnologia SL, Spain, develops and trades PVC-O pipe equipment, and is a specialist in molecular orientation technology.

The company's orientation technology provides plastic pipes that are almost unbreakable, with properties such as high impact resistance, high stiffness and

fatigue resistance, excellent behaviour with external loads, and maximum flexibility.

PVC-O pipes also offer larger hydraulic capacity, minimum loss of pressure, and a reduction in wall thickness and weight, leading to transportation and installation savings.

⚠ Molecor machinery for producing PVC-O 200mm



These improvements are made with lower raw material consumption for the same requirement of pipe, resulting in cost reduction.

PVC-O pipes are environmentally friendly, and are the leading

choice for water transportation. This claim is supported by a study titled 'Estimation of energy consumption and CO₂ emissions due to production, usage, and final usage of PVC, HDPE, PP, cast iron and concrete pipes', carried out by the Department of Engineering Projects, Universitat Politècnica de Catalunya (Barcelona, December 2005).

PVC-O machinery can be fitted into a PVC common extrusion line. Molecor adapts its orientation process to each user. Installation is completely automatic with operation undertaken via a touchscreen. A full dry system is fitted for accurate and homogeneous temperature distribution, while moulds are available for each diameter, with optional integral socket formation.

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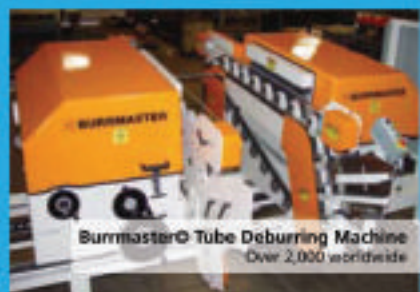
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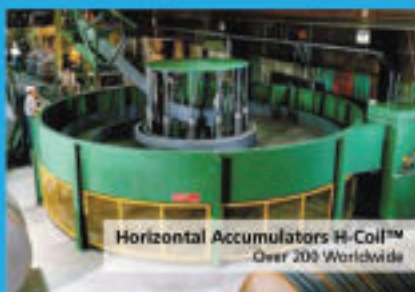
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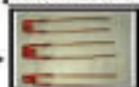
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Collaboration for turnkey pipe production equipment

Cincinnati Extrusion GmbH, Austria, has recently completed an agreement for extrusion production equipment with Maintools GmbH & Co KG, Germany. The agreement involves production lines for overlap-welded multi-layer composite pipes and drip irrigation pipes.

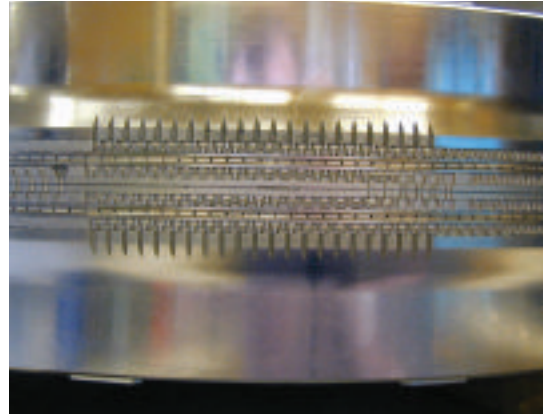
Both Cincinnati Extrusion and Maintools are renowned as pioneers in their respective fields. They have now pooled their expertise by arranging an exclusive cooperation agreement to supply the global pipe market with complete production lines for drip irrigation pipes and multi-layer composite pipes with diameters ranging from 12mm to 110mm.

Maintools offers a proven line of components and systems for overlap-welded multi-layer pipes and drip irrigation (such as DripTape, SpiroDrip and VarioDrip), while Cincinnati Extrusion contributes the powerful drive units for the lines. Its twin-screw and single-screw

extruders are specially geared to the requirements of each type of pipe, so that optimal performance can be achieved with minimal consumption of energy and resources.

Especially in irrigation systems, the trend is towards carefully planned, economical use of water – a resource in short supply. However, energy-efficient and material-saving processes play an increasingly important part as well, not only in the application itself, but also in the production of systems and equipment.

Due to their high-quality technologies and products, both Maintools and Cincinnati Extrusion are able to meet these requirements. They offer reliable equipment with a high quality standard, which stands out by its low maintenance



Section of an embossing wheel for drip tape produced by dual extrusion

requirements and excellent price-performance ratio.

The two partners have committed themselves to keep on adapting their product range to latest market conditions and requirements by constant further development and improvement of the individual components. This will ensure that they can continue to offer state-of-the-art turnkey solutions for the extrusion of multi-layer and drip irrigation pipes.

Overlap-welded aluminium-PEX composite pipe (Maintool technology)

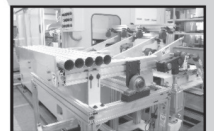


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Tungsten carbide tools for cold metal forming

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

These tools are supplied to large European manufacturers of tubes in different steels and non-ferrous metals for the most various applications. Products manufactured using Agir's tools include smooth tube with small dimensions

(0.25mm internal diameter and 0.33mm external diameter), and large tubes with 200mm internal diameter and 300mm external diameter.

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

Agir also manufactures adjustable dies with carbide blocks for simple profiles (square). In addition, they provide helical mandrels dedicated to the production of copper tubes used in air conditioners of any type.

The company has also developed a specific programme in order to optimise the range of best-matched dies to obtain the final required profile.

⚠ Agir has a large range of tungsten carbide tools for cold metal forming



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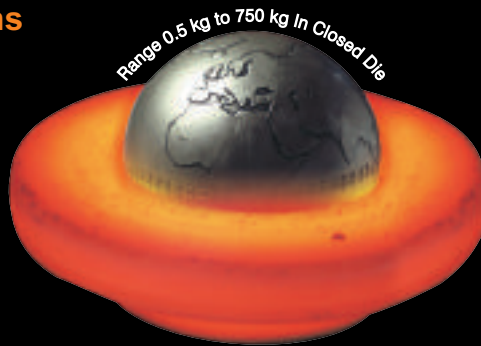
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From the AMERICAS

Oil and gas

A probable casualty of the Georgia-Russia War: the prospect for US and Western-sponsored pipelines in the Caspian region

Whatever the short- and long-range political consequences of the war in the Caucasus that began and ended in August, it was fought in an oil-rich region of keenest interest to the United States. Working with a BP-led consortium, the US helped build oil and natural gas pipelines across Georgia to the Turkish coast.

Another US-sponsored pipeline, at the planning stage when the war erupted, would carry natural gas through Georgia from the eastern shore of the Caspian Sea to Austria. What, now, of the expectations for that pipeline and other American initiatives for shipping Caspian Sea oil out of Central Asia and into Europe?

According to an early analysis in *Business Week* of a terrain altered starkly in favour of Russia, hopes are dim. Washington bureau correspondent Steve LeVine sees the reassertion of Russia's claim to be the dominant force in the Caspian region as having gained for it the edge in the struggle over access to 35 billion barrels of oil and trillions of cubic feet of gas. 'Probable losers' are the US and those Western oil companies that have bet heavily on their ability to operate with relative freedom in the Caspian ('*Georgia: a blow to US energy*,' 13 August).

Suggesting that the Russia-Georgia war may have set back 15 years of American economic diplomacy, Mr LeVine recapped that period, beginning with the realization by then-President Bill Clinton that Caspian-area countries newly independent of the Soviet Union were flush with oil and natural gas but had to ship it out by way of Russia. The absence of non-Russian pipelines also curbed the export potential of companies like Chevron, which owns half of Tengiz, the giant Kazakhstan oilfield. After some initial resistance, BP and Chevron backed an American pipeline strategy.

With Georgia a key transit point for any line to the West, that strategy created the so-called East-West Energy Corridor, and enlisted the cooperation of the leaders of Georgia, Azerbaijan, and Turkey on the construction of what would become the 1,000-mile-long Baku-Ceyhan pipeline. The Caspian's first independent oil export pipeline normally moves almost a million barrels of oil a day.

Mr LeVine wrote, "*For Georgia, it's not the fees it collects from pipeline transit – about \$60 million annually – that are important. Instead, the pipeline's presence signaled Georgia's stability and encouraged a flood of foreign investment.*" He added, "*That stability, of course, has proved illusory.*"

Regarding Bush Administration plans for a pipeline to ship natural gas to Europe along a route traversing Georgia, Mr LeVine provided some context: "*The proposed pipeline's success depends on Turkmenistan, which has the fourth-largest natural gas reserves on the planet, an estimated three trillion cubic meters. The Turkmen are cautious. Under former President Saparmurat Niyazov, they refused to defy the Russians [by supporting] the construction of the Baku-Ceyhan pipeline.*"

The drive toward renewable energy meets an opposing force: the new appeal of difficult-to-extract fossil fuels

High prices for oil, gas, and coal have created a market incentive to invest in 'clean' energy sources, a situation that would appear to favour former vice president Al Gore's push for 100 per cent renewable energy for electricity generation in the US over the next decade. But, as noted by a staff writer for the *Washington Post*, those high prices are also powering another trend: the extraction of fossil fuels from deep formations that can be made to yield to new drilling technology.

Pennsylvania is better known for steel than for oil and gas. But it was at Titusville, in the northwestern part of the state, that 'Colonel' Edwin Drake in 1859 drilled the world's first commercial oil well. And, today, the rolling farmland southwest of Pittsburgh is the scene of what the *Post's* Joel Achenbach terms an 'invasion' by heavy industry drilling aggressively into something called the Marcellus Shale.

"[This is] a layer of hard, black rock, more than a mile down," wrote Mr Achenbach. "*Trapped in tiny pores of that rock is a huge quantity of natural gas. The Marcellus Shale could become what people in the natural gas business call a big play.*" ('*Traditional energy's modern boom*,' 15 August).

A geologist who studies the shale called it a '*land rush type of deal*'. The Marcellus – which underlies parts of New York, Ohio, West Virginia, Maryland, Virginia, and Kentucky, as well as much of Pennsylvania – might contain more than 50 trillion cubic tons of gas, about twice what the US uses in a typical year.

Another of the *Post's* respondents, a resident of Oil City, near Pittsburgh, is already doing well out of shallower-lying crude oil but also recently leased his mineral rights below 3,000ft. The state of Pennsylvania is reported to be on pace to issue more than 7,000 permits for oil and gas drilling this year, more than twice as many as five years ago. And coal mining is also expanding, driven by rising coal exports. But Mr Achenbach perceives '*a broader national reality*' beyond the Marcellus boom: mature industries with the infrastructure, know-how, and capital to tap older energy sources. And he observed that oil and gas companies also benefit from a federal tax incentive, dating to 1918 that allows early deductions for '*intangible drilling costs*'.

A coal expert at the US Energy Department facility near Pittsburgh summed up for the government. Thomas Sarkus told the *Post*, "*We believe [fossil fuels] are going to predominate for at least 50 years.*"

Elsewhere in oil and gas. . .

➤ As global warming opens the Northwest Passage to navigation, Canada, the US, Russia, Norway, and Denmark are stepping up their manoeuvres to lay claim to oil reserves under the Arctic Ocean. By way of asserting the Canadian stake in the rich marine territory, Canada's prime minister Stephen Harper and his cabinet traveled in late August to Inuvik to review the country's largest-ever military exercise in the polar region. The town is 2,548 miles from the capital city of Ottawa. If disputes ensue, tensions between Moscow and the West – already exacerbated by the recent Russian-Georgian conflict – would likely intensify.



As for American initiatives in the Arctic, 2008 marks the fourth year that the United States has sought data defining the extent of its continental shelf in the Arctic. The oceanic affairs office of the US State Department has said that the Alaskan continental shelf may extend as far as 600 nautical miles from the coastline, far beyond the 200-mile limit within which coastal countries have sovereign rights over maritime natural resources.

On 6 September the US Coast Guard cutter *Healy* – this time in the company of a Canadian icebreaker – re-embarked from Barrow, Alaska, on a voyage to help create a three-dimensional map of the ocean floor in the area known as the Chukchi borderland. The *Healy* had already spent three weeks at sea to determine the extent of the continental shelf north of Alaska. The Canadian, US, and University of New Hampshire scientists aboard collected samples to establish the thickness of sediment in the region, a factor in continental shelf studies. These and related data are also useful for oil and natural gas exploration.

Precision Drilling Trust, Canada's largest oil and gas driller, will buy a Texas-based rival, Grey Wolf Inc, for \$2 billion in cash and stock. The agreement announced by the companies on 25 August will create one of the largest oil and gas rig operators in North America, with a fleet of 371 drilling rigs and 229 service rigs. The combined companies will offer an array of oilfield supplies and services as well as turnkey drilling projects. Precision Drilling (Calgary, Alberta) first made an unsolicited bid for Grey Wolf (Houston) in June. Results for the six months to that point suggest that the merger will produce annual revenues of \$1.8 billion.

Steel

Novolipetsk Steel's acquisition of Beta Steel will support its tube making operation in the US

The Russian steel producer Novolipetsk Steel has signed a definitive agreement to acquire Beta Steel, a US steel producer, from a group of private shareholders in an all-cash transaction. The deal is expected to close in the fourth quarter of 2008.

Russia's fourth-largest steel maker by volume is making the purchase to provide feed for another recent acquisition, John Maneely Co (Collingswood, New Jersey), one of the largest US producers of steel tube and pipe. Beta Steel (Portage, Indiana) is an independent producer specializing in hot rolled flat steel. Over 35 per cent of its output is currently sold to tube and pipe producers.

Novolipetsk Steel said on 4 September that its 'rationale' is to secure additional upstream integration with Maneely's Atlas Div, to which Beta is already a supplier. The two companies, Novolipetsk said, make 'a perfect match'.

Beta Steel operates an electric arc furnace melt shop with a capacity of 725,000 metric tons per year and a hot strip rolling mill of 1.1 million mtpy capacity. For 2007 the company reported revenues of \$324 million on sales of 547,000 mt of steel. Novolipetsk said it plans to increase Beta Steel's output through streamlining as well as supplying its own slabs, from Russia, for re-rolling.

From Moscow, Novolipetsk Steel said, "The acquisition of Beta Steel is fully consistent with [our] stated strategy of product diversification


and increasing sales of finished products in core markets. The transaction allows [Novolipetsk] to shape a new, vertically integrated pipe and tube player in the North American market."

President and CEO Alexey Lapshin further noted the Russian company's commitment to "develop a strong footprint in the US high value-added finished steel market."

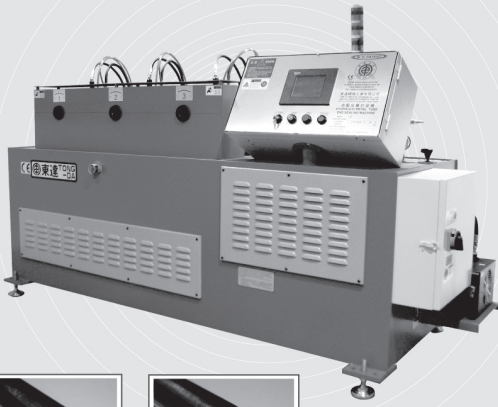
- Russia is the world's fourth-largest steel producer. In expectation of increased demand in North America, over the last few years Russian steel makers led by Severstal, Evraz Group, and Novolipetsk have spent over \$13 billion to buy up North American steel assets at the relatively low prices made possible by the weak US dollar. Having acquired around 10 per cent of US steel making capacity, these companies are now looking to secure raw materials for their mills. Severstal, for example, on 22 August agreed to buy coal miner PBS Coals Corp (Somerset, Pennsylvania) for about \$1.3 billion in cash.

