The international magazine for the tube and pipe industries

TUBE & PIPE TECHNOLOGY

Tube Southeast Asia

September 2007 | Vol 20 No 5 | US$28

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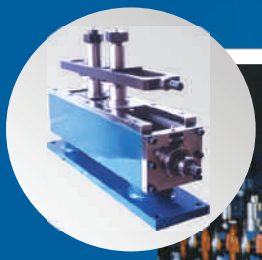

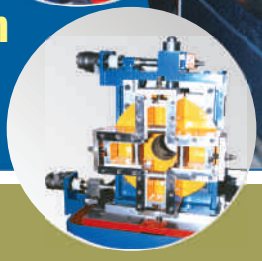

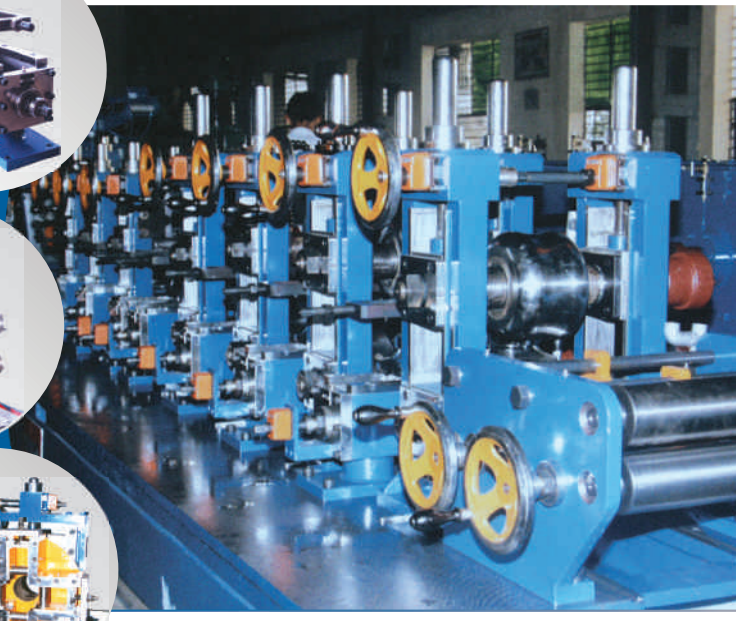

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  - Water, Gas & Oil Transmission

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EDITORIAL INDEX

http://www.jslcgg.com

Yangzhou longchuan steel tube co.,ltd

Yangzhou Longchuan Steel Tube Co., Ltd, established in November, 2003, is a professional manufacturer in seamless carbon steel pipes and alloy steel pipes. The annual production capacity is 250,000 tons, in which 150,000 tons are carbon steel pipes and 100,000 tons are alloy steel pipes. The size range is ¢14-¢325mm x 1.5-25mm,and the standards include ASTM, JIS, DIN, BS and EN. The products are widely used in the fields of electric power, boilers, petroleum, chemical, ship building, geology exploration and etc, of which 70% are exported to more than 40 country markets.

Our company, with the policy "pursue the perfect, to be the best", insists on the quality guideline "quality oriented, customer first, constant innovation and amelioration" and has got the certificates of ISO 9001, API 5CT, API 5L, PED, CCS and other shipping classifications.

Longchuan Steel Tube will invest 1 billion RMB in the second project, introducing the production line for the big outside diameter alloy steel tubes, the range of OD is 426mm to 1200mm. It is estimated that the production capacity is 100,000 tons and this project will be finished in the year 2008.

Our company plans to build the production base and stock warehouse by the year 2010. The production base will reach the amount of 350,000 tons of high quality seamless steel tubes of the specification ¢10 to ¢1200mm and the stock warehouse will have the capacity of 200,000 tons each year.

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Contents

Time to re-examine the piggy bank

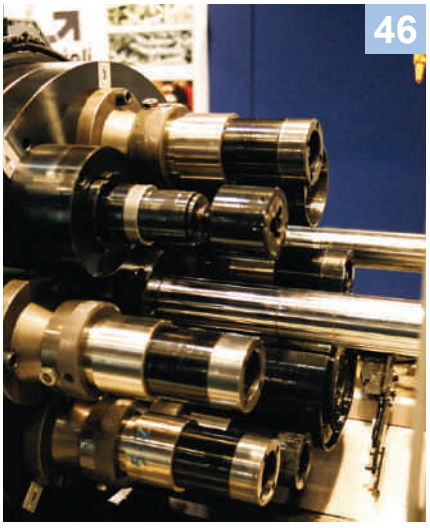
The recent financial storm in the stock market – with the Dow Jones, Nasdaq, FTSE and Asian markets all suffering serious turbulence – should serve to remind us of the complex fragility of the global economy. This market upheaval was largely triggered by sub-prime mortgages in the US housing market, which basically means a debt black hole due to high-risk borrowers defaulting on high-interest home loans. But whatever the cause, the emergence of uncontrollable debt and diminished confidence herald a new and dangerous phase in the world economy.

The problems are clearly serious with worldwide central banks including the Federal Reserve and European Central Bank forced to reconsider interest rates and inject over $300 billion into the stock markets as a rescue package. Although the jury is out on whether these measures have prevented catastrophe, there are already reports of tightening credit, big job losses in the financial industry, a decline in mergers and acquisitions, and potential damage to pension funds and the housing markets both in Europe and the US.

So far during my editorship of *Tube & Pipe Technology* I have fortunately avoided the advent of a global recession and its nasty repercussions. However, there is little doubt that the buoyancy of the tube and pipe industry would be dragged down by a sickening of the global economy. And with globalisation now emphasized by the growing strength of the BRIC countries, the world economy has become an even more delicate mesh of financial considerations and investment ramifications.

With this heightened sense of economic danger, over the next few years it might be a good idea for everyone – from individual to small company to multinational – to re-examine the books, save meticulously, invest wisely and manage debt more sensibly.

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



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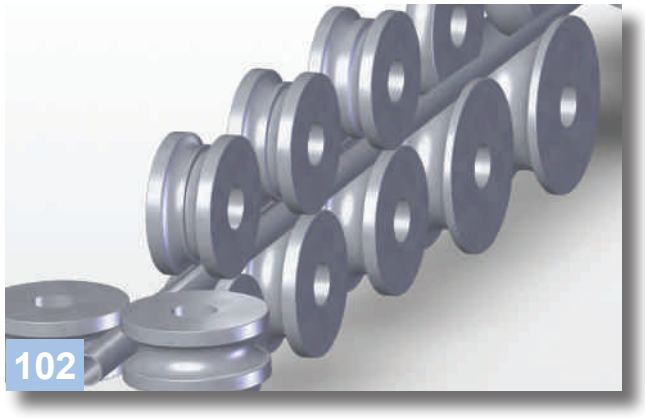
Features



Technical Article

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Booming demand for modified Tube Düsseldorf 2008

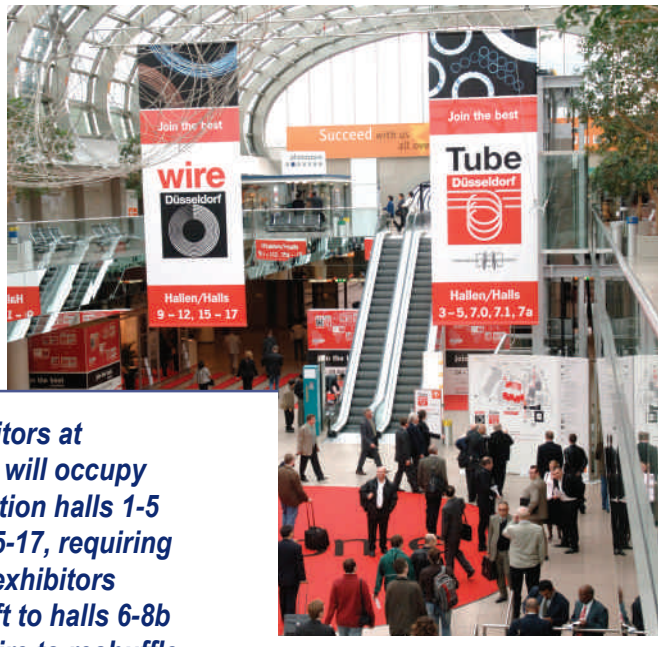
With just under eight months before the start of Tube Düsseldorf 2008, organisers Messe Düsseldorf have reported an unprecedented interest in the event and that *"applications exceed expectations for 2008"*. This increased bookings urgency is partially due to the recent announcement that a new show Metav will be held alongside wire and Tube 2008.

Bookings for Tube have accelerated considerably in recent months, with figures released by Messe Düsseldorf in May showing that 27,600m² of net exhibition space had been sold with 360 exhibitors registered from 29 countries.

In comparison, a lower exhibit space of 22,500m² had been rented at the same point in May 2005, before the last record-breaking show of 2006. Those registered so far for 2008 include a high number of companies from Belgium, Austria, Switzerland, the Netherlands, Spain, France, Italy and Turkey.

A similar picture has emerged for wire 2008, with May booking figures revealing that 43,000m² of net exhibition space had already been rented for wire 2008, compared to 37,000m² back in May 2005. This figure comprises 650 registered companies from 36 countries, with the largest number of bookings coming from Belgium, France, Italy, Spain, Switzerland, Turkey, China and India.

The hall locations at Tube and wire Düsseldorf – which will be held from 31 March to 4 April 2008 – will be affected by the introduction of Metav, billed as the international trade fair for manufacturing technology and automation. Exhibitors at Metav will occupy exhibition halls 1-5 and 15-17, requiring Tube exhibitors to shift to halls 6 to 8b and wire exhibitors to reshuffle into halls 9 to 14.



All change: some tube exhibitors and visitors will find themselves in unfamiliar exhibit halls at Tube Düsseldorf 2008

Exhibitors at Metav will occupy exhibition halls 1-5 and 15-17, requiring Tube exhibitors to shift to halls 6-8b and wire to reshuffle into halls 9-14

Already the world's most important trade fairs for the wire, cable, tube and pipe industries, the five-day event is expected to offer a broadened perspective with the addition of Metav Düsseldorf. Metav will host a complete range of state-of-the-art manufacturing technologies for the metal working industry – from machine tools, precision tools, and automation technology to complete systems.

The increased strength of the trio of events is predicted to pull in a crowd of over 100,000 visitors.

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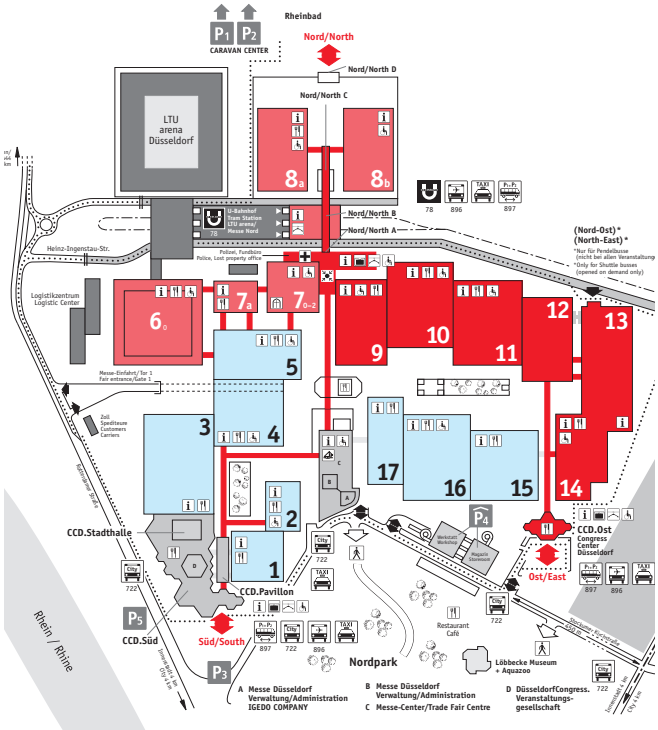
Below left: the Düsseldorf showgrounds, host to Tube, wire and Metav from 31 March to 4 April 2008; and below right: a plan of the how the exhibition halls will be divided for the trio of events (orange for tube, red for wire, and light blue for Metav)



Seco/Warwick enters into strategic alliance with Retech

Heat treatment and furnace specialists Seco/Warwick has entered into a strategic alliance with Retech Systems LLC, in order to combine resources and expertise. Together, the two companies will engineer, manufacture, sell and service Retech's vacuum processing equipment worldwide.