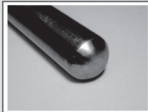
ArcelorMittal's price cutting in South Africa is bad news for US steel producers

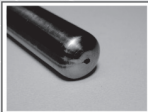
The 1 September announcement by Luxembourg-based ArcelorMittal that it was cutting its South African steel prices was seen by US steel producers as boding no good for the North American market. Indeed, the effect was evident immediately in a drop in steel stocks. Nucor, the leading US producer, slid 6.5 per cent in New York Stock Exchange composite trading. US Steel, the




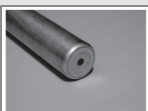
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second-largest producer by market value, declined 10 per cent, and AK Steel – No 3 in the US – dropped 8.9 per cent.

Already, in August, the US producers were getting 2 per cent less for their steel. The price of hot rolled steel sheet fell to an average \$1,047 a ton from \$1,068 in July, according to an 29 August report by *Purchasing* (Waltham, Massachusetts). The magazine for supply-chain managers said most steel mills had expected prices of \$1,080 for the month.

This must be seen in perspective. The decline was the first in about a year, and steel prices in the US had more than doubled from the \$508 a ton average that the mills were charging customers in August 2007. Through August, US steel prices had gained around 80 per cent since the beginning of 2008. Even so, the decision by ArcelorMittal was distinctly unwelcome news to the American producers. The world's biggest steel maker will cut prices for its long-steel products, used primarily in construction, by an average of 5.6 per cent in South Africa. Dale Crofts of *Bloomberg News* explained the significance for North America:

"The US relies on imported steel for about 25 per cent of its needs, and relatively lower prices in North America have made the US a less attractive destination for the imports it requires. That has allowed domestic producers to boost prices even amid lower demand." ('US steelmakers fall as ArcelorMittal cuts prices,' 2 September).

But, as noted by the second-largest steel maker in Latin America, a reverse trend has set in. Ternium SA, a division of the Argentina-based Technint group, said on 6 August that slowing North American demand for automobiles, appliances, and construction materials was starting to weigh on steel pricing, even as inventories remain balanced.

Moreover, *Bloomberg* pointed out, the price declines coincided with a seasonal slowdown, when General Motors Corp and other US automakers cut steel use during their scheduled shutdowns. The situation was not helped by the high price of gasoline and the changed driving habits of the suddenly thrifter average American. GM's sales in the U.S. fell 18% through August, as demand for many of its vehicles plunged.

Of related interest . . .

➤ In other news of ArcelorMittal, after four months of talks the company on Aug. 30 said it had reached agreement with the

union representing steel workers at its U.S. plants. Some 14,000 employees represented by the United Steelworkers at 14 plants in eight states had voted to authorize a strike if a contract were not agreed upon by Sept. 1. The workers make up 4.5% of the company's global workforce. The contract covers ArcelorMittal's flat carbon, long carbon, and iron ore mining locations in the U.S.

➤ After buying mines in Russia and the U.S. this year, ArcelorMittal on Aug. 20 said that it had agreed to buy iron ore miner London Mining Brasil for up to \$810 million to help improve its self-sufficiency in raw materials. By 2012, the Luxembourg-based company expects to have raised its iron ore sufficiency from 45% currently to 75 per cent. It recently raised its sufficiency in coal from 15% to 20 per cent.

London Mining Brasil has an estimated 1,059 million metric tons of indicated and inferred iron ore, and ArcelorMittal said it is considering a further \$700 million investment to increase production. The group also announced an agreement with Canada's Adriana Resources for the development of an iron ore port facility in the Brazilian state of Rio de Janeiro.

Automotive

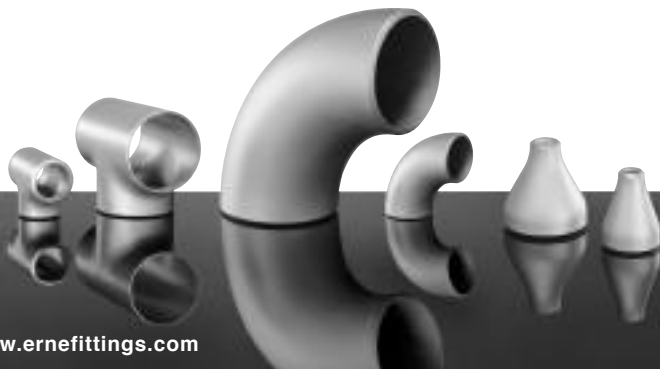
Ford's new diesel-powered Fiesta is 'awesome,' but European and Japanese models will beat it into the US market

"Ford's 2009 Fiesta EConetic goes on sale in November. But here's the catch: Despite the car's potential to transform Ford's image and help it compete with Toyota Motor and Honda Motor in its home market, the company will sell the little fuel sipper only in Europe."

David Kiley, a senior correspondent in the Detroit bureau of *Business Week*, wrote this in the magazine's 'Green Biz' section – where the new Ford product definitely rates a mention. It is described as a sporty subcompact that seats five, offers a navigation system, and gets a 'whopping' 65 miles to the gallon, which makes it at least 30 per cent more fuel-efficient than a comparable gasoline-powered car. And, self-praise or not, Ford America President Mark Fields obviously felt comfortable making the assertion, "We know it's an awesome vehicle."

What, then, are the 'business reasons' why the car will not be sold in the US? Chiefly, the Fiesta EConetic runs on diesel, and it seems

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that the American driving public dislikes the fuel. Only 3 per cent of cars on the roads of the US run on diesel (*'The 65mpg Ford the US can't have,'* 4 September).

Mr Kiley wrote, "Automakers such as Volkswagen and Mercedes-Benz have predicted for years that a technology called 'clean diesel' would overcome many Americans' antipathy to a fuel still often thought of as the smelly stuff that powers tractor trailers. Yet, while half of all cars sold in Europe last year ran on diesel, the US market remains relatively unfriendly" to the fuel.

"Americans see hybrids as the darling," Global Insight auto analyst Philip Gott told *Business Week*, "and diesel as old-tech."

Even so, and despite the fact that diesel costs from between 40 cents and a dollar more per gallon than gasoline in the US, European and Japanese auto makers – including Nissan and Honda – are readying diesel entries for the US market. Why not Ford?

"First of all, the engines are built in Britain, so labour costs are high," explained Mr Kiley. "Plus, the pound remains stronger than the greenback. At prevailing exchange rates, the Fiesta ECOnetic would sell for about \$25,700 in the US. By contrast, the Prius [a hybrid built by Toyota] typically goes for about \$24,000. A \$1,300 tax deduction available to buyers of new diesel cars could bring the price of the Fiesta to around \$24,400. But Ford doesn't believe it could charge enough to make money on an imported ECOnetic."

- For *Business Week's* Mr Kiley the question is whether the US ever will embrace diesel fuel and allow automakers to achieve

sufficient scale to make money on such vehicles. Volkswagen and Mercedes diesel cars were certified for sale in California only this year. James N Hall, of auto researcher 293 Analysts, said that California and the Northeast remain 'hostile to diesel'.

But Mr Kiley sees this risk to Ford in waiting for the hostility to subside: "The fuel takes off, and the car maker finds itself playing catch-up despite having a serious diesel contender in its arsenal."

Elsewhere in automotive . . .

➤ According to the American Customer Satisfaction Index, compiled by the University of Michigan and published 19 August, US car buyers in greater numbers are dissatisfied with their purchases from domestic automakers. The results of a telephone survey show Asian and European carmakers gaining in appeal to Americans at the expense of the Detroit producers.

Customarily, US brands raise their customer satisfaction scores each year – although not as much as their overseas rivals. This time, however, the ratings of the domestic companies declined even as their competitors' scores continued their climb. Lexus and BMW tied for first place, followed by Toyota and Honda – ousting General Motors' Buick and Cadillac brands, and Ford Motor's Lincoln and Mercury lines, from the No 2 slot.

The survey inquired of 5,500 people who bought cars within the past three years how their satisfaction level compared with expectations,

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how their vehicle compared with the ideal vehicle, and their overall satisfaction level.

Finance

Most US corporations avoid taxes, says a government study

A report issued by the US Government Accountability Office (GAO) on 12 August found that a majority of US corporations do not pay federal income taxes. Although this would be no surprise in the case of corporations taking losses in a given tax year, the study found that over 60 per cent of US corporations with revenue totaling more than \$2.5 trillion paid no federal income taxes between 1998 and 2005. The tax returns reviewed by the GAO for that period were filed by small businesses as well as multinational corporations.

Antonio Perez of the *Epoch Times* noted that, while corporations usually aim to report higher earnings to shareholders and Wall Street analysts, income for taxes can be drastically different from net income for financial reporting. He wrote, "The taxable income may be offset by prior period deferrals, various federal tax credits, and other write-downs prohibited by generally accepted US accounting standards."

The study, commissioned by two Democratic senators, was originally intended to investigate tax avoidance in corporate transfer pricing. [This pricing method permits allocation of sales and costs among different divisions of the company and different tax jurisdictions.] But the report did not mention any issues surrounding transfer pricing.

For the single year 2005, the GAO found that 25 per cent of all large corporations in the US owed no federal taxes. For purposes of the study a large corporation was defined as a company with more than \$250 million in assets.

Elsewhere in finance . . .

➤ "There is a new class of financial superpowers, and America is not one of them," wrote staff reporter Julie Satow, of the *New York Sun* (19 August). The reference was to research from the Council on Foreign Relations, which showed autocracies such as

China and the Arab states of the Persian Gulf, plus the governments of Russia and Venezuela, owning nearly 80 per cent of the world's \$1.71 trillion of government wealth. Autocracies' assets grew by 60 per cent in the last year to \$1.35 trillion, as of the second quarter, while democracies saw their assets plummet 7 per cent to \$360 billion during the same period.

For the US, this perhaps sounds more troubling than it is, despite the fact that the country has been running a large external deficit for some time. For other governments, autocratic or otherwise, to be holding US debt is a sign of the attractiveness of such investment. But Ms Satow pointed out that America's dependence on foreign funds 'can complicate foreign policy'.

For example, according to one respondent, the Georgia-Russia confrontation in August was an early instance of significant political tension between the US and one of its biggest creditors. Brad Setser, a fellow in geoeconomics at the Council on Foreign Relations, told the *Sun*, "As a result of the events in Georgia, Russia may become less willing to finance the US".

Collateral damage . . .

➤ As Wall Street's troubles deepen, big US investment banks like Morgan Stanley and Merrill Lynch are moving some of their key employees to increasingly influential hubs of finance in Asia, the Middle East, Europe, and Latin America. A parallel trend is funneling jobs from traditional financial centres like New York, as price pressure moves jobs lower down the corporate ladder overseas, especially to India. The relocations enable the banks to strengthen themselves in regions where they had already been building up business, while retaining skilled workers threatened by the waves of layoffs that have claimed 80,000 finance jobs globally.

➤ Apparently the combination of the downturn in housing construction and stepped-up immigration raids have made it harder for Mexican migrants to find jobs in the US and to send money home. According to Mexico's Central Bank, money sent home by Mexican workers in the US declined by 2.2 per cent in the first half of 2008. Year-end figures are expected to show a continuation of the trend. This is the first sustained decline since the bank began tracking these remittances, in 1995.




Dorothy Fabian, Features Editor (USA)

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The specialities under review here are so strongly associated with accuracy and precision that, in an industry renowned for fidelity to set standards and exact measurement, they may seem to be first among equals.

In the industrial setting, excellence is never an accident; and the perfection that is expected, and routinely found, in the pieces coming off the line in a modern tube cutting mill come from a culture of perfectibility.



 Carbide tipped and HSS blade technology from WD Quinn Saw Co (see page 98)

A unit makes compound curve cuts while providing angular abutment of tube ends on opposing tube surfaces. A laser-driven robotic cutter creates four unique and faultless parts from a single tube. Cold saw equipment produces a dimple-free, burr-free cut with a minimum of setup and operator expertise – anticipating today's business ethos of commitment to important savings in time, labour, and money.



 Tube laser cutting using technology from Rofin (see page 86)

No more nor less than any other tube making process, cutting, sawing, and profiling are very advanced technologies.

But their association with caliper precision makes them worthy exemplars of an industry that itself was built on exactitude in the service of productivity.



Newly developed flying profile cutter

Schöler Spezialmaschinenbau GmbH, Germany, has launched the newly developed RS600 flying profile cutter. This new cutter combines the established Schöler technologies of the high-frequency rotary tube cutters RS100-RS300, with the RS400 flying vertical cutters, which provides for a multitude of application options.

The RS600 can be utilized in a variety of manufacturing operations where a

 The new RS600 flying profile cutter



rectangular burr-free, cut edge is required at an extremely high output rate. In order to meet the requirements, a high-performance cutting method has been developed, in which the cutoff unit is synchronized to the profile speed on a linear drive system.

Using a synchronized cutoff unit, the cut can be executed by a rotating blade fitted onto the cutoff unit. During this stage, the linear drive system can be swivelled around the horizontal centre of the profile. This ensures easy determination of the point at which the blade dips into the profile, enabling the optimal separation of unsymmetrical profiles.

The heart of the RS600, as for all Schöler cutters, is an efficient hardware/software platform. It enables millisecond-precise synchronization of the acceleration processes for the cutoff unit and cutter arm.

Only with the optimum interaction of all components can the excellent cutting length variation be achieved.

The flying profile cutter RS600 is designed as a self-contained unit that can easily be integrated into all Schöler profile welding and folding systems. In addition, open mechanical and electronic interfaces ensure a trouble-free integration into production systems of external manufacturers.

Highlights of the machine include freely definable dip point of the blade by swivelling the linear drive system by $\pm 90^\circ$. A minimum cutting length variation is possible by using an in-house developed hardware/software platform. In addition, there is automatic adjustment of profile lengths by continuous temperature compensation.

Inclusive of stable cutter blades and cutoff dies, the machine can be retrofitted to existing welding, folding or extruding system (also external systems). Other features include integrated diagnosis and analysis functions, remote control via modem or internet link, freely programmable outputs for integrating further components, and profile length adjustment at full production speed.

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Specialist products for circular sawing applications

Tenryu Saw Mfg Co Ltd, Japan, is a leader in the Japanese saw blade industry, with specialist products in circular sawing for the tube and pipe industry. With over 90 years' experience, the company has developed and expanded the market all

over the world. The company's saw blades are currently being used for a range of applications.

As the market structure has changed dramatically, the method of cutting has

also seen extensive development. In the tube and pipe industry, many users are now seeking a better way of sawing more precisely and quickly in order to achieve higher productivity.

From the context of the recent change in the international industry, Tenryu has encountered various new challenging applications for circular sawing.

In each instance of R&D, the company has accumulated the knowledge and experience from each project.

In order to turn new ideas into actual products, the company is always seeking a better way to produce quality saw blades. In order to maintain the quality of the products, Tenryu has set an extremely high standard for manufacturing and quality control.

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 Tenryu provide specialist products in circular sawing



Lasers in tube manufacture – a well-rounded process

Steel tubes are used to produce a vast array of products including water pipelines, steel furniture, machine frames and even the fine tubes of less than 200µm in diameter used within the medical device industry.

Thousands of miles of pipeline, tube and profiles are formed, welded, cut and marked every day. In many cases, the machines used for this diverse range of applications have lasers at the heart of the process.

Rofin, Germany, produces a complete range of laser sources and solutions, for use in an increasing number of applications. The advantages of laser welding are well known to Esta Rohr, a manufacturing company in Siegen, Germany.

Esta Rohr produces longitudinal seam welded, stainless steel pipes on a 3-shift operation, using a 4.5kW CO₂ slab laser integrated within a Rofin profile welding system (PWS).

“The benefits for us are obvious,” commented Mr Sven Pitzer, technical manager of Esta Rohr. “Compared to the traditional TIG-welding process, the laser is three times as fast. For example, we were welding tubes with dimensions of 18mm x 1mm with the conventional TIG-machine at 5.5m/min. By comparison the laser achieves 16m/min, and it is not the power of the laser which restricts the speed, but the subsequent in-line annealing unit.”

Another important factor for Esta Rohr is the capability of the profile welding system to weld both austenitic and ferritic stainless steels. In addition to the range of austenitic

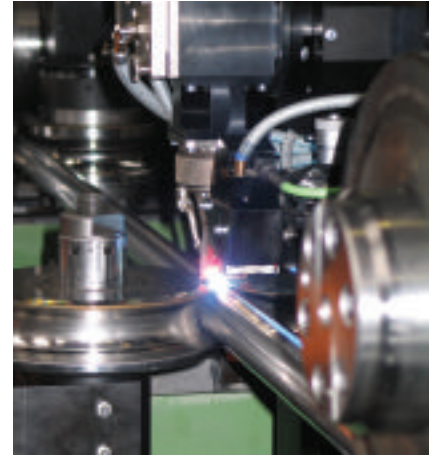
materials, ferritic steels such as 1,4509, 1,4520 or even 1,4521 are currently being used. These steels are often more economical, but still offer a technically feasible alternative in many application areas due to their equal corrosion resistance.

When manufacturing stainless steel tubes, the process benefits of the laser allow precise control of the laser parameters and therefore the energy used to create the weld, along the full length of the tube.

The laser also offers distinct advantages when it comes to system availability: the contact-free CO₂ slab laser system has an availability of almost 100 per cent, unlike the traditional TIG-welding process with its electrodes which have to be replaced regularly, causing inevitable breaks in production. In addition to Esta, more than twenty other companies worldwide have opted for Rofin’s CO₂ slab lasers combined with the profile welding system for the manufacture of stainless steel tubes.

With its integrated gap recognition, the PWS sensor technology adjusts for the smallest deviation of the weld seam position, providing optimum welding results even under difficult conditions. Rofin states that laser weld seams are more resilient than conventionally created weld seams, which is a distinct advantage when tubes are to be formed and manipulated following the welding process.

The benefits of speed and precision are also apparent in the laser cutting and profiling of tubes. In instances where traditional methods such as drilling, milling, sawing or die cutting reach their limits, laser



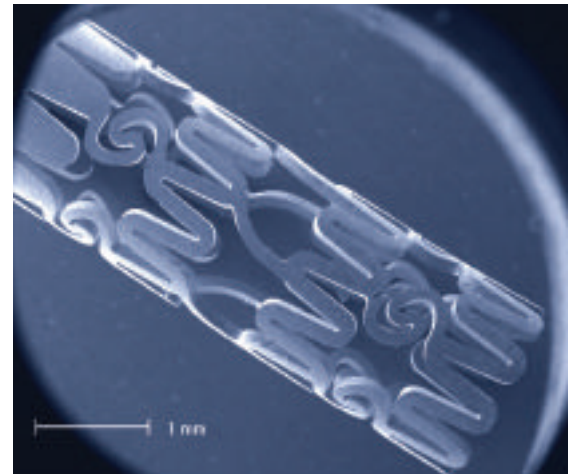
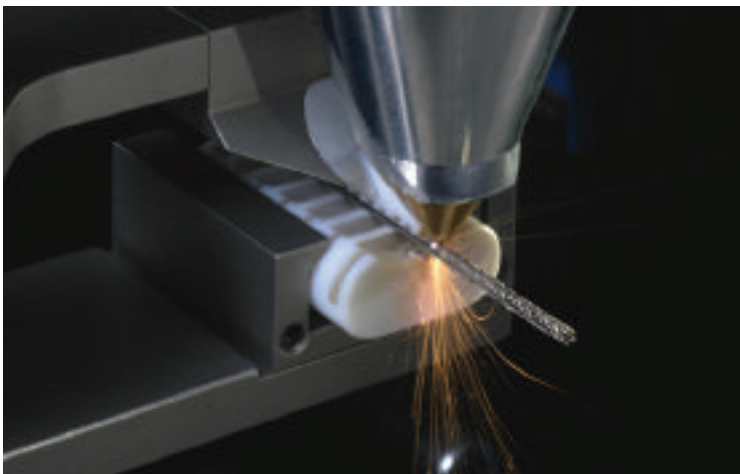
ⓘ Laser welding of tubes using the Rofin profile welding system

➤ **Traditional methods of cutting and machining tubes generate mechanical loads which can induce stresses into the materials and parts** ◀

cutting opens up new possibilities. All of the traditional methods of cutting and machining tubes generate mechanical loads, which in turn can induce stresses into the materials and parts being processed.

Laser cutting, however, is a contact free and highly flexible process. Simple programme changes enable different parts and profiles to be produced without the need to perform any tool changing operations.

ⓘ (Below) Medical stent production using Rofin’s StarCut tube system; and (below right) a close-up view of a stent





The flexibility of the laser makes it suitable for a wide range of marking applications on steel tubes. Tubes often require marking for quality control purposes and to enable part traceability. In these instances it is essential that the mark is permanent, clear and applied in the shortest time.

Rofin has developed a concept which enables tubes to be marked on-the-fly. With this system integrated into a tube production line, it can be used to mark part numbers, production dates and times, bar codes, data-matrix codes and ascending or descending serial numbers.

The laser marking process is not affected by surface impurities such as the thin film of oil that may be present due to the tube forming process.

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 Tube cutting at Dimensione Laser using Rofin slab lasers

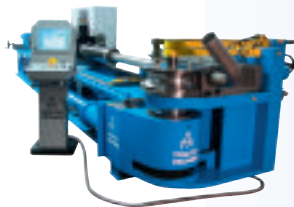
The thermal load on components that are cut using lasers is also minimal, as demonstrated by Rofin's StarCut tube system. It is used to precisely and quickly manufacture miniature and intricate components such as 200µm diameter medical stents.

Italian company Dimensione Laser has been using lasers for processing tubes and flat sheet for more than ten years. The company now has a total of five tube cutting systems installed, each of which uses a Rofin CO₂ slab laser.

The laser cutting process is not restricted to small and thin section parts. Large parts can be cut reliably and quickly by laser, from simple web cuts to complex notch and contour cuts.

The systems are used to produce a large variety of different parts, many of which are low volume items. Advantages include low maintenance, high uptime, minimal gas consumption, and the flexibility of the lasers.

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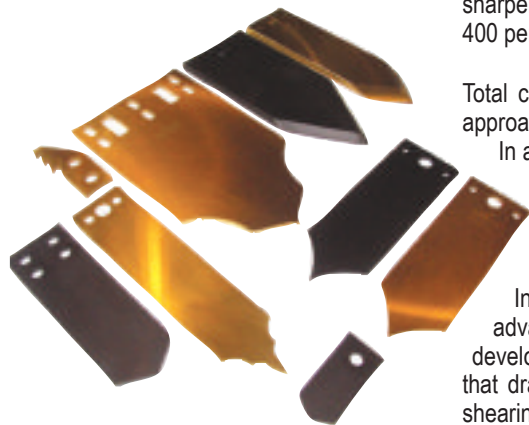
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Speciality metal cutting blades and systems

New-Form Tools, Canada, is a provider of metal cutting solutions to the tube, pipe, and rollform industries. The company has developed speciality blades and cutting systems for high tensile and high strength materials including stainless steels and exotic metal tubing. The titanium coated speciality shear blades and jaws are impact resistant and wear resistant.

The company aims to remove the unpredictability in blade life, and provide solutions for those that have struggled with sawing and shearing issues. New-Form offer consistent saw quality cuts in varying

 *New-Form shear blades offer a rate of 5,000-11,000 cuts in difficult high strength tubing*



size and wall thicknesses, with long life and high quality cuts of high strength steel tubing.

Examples from customers using New-Form shear blades reveal a rate of 5,000-11,000 cuts in difficult high strength tubing 0.179" wall by 6½" diameter. Historically, these tube cutting numbers were unpredictable with numbers of 100-800 cuts.


These results have been verified at one customer in mid-USA, saving in excess of US\$1 million dollars on its tube mill from the actual scrap steel tube produced. New-Form claim that the cost of new blades and sharpening has been reduced by more than 400 per cent.

Total cost reductions in one tube mill line approached \$1.4 million dollars per annum.

In addition, the customer has drastically improved its efficiencies so that ample run time is available to run additional products.

In addition to these cost saving advances, New-Form Tools has developed patented quick change systems that dramatically reduce downtime in tube shearing. Tool package changes that would



 *Rotary disc cutters (above left) and slitter knives (above right) from New-Form Tools*

total up to 60 minutes have been reduced to as little as 60 seconds.

New-Form Tools offers standard and custom rotary knives for cutting applications. CNC centres prepare edges on knives that can be machined according to unique specifications. The company also offers affordable metal cutting solutions to the rollform industry. Manufactured from highly dependable FN99 steel, the company's rollform tooling resists chipping and cracking, resulting in less downtime.

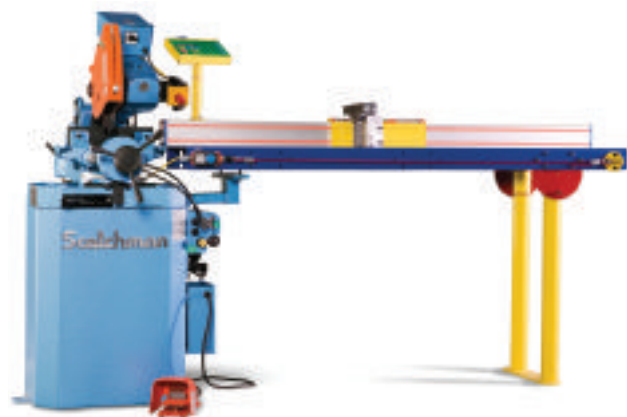
Produced with NFT100 high grade steel, the company offers highly durable slitter knives. Coil processors can achieve significant savings with chip resistant knives, providing increased production and reduced downtime.

New-Form Tools Ltd – Canada
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Advanced feed system for fully automatic cutting

Scotchman Industries, USA, is the manufacturer of an advanced feed system that is designed to turn a semi-automatic machine into a fully automatic production machine. This system acts to increase productivity, decrease setup time, reduce operator error and eliminate waste.

 *The Scotchman advanced feed system*



Operators can either manually enter dimensions into the controller or pull a cut list directly from the controller. Powered by TigerStop, the programmable controller can store up to 99 programs. Cut list information can also be downloaded directly from a PC, speeding up production and reducing the chance of operator error.

Once the material is secured in the indexing clamp and the machine started, the Scotchman advanced feed system automatically moves the material into position and clamps it, then cycles the machine.

To perform one-off cuts, the operator simply keys in the desired

cut length (in inches, fractions, or metric) and pushes 'start', and the automatic stop moves to position.

Scotchman president, Mr Jerry Kroetch, commented, "The advanced feed system will cut production time in half, virtually eliminating setup time. Now, operators no longer need to use a tape measure or set and adjust manual stops."

The advanced feed system can be used as a programmable stop system or a fully automatic programmable push feed system with the optional material clamp.

Scrap can be eliminated by using the optional optimising software. Upon entering the clear stock length of a piece of material into the controller, the system calculates how to optimise the material for the highest yield.

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Email: info@scotchman.com
Website: www.scotchman.com



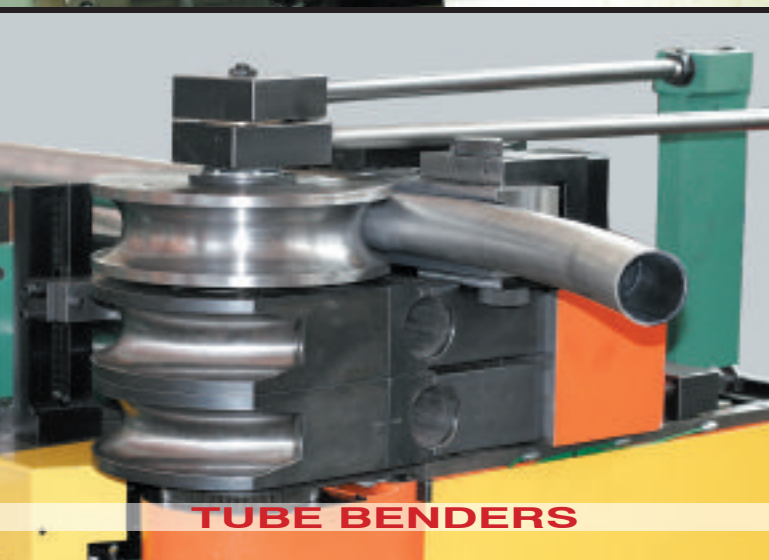
TUBE CUTTING LINES



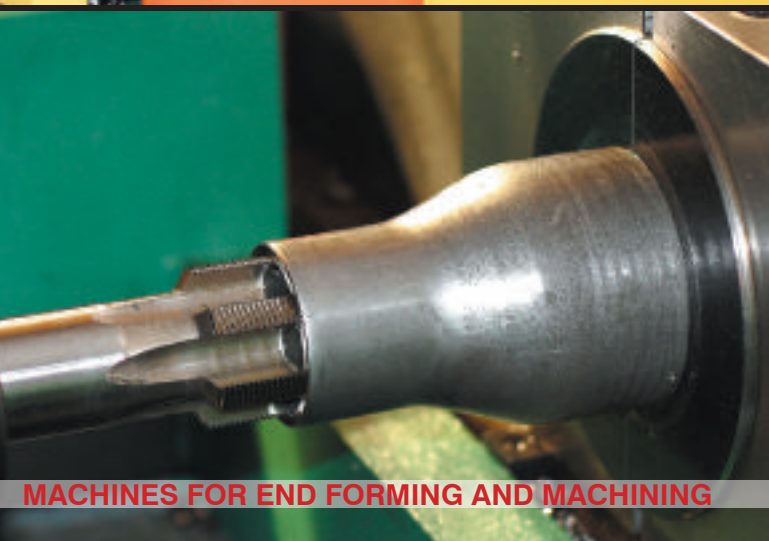
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DEBURRING SYSTEMS

Fast and safe cutting with high-performance HBP313A band saw

The HBP313A is the latest model of HBP-series band saws from Behringer GmbH, Germany. This machine offers a range of substantial benefits including precision, economy and performance.

The machine's extended cutting range encompasses round material up to 310mm, and 500mm x 300mm (W x H) for slabs, while pipes up to 310mm can be cut. With cutting speeds of between 20m and 140m per minute, depending on material and thickness, the HBP313A is both fast and reliable.

The best cutting results are ensured by a rigid, low-torsion, low-vibration saw frame in a stable cast construction with backlash-free pretensioned quadruple guides. The machine is even capable of providing the best results on material with difficult cutting properties.

The machine's two guide columns are ground and hard chrome plated. A saw frame with a 3° incline offers a particular benefit when sawing profile material. The hydraulic saw-blade clamping fixture is

electronically monitored, with a sensor system ensuring automatic pressure reduction in case of machine standstill.