Retech is a fully integrated manufacturer of thermal vacuum processing equipment, and a supplier of plasma arc, E-beam and casting furnaces for the melting of titanium. In the past, the company has contributed important advancements in precision pouring, cold hearth melting, consumable casting, metal powder production and raw or feedstock material production for the metallurgical industries.

Seco/Warwick has manufacturing facilities in USA and Poland that are complementary to Retech's USA facilities in California and New Jersey. Retech has recently established an office facility in New Jersey (USA) as the centre of excellence for the Retech vacuum arc remelt product group. This office will also support the joint efforts with Seco/Warwick's vacuum team.

Mr Jeff Boswell, Seco/Warwick Group president, says *"We look forward to working together through this strategic alliance to serve our worldwide customer base with a complete portfolio of products for heat treatment, metal melting and environmental treatment systems."*

Mr Artur Wiechczynyski will be the Retech team leader for Seco/Warwick Group worldwide. Based in Swiebodzin, Poland, he will coordinate all activities between the two companies.

Mr Jim Goltz, president of Retech Systems LLC, commented, *"The most important opportunity is that this agreement will allow Retech and Seco/Warwick to combine their expertise and jointly develop new products in our closely related business areas."*

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Website: www.secowarwick.com

Retech Systems LLC – USA
Fax: +1 707 468 9227
Website: www.retechsystemsllc.com

DIARY OF TUBE EVENTS

2007

SEPTEMBER

09-12	**Pipe & Tube Houston Conference (ITA/TPA)** *Houston (TX), USA* **Conference**	**Email**: jen@fmanet.org **Website**: www.pipe-houston.com
17-22	**EMO Hannover 2007** *Hannover, Germany* **Exhibition (tools)**	**Email**: emo@vdw.de **Website**: www.emo-hannover.de
24-26	**Tube Ukraine (ITA)** *Dnepropetrovsk, Ukraine* **Conference**	**Email**: info@itatube.org **Website**: www.tube-ukraine.com

OCTOBER

02-04	**Tubotech/Metaltech** *São Paulo, Brazil* **Exhibition**	**Email**: cipa@cipanet.com.br **Website**: www.cipanet.com.br
02-04	**Rio Pipeline 2007** *Rio De Janeiro, Brazil* **Exhibition**	**Email**: press@ibp.org.br **Website**: www.ibp.org.br
10-12	**China Steel Tube Expo** *Tianjin, China* **Exhibition**	**Email**: shanghai1984@126.com **Website**: www.mtmexpo.com
16-18	**Tube/wire Southeast Asia** *Bangkok, Thailand* **Exhibition**	**Email**: tube@mda.com.sg **Website**: www.tube-southeastasia.com
17	**Non-Ferrous Bangkok (ITA Seminar)** *Bangkok, Thailand* **Conference**	**Website**: www.itatube.org
17-19	**17th international conference on pipeline protection** *Edinburgh, UK,* **Conference**	**Email**: conforg5@bhrgroup.com **Website**: www.bhrgroup.com
24-28	**Korea Metal Week** *Seoul, Korea* **Exhibition**	**Email**: ktfairs@ktfairs.com **Website**: www.ktfairs.com

NOVEMBER

11-14	**Fabtech** *Chicago, USA* **Exhibition**	**Email**: information@fmafabtech.com **Website**: www.fmafabtech.com
13-16	**Tube & Pipe Central Asia** *Almaty, Kazakhstan* **Exhibition**	**Email**: info@expocentralasia.com **Website**: www.expocentralasia.com

2008

FEBRUARY/MARCH

14-16	**Tube India** *New Delhi, India* **Exhibition & Conference**	**Email**: kueppersS@messeduesseldorf.de **Website**: www.tube.de
28-02	**BORU** *Istanbul, Turkey* **Exhibition**	**Email**: info@ihlasfuar.com **Website**: www.ihlasfuar.com

MARCH/APRIL

31-04	**Tube Düsseldorf** *Düsseldorf, Germany* **Exhibition**	**Email**: liedtkeM@messeduesseldorf.de **Website**: www.tube.de

MAY

27-30	**Tube Russia** *Moscow, Russia* **Exhibition**	**Email**: wolfgramC@messe-duesseldorf.de **Website**: www.metallurgy-tube-russia.com

Ukraine's Interpipe: expanding plans for global growth

Interpipe, Ukraine, is on a fastrack to financial, technical and trading growth, according to company figures and independent verification from international financial agencies Fitch and Standard & Poor.

Already a leading producer of seamless pipe and wheels for the domestic and eastern European market, the company has increased its global sales by over 10 per cent annually for the last five years. In this time, the company has also increased the countries it serves from 46 to 76. This growth has elevated the company into the league of fastest growing global pipe manufacturers.

With an annual production of 1.4 million tons and gross revenue of around US$1.6 billion, Interpipe's share of the world seamless pipe market already exceeds 4 per cent, with further expansion planned in the coming years.

In 2006, the company achieved a sales revenue of US$1.44 billion and gross profit of over US$503 million. This equated to a sales growth of 11.8 per cent for seamless pipe and 20.3 per cent for welded pipe.

This growth has been accelerated by the process of restructuring all Interpipe entities under one holding company. In addition to a rebranding process, several large-scale projects were initiated in 2006, including the construction of an electric steel making facility in Dnepropetrovsk.

A reflection of this growth and expansion, the company has been awarded a positive rating by international financial agencies Fitch and Standard & Poor. Fitch rated Interpipe as 'B+' (long-term) and 'B' (short-term), with an outlook rating of 'stable'. Ratings agency Standard & Poors gave Interpipe a long-term credit rating of 'B+' and a rating of 'uaA' (by national scale).

These ratings reflect Interpipe's good position among its international pipe peers, based on its low indebtedness and relatively high profitability, driven by favourable industry prospects and a low-cost production base. Its 2006 earnings (EBITDA) margin was 25.5 per cent compared with an international pipe producers' average of 22.6 per cent.

Standard & Poor's analysts expect Interpipe to benefit from a good market position, with strong demand for seamless and welded pipes in the medium term. Fitch pinpointed Interpipe's diversified product portfolio (ie pipes and wheels) as highly beneficial, together with its high export revenue (79 per cent for pipe).

To further build its export portfolio, Interpipe has just gained pre-qualification from a number of leading oil producers. Interpipe Niko Tube has been approved for inclusion in the Kuwait Oil Company's approved list of manufacturers (API 5CT pipe), while Interpipe Niko and Interpipe NTRP have both gained pre-qualification from the UAE's Abu Dhabi National Oil Company (API 5L pipe).

Interpipe's short-to-medium plan for 2007-2009 involves investment of almost US$730 million. This investment includes new product development, improved process control and non-destructive testing, extension of special finishing floors, and de-bottlenecking and flow rationalization.

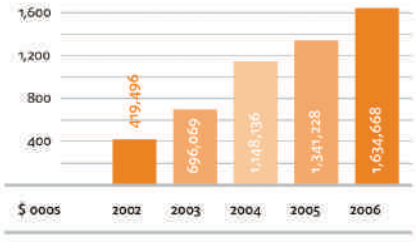
Interpipe – Ukraine
Fax: +380 562 389482
Website: www.interpipe.biz

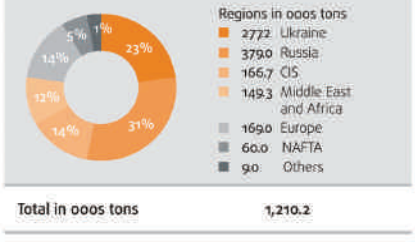
Production growth

000s tons	2002	2003	2004	2005	2006
Pipes	892.0	1,0677	1,016.9	1,061.0	1,211.8
Railway wheels and Tyres	153.0	207.2	222.3	211.3	221.8
Total	1,045.0	1,274.9	1,239.2	1,272.3	1,433.6

International sales volumes dynamics

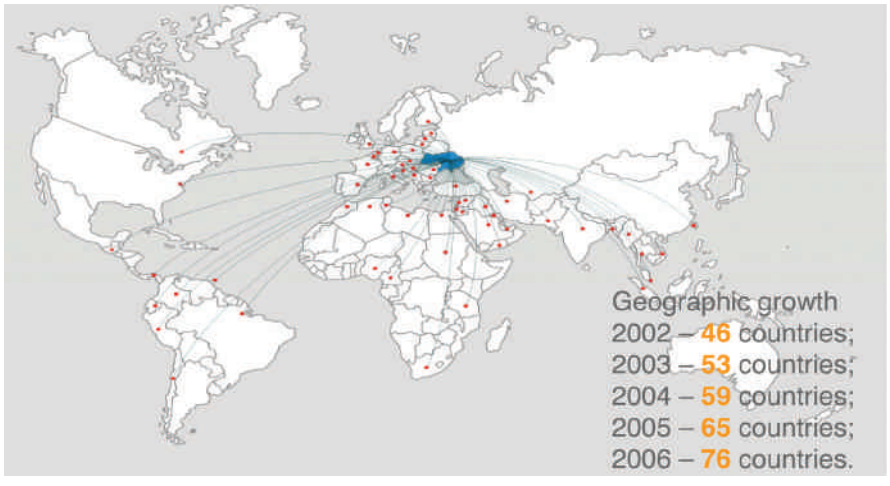
000s tons	2002	2003	2004	2005	2006
Pipes	623.0	715.0	707.0	789.8	933.0
Railway wheels and Tyres		82.0	137.5	98.4	105.0
Total	623.0	797.0	844.5	888.2	1,038.0

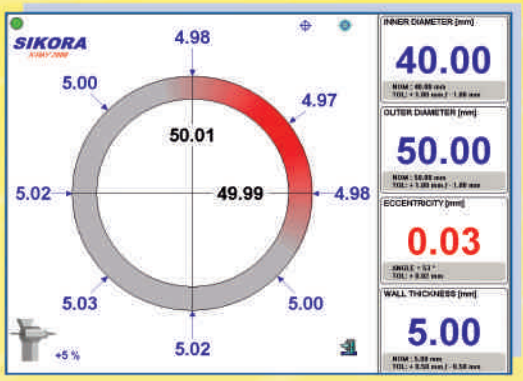




(Above) Interpipe's success in figures; and (top) a major part of Interpipe's strategic investment is the turnkey installation of a 1.3 million ton electric arc meltshop in Dnepropetrovsk

The company's geographical distribution has increased from 46 to 76 countries in 4 years





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.

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Tube India 2008 – New Delhi, new location

Tube India's relocation from Hyderabad to New Delhi, India's capital and seat of government, is expected to attract a higher number of exhibitors and visitors to the event in 2008. Taking place from 14-16 February at the Pragati Maidan exhibition venue, the 3rd Tube India will also be held alongside Schweissen & Schneiden India and Metallurgy India.

The decision was taken to relocate Tube India following the last exhibition in Hyderabad in 2005. Although Tube India 2005 attracted 114 exhibitors and 5,000 visitors, the organisers Messe Düsseldorf expect New Delhi to better reflect Tube India's growing status as a showcase event. In 2008, the event is expected to attract around 150 exhibitors and 7,000 visitors.

New Delhi – the heart of India – is home to officials and decision makers from the Government of India. The public and private sectors are also predominantly based in the capital of the country and in nearby business areas. In addition, major users of steel, such as manufacturers of components and bicycles, are based in north India. The move from south to north India was therefore a conscious decision to choose the best location for the steel industry.

The city is also well connected and has world-renowned hotels, making it more convenient for people to travel and stay in the city. The month of February is an ideal time to visit the beautiful sights of historical New Delhi.

Pragati Maidan, a world-class exhibition complex, covers 149 acres of prime land in central New Delhi. It offers 61,290m^2 of covered exhibition space in 16 halls plus 10,000m^2 of open display area. A number of important aeronautical and automobile exhibitions will also take place around the time of Tube India.