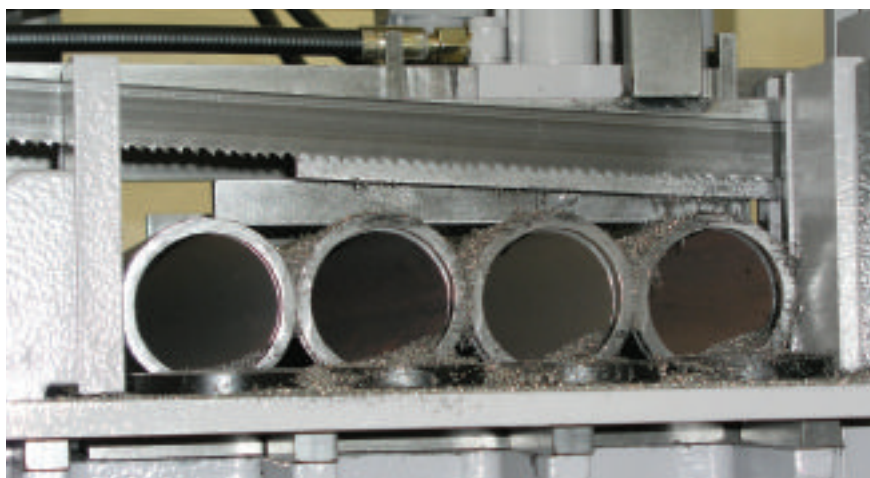
Precise cutoffs at high output are guaranteed both by a constant cutting feed rate and a constant cutting force when working with pipes and sectional material.

The height of the saw frame can be fully automatically adjusted in line with material height. The frame also features a rapid lowering function in automatic operation to reduce downtime.

The HBP313A is ideally configured for operation with minimal supervision. The material is clamped hydraulically in the horizontal direction, with facility for stepless adjustment of the clamping pressure. The cylinder stroke stretches over the whole of the cutting area. A feed gripper mounted on self-aligning bearings reliably transports heavy solid material into the machining position.

The HBP-series from Behringer encompasses several different sawing machines with a cutting range from 260mm to 510mm. The HBP-series machines are all either semi or fully automatic models.

 The HBP313A band saw for round material up to 310mm



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Ultra high-speed automatic circular sawing machine

Parthenon Metal Works, USA, has ordered a second ultra high speed Bewo SCF 90 Quatro automatic circular sawing machine from Bewo Bv, the Netherlands,

via US/Canadian representative European Technology Centre North America, USA.

 Bewo's SCF 90 Quatro automatic circular sawing machine



The machine will be supplied complete with in-line brush deburring, 100 per cent length measuring and pick-and-place packing system.

Parthenon installed its initial machine (the first Bewo SCF 90 Quatro line in the USA) during early December 2007. Mr Chuck Chandler, engineering and project manager, commented that "once the company had got to grips with this new technology, a second machine was inevitable."

As a steel tube manufacturer servicing the needs of many industries, particularly the high demands of the automotive industry, Parthenon is constantly investigating and investing in ways to increase productivity, reduce turnaround time and improve the quality of products.

Mr Chandler added, "The Bewo SCF 90 Quatro sawing line has revolutionised our re-cut department, providing customers with considerable improvements in the quality of cut finish, cut to length tolerances and repeatability, whilst reducing setup times, tooling and labour costs but also critically increasing productivity."

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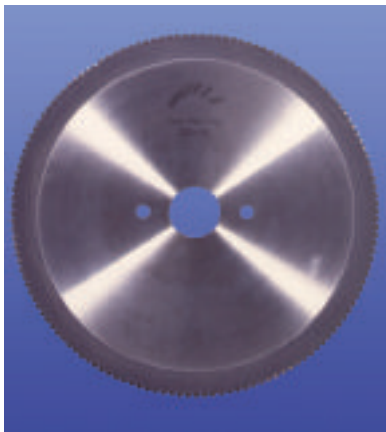
Cutting, Sawing & Profiling Technology


Product advancement in one-way cold saw blades

Kanefusa Corporation, Japan, is a leading manufacturer of saw blades and industrial machine knives. With annual sales of over US\$160 million and 4 per cent spent on R&D activities, the company has pioneered cold sawing technology using one-way saw blades.

This technology is claimed to be superior to band and metal saws, leading to increasing popularity among manufacturers of automotive parts or machine elements (such as bearings). On average, it is claimed that a cold sawing machine can replace 3 band or metal saws. This is possible due to the cut cycle times of one-way saw blades, which are significantly faster. They are capable of outlasting band, metals and grind-able saw blades.

One-way saw blades are tipped with very durable grades of cutting edge materials, such as cermets or coated tungsten carbides, which are difficult to grind. The tooth geometry of these saw blades allow them to perform better and cut cleaner. The geometry is so unique that they cannot be reground on conventional grinding machines.



 The Ferro Max Tube saw blade from Kanefusa

It is even possible to run the saw blade until the teeth come off, without concern of damaging the saw blade. Another tremendous advantage of the one-way saw blades is their high process reliability. One-way cold saw blades cut solids and pipes made from low carbon, high carbon and stainless steel.

Users often report a sharp drop in performance after grinding. In the case of one-way saw blades, performance is very consistent – blade-after-blade. Further advantages are the minimal amount of lubrication required and the thin kerf compared with grind-able cold saw blades.

Kanefusa has recently released the Ferro Max series of cold saw blades, which has made rapid advances in the bearing industry. Ferro Max has set a new performance standard due to a newly developed coating, improved carbide grade and new blade design.

The Ferro Max Tube is designed to cut thin walled tubes. In addition to a unique tooth shape and exclusive cutting edge material (available only to Kanefusa), the company has produced a tipped saw blade with a tooth pitch of 6.39mm.

At a user in the UK, a regular HSS-saw blade (D = 300mm, 180 teeth) cut 2,000 pieces of ST37 (D = 35mm, wall thickness = 1.8mm, tensile strength = 800N/mm², cutting speed = 120m/min), on a Bewo ECH108M machine, while Ferro Max Tube (D = 300mm, 150 teeth) cut over 20,000 pieces.

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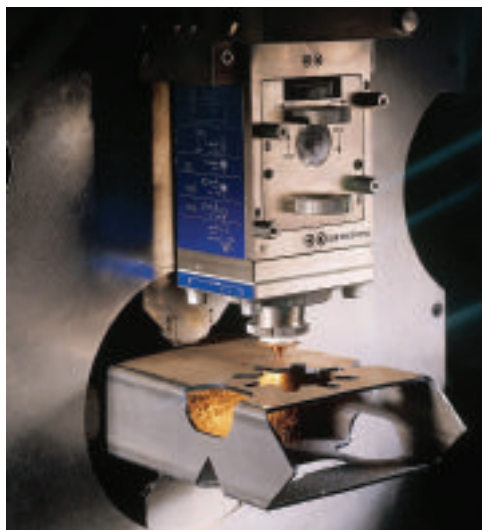
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Tube laser contributes to sheet metal component manufacturer's strategy

BLM Group UK Ltd has delivered a new BLM Adige LT 712D CNC tube laser to Hydrum Sheet Metalwork, UK.

With over 30 years of experience in subcontract manufacturing, Hydrum has built a reputation for quality sheet metal components, assemblies and light fabrications produced at its 70,000ft² factory.

⚙️ *The BLM Adige LT 712D tube laser can process round, square, rectangular and flat-sided oval section tube up to 152mm diameter*



The decision to purchase the LT 712D tube laser was based in part on the performance and reliability of the BLM Dynamo CNC tube bender and the new machine's 8.5m tube length processing capacity.

"We were impressed by the build quality of the machine, its off-line programming capability, the service and support provided by BLM Group UK Ltd, and the experiences of other end-users," said Mr David Greatorex, operations director at Hydrum.

"Where we would previously have used several machines to process tubular components, we now use the tube laser and have eliminated inaccuracies and work-in-progress. All of this has enabled us to take cost out of the job because it is not just about cutting faster, it is about revisiting the entire production process from design to delivery of the completed component."

The BLM Adige LT 712D is equipped with a Siemens Sinumerik 840D CNC and can process round, square, rectangular and flat-sided oval section tube up to 152mm diameter,

courtesy of a 2,500W laser source. Off-line programming software specifically developed for the machining of tubes creates new programs quickly and easily, typically less than 10 minutes from drawing to finished part.

The machine is provided with Siemens control that allows the operator to manage all the main functions, including program downloads. Fast setup and changeover times (around three minutes) mean short batches can be managed as cost-effectively as longer production runs.

In addition to sheet metal processes such as CNC punching, presswork, folding and rolling, and its expertise in laser tube cutting and profiling, Hydrum also offers MIG/TIG welding of mild, stainless steel and aluminium.

Precision CNC machining is also available, with powder coating of parts that require painting prior to final assembly and delivery.

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Automatic sawing and deburring system

Klingelhofer Corporation, USA, provides a range of cutting and sawing equipment from a range of leading manufacturers.

The company offers the Kasto model KastoWa-90R/S automatic sawing machine in combination with the RSA model NN 1000A wire brush deburring machine.

⚙️ *The Kasto model KastoWa-90R/S automatic sawing machine*



These combined machines are designed for tube and shape up to 3½" in diameter. The modern sawing machine is equipped with a length gauge and a tilting support table for long cutoffs. It also includes an automatic loading table, pusher type stock feeder, trim cutting, remnant end separation, and infinitely variable blade speeds up to 780sfpm by means of a frequency controlled motor.

The newly developed saw carriage enables the efficient use of notch grind, TiCN coated cobalt

blades for extremely high cutting rates. Vertical and horizontal clamping on the infeed side and horizontal clamping on the discharge side assure square and burr-free cuts.

The heavy-duty tube and bar end deburring machine is loaded automatically by means of an interlinking cut piece transfer system.

Burrs are simultaneously removed from both ends with tubes being deburred on the ID and OD. Interchangeable support rails are available to rotate rectangles or shapes.

The machine has a simple horizontal and vertical adjustment of the brushes as well as lateral adjustment for the cut piece length. Standard sawing and deburring lengths of 40", 80", and 120" are available.

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Latest automatic tube cutoff machine for 4-18mm Ø tube

Ravni Technologies, France, manufactures the MDC10CM automatic tube straightening and cutting machine. This machine is designed to run with steel tubes, stainless steel tube, coated tubes, and copper tubes from coils with a diameter range from 4mm to 18mm.

The standard line includes a single or double motorised uncoiler synchronised

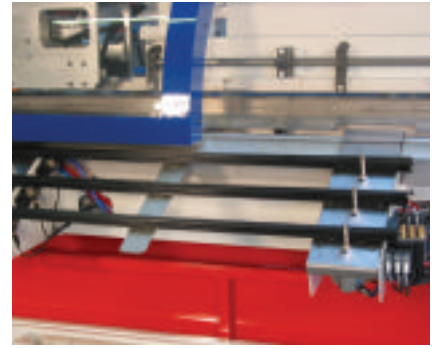
 The MDC10CM automatic tube straightening and cutting machine




with the machine, a caterpillar feeding station, a straightener and a cutoff unit. The machine is equipped with a chipless cut or a slitting saw according to the customer requirements. The numerically controlled caterpillar feeding station allows a speed of 180m/min with a precision of $\pm 0.5\text{mm}$ over 1 metre.

All the tools can be changed very quickly and the roller straighteners are settled on a rotating table. In addition, they are adjustable and equipped with digital indicators or mechanical memory to find the perfect setting for every diameter.

A numerically controlled chipless cutoff unit is available as optional equipment. This allows setting of the speed and penetration depth



 The machine is equipped with a caterpillar feeding station

of the wheel into the tube according to the thickness. All the parameters are programmable on the CNC display and can be recalled.

The advantages of this process are traceability, and fast operation setup. Ravni Technologies can provide the service for the installation, training and setup of the machine all over the world.

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DANIELI CENTRO TUBE

High power cold circular sawing plants

Maschinenfabrik Liezen und Gießerei GmbH (MFL), Austria, is a leading manufacturer of high power cold circular sawing plants. The sawing plants are designed for cutting of construction and stainless steel, ferrous and non-ferrous material in the form of billets, tubes, profiles and plates.

 MFL high power cold circular sawing plants



These custom-made solutions are used for specific applications such as tube or profile layers, billets or plate sawing plants. Billets and tubes up to 800mm in diameter can be cut by the company's billet and single tube sawing machines.

Each of these machines utilises carbide tipped saw blades, which guarantee an accurate and high capacity by lower cost and long tool life.

MFL has developed a layer sawing machine with a layer width of 1.5m that can be used for cutting tubes, I- and U-beams, sheet pilings, angles and profiles. This special sawing machine (type HKA 2200 L160) has been installed at a Chinese company that produces construction steel profiles.

The MFL sawing machine is used for the cutting of several profiles in one layer to the required exact length. This sawing machine is equipped with an installed driving power of 160kW and a saw blade diameter of 2,200mm. The fully automatic sawing machine was supplied and installed in 2007.

MFL claims to be the only manufacturer that produces layer-sawing machines up to this large layer width of 1.5m. Thereby, MFL offers completely new technology for rolling mills by cutting big profiles with carbide tipped saw blades.

A complete sawing machine includes auxiliary equipment in the inlet and outlet stand-alone sawing machine. In addition, when compared to conventional friction saws, there are a number of advantages to the new technology for cutting structural steel with carbide tipped saw blades.

Qualitative advantages of the final product include a smooth cutting surface, which is almost burr free. In addition, there is the benefit of a 100 per cent rectangular cut in horizontal and vertical direction.

Operational advantages include a noise level of less than 92dbA, no dirt and spark pollution during operation, and an increase of lifetime to a minimum of 150 to 200 per cent.

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Automatic cutting centre with intelligent motion system

Pedrazzoli IBP SpA, Italy, manufactures the MCL 120 IMS automatic cutting line, capable of cutting round tubes with different sections up to a diameter of 120mm. Featuring a high speed cutting cycle and sturdy construction, the line is suitable for cutting large thickness tube and high-resistance materials.

The automatic loader can bear more than 4 tons and has a fast movement speed. The MCL 120 IMS can fit blades from 140mm to 370mm diameter, and the cutting speed

can operate with 38-287rpm. The automatic programmable bar stop ensures precision, even when quickly changing cutting measures.

A patented discharge system allows fast unloading of cut pieces and maintains the correct position of the material after the cut. This makes it easier to attach the machine to other working units.

Pedrazzoli's IMS control (intelligent motion system) allows the feeding speed, thrust



 The cutting head of the MCL 120 IMS

torque and cutting speed to be modified during the work cycle. This software helps the operator to choose the right blade, to optimise cutting length and regulate cutting speed.

The MCL 120 IMS automatic cutting centre can be integrated with end-deburring operations, washing and drying system, dimensional control system, and collection units by adding standard accessories.

Pedrazzoli IBP SpA – Italy
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 Pedrazzoli's MCL 120 IMS automatic cutting centre

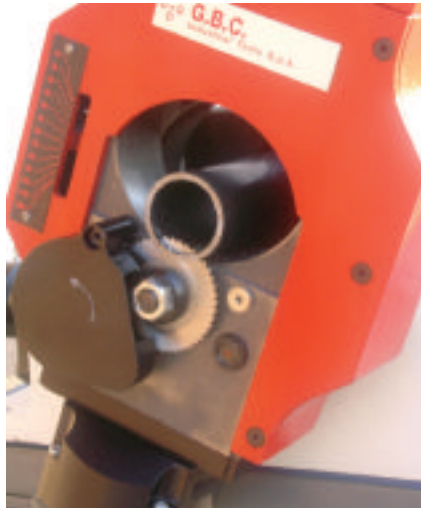




Three different product lines for pipe cutting applications

GBC Industrial Tools SpA, Italy, has over 30 years of experience in manufacturing portable pipe cold cutting and bevelling machines (1" to 60"), plate bevelling machines, pipe bevelling machines and hydraulic torque wrenches.

 GBC's orbital cutter



For pipe cutting applications, the company offers three different product ranges. The GBC supercutter (6" to 60") features a steel body, and heavy-duty, split frame. It is suitable for large pipe sizes and heavy wall pipes, including exotic materials.

The MCA cutter (1" to 30") has an aluminium body, lightweight, low profile, and split frame. It is suitable for all extreme onsite applications where high portability and easy handling is a factor.

The GBC orbital pipe cutter (¼" to 12") is a bench type unit, suitable for small wall thickness tubes, square and burr free cutting. It is designed for applications where a clean result is required, such as the food and semi conductor industries.

The company's new stationary GBC FB 500 pipe bevelling machine is engineered for factory or shop pre-fabrication, and mass production, where a wide range of sizes and quick job execution is necessary. Featuring solid construction, rugged, strong



 The heavy duty supercutter

motor and gear component, the machine is equipped with four speed selection, self-centring vice, auto coolant and chip removal basin.

GBC can also supply tailor-made machines, manufactured for specific purposes, as well as tooling for pipe cutting, outside bevelling (simple or compound), root face and counter-boring.

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A new view

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High performance cutting lines


Reika, Germany, is an international leader in cutoff machines for steel and stainless steel tubes. The company has recently received several orders for standalone machines and complete finishing lines with integrated cutoff machines.

A highlight of Reika's range is the rotary cutting machine for large diameter seamless tubes with high tensile strength up to 1,200N/mm². Consequent developments have enabled cutting of large wall tubes with standard carbide tools. The machines are highly flexible and help to substantially reduce tool costs compared to carbide saws.

The company is also very successful with its high speed cutting lines for precision tubes. The highest flexibility and lowest tool cost is possible due to a combination of chipless cutting and chip forming cutting on the same machine. Easy manual machine operation and short changeover times are made possible by standard Siemens CNC control and quick change tool systems.

Optimizing software for scrap reduction is available for both machine generations, which is an additional benefit because of less scrap material.



 Reika is an expert in cutoff machines for steel and stainless steel tubes


Reika rotary cutoff machines are available for a tube diameter range of 10-620mm. They can be combined with several components in order to cover nearly every individual requirement of the customers starting from stand-alone machines to complete turnkey solutions.

Reika GmbH & Co KG – Germany
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Expertise in grinding blades to peak performance

WD Quinn Saw Co, USA, is a producer of saw blades that provide perfect tooth geometry for each application. The company incorporates the latest CNC equipment into its manufacturing program, specializing in several markets including tube mills and secondary processing facilities using carbide tipped and HSS blades.



 WD Quinn is an expert in carbide tipped and HSS blade technology

Carbide tipped blades are sharpened and notched on a Vollmer CHD 270 with a 5-station palletized loader enabling continual processing of blades up to 800mm.

The HSS blades are ground and notched on a bank of Schmidt-Tempo machines, including a 6 axis Freestyle machine with automated loading and unloading also enabling constant processing on blades up to 500mm. The Freestyle machine is capable of grinding and chamfering blades in a single handling.

The company's Schmidt Tempo XXL machine is capable of processing blades up to 1,320mm, which are ideal for segmental users cutting structural metals.

All processes are designed to minimize handling and improve blade quality. WD Quinn also provides surface treatments applicable to the process through a close-knit group of specialist suppliers.

The climate-controlled facility is maintained with a web cam system allowing monitoring of progress on cells from virtually anywhere in the world. Established over 100 years ago, WD Quinn has a true understanding of blade design and application, with expertise in grinding blades to peak performance, and provision of in-depth technical support.

WD Quinn Saw Co – USA
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Email: info@quinnssaw.com • **Website:** www.quinnssaw.com

Portable tools for cutting and bevelling

EH Wachs Company offers a diverse line of portable tools for cutting, squaring, bevelling and facing pipe, tube and vessels of all sizes and schedules, under all conditions and environments.

The company also provides rental/lease options, onsite training, custom machine design and manufacturing of special application machines.

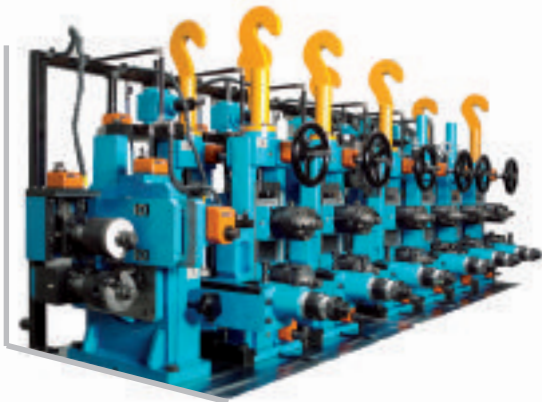
The company is a manufacturer of onsite machining and valve turning equipment, providing solutions for thousands of applications, along with rapid response time to customer needs and stringent quality management.

Wachs has developed a remotely operated milling machine to decommission redundant pipe conductors lying on the seabed in the Gulf of Mexico. Wachs used its experience and knowledge to develop a complete range of cutting solutions for sub-sea, diver/ROV friendly cutting tools and cutting systems. All of the subsea products perform under the most demanding underwater conditions.

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Laser machines cut cycle times by 50-60 per cent

Trumpf, Germany, has supplied two state-of-the-art CNC laser cutting machines to Savekers, a UK-based OEM that supplies an innovative range of architectural metalwork items to a host of industries. These machines have led to benefits that include an impressive reduction in cycle times of 50-60 per cent on average.

Savekers architectural metalwork range includes sliding door and window track products, retail systems, shelving systems, pedestrian guidance and barriers, and leisure products. Manufactured largely from tube, plate and sheet steel, all production operations (with the exception of powder coating) are conducted onsite.

Until recently Savekers had no laser cutting facility for tube and relied on an ageing waterjet profiling machine for its plate work. For laser cutting tube and profiles, the Trumpf TruLaser Tube 5000 is an automatic and flexible machining system.

It can process tube up to 6,500mm in length with wall thickness up to 6.4mm (mild steel). The machine is available with a loading unit and part removal station.

The TruLaser Tube 5000 makes it possible to cut tubes and profiles into sections in a single setup. It also makes it possible to produce recesses and contours with the laser, an attribute exploited widely by Savekers for nearly all of its products.

"Whereas we previously bought pre-slotted tube we can now manufacture slots of the desired length and in the exact position required by each customer," says Saveker's chairman Mr Martin Saveker. *"Previously we had to offer 'universal' versions of our slotted tubular products."*

With travels of 2,500mm, 1,250mm and 115mm in X, Y and Z respectively, the Trumpf TruLaser 2525 can cut up to 20mm thick mild steel, 15mm stainless steel and 10mm aluminium.

Typical Trumpf innovation is applied in the form of an additional Y-axis integrated in the motion unit. Unlike the standard Y-axis, it does not move the complete motion unit – only the cutting head.



A test cut part example

The Trumpf TruLaser Tube 5000 for laser cutting



Mr Saveker says that speed was the major consideration behind seeking new flatbed profiling capability. Having already decided to buy the Trumpf TruLaser Tube 5000, another model was selected – the Trumpf TruLaser 2525.

"We can cut at 200mm/min using our existing waterjet facility, however the TruLaser 2525 can profile at 20,000mm/min for some jobs," says Mr Saveker.

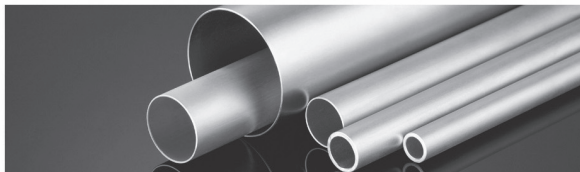
The intelligent application of a double axis greatly increases the dynamics and reaction time of the machine and, particularly on small part geometry, processing time can be reduced by up to 30 per cent.

Advantages of the TruLaser Tube 5000 have so far included design of more intricate products, zero tooling requirements, extensive de-stocking, enhanced cut finish, and cutting of parts 'on-the-fly' from material that would conventionally be scrap.

"We've easily cut 50-60 per cent from cycle times," states Mr Saveker.

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High-performance solutions for plasma cutting and automated welding

Kjellberg Finsterwalde, Germany, is a specialist in plasma cutting technology and high efficiency arc welding methods. The company's HiFocus 440i system offers high cutting precision across a full range of material thickness from 1-100mm.

within the HiFocus series and gives up to 15 per cent reduced dimensions, weight reduction and enhanced performance. The new BWE plasma-head change unit is designed to increase automation levels.

The new PerCut 450M plasma torch completes the system's process flexibility. This is the latest swirl-gas plasma torch

By integrating the ignition boxes for the HiFocus 130 and HiFocus 160i into the PBA-160 plasma torch connection unit, the



 Kjellberg Finsterwalde's HiFocus 440

units are more compact. In addition to the increase of ignition reliability, investment costs are reduced.

This logical step was taken after the successful experiences with the more powerful HiFocus units, which were previously furnished with similar combined plasma torch connection units.

Now available for the YellowXLife consumable system is the Cathode T012Y. Constructed for oxygen cutting, the cathode is suitable for up to 360A cutting current. YellowXLife represents a significant extended lifetime for nozzles and cathodes.

In the field of arc welding engineering, Kjellberg Finsterwalde's KA-series welding tractors are the basis for various customised solutions. A cross-slide for positioning the welding head ensures high stiffness for rugged industrial applications.

The company's range of equipment for high performance welding technologies is enhanced by strip cladding. Especially for submerged arc welding and electro slag welding, high melting down rates and cost reductions can be obtained.


Kjellberg Finsterwalde – Germany
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Latest flying shear cutoff

Olimpia 80 Srl, Italy, has designed and patented new flying shear cutoff equipment for inline cutting of high speed welded tubes. Tube cutting is operated by means of two tools that are hydraulically operated and controlled by the latest electronic methods.

The whole process is controlled by one hydraulic cylinder, which guarantees the perfect synchronization of the cutting cycle and provides optimum conditions for the cutting time. In addition, the use of hydraulic systems ensures easy machine operation and reduction of maintenance time and costs.



 Movement of the cutting carriage is electronically controlled

The movement of the cutting carriage is electronically controlled to guarantee the automatic adaptability to the tube speed. In addition, an inclination system allows the automatic tool centring on the tube angle for instances of square and rectangular profile production.

This equipment is offered in two different models covering ranges from 15mm to 76mm OD and from 30mm to 114mm OD, with wall thicknesses from 0.8mm to 3.5mm. The new flying shear cutoff can reach line speeds of up to 180m/min.

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Website: www.olimpia80.com

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OLIMPIA 80 s.r.l. Engineering

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Angular cutting for tube, solid bar and profiles

Conni, Italy, is the manufacturer of the new Lybra C450 model that has been designed for cutting of ferrous materials, tube, solid bars and steel profiles. The machine has been developed for 90° and angular cuts in standard combination or for particular cutting cycles adapted to specific technical needs.

The rotating cutting head allows both straight and high precision cuts of $\pm 60^\circ$. Multiple parts can be fed side-by-side or stacked, with pre-programmed and automatically sequenced cutting cycles.

 The new Lybra C450 cutting machine

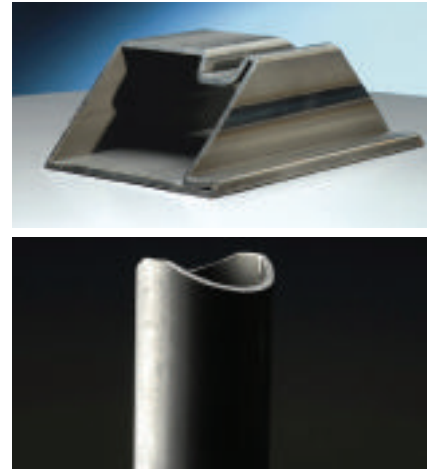



The new version is equipped with industrial PC Siemens Microbox PC 420 Windows XP (embedded), which allows the machine to be connected online from a remote computer to the machine PC by local network. The production lists can thus be prepared in the office and directly sent to the sawing machine PC before production.

It is also possible to integrate an interface between the company's record format files and the user's internal managing program. The optimization of the cutting cycles allows the least possible material waste in

unison with material size and cycle option. This software has very simple and user-friendly operation with high quality components.

For over 40 years, Conni has been known for technological progress in the field of cutting solutions. The company offers a



 The machine is used to cut a range of tube, solid bar and steel profiles

range including swing machines, deburring units, washing machines, and piece collectors, and other special applications. This range combines technology, progress, experience and ongoing system improvements.

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-  **welding bead cutter**
-  **cooling system**
-  **servo-auto cutting machine**
-  **electric control equipment**

Pipe forming Mill : OD range 7.0mm-160.0mm

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-  **high frequency Mos-Fet welding machine**
-  **Hand tools**

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Planetary cutting and bevelling solution

Orbitalum Tools GmbH, Germany, is a leader in the area of orbital metal pipe cutting and facing technology. The company's GF 20 AVM is a powerful solution for cutting and bevelling pipes between 283mm and 508mm (11.142" to 20") in diameter.

 GF 20 AVM with height-adjustable lifting bench




The principle of the new GF 20 AVM, for cutting and facing high alloy, low alloy and unalloyed metal pipes, is based on the planetary cutting process. The machine can cut pipe up to a thickness of 15mm (0.591").

An automatic feed module, known as AVM, controls the feed process, increases saw blade durability, and optimises cutting results, maximising productivity and increasing efficiency. The machine has a new motor optimised for speed, especially for stainless steel and high performance materials without any additional driving mechanism.

The GF 20 AVM also has a highly adjustable and robust lifting bench, including a swarf collector. Other features include an ergonomic operator handle and safe operator position, and a swivel cable containing a plug and socket connector for quick and easy replacements.

Options include a continual cooling system to increase saw blade durability and high surface quality of the pipe, and aluminium clamping shells designed for processing thin-walled pipes.



 The saw blade automatically rises into the pipe wall and then cuts planetarily clockwise around the pipe

Areas of application for the GF 20 AVM include plant construction in pharmaceutical, chemical, foodstuff and drinks industries, the construction of power plants and the shipbuilding industry.

Orbitalum Tools GmbH – Germany
Fax: +49 7731 792 500
Email: tools@orbitalum.com
Websites: www.orbitalum.com

Double mitre saws and special purpose saws

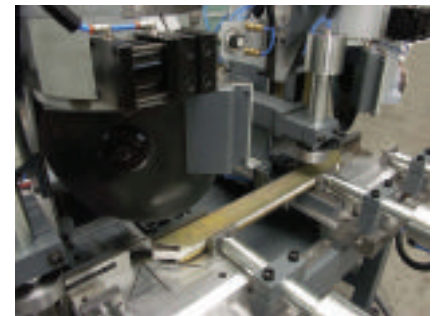
J Neu GmbH, Germany, manufacture double mitre saws and multihead saws under the Ekal brand, which are characterized by durable design and precise cutting results. Rafter trimmer functions are possible with some models, when combined with the universal adjustment possibilities. These saws are ideally suited to those production enterprises dependent on maximum flexibility.


 Neu manufacture the Ekal brand of double mitre saws and multihead saws



The DGS-L series is universal in design and provides innumerable adjustment possibilities. The series can cut bent profiles concurrently on both ends, with accuracy and advanced productivity.

The supporting table can be rotated to obtain optimal material stress. In addition, rafter-cuts can be achieved by adjusting the mitre and inclination of the sawing head.



 The machine can cut bent profiles concurrently on both ends

These models are easy to operate by use of a touchscreen, while all functions can be intuitively called up.

Also available from Neu GmbH are cutting-lines with loader-magazine and automatic mitre adjustment, together with high speed cutting lines for tubes. A wide range of special purpose machines rounds up the Neu product range.

J Neu GmbH – Germany
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Microcomputer controlled length flying saw technology

Shen Yang ShenGong Contor, China, is the manufacturer of a microcomputer controlled length flying saw system, available as part of a range from model 32 to model 610.

The flying saw is accompanied by other tube production machinery such as shear welders and large-scale horizontal spiral loopers.