The move from south to north India was a decision to choose the best location for the steel industry

© Christine Dedman. Image from BigStockPhoto.com

At the heart of India, organisers say New Delhi is better positioned as the new home for Tube India 2008

As an important supporting event for the exhibition, the International Tube Association will hold a conference in New Delhi on 13 February 2008 before the exhibition. Currently open to submissions, the conference is titled 'Pipe Dream India: innovations & technical realities for tube and pipe production'.

The event – together with the ITA's technical conference – should provide an impressive return for Tube India, and act as a platform for lucrative business relations between both domestic and international exhibitors.

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Website: www.itatube.org

Mexico's IUSA place order with MRB Schumag

MRB Schumag, UK, has announced a further sale of its revolutionary new SB4F spinner block to IUSA sa, Mexico. The sale – the first SB4F in the NAFTA region – will assist IUSA in fulfilling its extensive copper tube production plans in the region.

IUSA's current tube manufacturing operations extend to 3 facilities, producing 120,000t of copper tube per year. The transaction further cements the relationship between the two companies, which now spans many decades and in the region of 20 tube blocks.

Mr Paul Storey, managing director of MRB, commented, *"This latest machine has been in development for several years, and has numerous innovative features. The relationship with IUSA dates back to the 1950's, when the late Mr Alejo Peralta bought the first block from the then, Marshall Richards Machine Co."*

MRB Schumag Ltd – UK
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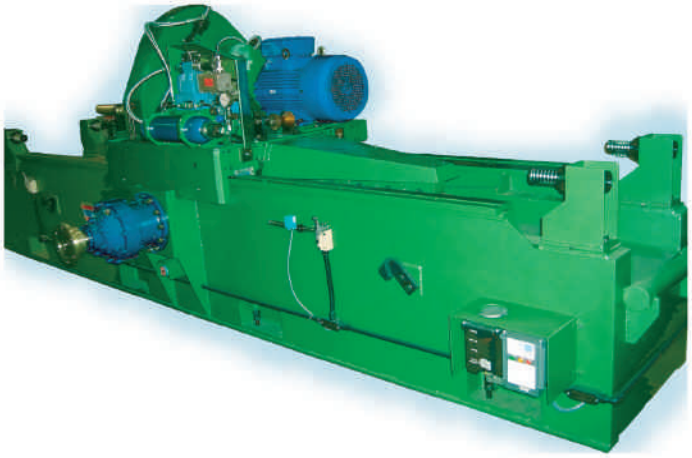
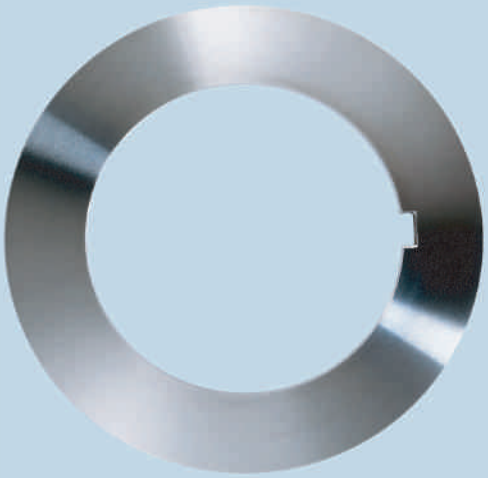
Email: pas@mrbschumag.com
Website: www.mrbschumag.com or

TRM

Our drive for quality and perfection has made us an industry leader in tube & pipe mill manufacturing



At **TRM**, we believe that the success of our products is a result of using only quality materials, the most advanced technology available, qualified staff and most importantly, adhering to a high level of standard that promises our customers the ultimate degree of quality.



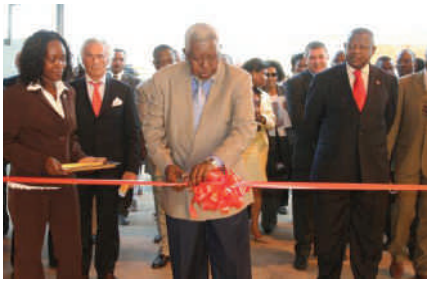
Thai Rolling Machinery Co.,Ltd. 57/3 Suksawadi 76, Bangjak, Prapradaeng, Samutprakarn 10130 THAILAND
Tel. (662) 463 7263 - 4, Fax. (662) 463 1616, http://www.thairolling.com, email: contact@thairolling.com

Socotherm establish Angolan subsidiary

Socotherm SpA, Italy, a leader in pipe coating and insulation, has inaugurated Socotherm Angola Ltd, the company's Angolan subsidiary. Socotherm Angola is the first and only Angolan marine base able to serve local market demand in the offshore and deepwater sector. Deepwater fields are fast developing in Angola, with high growth rates.

The opening ceremony – held in Luanda – was attended by a party including Mr Desiderio Costa – the Angola minister of petroleum, Mr Lambert Mende Omalanga – the Congo Democratic Republic minister of petroleum, Mr Botelho de Vasconcellos – the Angola minister of water and energy, and other important local authorities and company representatives.

Left to right: Mr Zeno Soave (chairman & CEO of Socotherm Group), Mr Desidério Costa (Angola petroleum minister), and Mr Lambert Mende Omalanga (Congo Democratic Republic minister of petroleum)



Present on behalf of the Socotherm Group were Mr Zeno Soave, CEO of the Group, Mr César Mainetti, managing director of Socotherm Americas, and Mr Miguelangelo Thome, West Africa COO.

Socotherm Angola Ltd already operates a 3-layer polyolefin external anticorrosion coating plant (Plastykote®), a thermal insulation plant for deepwater pipes (Wetiskote®) and a concrete weight coating plant (Concretkote®).

Presently the Angolan subsidiary is carrying out pipe thermal insulation for the 'Saxi e Batuque' project. The company will also be responsible for the upcoming coating projects 'Tambua Landana' and 'Malongo' – worth almost US$50mn.

Socotherm Group – Italy
Fax: +39 0426 901 055
Email: info@socotherm.com
Website: www.socotherm.com

Ukrainian research and development for new tube technologies

State Enterprise Ya Ye Osada Scientific Research Tube Institute (SE SRTI), Ukraine, is a scientific centre of the metallurgical industry in Ukraine and the CIS countries. The Institute has recently developed energy-saving tube production technologies that are now due for launch.

Mr Grigory Shepel, director of the Institute

The Institute's activities are spread over the fields of theory, technology and the methods for manufacturing tubes and high pressure cylinders. Areas of research include problems of tube production at all stages, from making tube billets to finished product quality control and certification, and investigation of economical and marketing issues.

The Institute has laboratory and trial facilities for the development of competitive and ecologically safe technologies for the manufacture of tube and cylinders. This technology applies to tube produced from both ferrous and non-ferrous metals – including refractory metals, titanium and zirconium based alloys – with anti-corrosion coatings and methods of application.

State Enterprise Ya Ye Osada Scientific Research Tube Institute (SE SRTI) – Ukraine
Fax: +380 56 372 4541
Email: postmaster@vniti.dp.ua • **Website**: www.vniti.dp.ua

Jesco to build first seamless tube plant in Saudi Arabia

Jubail Energy Services Company (Jesco), a subsidiary of Riyadh based Industrialization & Energy Services Company (TAQA), has placed an order with Danieli for the supply of what is believed to be the first seamless tube plant in Saudi Arabia.

Danieli Centro Tube (DCT) – a division of Danieli – will be in charge of the construction of this new plant, due for installation on a turnkey basis in Al-Jubail at the end of 2008.

The hot rolling mill is an essential component of the completely new tube plant. Plans include a DCT designed 14" FQM-mill (3-roll continuous rolling mill with retained mandrel) and an extractor and sizing mill, both in the 3-roll design of Freidrich Kocks GmbH & Co KG, Germany.

Following completion, the new plant will have an annual production capability of up to 400,000t of high quality seamless tubes. These tubes will be produced in a range of 139-365mm diameter in accordance with international standards to be applied in the oil industry.

According to the agreement, Kocks will have comprehensive responsibility for the 3-stand extractor and 10 stand sizing mill. Both mills are equipped with 'Star Drive' featuring separate drives for every roll. The 3-roll stands are designed for a nominal roll diameter of 650mm.

Important technical features are the quick stand changing system, the inline remote controlled pass adjustment for the adjustable stands, and quick roll changing system in the roll shop.

The deal also includes process automation systems and the Tumicon-System, consisting of various Kocks components. Two other important elements are the Tec-Box – a dynamic open and closed loop system for quality optimisation, and the Inspect-System.

Friedrich Kocks GmbH & Co KG – Germany
Fax: +49 2103 54 028
Email: v.d.Heiden@kocks.de
Website: www.kocks.de

Danieli – Italy
Fax: +39 0432 59 8289
Email: info@danieli.com
Website: www.danieli.com

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ShawCor acquires X-Tek Industrial

Global energy services company ShawCor Ltd has acquired X-Tek Industrial Ltd from X-Tek Systems Ltd, UK. The company has been renamed Shaw Inspection Systems Ltd. Shaw Inspection Systems will offer a complete range of x-ray equipment designed to meet specific requirements including both hardware and specialised software for a broad range of inspection applications.

With dedicated R&D capabilities, the company offers x-ray equipment specifically designed to eliminate the use of x-ray film, while speeding up inspection processes technologies. These systems and services address requirements in a range of industries including pipeline, aerospace, nuclear, power and medical.

Shaw Inspection Systems specialises in the development of real time, digital non-destructive testing systems. The company manufactures the FFRESHeX digital continuous x-ray weld inspection system. This system inspects pipe welds on clad pipe at the high inspection rates required when laying offshore pipelines.

Commenting on the acquisition, Mr Les Hutchison, VP of Shaw Pipeline Services, ShawCor Ltd, said, *"Shaw Inspection Systems brings unparalleled expertise in real-time x-ray inspection systems, which complements ShawCor's pipeline and pipe services products and services as a whole. Shaw Inspection Systems will be uniquely placed to expand the global market for its products and services."*

Mr Steve Drake, general manager of Shaw Inspection Systems added, *"With the backing of a major global organisation with the resources of ShawCor, Shaw Inspection Systems can further invest in the development of its world-leading real time x-ray inspection systems."*

Shaw Inspection Systems Ltd – UK
Fax: +44 1493 603 347
Email: mallen@sis.shawcor.com
Website:
www.shawinspectionsystems.com

ShawCor – Canada
Fax: +1 416 743 7199
Website: www.shawcor.com

Hellingrath purchasd by SMS Demag

SMS Demag, Germany, has acquired Hellingrath GmbH, an integrated system supplier of holistic mechanical-electronic solutions. Hellingrath also specialises in electrics and automation systems for the steel industry.

With a workforce of 85, Hellingrath generated sales of approximately €16.5 million in 2006. The company has, for more than 60 years, operated in industrial automation with a focus on the European steel industry.

The company's range of products and services covers all aspects of planning and implementation of electrics and automation projects.