 The microcomputer controlled length flying saw system



The computerized cutoff machine is key equipment in any pipe welding and cold bending material line. It is used to obtain high precision cutting with fixed dimensions while the material is moving at high speeds.

The system is mainly composed of a microcomputer control, high-power reversible servo system, mechanism, hydraulic system, and baric system.

The system is designed to increase production and improve product quality. It is controlled by a microcomputer and driven by a hydraulic system to weld metal sheet automatically by CO2 gas.

It has a simple structure, reliable working performance and efficient operation. It mainly consists of bed body,

feed in unit, clamping unit, shearing unit, welding unit, hydraulic system and electric system.

The company's spiral accumulator series is the latest metallurgical equipment to ensure continuous and automatic production in welding pipeline.

It stores and supplies successive strip material to the forming machine. There is a fixed number of strip material circles stored in the accumulator.

The main characteristics include advanced working theory, original striation design, standard technology, improved product quality, prolonged service life of forming machine and roller, and easy installation/operation

The company is part of the Shenyang Polytechnic University, which has gained the ISO 9001: 2000 quality system certification.

ShenGong Contor CongLiang – China
Fax: +86 24 8369 7976
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Website: www.sygcontor.com

SHANGHAI YUEYUECHAO STEEL TUBE

Established in 1994, Shanghai Yueyuechao Steel Pipe Group mainly deal with seamless steel pipe, seamless square/rectangle steel pipe, large OD LSAW manufacture. The specification for LSAW of Shanghai Yueyuechao Manufacture Tube Co., Ltd is $\Phi 355-1422 \times 8-60\text{mm}$. The specification of cold drawn seamless steel tube for Jiangyin Yueyuechao Manufacture Tube Co., Ltd, ranges from $\Phi 6-426 \times 1-20\text{mm}$, hot expanded tube specification ranges from $\Phi 168-630 \times 4-50\text{mm}$. Quality standards are API/ASTM/GB/ISO/DNV/JIS.

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Cutting machinery concept leads to increased sawing performance

Framag, Austria, has provided QualitätsSägeZentrum GmbH (QSZ), Germany, with an individual cutting machinery concept in order to process a variety of different material dimensions and qualities. QSZ is a quality sawing company for steel mills, forging companies, and pipe mills.

Both of the company's two factories operate fully automated band and circular sawing machines for cutting pipes, beam blanks or solid material of steel, stainless steel and non-ferrous metal. The company is able to process material up to a diameter of 530mm.

The first phase of Framag's work for QSZ involved material positioning 'for perfect cut' with a frequency-controlled infeed and discharge conveyor. It also involved two opposing laser units to control the conveyors.

The result of the first phase was a positioning accuracy of ± 5 mm. The sawing lines with forwarding devices for raw material are designed to be user-friendly and allow easy operation of both units by just one person.

In the second phase the sawing unit was completed with a support grate, material



Framag has supplied the KKS 1250 sawing machine to QSZ

feed unit (positioning accuracy of ± 0.5 mm) and scrap removal device. This allows a fully automated operation of the whole sawing process.

The state-of-the-art circular sawing machine – branded type KKS 1250 billets – is used for sawing of solid material (round, square, rectangular). It is equipped with a centric main- and auxiliary clamping device and height adjustable table.

The advantage is the hydraulic support of bent or curved material and protection of the saw blade against jam in the cut. This allows much higher durability of the sawing blades.

On average more than 50m² saw blade tool life is achieved with this sawing machine. These outstanding values result from the technical combination of a sawing column including a Hydropol®, extreme torsion-stiff and robust sawing gearbox. It also benefits from stable and vibration-free clamping devices. The combination of these three critical factors reduces the vibration caused by the sawing process.

The KKS 1250 sawing machine allows cutting of round material with diameters from 180-420mm and square bar steels with edge length between 160mm and 400mm.

Sawing blade diameters from 1,100mm to 1,350mm are possible, while a user-friendly Siemens PLC technics control system has been implemented.

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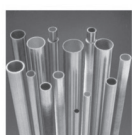
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Latest 2 axis bandsaw with optimum performance

Rüsch, Italy, manufactures the innovative and large-size 1100/1260A bandsaw machine, which provides first-class performance cutting of hard materials. The core of the user-friendly 1100/1260A is the 2 axis CNC of the latest generation.

In order to use the machine, the operator sets the type of material, shape and dimensions of the workpiece. The machine automatically sets the optimal cutting parameters.

To make a cut it is only necessary to push the start button. Data input is easy because

icons are shown in the display and all the operations are clearly signposted.

It is possible to adjust the speeds (downfeed and turning speed of the saw), with the overrides. Two sensors check the perpendicularity of the cut and the power applied to the cutting teeth; this allows the CNC to automatically adjust the cutting.

It is possible for experts to set cutting parameters manually. This way the machine is easy to use and cutting precision and best sawing performances are enabled.

The display shows cutting program, pieces to be cut, cut pieces, carriage position, bow position, saw speed and downfeed speed.

All machine movements are made with digitally driven brushless motors, coupled with high precision ballscrews. The machine is made to support over 30t on its rollerbed.

Rüsch Bandsaw Machines – Italy
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Website: www.scortegagna.com

ⓘ The large-size 1100/1260A bandsaw machine from Rüsch



Bi-metal band saws with higher performance

Sägen-Mehring, Germany, has developed a new range of high-performance metal band saws branded RIX-Formula SPF. The saws, are based on a new complex SPF-coating and multi-step procedure to improve the concealment of cutting edge coating. Using this technology, higher temperature resistance and red hardness can be achieved.

The new saws have been developed in response to increasing industry requirements for metal sawing machines and cutting tools. Higher cut rates are now specified, with more cm² of cut area per minute, higher tool life and more precise cross sections. This equates to less cost per cut.

In the area of cutting tools (ie metal band saws), the development stages over past years have been well documented. Bi-metal band saws are equipped with modern alloyed cutting materials made from high speed steels. The backing bands feature high resistance against tensile stress, alternating bending load and torsional stress.

It was becoming increasingly difficult to make further improvements to these components. Established and developed versions of setting and tooth geometries were, in many cases, specifically conceived for predetermined application areas, mainly for wear-resistant steels and alloys.

Further improvements were predicted by using tungsten carbide as a cutting material. However, it had seemed that the long expected breakthrough could not be implemented on a wide basis. The dominant industry opinion had been that band saws with tungsten carbide tips could be used economically, especially with the availability of sawing machines with high drive capacities and short cutting times.

In the search for new efficient ways to improve performance, due to existing experiences with precision cutting tools, an answer was found in coating processes and cutting edge treatment. It has been possible to achieve technically viable methods for coating of 'coil ware' and repeatable and exactly definable treatment methods for saw teeth.

The new RIX-Formula SPF band saws provide higher cutting speeds, larger feed values and outstanding cross section qualities. This is even the case with very hard steels, austenites and high-temperature alloys.

Extended application tests using RIX-Formula SPF band saws have been undertaken at a big German steel distributor. The test results show economical and efficient cutting speeds and cut rates – close and sometimes better than the values reached by TCT band saws.

Even high-tensile steels were cut with a cutting speed of more than 60 to 70m/min. In addition, this performance did not have any negative effects on accuracy.

On a cutting length of 700mm a tolerance of less than 0.1mm could be measured. These high cutting values had no negative effects on cross-sections, leading to finely structured and spotless cross sections.

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Band saw machines: high performance with nesting cutting

ISTech Segatrici, Italy, is a specialist in band cutting and manufactures band saw machines on double columns. These sturdy and reliable machines offer high performance and state-of-the-art technical solutions.

As standard, the numerically controlled and semi-automatic models have a cutting capacity between 260mm and 1,020mm.

 Band saw machine model ISTech 431 NC with nesting fixture and long index stroke



The company also produces automatic cutting systems and customized machines for every special requirement.

In the area of nesting cutting, ISTech offers a wide variety of solutions with different types of nesting fixtures. The best solution can be selected according to the shape and dimension of the material and the bundle. It is even possible to operate some of ISTech's nesting fixtures without adjustment. Other nesting fixtures require some manual adjustments, but the bundle vice guarantees a minimum butt end.

ISTech nesting fixtures are made up of one fixed vice mounted onto the machine frame, and one movable vice mounted onto the material feeder. These two vices, working together, guarantee a perfect clamping of the bundle and eliminates any possible vibration that can reduce the life of the blade.

In addition, special plastic components are mounted on the vice clamping face to secure the bundle and absorb any residual vibration. All ISTech nesting fixtures are hydraulic and use the machine's maximum cutting capacity.

ISTech machines have standard features including variable band speed with inverter, recirculating ball screw, automatic guide arm (with zero clearance carbide insert), hydraulic band tensioning, and head fast approach on the material to be cut.

The machines have a power driven band cleaning brush and hydraulically driven screw type chip conveyor. A servo feed sensor keeps the blade cutting at optimum feed rates.

ISTech Segatrici Srl – Italy
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Email: info@istech-segatrici.com
Website: www.istech-segatrici.com

Ratchet pipe cutter for automotive applications

The Dako No 224 ratchet pipe cutter is ideal for retrofitting catalytic converters and soot particle filters as well as for replacing parts of vehicle exhaust systems. Depending on the surrounding area, the exhaust simply needs to be pulled down far enough to allow room for the cutter head to rotate around the pipe.

No sawing or grinding is required, thereby eliminating the risk of injury to the user and avoiding any possibility of the underside of the vehicle being damaged by sawing or grinding. The cutting produces no swarf, so that no chips or swarf can enter the exhaust system.

The cut is clean and needs no tidying up, so the new sections of the exhaust can be fitted immediately after the pipe has been parted off. This results in considerable time saving over conventional methods.

The ratchet drive features automatic advance of the cutting wheel with every turn. The special alloy of the cutting wheel gives a long tool-edge life and ensures fast work, while the body of the pipe cutter is made from rugged, easy-care die-cast aluminium.

The Dako No 224 ratchet pipe cutter is designed for parting plain steel, stainless steel, copper and aluminium tubes. It is available in two sizes – 16mm to 35mm pipe diameter and 35mm to 66mm pipe diameter – with wall thicknesses from 1.5mm.

Gedore Tool Centre KG – Germany
Fax: +49 21 91 596 999
Email: dako@gedore.de
Website: www.gedore.de


Tube mill and slitting line tooling

Dee Tee Industries Ltd, India, is a leading manufacturer and exporter of tube mill tooling and slitting line tooling. The company's products are present in over 44 countries, with agents and distributors in nearly all these countries.

The company is specialized in slitter knives, spacers, rubber rings, rubberized spacers, tube mill/section mill rolls, fins, and tube cutoff knives. Other equipment includes cold rolling mill rolls (eg Sendzimir mill rolls), leveller rolls, and narrow 4Hi mill rolls.

Raw material is sourced directly from a range of leading European manufacturers. Dee Tee's manufacturing facility contains all the necessary facilities from raw material cutting up to finishing, including heat treatment.



 Dee Tee provides a range of tube mill tooling and slitting line tooling


Dee Tee Industries Ltd – India
Fax: +91 731 2422108
Email: babu@deeteegroup.com
Website: deeteegroup.com

Fully automatic hitch feed saw

The Scotchman Industries CPO 315 HFA is a fully automatic, hitch feed, circular cold saw that provides uninterrupted cutting of tubing or solids. The machine is suitable for high volume and short length applications that require very accurate and clean cuts.

The CPO 315 HFA has a length tolerance of ± 0.004 " on up to $3\frac{1}{2}$ " diameter tube or pipe, and up to 2" solid material. The machine uses a 12 $\frac{1}{2}$ " blade, and has the ability to cut pieces

as short as $\frac{1}{8}$ " and as long as 90". The hitch feed saw uses a 30" index that can

 The CPO 315 HFA from Scotchman Industries can cut pieces from $\frac{1}{8}$ " to 90"



be run at a maximum of three times. Optional form jaws can be used to feed multiple pieces of smaller diameter material for hourly piece counts in the hundreds – thus reducing labour costs.

The saws, which are available in ferrous and non-ferrous models, have a variable speed feature, which allows operators to match the feed and speed to the job, for faster cutting times and longer blade life.

Scotchman Industries Inc – USA

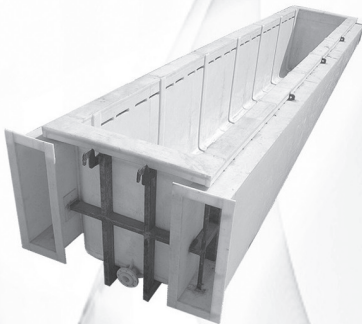
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Quality band saw blades for tube and pipe applications


Diamond Saw Works Inc, USA, manufactures the Sterling® family of world-class band saw blade products. The company provides cost-effective products to the pipe, tube and structural shape sawing industry, based on research and development of application specific products combined with state-of-the-art manufacturing.

DSW has designed and developed a series of bands that are optimized specifically for fabrication shop applications. The company's New Wave™ bi-metal bands feature a modified wavy tooth set ideal for cutting smaller structural shapes where tooth strippage is a problem.

The Cut Master™ M-42 bands feature the company's unique tooth geometry providing aggressive performance while resisting tooth strippage when single or bundle cutting medium size structural shapes or tubing.

The company's Kerf Plus™ M-42 extra heavy-set bands are ideal for single or bundle cutting larger shapes that may close into the cut causing pinching and subsequent band damage.



 Diamond Saw Works offers an extensive range of Sterling® band saw blade products

Diamond Saw manufactures a full range of band saw blades including carbon, bi-metal, carbide tipped and diamond grit edge bands for both metal and wood sawing applications.

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The above equipment is characterized as measuring "external diameter, roundness, straightness and length" by using its non-contact sensor.



In-Line Bright Annealing Equipment for Stainless Tube

go through various processes
(new process addition)

Portable plasma cutting system with maximum capacity up to 19mm

Hypertherm, a leader in plasma metal cutting technology, has launched a portable plasma cutting and gouging system, branded the Powermax45®. The system offers a maximum production capacity of 19mm and severance capability up to 25mm.

The Powermax45 is a single-gas system (air or nitrogen) designed for both hand-held and mechanized applications. Users benefit from the system's ease-of-use (weighing only 15.8kg), excellent cut quality, and long consumable life, which keep productivity high and operating costs low.

With strong performance on generators, the Powermax45 has the versatility to move from the shop to the field, and back again.

While the Powermax45 has the power to cut thicker materials when needed, the manufacturer recommends it as the perfect system for those who are cutting up to 12mm metal for 80 per cent of the time. It is ideal for cutting and gouging applications in many industries including HVAC duct cutting, truck and trailer fabrication, as well as facility and equipment maintenance of all types.

Featuring patented technology and high power efficiency, the system delivers consistent performance even with low-line conditions or when connected to a motor generator. It is designed with a built-in CNC interface and 50:1 voltage divider, making it ideal for mechanized cutting of duct-work and other materials up to 10mm.

Patented drag cutting technology and simple controls allow any operator to become skilled with the Powermax45. The system includes an easy quick connect torch for simplified transitions between hand-held and mechanized applications.

Unlike oxyfuel systems, the Powermax45 requires no pre-heating of the workpiece and no regulated flammable gases. It has 45-ampere output current and 50 per cent duty cycle, which means the system is ideally designed for industrial usage.

Hypertherm Europe – The Netherlands
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Complete range of sawing tools

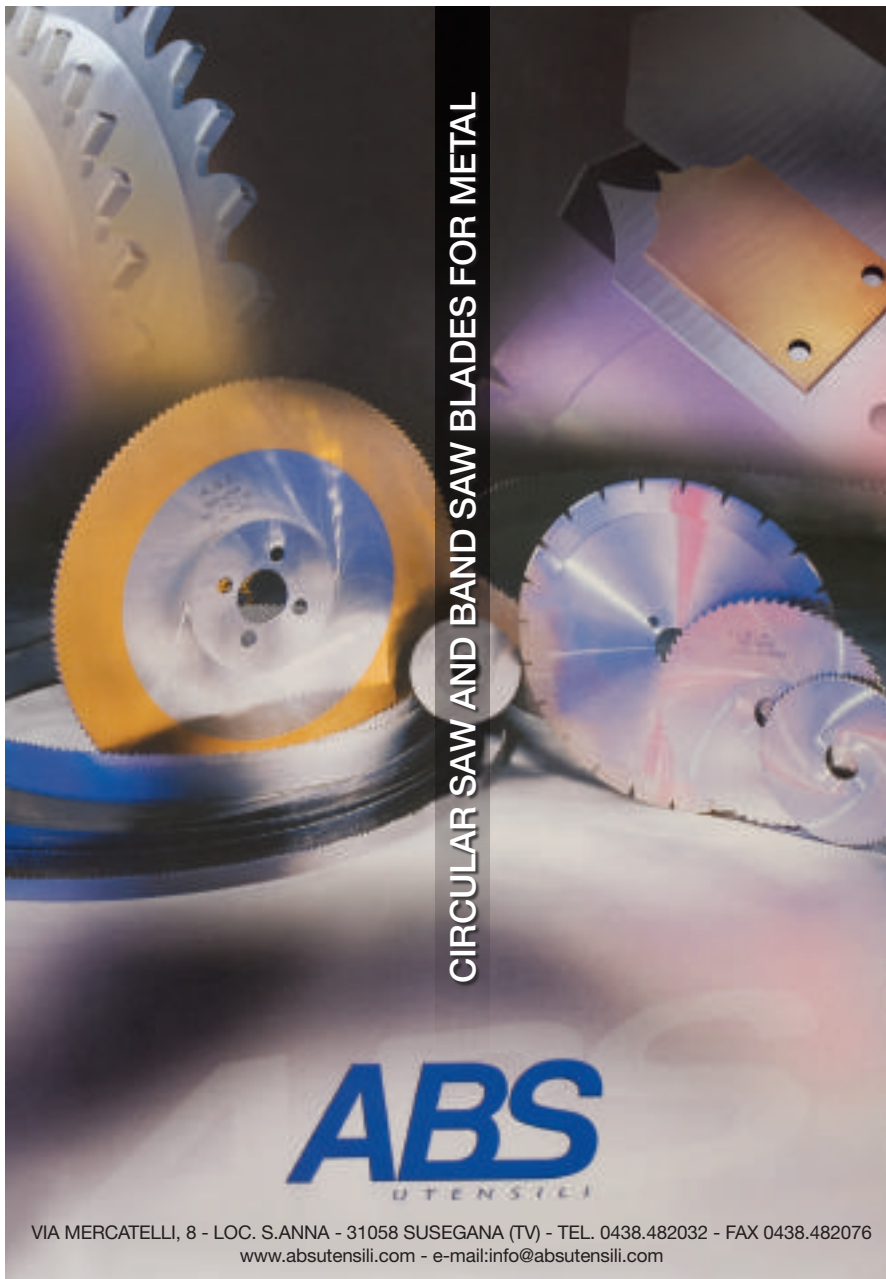
Arntz, Germany, is a leading producer of sawing tools, with more than 200 years of experience in tool production. The main product range includes band saw blades and circular saw blades, essential to the metal industry.

The company's production program for circular saw blades is divided into segmental saw blades (diameters up to 1,870mm), tungsten carbide tipped saw blades (diameters up to 2,200mm), HSS high speed steel saw blades (diameters up to 600mm) and friction saw blades for hot and cold cutting (diameters up to 2,500mm).

Band saw blades are manufactured as bi-metal, tungsten carbide tipped, carbon steel or diamond coated blades (width up to 80mm), available in coils or as endless welded loops.

The company supplies band saw blades and circular saw blades especially designed for tube and profiles.

Arntz GmbH + Co KG – Germany
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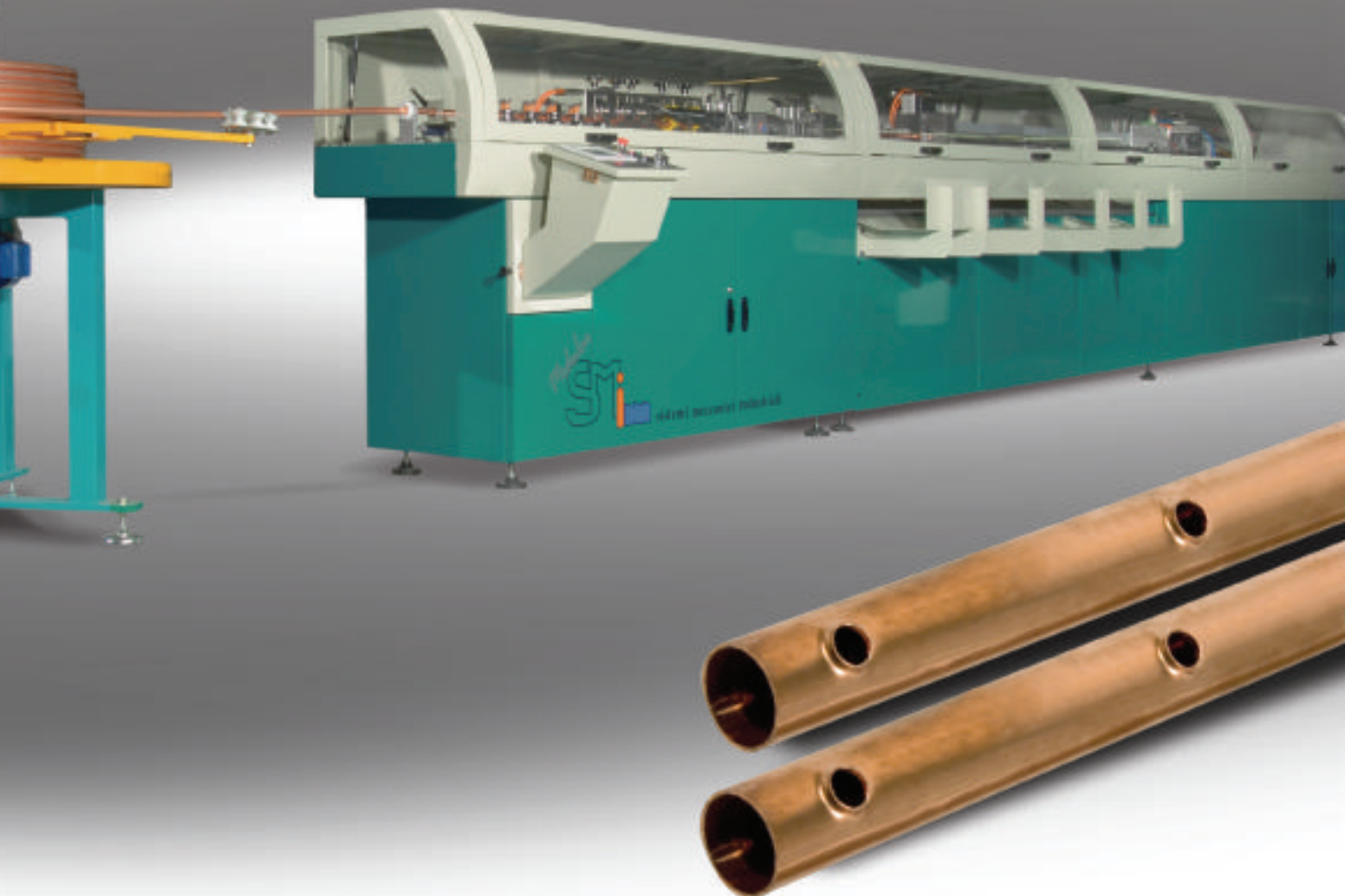


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CUTTING LINE FOR COPPER TUBES WITH INTERNAL PUNCHING UNIT



Plastic pipe and profile cutting

Foshan Technwell Plastic Machinery Co Ltd, China, is the manufacturer of advanced cutting devices for plastic pipe and profiles. A number of methods are employed for cutting plastic pipe and profile, including

ⓘ Foshan Technwell offer technology for the cutting of plastic pipe and profile



directional round plate saw cutting, planetary saw cutting and burr-free cutting.

The cutting method is determined by the diameter of the saw plate. In terms of directional round plate saw cutting, the diameter of the saw needs to be larger in relation to the pipe diameter and profile width, while the cut surface is lower quality and the noise louder. Therefore, this method is limited and not suitable for pipe diameters over $\varnothing 250\text{mm}$.

If the pipe diameter is over $\varnothing 250\text{mm}$, it is necessary to employ the planetary saw mode of cutting. Using a planetary cutting saw, the saw is round and operates independently at high speeds.

It works by rotating around the pipe in one circle, in order to achieve pipe cutting with a high quality surface finish, especially suited to pipe that requires a chamfered end. It is possible to use this method with larger diameter pipe, while noise levels are decreased.

In order to avoid burr and chips in a saw cutting mode, it is necessary to use a sharp-cut thin circle blade. A burr-free cutting machine with this blade rotates around the pipe at higher speeds, avoiding burr and chips. Therefore, the circle blade in the burr-free cutting method runs at higher speeds than in planetary cutting.

The difference between burr-free cutting and planetary cutting mainly involves the number of circumferential journeys around the pipe. There is only one rotation of the circumference during planetary cutting, while there are several circumferential rotations during burr-free cutting.

Therefore, burr-free cutting is not suitable for pipe diameter over $\varnothing 250\text{mm}$. If the circle blade is changed into a rectangle sharp-cut blade – enabling directional cutting – then it can be applied for plastic profile burr-free cutting.

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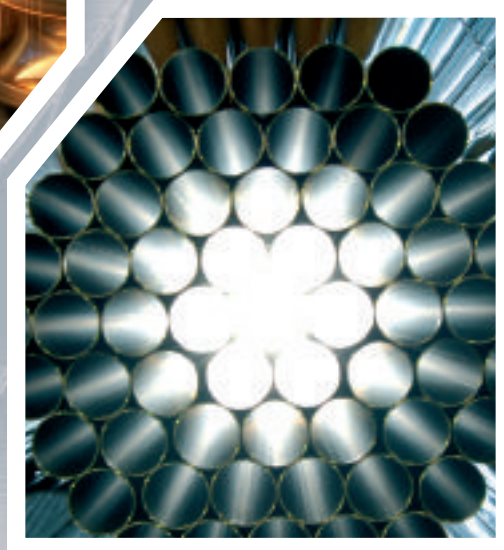
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times the life of conventional CrV blades. Tungsten carbide tipped ProCut T blades are supplied for conventional high-speed steel flying saws. These blades enable higher cutting speeds and longer life that results in improved productivity.

The company's most recent development is the PowerBlade 65, which has a superior PVD coating with substantially increased

oxidation resistance. The PowerBlade 65 sets a new standard for cutting steel tubes with material strength from 450-650N/mm².

ProTube is able to supply complete tube and pipe mills, together with solid state welders and the complimentary finishing and packaging equipment. The company also supplies consumable items such as forming rolls, weld coils, impellers, scarfing tools, nick and shear blades for tube mills.

In the area of fabrication, the company supply profiling machines capable of profiling tube and pipe from 50mm to 2,500mm diameter. These machines ensure accuracy, high output and time saving.

In other steel processing areas, ProTube supplies slitter tooling and accessories for coil processing, shear blades for plate, strip and bar mills, and rolls for cold bar forming. NDT of tube, rod and wire is available through eddy current systems.

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Manchester Tool & Die Inc, USA, has introduced a new 24014 high-pressure and high-thrust groover for rolling or cutting operations with quick and easy tool changes and easy access to tooling.

The 24014 features a 5 second cycle time (dependent upon application and optional equipment), machine capacity of 3/4" diameter x 0.120" wall, jaw opening of 1 1/4" and a clamp force of 3t.

The 24014 groover operates by advancing and closing a spinning head containing rolling or cutting tools over a clamped tube. The depth of the rolled or machine cut grooves can be changed with a simple adjustment.

It is equipped with a 7 1/2 HP spindle motor with variable speed control on the motor, panel view operator interface and voltage based upon customer specifications. A variety of additional features and options are also available.

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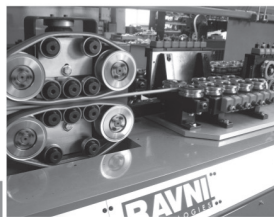
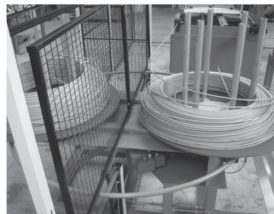
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Finished lengths up to 15m are available, depending on the section size, with a maximum input length of 18m (determined by the size of the section required). Typical applications include roof trusses, pipework, bridges, yellow goods industry, cranes, fencing, furniture and automotive.

The company operates in partnership with sister company Tubes (UK) Ltd, a stockist of structural tubes and hollow sections in



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Bending 'off-fall': minimizing the necessary evil of tube forming

By Mr Lonnie McGrew, vice president of engineering, AddisonMckee, USA

Introduction

As global steel prices continue to soar, it is essential to develop solutions that are purpose-designed to expedite manufacturing time and minimize tube wastage. This article will investigate the methods of negating bending 'off-fall', a complex adversary of tube bending. 'Off-fall' is more commonly known as remnants of unusable material, or planned material scrap or waste.

In today's cost-conscious times, anyone involved in the tube bending process may instinctively consider perishables, such as wiper dies, mandrels and lubricants, to be their greatest enemies. However, investigation of the scrap bin sitting beside a tube trim machine in any tube forming facility will quickly establish the real culprit: namely bending 'off-fall'.

For example, most vehicle exhaust systems are produced from stainless steel, which has increased in price per inch by over 30 per cent compared to twelve months ago. It is, therefore, relatively straightforward to see how even one inch of extra material wasted per unit can equate to a substantial cost increase per year.

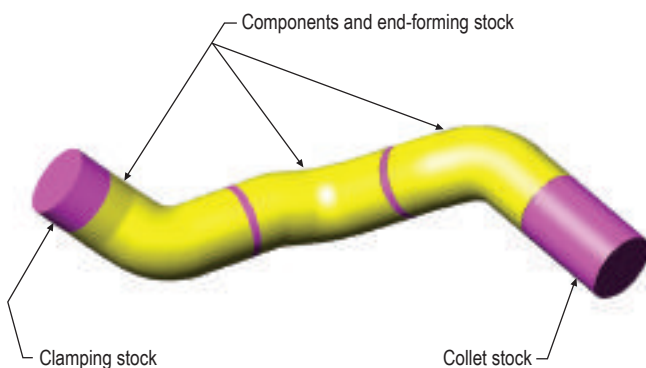
Although bending 'off-fall' is unavoidable, there are ways to minimize the amount required for bending and thus initiate cost savings. Here, we investigate theoretical tube calculations used by process engineers and provide some efficiency improvements for minimizing material waste.

Making theoretical tube calculations

There are three main components that must be considered when calculating the length of material needed to produce a bent part (see figure 1). These components are:

- **Clamping stock** – the extra material needed to sufficiently grip and bend the first bend of the component.
- **Component(s) length** – the developed length along the centerline of the component, including material needed for

Figure 1: Multi-component bend stick



- subsequent end-forming operations and, if there are multiple components being bent in one tube, material required for parting.
- **Collet stock** – the extra material needed to sufficiently grip the tube in order to rotate and position for bending.

Examining sample figures

It is possible to examine sample figures that are based upon tube centerline data of XYZ, YBC.