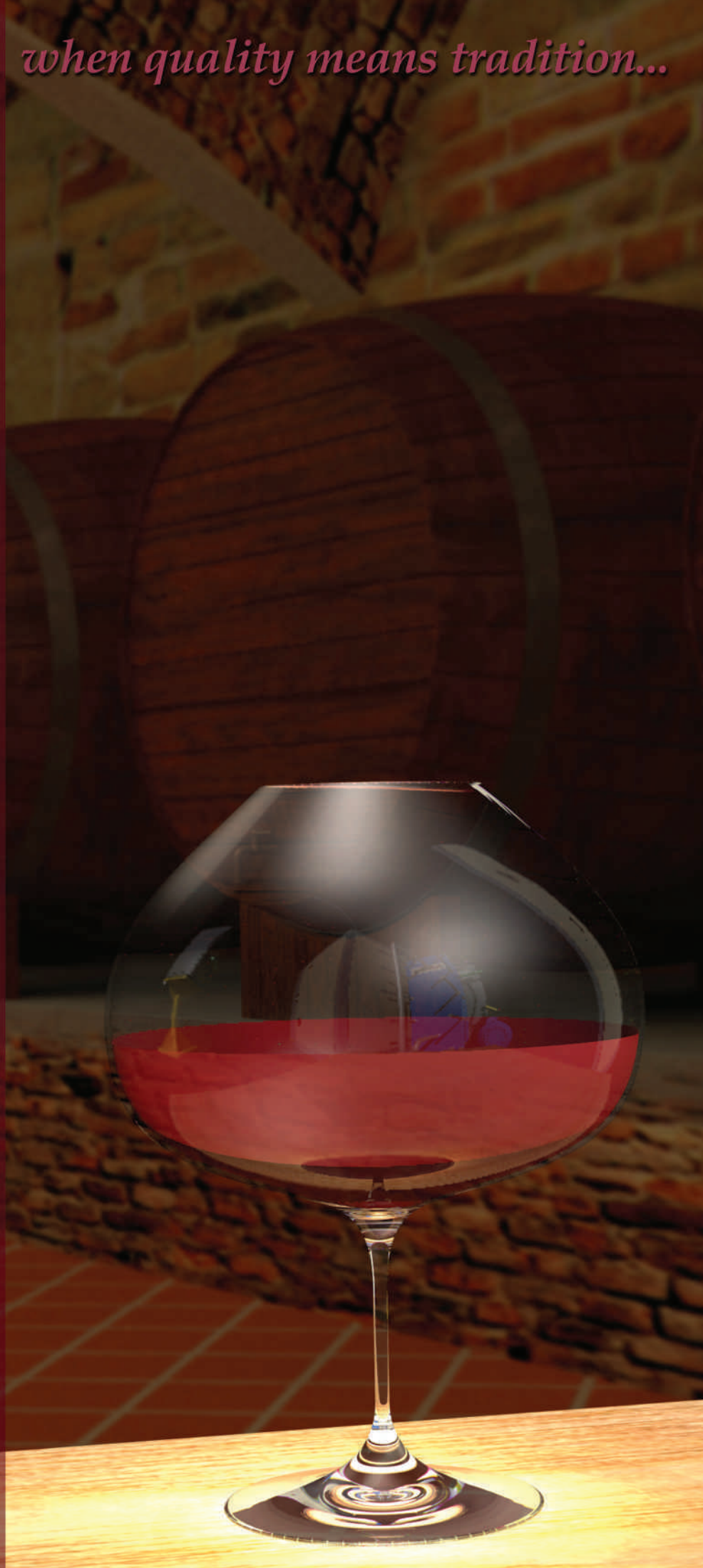
The acquisition comes on the back of the SMS Demag strategy of expanding its scope of electrics and automation services for both new plants and revamps.

SMS Demag AG – Germany
Fax: +49 211 881 4902
Website: www.sms-group.com

GALVAK has selected an Emmedi Classic Welder, 350 kW output power, for producing 30 to 103 mm diameter carbon steel tubes. The traditional Emmedi welder was purchased to realize high quality products in order to meet international quality standards.

Galvak is an innovative and leading company located in Monterrey, Mexico. It produces galvanised and painted steel sheets as well as standard and high resistance pipes and structural profiles. Galvak has state-of-the-art technology and certified quality systems across all its processes.

when quality means tradition...



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Tube Ukraine conference set for success

The International Tube Association has reported that its forthcoming Tube Ukraine conference is shaping up to be one of the best in its history. Held in Dnepropetrovsk from the 24-26 September 2007, the conference will be one of biggest gatherings of technical tube and pipe experts seen for many years outside of the major exhibitions.

Titled *'Modern production trends for tube and pipe – welded, seamless & non-ferrous'*, the event is co-organised by Ukrtruboprom Association and sponsored by CJSC Nikopol Stainless Steel Tube Mill. The conference has received substantial support from Ukrainian and Russian producers, technical specialists and engineers.

Dnepropetrovsk is the host city for Tube Ukraine

Over 60 expert speakers from across the world will give technical presentations over two days, with the third day dedicated to an optional tube plant tour either at Interpipe Niko Tube seamless plant (seamless/stainless) or Interpipe Novomoskovsk (welded). Tabletop exhibits will be situated on the first floor of the venue – the Palace of Culture 'Metallurgists' – and will operate for both full days of the conference.

Companies represented by speakers at the conference include State Enterprise NITI, Ukgipromez, and Dnepropetrovsk Tube Works (Ukraine), JSC Cvetmetobrabotka and TMK (Russia), Sumitomo Metal Ind and Kusakabe (Japan), Danieli Centro Tube (Italy), Kocks GmbH, SMS Meer and Reika (Germany), and EFD Induction (Norway).

The main social event is sponsored by OCTG and IMS Messsysteme GmbH, while Interpipe will hold a cocktail reception at the Palace of Metallurgists immediately after the conference on 25 September. UVIS, the main conference sponsor, is also planning a reception for specially invited delegates.

International Tube Association – UK
Fax: +44 1926 314755
Email: info@itatube.org
Website: www.itatube.org

Omni-X celebrate 20 year anniversary

Omni-X Inc, USA, has celebrated its 20th anniversary with the announcement of planned global expansion. In 20 years, the family owned business has grown from a three-man operation into one of the largest manufacturers of tube bending tools. The company currently operates manufacturing facilities in Colorado and the Czech Republic.

As a mark of its progress, Omni-X are in the initial stages of establishing manufacturing locations, in the expanding markets of India and China, with a target startup date of mid 2008. With these four locations the company will be able to provide localized service and products on a global scale.

> ***Omni-X are in the initial stages of establishing manufacturing locations in India and China***

Since 1987, Omni-X has specialized in the design and manufacture of consumable mandrels and wiper dies, as well as simple and complex multi stack compound bending dies.

Serving industries including automotive, aerospace, HVAC, shipyard, furniture and others, the company provides solutions to any bending challenge for any size or shape tube/pipe and for any make/model tube bender.

Omni-X Inc – USA
Fax: +1 303 789 4755
Email: alex@omnibend.com
Website: www.omnibend.com

Omni-X CZ sro – Czech Republic
Fax: +420 5 48212804
Email: sales@omni-x.cz • **Website**: www.omni-x.cz

Contract for new 1,200kW vacuum tube welder

Lorraine Tube, France, sister company of Condesa Group, Spain, has placed an order for a new, high-speed 1,200kW Emmedi 'Classic' welder. It will be used for the production of 76-219mm diameter carbon steel tubes.

Emmedi vacuum tube welders range from 50 to 1,200kW, and can be supplied with a welding management system and adjustable welding table.

The company, which is now the tube welding and annealing division within the SAET Group, produces high frequency inline induction welders for metal pipes, medium and high frequency equipment for heat-treatments, and seam and full body annealing systems.

In 2006, Emmedi supplied more than 30 pieces of equipment worldwide, several of them in the range of 450 to 850kW output power. The company's merging with SAET has provided Emmedi with the opportunity to improve technological innovation and research for new products.

SAET Induction Technology and Equipment – Italy
Fax: +39 011 997 4328
Email: info@saet.it
Website: www.saetgroup.com

Emmedi Welding and Annealing – Italy
Email: sales@emmedi.it
Website: www.emmedi.it

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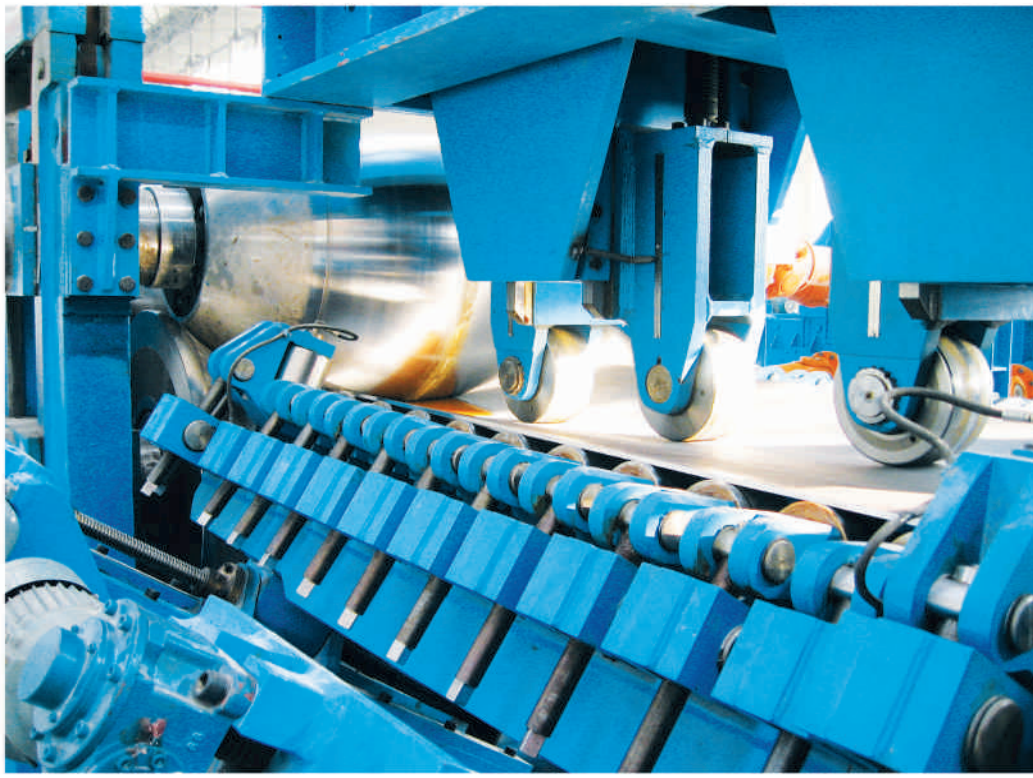

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E-mail : erw@milltechco.com

NDT Systems & Services establish US subsidiary

NDT Systems & Services AG, Germany, has established a subsidiary company based in Wilmington, Delaware, USA. This new subsidiary will serve the automated non-destructive testing requirements of the North American market for the metal, rail, and automotive industries.

The main focus of NDT Systems & Services (America) Inc will be the stationary inspection systems and plants offered by its parent company. The range of the company's technology includes automated inspection plants for non-destructive testing of heavy plate, strip, pipe, and railway wheels and axles, together with equipment for weld testing of tailored blanks.

NDT Systems & Services AG is also a leading provider of advanced inline inspection technologies for the non-destructive testing of pipelines using ultrasound technology.

The newly-formed North American subsidiary will also be resourced to support the pipeline inspection activities of the company's co-operating partner, Houston-based Tuboscope Pipeline Services.

The president of NDT Systems & Services (America) Inc has been named as Mr Alfred Barbian, who is also the CEO of the parent company in Germany. He will be supported by Mr Dietmar J Neidhardt as acting vice president and general manager. Dr Neb Uzelac has been named as a further acting officer of the company.

The first official engagement of the new company was the participation at AISTech 2007, the iron & steel technology conference and exposition held in Indianapolis in May.

NDT Systems & Services AG – Germany
Fax: +49 7244 7415 97
Email: michael.beller@ndt-ag.de
Website: www.ndt-ag.de

NDT Systems & Services (America) Inc – USA
Fax: +1 218 3633723
Website: www.ndt-ag.com

Northwest Pipe acquires Continental

Northwest Pipe Company, USA, has acquired the Continental Pipe Manufacturing Company, based in Utah, USA. Continental produces spiral welded steel pressure pipe for use in water transmission pipelines, with trading generally restricted to Utah and the surrounding region.

With manufacturing facilities across the USA and Mexico, Northwest Pipe Company has three business segments: the Water Transmission Group, Tubular Products Group and Fabricated Products Group.

"The Continental acquisition is a great fit for our Water Transmission business," said Mr Brian W Dunham, Northwest's CEO.

Northwest have appointed Mr Jeff Bruny as regional vice president for water transmission operations. In addition to the Continental operations, he will be responsible for Northwest's Adelanto and Portland divisions.

Northwest Pipe Company – USA
Fax: +1 503 240 6615
Website: www.nwpipe.com

Quaker strengthens commitment to Asia/Pacific region

Quaker Chemical Corp, USA, has opened a new 20,000m² facility in Qingpu, Shanghai, China. Designed for modern and flexible manufacturing, the site includes production, development and quality laboratories, a bulk tank farm, a warehouse and office space.