60.3 diameter x 1.75mm wall, 409SS

| X | Y | Z | CLR | Y | B | C |
|--------|-------|-------|-------|-------|--------|-------|
| 150.70 | 67.60 | -7.45 | | | | |
| 130.40 | 44.50 | 0.00 | 63.50 | 23.97 | | 13.78 |
| 94.10 | 0.00 | 0.00 | 63.50 | 19.61 | -98.62 | 50.79 |
| 15.50 | 0.00 | 0.00 | | 48.45 | | 0.00 |

Determining clamping stock

When determining clamping stock, several factors must first be considered:

- Will the bender have boost capabilities?
- Does the product require a square end?
- Cosmetic details (grip type – saw tooth, carbide spray, etc)
- Will the extra clamping stock be removed with a saw or stab-cut type operation?

Where a bender is equipped with boost and it is intended to use the minimum grip length of 1D, the end of the tube will be out of square. A good rule of thumb, therefore, is the first straight must be at least 1.5D before the end of the tube is not pulled out of square by the bending process. If boost is not used, the first straight should be at least 2D.

Looking at the sample data, it is possible to observe that the first straight is 23.97mm. This is a 0.40D straight (23.97/60.3). Assuming the bender used does not have boost capabilities, enough extra stock will need to be added to increase the first straight to 2D.

Clamping stock formula

- OD = Tube outside diameter
 - SL_x = Straight length (where x is the first straight)
- Clamping stock = (OD * 2) – SL_x (without boost)
 Clamping stock = (OD * 1.5) – SL_x (with boost)

Using the sample data:

Clamping stock = (60.3 * 2) – 23.97 (without boost)
 Clamping stock = 96.63mm (extra stock added to existing first straight)

Efficiency improvements: strategy 1

In this example, 120.6mm of total grip stock is a safe starting condition. Once the tube is developed, it will be necessary to shorten the actual grip length by 5mm and re-run the trial.

If there is no slippage, shortening by another 5mm can be implemented prior to re-run. This process can then be repeated until slippage occurs, at which point 5mm to 10mm should be added back to the tube.

Shortening the tube for bending trials

When shortening the tube for bending trials, the tube need not be physically cut in order to shorten it relative to the first straight. Instead, it is possible to simply 'tell' the bender that the tube is longer than it really is and the bender will adjust the tube back, effectively shorting the first straight.

Once the final length is determined and the tube is physically cut to length, it is then necessary to 'tell' the bender the actual length.

Determining component(s) length

To determine the length of stock required for the components, the distance along the centerline path will need to be calculated. In addition to the centerline length, any additional material for subsequent end-forming operations will need to be added. In the case of multiple components, this includes material required for splitting or parting operations.

Minimum requirements for trimming

There are also minimum requirements for trimming. If there is a plan to saw, a minimum of 3mm + the saw blade width will be required. On the other hand, a stab-cut process will need about 15mm + the blade width.

- SL_x = Straight length (x is the straight number)
- AL_y = Length along the arc (y is the bend number)
- NC = Number of components in tube
- CW = Cut width
- EF = Material length required for subsequent end-forming

Arc length formula:

$$AL_y = (II * CLR / 180 * \text{degree of bend})$$

Component length formula:

$$[(SL_1 + AL_1 + SL_2 + AL_2 + SL_3... + EF) * NC] + [CW * (NC-1)]$$

Using the sample data:

(Assuming 3mm for end-forming and 4.75mm cut width)

$$[(23.97 + 15.27 + 19.61 + 56.29 + 48.45 + 3) * 3] + [4.75 * (3-1)] = 509.27\text{mm}$$

Component length = **509.27mm**

Determining collet stock length

In order to determine collet stock length, several tooling components must be evaluated: pressure die, wiper die, and collet.

Determining pressure die length

Pressure die calculations are straightforward and are based on the deepest bend. The pressure die is typically set to travel at 1:1 ratio with the perimeter of the bend die. The calculation can be simplified as follows:

Pressure die length formula:

$$II * CLR / 180 * \text{deepest bend}$$

If this were the pressure die's final length, it would leave a deep impression at the end of the bend. Therefore, it is necessary to add an additional amount to 'support' the tube at the end of the bend. This is typically 2D.

Pressure die support adder formula:

$$2 * \text{tube diameter}$$

Using the sample data:

$$\text{Pressure die length} = (II * CLR / 180 * \text{deepest bend}) + (2 * \text{tube diameter})$$

$$\text{Pressure die length} = (3.14 * 63.5 / 180 * 50.79) + (2 * 60.3) = 176.89$$

$$\text{Pressure die length} = 176\text{mm}$$

Efficiency improvements: strategy 2

If the tube in the collet is gripped through the last bend, the end of the pressure die will normally be the first point of interference the collet housing encounters (see figure 2). This is especially true if the 'deepest bend' is not the last bend. If the pressure die is shortened, then the tube length may likewise be shortened. As stated above, 2D support is normal but in some cases can be reduced to 1.5D.



Figure 2

Determining wiper die length

Because many tooling manufacturers are producing wipers in high volumes, they have standardized lengths. Typically, insertable tip lengths are:

- 100mm for tube diameters < 76mm
- 127mm for 76 tube diameter
- 1.5D for tubes larger than 76mm
- Minimum length for specials should be 1.5D

Using the sample data:

$$\text{Wiper die length} = 100\text{mm}$$

Efficiency improvements: strategy 3

If a wiper is used that is greater than 2D in length, then the wiper die may be the first point of interference (see figure 3). As with the pressure die, this is a safe number but may not be necessary to produce an acceptable bend.

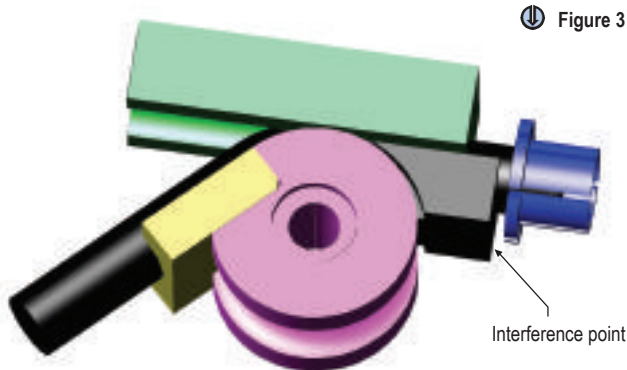


Figure 3

Determining collet depth

When determining collet depth stock, several factors must be considered:

- Rotational torque from tube
- 0.5D minimum
- Bender manufacturer's standards

Again, the idea is to reduce the amount of tube needed to sufficiently hold the tube during the bending process. For the sample calculations, we will use the 0.5D minimum.

Collet depth formula:

Tube OD * 0.5

Using the sample data:

Collet depth = 60.3 * 0.5 = 30.15

Collet depth = 30.15mm

Collet stock length

Once all the tooling lengths are determined, it is possible to calculate the additional material need for the collet end. At this point it is necessary to decide whether or not boost will be used.

With boost (collet will hold tube during the entire bending cycle):

- PLt = Pressure die length (where t is the total length)
- PLr = Pressure die length (where r is the remaining length from tangent after the last bend is made) (see figure 4)
- WL = Wiper die length
- CD = Collet depth
- SLx = Straight length (where x is the last straight)
- CF = Clearance factor (5mm)
- ALy = Length along the arc (where y is the last bend)
- LL = Limiter length (distance from tangent at which the collet housing will encounter interference)

Arc length formula:

ALy = (PI * CLR / 180 * degree of last bend)

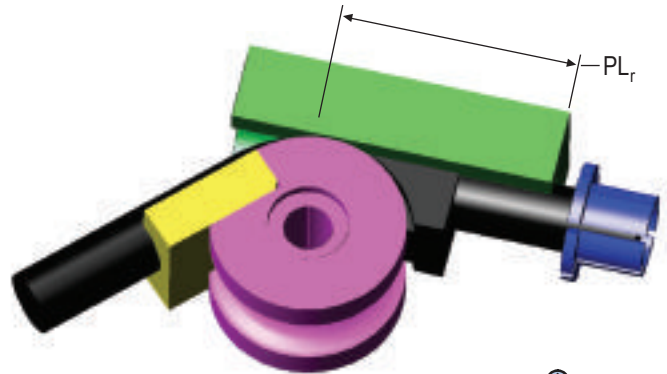


Figure 4

Pressure die length remaining formula:

PLr = PLt - ALy

Limiter length formula:

LL = WL or PLr (whichever is greater)

Collet stock length formula:

LL + CF + CD - SLx

Using the sample data:

- WL = 100mm
 - PLt = 176mm
 - SLx = 48.45mm
 - CD = 30.15mm
 - ALy = (PI * CLR / 180 * 50.79) = 56.29
 - PLr = 176 - 56.29 = 119.71
 - LL = 119.71 (PLr is greater than WL)
- Collet Stock = LL + CF + CD - SLx
Collet Stock = 119.71 + 5 + 30.15 - 48.45

Collet stock with boost = 106.41mm

Note: If the calculated collet stock is a negative number then no additional collet stock material is required.

Efficiency improvements: strategy 4

For part configurations, where the deepest bend is not the last bend, the pressure die is typically extended past the wiper as the bend cycle completes (see figure 4). When this situation occurs, a 'split pressure die' should be considered. The two halves will act as one die until the last bend.

Before the last bend is position, the rear pressure is lifted out of the way, allowing the collet housing to approach further towards tangent (see figure 5).

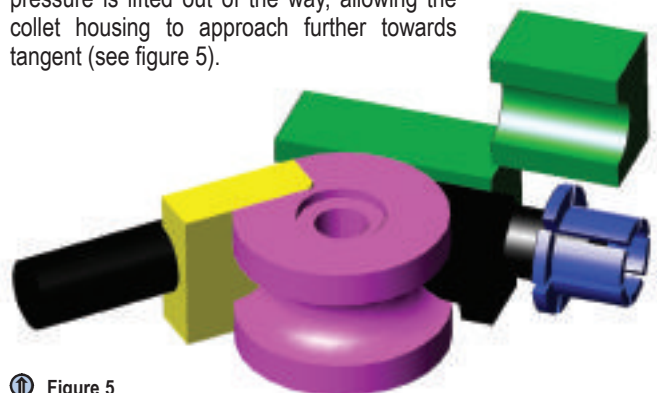


Figure 5

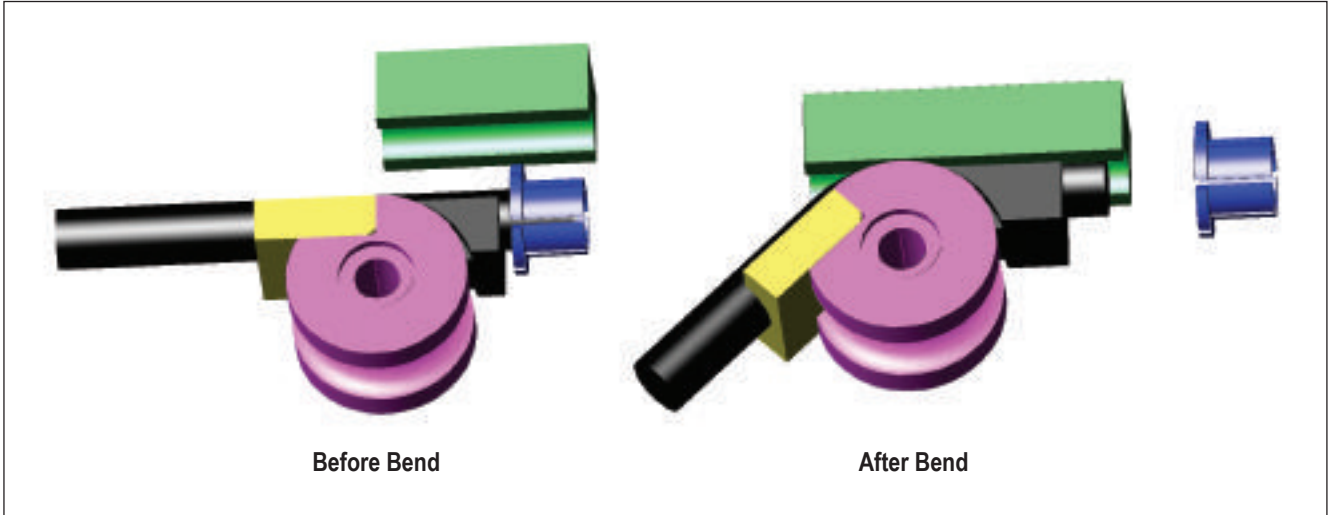


Figure 6

Without boost (collet will release the tube during the last bend):

When bending without boost, the pressure die length is not a consideration. As seen in figure 6, the pressure die can be 'backed' out of the way while the tube is positioned for the last bend. As the tube is positioned, the wiper die becomes the only point of interference. Once the tube is in position and clamped, the collet is retracted and the pressure die is advanced.

- WL = Wiper die length
- CD = Collet depth
- SLx = Straight length (where x is the last straight)
- CF = Clearance factor (5mm)
- ALy = Length along the arc (where y is the last bend)
- LL = Limiter length (distance from tangent at which the collet housing will encounter interference)

Arc length formula:

$$ALy = (II * CLR / 180 * \text{degree of last bend})$$

Limiter length formula:

$$LL = WL \text{ (Pressure die length is not considered)}$$

Collet stock formula:

$$LL + CF + CD - SLx - ALy$$

Using the sample data:

- LL = 100mm
 - CD = 30.15mm
 - SLx = 48.45mm
 - ALy = $(II * CLR / 180 * 50.79) = 56.29$
- Collet Stock = $LL + CF + CD - SLx - ALy$
 Collet Stock = $100 + 5 + 30.15 - 48.45 - 56.29$

Collet stock without boost = 30.41mm

Note: If the calculated Collet Stock is a negative number and the last straight is less than 2D, then only add enough material to make the last straight 2D. If the calculated collet stock is a negative number and the last straight is greater or equal to 2D, then no additional collet stock material is required.

Theoretical tube length

The theoretical tube length is the sum of the three main components: clamping stock, component(s) stock, and collet stock:

Theoretical tube length formula:

$$\text{Clamping stock} + \text{Component(s) stock} + \text{Collet stock}$$

From the sample data:

$$\text{Theoretical tube length (with boost)} = 96.63 + 509.27 + 106.41$$

$$\text{Theoretical tube length (with boost)} = 712.31\text{mm}$$

$$\text{Theoretical tube length (without boost)} = 96.63 + 509.27 + 30.41$$

$$\text{Theoretical tube length (with boost)} = 636.31\text{mm}$$

Conclusion

As process consultants, AddisonMckee is often asked to advise clients on the amount of material required to bend a component or series of components. To aid in a smooth ramp-up to production, AddisonMckee typically calculates the numbers in accordance with a 'play-safe' policy. It is vital that a client is not left with twenty bundles of tubes that are an inch too short.

However, it is often the case that the initial tube length is accepted and never re-evaluated. In these circumstances, the opportunities for efficiency improvements are tangible and easily achievable. For this reason, it is essential that material length and potential wastage is properly observed and evaluated. This approach holds the key to efficiency improvements and possibly the success or failure of a business.

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API pipe producers worldwide trust Thermatool.



The welder of choice that delivers the highest quality weld.

- Guaranteed Frequency Stability with repeatable Heat Affected Zone (HAZ) control
- Proven technology delivering the highest efficiency under “mill” conditions, with no need for an HF transformer or manual tuning
- Power to do the job (up to 2MW) at higher weld frequencies (>150kHz) as demanded by the oil and gas sector
- Rugged, modular design with built-in redundancy in order to maximise production uptime – backed up by 24/7 local service and support

Thermatool understands what API pipe producers demand - an HF welder to satisfy specifications for P110, L80, N80, X80, X100 and higher grades.

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