This integrated facility will enable the company to optimise manufacturing efficiencies across the region, expand its research and development capabilities, and keep pace with the region's exponential growth.

Quaker is a provider of process chemicals, chemical specialities, services, and technical expertise to a wide range of industries, including steel, automotive, mining, aerospace, tube and pipe, coatings, and construction materials.

The company's significant investment in China is a continuation of its commitment to the Asian market, which began in 1995 through a joint venture partnership with Wuxi. In late 2006, Quaker acquired the remaining shares in the Wuxi-Quaker partnership, and made Shanghai the headquarters location for its Asia/Pacific operations.

(Top) the opening of the new Quaker facility; and (above) a tank farm at Quaker's manufacturing site

Quaker Chemical Corporation – USA
Fax: +1 610 832 4497
Email: info@quakerchem.com • **Website**: www.quakerchem.com

Huzhou Xinyaohua Stainless Steel Pipes & Tubes Co., Ltd.

Commodity:

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Standards:

JIS G 3463, DIN 17456/58/2462, ASTM(ASME) A/SA 213/M, A/SA789/M, BS3059/3606, GBT/13296 & Gost 9941;

JIS G3459, ASTM(ASME) A/SA 312/M, A/SA790/M, BS3605, GBT/14975/6 & Gost 9940; ASTM A269/M

http://www.mgs-stainless.com

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PH: 86 572 3733568
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Cell: 86 137 3820 9722
E-mail: export@mg—stainless.com

Air Liquide completes acquisition of Linde Gas UK

Air Liquide Group has announced its successful takeover of the business activities of Linde Gas UK. This acquisition, valued at €105mn, will have an immediate and positive impact on the Group's results and allow Air Liquide to almost double the size of its UK operation. Air Liquide has been present in the UK since 2004, following the acquisition of local Messer operations.

This new business is complementary to other Air Liquide activities, and the additional production units will enable Air Liquide to provide a wider range of products and services to key industry sectors. It also gives an exciting opportunity to access the UK hospital and homecare markets, an area where Air Liquide has proven its ability to provide innovative and customer oriented solutions elsewhere in the world.

Mr Klaus Schmieder, senior executive vice-president of the Air Liquide Group, states, *"Air Liquide will integrate the existing UK operations in an enlarged business, to strengthen our position in the UK industrial and medical gases markets."*

With around 280 employees, Linde Gas UK has total revenues of around €60mn. Air Liquide is a world leader in industrial and medical gases and related services. The Group offers innovative solutions based on constantly enhanced technologies and produces air gases (oxygen, nitrogen, argon, rare gases) and many other gases including hydrogen.

Air Liquide Group – France
Fax: +33 1 39 56 11 22
Website: www.airliquide.com

Linde Gas UK – UK
Fax: +44 121 500 1111
Website: www.linde-gas.co.uk

Sumitomo and Vallourec join forces in Brazil

Sumitomo Metal Industries Ltd (Sumitomo Metals), Japan, and Vallourec Group, France, have formed a joint venture company in Brazil to manufacture seamless pipes.

Established on the basis of a long-running partnership, the new company – Vallourec & Sumitomo Tubos do Brasil Ltda – will be situated in Jeceaba, the state of Minas Gerais.

After becoming operational in 2010, the joint venture will give Sumitomo Metals a global seamless pipe supply capacity of 1.6 million tons annually. Capacity of the new plant will include 600,000t/year of seamless pipe and 1 million tons/year of crude steel, with 700,000t of this being used for the seamless pipe mill. The new seamless pipe facilities will offer a product range of 168.3 to 406.4mm.

The joint venture will employ charcoal blast furnaces, which will use charcoal made from eucalyptus trees grown in a company-managed plantation. This will reduce the environmental impact of the steelworks and help prevent global warming.

Sumitomo Metals – Japan
Fax: +81 6 6223 0305
Website: www.sumitomometals.co.jp

V & M – France
Fax: +33 1 49 09 39 90
Website: www.vallourec.com

First time in Tianjin for the China Steel Tube Expo 2007

Targeted at the Bohai-rim and northeast Asian region, the China Steel Tube Expo 2007 will take place from 10-12 October 2007. Staged at the Tianjin Binhai international convention and exhibition centre, the event will feature a large number of domestic and international manufacturers and suppliers of seamless and welded tube.

According to organisers the Shanghai Shenshi Exhibition Service Co Ltd, 300 companies are expected to cover an exhibit area of 20,000m^2. These companies will exhibit the latest products and technology in the steel tube industry.

It will be the first time that the event has been held in Tianjin Binhai New Area, which is regarded by the Chinese government as a fast growing and highly promising area to promote international trade. Sponsors include the China Steel Pipe Association of China Steel Construction Society (CSPA), Hebei Steel Tube Trade Association, and Shanghai Steel Tube Trade Association.

Tube product exhibits will include seamless steel tube, welded pipe, stainless steel tube, seamless special-shape tube, carbon steel tube, cold drawn seamless steel tube, composite steel tube, and hot galvanizing steel tube.

Featured machinery and equipment will comprise production and processing technology, welding equipment, inspection apparatus, surface engineering technology and corrosion preventive technology.

The event in October follows on from the 3rd Shanghai Tube Expo and China International Steel Tube Industry Seminar, held last May. This combined event attracted over 400 companies from 30 countries and regions, including USA, France, Germany, Japan, Russia, Italy, China and southeast Asia. Exhibitors included Baosteel, Tianjin Pipe, Hengyang Steel, Baoji Petroleum Steel, Jinghua Steel, SMS, Techint, Inductotherm, EFD, ABB, and Siemens

Shanghai Shenshi Exhibition Service Co Ltd – China
Fax: +86 22 24140707
Email: shanghai1984@126.com
Website: www.mtmexpo.com

Commercial Metals invest in Croatian pipe mill

Commercial Metals International AG, the Swiss subsidiary of Commercial Metals Company, USA, is set to acquire Valjaonica Cijevi Sisak (Sisak), following an agreement with the Croatian government.

Sisak is an electric arc furnace-based steel pipe company with an annual pipe making capacity of around 305,000 metric tons.

The deal – worth in the region of US$7 million – will lead to an investment from CMC of about US$40 million.

Mr Hanns Zoellner, executive vice president and president of CMC's marketing and distribution operations, stated, *"Sisak will be our base for growth in the robust and key markets of central and eastern Europe. We know that this is a turnaround opportunity and are ready to invest to bring this mill to a high level of profitability."*

Commercial Metals International – USA
Fax: +1 214 689 5886
Website: www.commercialmetals.com

Battenfeld China celebrates its 10th anniversary

To celebrate its 10th anniversary, Battenfeld Extrusion Systems, China (a subsidiary of Battenfeld Extrusionstechnik, Germany), invited 250 visitors from Asia and Europe to an 'open house' event.

The demonstration, in the company's own technical lab, consisted of four exhibits: a pipe extrusion line, a profile extrusion line, a thermoforming line, and a blown film line.

During the event, PE-RT pipe with a diameter of 20mm and 2mm wall thickness was manufactured on a complete line at 20m/min. The equipment package included a 60mm single-screw extruder, lattice-basket die, two-chamber vacuum tank, cooling section, belt haul-off, cutting knife and semi-automatic winder, newly developed by Battenfeld China.

The official opening of the 'open house' event at Battenfeld China

The company's techBEX line for the production of small profiles is available in two standard versions, with a choice of 45mm or 60mm extruders and downstream equipment to match.

The line demonstrated featured a BCE1-60-25D single-screw extruder designed for an output of 70kg/h of U-PVC. The downstream package included a 2.5m CT2500/Vi calibration table, B100E belt haul-off, SE50E servo-driven saw, and tilting table. The line reached an extrusion speed of 5m/min with a die supplied by Yuasa Elastomer Products (YEP).

The opening speech from Mr Wolfgang Studener, president and CEO of Battenfeld

Battenfeld Extrusionstechnik GmbH
– Germany
Fax: +49 5731 27124
Email: welcome@bex.battenfeld.com
Website: www.bex.battenfeld.com

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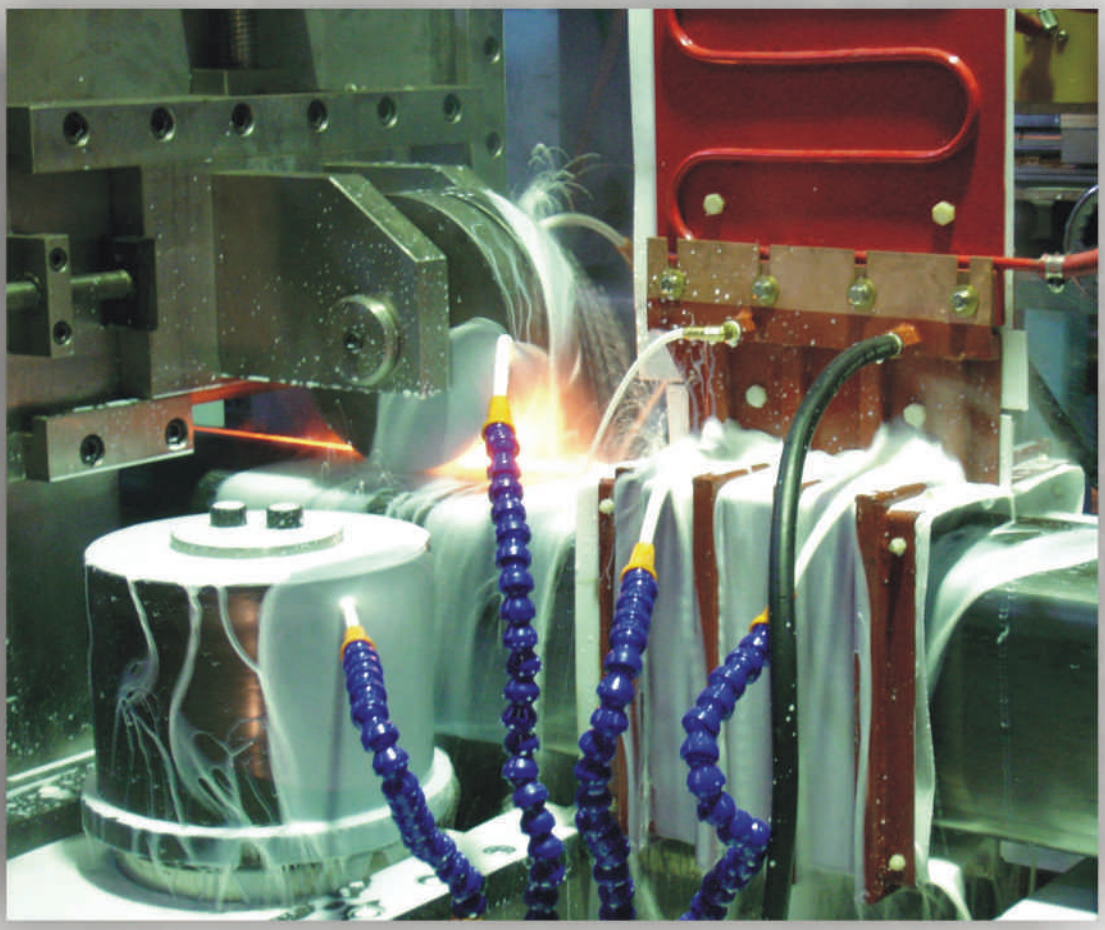

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Http://www.hisen.com.tw

AddisonMckee wins world-class manufacturer award

Tube manipulation solutions provider AddisonMckee, USA, has been declared the sole recipient of the 'World-class manufacturing award', one of seven separate awards announced during a conference luncheon entitled 'The Manufacturer Live', held on 30 May in Chicago, USA.

'The Manufacturer' is a resource organisation for manufacturing decision makers, and uses its annual awards ceremony to highlight those organisations promoting world-class levels of manufacturing excellence in the United States.

Mr Eric Cohen (WHI Capital Partners – principal owners of AddisonMckee), Kevin Linehan (MMS), Mr Christian Rogiers and Mr Mike Burnett (AddisonMckee), and Mr Dann Maurno (The Manufacturer magazine)

The award presented to AddisonMckee recognises an organisation's ability to benchmark, examine and make continuous improvements in everything from lead times to customer returns, work content to labour minutes per unit, and inventory levels to cycle times.

AddisonMckee president and COO, Mr Joe Eramo, states "*This award provides evidence of our ability to expand globally while continuing to grow our US manufacturing base.*"

The Manufacturer's editor-in-chief, Mr Dann Anthony Maurno, said, *"I was impressed by their consultative approach with customers, beyond the product and into their operations. And a company like AddisonMckee, that improves revenue growth by 107 per cent over five years, has much to tell."*

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

Gulf Plastics Pipe Academy receives launch

Borouge, UAE, has announced the launch of the Gulf Plastics Pipe Academy (GPPA), of which it is a founding member. The GPPA, formally launched by Mr Harald Hammer, CEO of Borouge Pte Ltd at Dubai PlastPro, is set to play an important role in increasing the use of high quality plastics pipe systems in the Middle East.

The GPPA is an independent, non-profit organisation formed to promote the use of specified plastics pipe systems and good installation practices in the greater Middle East region. The organisation represents all stakeholders in the plastic pipe value creation chain, including polymer producers, pipe/fittings producers, and pipe installers and utility providers.

The organisation is committed to raising the knowledge and skills required to develop high quality plastics pipe systems. This will be achieved through developing education and training programmes, promoting standardisation and certification and encouraging best practice in health, safety and environmental matters.

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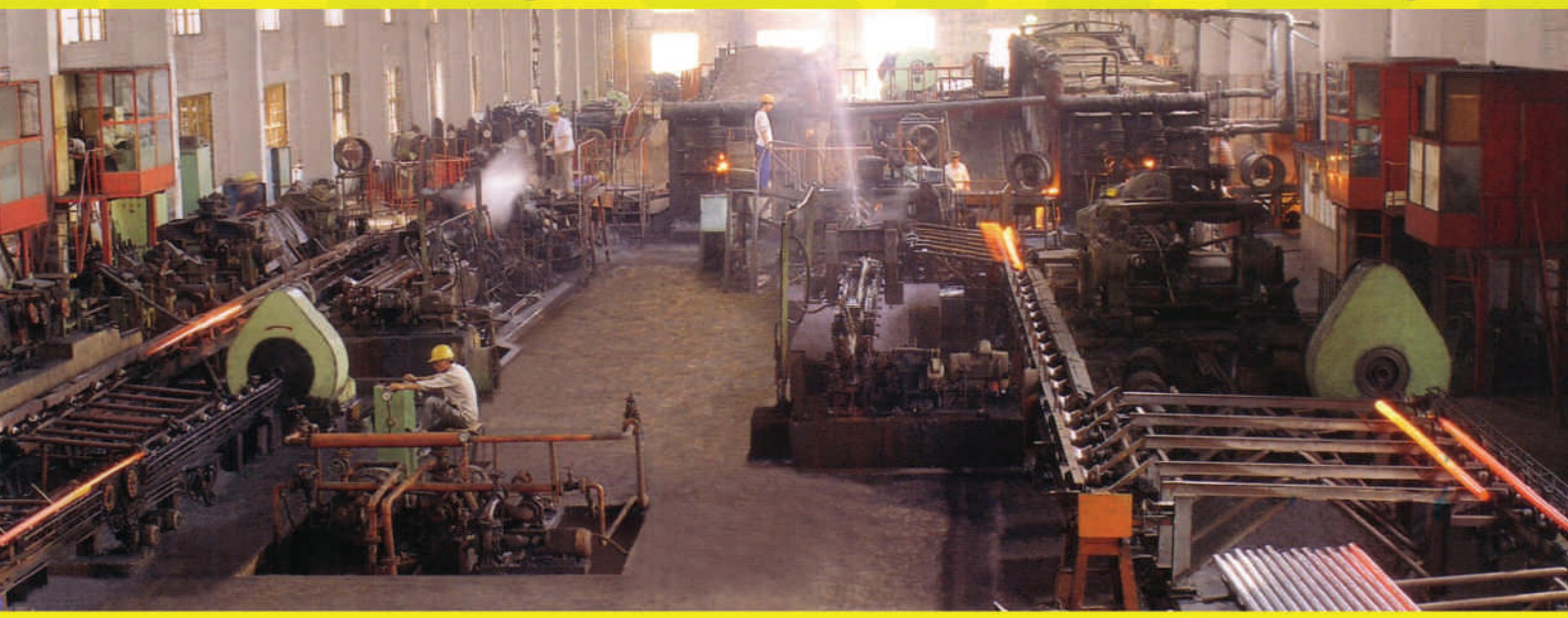

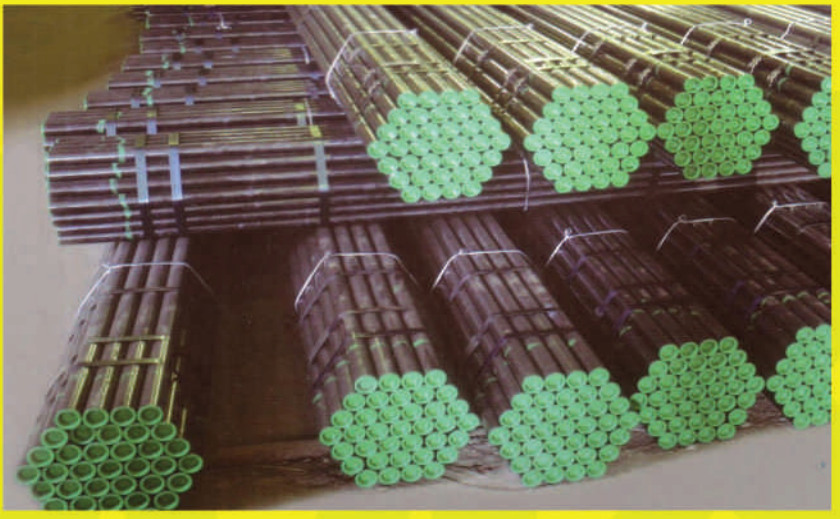

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Email: sales@beijingmaster.com china-steelpipe@163.com

URL: www.china-steelpipe.com

Borouge believes that adopting better plastic pipe systems will benefit all stakeholders and, ultimately, result in advanced pipe networks that provide real benefits to communities in the Middle East. Mr Hammer commented, "*Robust and leak-free pipe networks are a fundamental element in any country's infrastructure. Borouge recognises the role it can play to address the global challenge of clean water availability and sanitation.*"

Mr Rob Lawrence, chief executive of GPPA, commented, *"The GPPA will offer a range of services based on the needs identified by those working throughout the plastics pipe value chain and we expect to be able to address many of the concerns that will come from the exceptionally tough environment in the region. The GPPA's unique strength is that its members represent all interested parties, enabling it to be a powerful lobby group on behalf of the industry and its customers."*

"The GPPA model also has relevance in the significant pipe markets in India and China, where the full benefits of specified plastics pipe systems have yet to be realised," added Mr Bjorn Klofelt, vice president of Plastics Pipe Academy Project. *"We have had very positive responses to this joint industry educational initiative from several major Indian and Chinese companies."*

Borouge – United Arab Emirates
Fax: +971 2 6070 889
Email: info@borouge.com
Website: www.borouge.com

Dates announced for Boru 2008 exhibition

Exhibition organisers Ihlas Fuar Inc, Turkey, has announced the new dates for Boru 2008. The event will take place from 28 February to 2 March 2008, and will again be held at the Istanbul Expo Centre, Turkey.

The last show in 2007 took place from 22-25 March 2007, and was a big draw for many important decision makers in the tube and pipe industry. Over 150 exhibitors from 23 different countries took part in the event.

Guests including the Mayor of Istanbul and the president of Ankara Trade Chamber were accompanied on a tour through the halls by Mr Huseyin Boz, general manager of Ihlas Fuar. Over four days, more than 16,000 people visited the fair, which was held in two halls and covered more than 11,000m^2.

Istanbul will again host the Boru exhibition in 2008, from 28 February to 2 March

Turkey acts as a bridge between Europe and Asia, and is a rapidly growing market and trade platform for manufacturers and traders, having seen 9.5 per cent annual growth in 2005.

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Events News in Brief…

events news in brief…

Tube Russia 2007 (www.metallurgy-tube-russia.com) celebrated another successful event in May, with an increase in exhibition space of 30 per cent compared with 2005. There were 13,500 visitors at the combined events (including wire Russia), an increase of more than 12 per cent on 2005. However, while there was an increase in international exhibitors at the event, attendance from Russian exhibitors has dropped.

EMO Hannover (www.emo-hannover.de) – the specialist metalworking event – will be held from the 17-22 September 2007 in Hannover, Germany. Billed as the *'world of machine tools'*, the event is set to attract all major international tool manufacturers. A range of topics will be highlighted at the show, including CRP (carbon reinforced plastics), solutions for the medical sector and a symposium on lightweight construction.

Iran's **2nd annual tube and profile exhibition** (email: ajoop_1357@yahoo.com), welcomed exhibitors and visitors to Tehran's Hejab Hall from 25-27 July 2007. The small-scale event provided a wealth of networking opportunities for those wishing to do business in Iran. The exhibition was organised by the Syndicate of Steel Pipe and Profile Manufacturers, the Syndicate of Iranian Aluminium Industries, Tehran's Mine & Industry House, UPVC Iran and Mine & Mining Industries Database.

The **6th Metal-Forum of Ukraine 2007** (www.metal-forum.org), the leading event for metallurgy and metal in Ukraine, will take place from 18-20 October at the KyivExpoPlaza in Kiev. The event is the meeting point for decision makers from the Ukrainian mining, metallurgy and metal industry from all industrial regions of Ukraine. It will take place alongside the 2nd exhibition of forging and art foundry, among other events.

euroLite (www.eurolite-expo.eu), an exhibition for the lightweight design and construction industry, will be staged from 26-28 June 2008 in Salzburg, Austria. The inaugural event will showcase the entire spectrum of development and simulation tools to component tests and series production. Materials presented will include non-ferrous metals, aluminium alloys, lightweight steel, fibre reinforced plastics, composites, and nano materials.

Surfacts (www.surfacts.de), the 4th trade fair for surface technology, will be staged from the 9-11 October 2007 in Karlsruhe, Germany. The event will take place alongside WTT Expo – an event for industrial heat exchanger and heat transfer technology; and Interpart, a trade fair for the automotive, mechanical and plant construction industries. This year the show will focus on the technology to meet the recent EU end-of-life vehicle legislation, which bans coatings containing chromate (VI) for automotive parts.

TUBE MILL(ERW)
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- Reference : Over 170
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- Painting Line

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Event News Cont…
event news cont…

Machine Tool Indonesia 2007 (www.allworldexhibitions.com/metal) will be held from 5-8 December 2007 at the Jakarta international exhibition centre, Indonesia. Held for the 4th time, the event is Indonesia's largest machine tool, precision engineering and metalworking technology exhibition. The last show in 2006 attracted 1,254 exhibiting companies from 35 countries and 26,096 visitors.

The **China International Steel Distribution and Logistics Conference** (www.mc-ccpit.com/Logistics) will take place from 15-16 September 2007 at the Biyuyuan Hotel, Zhenjiang, Jiangsu, China. Co-organised by the Metallurgical Council of CCPIT (MC-CCPIT) and the China Iron and Steel Association (CISA), the conference will focus on China's steel industry, logistics, distribution, profitability and management.

Industrial Pumps, Valves & Systems India (IPVS) (www.pumpsandsystemsindia.com), will take place from 5-7 October at the Hitex exhibition centre, Hyderabad, India. The Indian market for industrial pumps and systems has been growing for many decades. The event is sponsored by Process Plant & Machinery Association of India (PPMAI) and the Indian Pumps Manufacturers Association (IPMA).

Business News in Brief…
business news in brief…

US Steel (www.ussteel.com) has completed the takeover of **Lone Star Technologies** (www.lonestartech.com), who have become a wholly owned subsidiary of the company. Lone Star Technologies is a leading specialist in the manufacture of oilfield casing, tubing, couplings, linepipe, and speciality tubing products used in a variety of applications.

Nakata Mfg Co Ltd (www.nakata-mfg.co.jp), Japan, has relocated its head offices to a brand new facility to commemorate its 100th anniversary. The move to the new location – at 3-7-6 Tagawa, Yodogawa-ku, Osaka 532-0027, Japan – took place in June.

Tubos Reunidos (www.tubosreunidos.com), a Spanish leader in seamless steel tube, have announced a merger with **Grupo Condesa** (www.condesa.com), welded steel tube and pipe manufacturer. With this agreement, it is believed that the two will form the biggest tube enterprise in Spain and second largest in Europe.

Roll-Kraft (www.roll-kraft.com), USA, has added a CNC precision optical profile grinder to the factory floor at its facility in Mentor (OH). Roll-Kraft's 37th CNC, this machine will be used to grind profiles on smaller, more intricate products.

Casey Equipment Corp (www.caseyusa.com), USA, a provider of used and refurbished steel mill equipment, has been hired as the exclusive sales agent for the sale of an idled melt shop at the site previously known as Calumet Steel. The melt shop includes two 30t electric arc furnaces and a 2-strand Rokop billet caster (www.surplusmeltshop.com).

Corus Tubes Energy Business (www.corusgroup.com), UK, has announced a boost in production at its 42" and 84" Hartlepool mills, following the introduction of its continuous improvement programme (CIP). Average productivity now stands at 40 per cent higher than in 2004 when the company embarked upon the programme. The 42" mill has moved from a 10-shift operation to 15. Corus Tubes has also invested in new equipment to improve process flows.

Borealis (www.borealisgroup.com) has announced the introduction of lean manufacturing into its facility in Bamble, Norway. The company is also considering phasing out its R&D activities in Norway, to focus its innovation capability in Austria, Finland and Sweden. This follows on from the planned Borouge innovation centre in Abu Dhabi, UAE. The company also intends to move its business management from Mechelen, Belgium, to its head office in Vienna.

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Business Briefs Cont...

business briefs cont...

The **Linde Group** (www.linde.com) has concluded the sale of its packaged gases business in the USA to the industrial gases company, **Airgas Inc**. Linde will retain certain packaged gases accounts relating to its independent distributors, including acetylene production sites and filling plants. The Linde Group is a world-leading industrial gases, medical gases and engineering company with around 49,000 employees working in more than 70 countries worldwide.

Unison (www.unisonltd.com), UK, has achieved the prestigious ISO 14001 standard for its Environmental Management System, alongside the better-known ISO 9001 accreditation for its Quality Systems. These two awards have confirmed the company's internal and industry-wide policies in energy-efficiency.

IMechE, The Institution of Mechanical Engineers (www.imeche.org), has appointed leading energy engineer Mr John Baxter as its 122nd president, replacing Mr Alec Osborn (MBE). Mr Baxter is currently group engineering director at BP, and his inaugural speech focussed on the immediate need for industry and government to work together with engineers to combat climate change. Mr Baxter promised to champion the IMechE's key themes: education, energy, environment and transport.

TubeMart (www.tubemart.com) have appointed **Tube Fabrication Machinery Ltd** (TFML), UK, as one of their network of global dealerships and exclusive UK representative. With AddisonMckee as its parent company, TubeMart combines the widest choice of machinery from leading manufacturers into one highly comprehensive catalogue. It is claimed to be the new single source method of choosing high-quality, mid-range tube manipulation solutions.

Socotherm Americas (www.socotherm.com) has been awarded a US$20mn contract by the **Venezuelan Oil Company PDVSA**. This contract will involve 3-layer polyethylene and concrete weight coating, and cathodic protection of large diameter pipes for the Barbacoa-Margarita project (phase II). This 135km gas line will run from Anzoátegui State to Isla Margarita, and includes two landlines of 20km and 86km and a submarine line of 26km.

Trumpf(www.us.trumpf.com), USA, has officially opened its company headquarters in the Trutec building in Seoul, South Korea. The new offices are located in 'Digital Media City', with four of the building's twelve stories occupied by Trumpf Korea. Trumpf has had a subsidiary in Korea since 1997 and has become one of the region's leading machine tool companies.

Cincinnati Extrusion GmbH (www.cet-austria.com), Austria, has launched a new online shop for its Alpha extruders. The four standard extruder models are available for purchase at www.my-alpha.com. The Alpha single-screw extruder series is tailored to the production of small profiles, and around 400 units have already been sold.

AddisonMckee (www.addisonmckee.com), USA and UK, have appointed Mr Sung Soo Kim as their service engineer for South Korea. Mr Kim began his role supporting AddisonMckee's growing Korean customer base in May 2007. He will be assisted by AddisonMckee's regional machine and consumables manufacturing and supply facility in China.

Fusion UV Systems Inc (www.fusionuv.com), specialist in ultraviolet curing systems, has appointed **Kendrolab Spólka zoo** (www.kendrolab.pl) as its exclusive distributor for Poland. The company will add Fusion UV products to its inventory of multi-brand laboratory and medical equipment, and Heraeus infrared and UV lamps.


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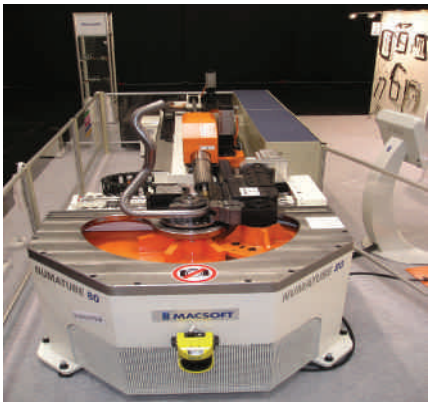
Advanced family of CNC tube benders

Numalliance, France, offers impressive CNC tube bending versatility and creativity with its new line of CNC tube benders, branded Numatube. The Numatube 80 is the first model of a line for 25-150mm tube diameter. In its basic configuration, the Numatube 80 offers 11 axis and all automatic adjustments. The machine is completely electric because clamping on the mobile chariot is a numeric axis.

The Numatube 80 is designed for 25-150mm tube diameters



The main innovation lies in the bending head, which is without a traditional arm and therefore does not have any of the usual drawbacks. The conception of the bending head comes from a system with 4 interpolated rotary axes. It has been previously developed in the FX line of CNC wire benders. This technology is accompanied by Numalliance's own high performance, proprietary software ensuring constant evolution.

With this new bending head working by interpolation, the Numatube 80 is capable of achieving a higher speed of at least 30 per cent compared to existing tube benders. However, speed is of no use without the rigidity to exploit it. Therefore, Numalliance has created a bending head with extreme rigidity to ensure very high acceleration and speed.

In addition to speed and rigidity, Numalliance has also worked on increasing the productivity of this machine by eliminating all sensors and chains. The machine has a perfect balance of the frame, minimum maintenance, internet monitoring option, and clockwise and counter-clockwise rotation of bending.

With a fast and rigid bending head, the machine enables clockwise and counter-clockwise rotation of bending

In the basic version, the Numatube 80 requires less than 30 minutes to change rotation from clockwise to counter-clockwise. The machine can bend both ways automatically if the bending does not require any markings eraser.

The Numabend line was designed for bending torsion bars and exhaust brackets

Options include 6 tons push chariot, automatic rolling and bending, automatic change of clamps (12 units), cutting of tube on the bender, and others currently in development.

The Numatube 80 is mostly geared towards the aerospace and automotive industries. It guarantees very high precision and excellent repeatability, great speeds and high availability rate. It is run by a user-friendly and constantly upgraded software that permits ease of operation.

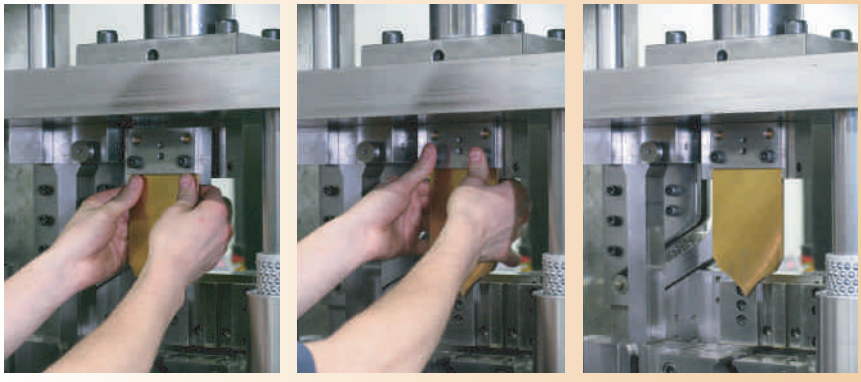
Numalliance has also developed the Numabend line, especially created for working without a mandrel and ideal for the bending of torsion bars and exhaust brackets. This line of machines functions entirely automatically clockwise and counter-clockwise with the same technology as the Numatube line.

Numalliance/Macsoft – France
Fax: +33 3 29 58 46 47
Email: macsoft@numalliance.com
Website: www.numalliance.com

Quick change cut-off blades and jaw systems

New-Form Tools, Canada, provides a broad range of products including blades, tools and dies, carbide tooling, hydroform blades, tube/pipe and roll-form tooling, titanium coatings and automation.

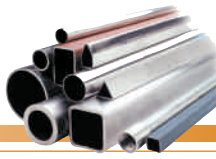
The company has developed a revolutionary quick change system for changing cut-off blades in less than 10 seconds and jaw systems in less than 1 minute.



Change blades in less than 10 seconds with quick change systems from New-Form Tools

The company claims that its patented quick change system can increase mill uptimes by as much as 1 to 2 hours per day – an added benefit of 300-600 hours of running time per year. Quick change blade, jaw, and cross cut systems are made to fit existing die sets.

New-Form Tools Limited – Canada
Fax: +1 519 272 1996
Email: service@newformtools.com • **Website**: www.newformtools.com



Seamless ERW steel pipes and pipe fittings

Hebei Zhongyuan Industrial Group, China, produces seamless, ERW and LSAW steel pipe and pipe fittings. The company's steel pipes are available in diameters ranging from 219mm to 2,420mm, and wall thicknesses from 6mm to 20mm, with hot-rolling steel pipe available in diameters from 88.9mm to 630mm, and wall thicknesses from 3.5mm to 12mm.

The company's branch Plant Hebei Cangzhou Hengtong Tubing Co Ltd, China, can also produce a series of high, medium and low pressure tube and pipe fittings, including elbow, tee, reducer, flange, bend, and socket tri-cross. These fittings are suitable for line and oil API seamless and welded pipes.

The company is a contracted supplier of CNPC and SINOPEC and its products are used in the West-East Gasoline Project.

Hebei Zhongyuan Industrial Group – China
Fax: +86 22 2371 9422
Email: lz.perfect@vip.163.com
Website: www.hengtonggj.com

PVD surface coatings for HSS circular sawblades

Julia Utensili, Italy, a producer of HSS circular sawblades for metal cutting, has launched a new range of PVD coatings. In order to distinguish the new coatings from those previously supplied, they have been identified with new brand names.

Yellow Tiger is a gold-yellow coloured coating, made of titanium nitride (replacing TIN). It is suited to low tied structure steel and carbon steel cutting, and must be used with plenty of lubrication with emulsion or cutting oil. It is not suitable for copper, brass, bronze or titanium cutting.

Grey Shark is blue-grey in colour, and made of titanium and carbon nitride (replacing TICN). Its technical characteristics and low friction coefficient makes it suitable for cutting abrasive materials such as stainless steel and medium alloyed steels with a hardness of up to 800N/mm². Abundant cooling lubrification during the cut is recommended.

Julia Utensili has launched a new range of PVD coatings

The copper-red coloured Red Dragon multilayer coating, made of titanium and carbon nitride, has similar characteristics to the Grey Shark coating, but with greater tenacity and minor friction coefficient. These properties also improve the cut's finishing. It is recommended for use in the cutting of hardened and tempered steels or high alloyed steels, and for brass, copper and aluminium cutting. This coating should be used with plenty of emulsion lubrication or oil during the cutting operation.

Black Hawk is a grey-violet coloured multilayer coating made of titanium and aluminium nitride (replacing TIALN), with a high thermal resistance to the sub-layer. It is suitable for high alloy steel, up to 1,100N/mm², for cast iron cutting, stainless steel and any material that develops high heat energy. It can also be used for bronze and brass cutting, but cannot be adapted for copper.

The dark-violet coloured Dark Panther multilayer coating, made of titanium, carbon and aluminium nitride (replacing TIALCN), combines the protection from use of the harder layers with the characteristics of a solid lubricated coating, and is suitable for cutting stainless steel with hardness higher than 1,000N/mm², aluminium and Inconel.

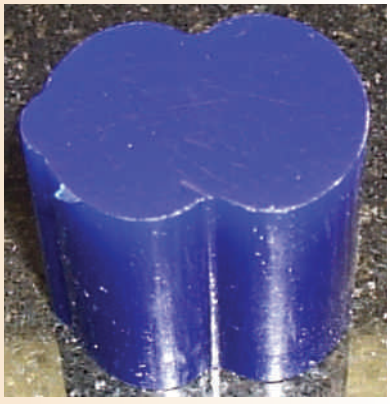
Julia Utensili SpA – Italy
Fax: +39 0432 784725
Email: juliacom@julia.it
Website: www.julia.it

'Peanut' spring tooling innovation

Eagle Precision Technologies Limited, Canada, a provider of tube bending and forming solutions, has announced a new innovation to its standard range I/O jaw tooling.

I/O jaw segments complete with 'peanut' spring

The patent pending design uses a special polyurethane 'peanut' spring between each segment of the I/O jaw. The company anticipates that this solution will be less likely to wear than a traditional spring, potentially providing greater repeatability and consistency over the life of the tool. An added benefit is that the 'peanut' completely fills the space between the I/O jaws, so there are no cavities for oil and debris to get caught between.



The 'peanut' shaped polyurethane spring

The design solves a long term problem in the production flow of I/O jaws, and should help the company to provide shorter lead-times on tooling. New jaw designs using the 'peanuts' will soon be released as Eagle's standard for straight tube calibration and sizing applications.

Eagle Precision Technologies manufactures CNC tube benders, tube end-finishing equipment, custom machine building, muffler manufacturing equipment and tooling. The company has an installed base of more than 8,000 pieces of equipment in more than 60 countries.

Eagle Precision Technologies Limited – Canada
Fax: +1 519 756 0195 • **Email**: sales@eaglept.com • **Website**: www.eaglept.com

Smart Interrupter for pipeline corrosion technicians

Radiodetection Ltd, UK, researches, designs and develops pipeline inspection and cable location equipment. These products are used in industries involving digging activities, from major utilities to drainage, inspection, horizontal drilling and site contractors.

The company has launched the SI220 Smart Interrupter for monitoring the effectiveness of cathodic protection (CP) systems. Developed in cooperation with leading CP systems experts, the SI220 is a solid state interrupter for corrosion technicians that incorporates improved over-voltage and thermal protection.

CP systems are used to protect buried metal pipes and other structures against corrosion. The Radiodetection SI220 enables the interruption of the CP current, allowing the integrity of the pipeline coating to be evaluated without disturbing the pipeline, as part of the routine maintenance of cathodically protected pipes.

The SI220 consists of a base unit controller, which drives a separate booster unit and allows current switching of up to 100 amps at 220V peak (155V rms).

Technicians can synchronise up to eight units using the Radiodetection patented GPS time stamping system (supplied as standard) to monitor the effect of multiple CP sources. This time stamping also allows 24 hour operation, enabling interruption during survey hours and leaving the pipeline protected at all times.

The SI220 delivers high voltage operation with reverse polarity indication and can be used as a conventional interrupter, switching currents up to 100A as well as generating unique signatures for the Radiodetection Stray Current Mapper system.

Housed in a robust engineered casing with fire retardant material, it has a 300 hour battery life from 2D cells, or can run for an extended time from the CP supply.

The SI220 Smart Interrupter from Radiodetection Ltd

Radiodetection Ltd – UK
Fax: +44 117 976 7775
Email: sales.uk@radiodetection.spx.com
Website: www.radiodetection.com

Tube straightening and finishing combined

Reika, Germany, has received orders for its hi-tech straightening machines from three customers. The machines are custom made according to a special design for hot rolled tubes and cold drawn precision tubes.

The design of the company's six-roll straightening machine with sloping machine bed allows the automatic removal of scale from hot rolled tubes out of the machine area. The ten-roll machine with integrated twin tub allows straightening with a full flow water cooling system, for improved tube surface quality.

Reika has received several orders for its straightening machines

The company also produces finishing lines, including NDT testing lines

The machines will be delivered in combination with Reika's finishing line equipment.

The company's range includes facing and chamfering lines, NDT testing lines and different conveyor systems for high speed transport of tubes.

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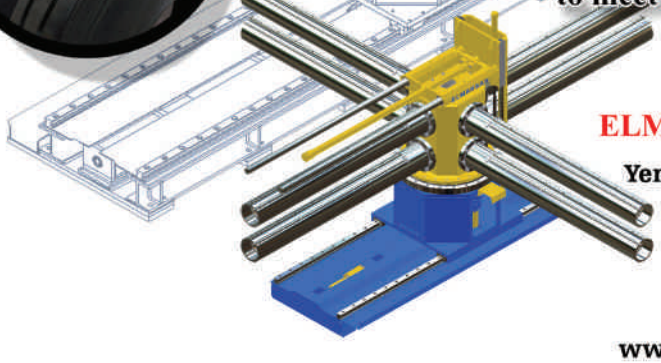
- Automatic Packing Machines
- Leveller
- Flying Saw (Cold Cutting)
- Pipe and Profile Forming Rolls
- Rotary Shears
- Multiple Cutting Units
- Each of these lines can be modified to meet specific production needs.



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www.elmaksan.net info@elmaksan.net

High performance alternative to band saw

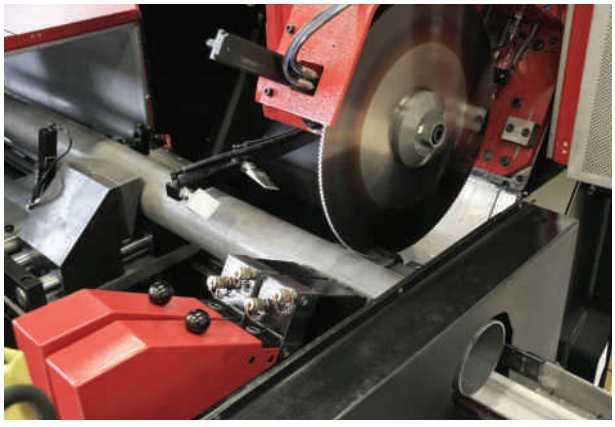
RSA, Germany, has developed a new sawing machine, Rasacut XXL, for a wide spectrum of pre-production applications. During the mass production cutting of tubes, sections, and solid bars up to 100mm diameter, circular saws provide high output, precision, and automation of preceding and follow-up processes. Band saws, on the other hand, are advantageous for the cutting of small daily quantities.

According to RSA, there is still room for improvement in the pre-production of mass production cutting in the diameter range from 100mm to 170mm. Blanks for die-formed parts, pistons, shafts, drums, and axes are most likely sawn on slow band saws, though they are produced in large batches. Until now, circular saws have not been sufficiently flexible and productive for the efficient manufacture of a wide range of workpieces.

RSA has developed its new circular saw for tubes up to 15mm wall thickness and 170mm diameter, previously the domain of band saws.

Cutting time is claimed to be up to 90 per cent below that of up-to-date band saws, depending on the workpiece, with an improved cut quality. The increase in productivity is mainly due to the drive of the saw. With up to 40kW, the saw drive attains a rated torque of up to 1,500Nm which is consistent at any speed.

During the development stage, RSA placed the focus on a part spectrum as wide as possible. Short set-up times were also important to ensure the flexible use of the saw. Workpieces from 20mm diameter upwards can be produced in fixed lengths between 50mm and 3,000mm.



The Rasacut XXL cuts a round tube with 4mm wall thickness and 135mm diameter in only 5.5 seconds

Either HSS or carbide blades can be used, and a saw blade change takes approximately one minute

Saw blade changes (eg from HSS to carbide) are made with only a few manual movements, since the saw head is easily accessible. Setting up the entire saw usually takes an operator only around five minutes.

For the singling and feeding of base lengths, a bundle loader and a flat magazine are used. After the cut, the direct interlinking to further processing steps such as the deburring is possible.

Furthermore, sorting systems ensure a trouble-free removal of the material, particularly when different fixed lengths are sawn from the same base material.

RSA GmbH & Co KG – Germany
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Email: pr@rsa.de
Website: www.rsa.de

RSA Cutting & Deburring Systems Ltd – UK
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Email: rsa.gb@rsa.de
Website: www.rsa.de

Latest range of component washing machines

A new range of tunnel washing systems has been introduced to the UK by Geo Kingsbury, under a sole agency agreement with manufacturer Dürr Ecoclean, Germany. The EcoBelt machines use either a belt or a chain conveyor to transport industrial components through the various cleaning and degreasing processes.

Approximately 40 variants of modular construction allow systems to be configured to support anything from entry-level use to top-end production applications. They also allow expansion at a later date by retrofitting additional units. There are four main sizes of system to suit workpiece dimensions and required throughput.

Components can be loaded by hand or the machine can be integrated with a machine tool or production line for automatic feeding of components onto the belt. Various cleaning processes and conveyor speeds can be programmed using the Siemens control, based on single or multiple washing, rinsing and hot air drying cycles. This allows production speed to be optimised according to how much oil, grease, swarf or dirt needs to be removed from the components.

Dürr's new Ecobelt conveyor-type, aqueous cleaning systems are available in the UK through Geo Kingsbury

Geo Kingsbury has also been appointed to sell an additional range of Dürr Ecoclean machines – highly automated cells built at the company's factory in Monschau, Germany. These machines suit large volume production applications such as those found in the automotive industry. Included in this range is the EcoCFlex, a machine that incorporates a 6-axis robot for component loading and injection flood wash.

Geo Kingsbury Machine Tools Limited – UK
Fax: +44 23 9250 1741
Email: mtools@gkholdings.com • **Website**: www.gkholdings.com

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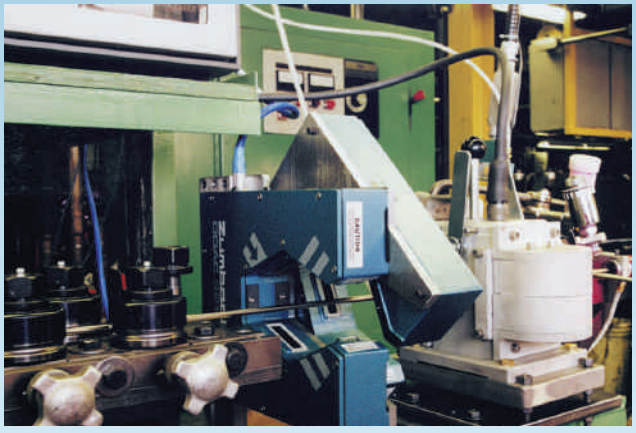
- Oscillating for full profile

Swiss Made Quality 50 Years 1957 2007 Zumbach



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Besides the above-mentioned systems, Zumbach also manufactures systems for the ultrasonic wall thickness measurement on tubing, pipe and hose made of plastics and rubber, as well as systems for cross-sectional measurement of hollow and full profiles.

Worldwide Zumbach Customer Service and Sales Offices in:

Switzerland (H.Q.): Tel. +41 (0)32 356 04 00, E-mail: sales@zumbach.ch
Argentina: Tel. +54 (0)11 4701 0774, E-mail: ventas@zumar.com.ar
Belgium: Tel. +32 (0)2 478 16 88, E-mail: zumlux@skynet.be
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Germany: Tel. +49 (0)2238 8099-0, E-mail: verkauf@zumbach.de
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Zumbach

We Measure Quality

Seamless pipe maker opts for LUT wall thickness gauge

Tecnar, Canada, has received an order from a well-known German seamless pipe producer for its LUT laser ultrasonic thickness gauge.

The LUT gauge will be installed in the company's hot production line, where it will ensure better pipe quality and more economic pipe production.

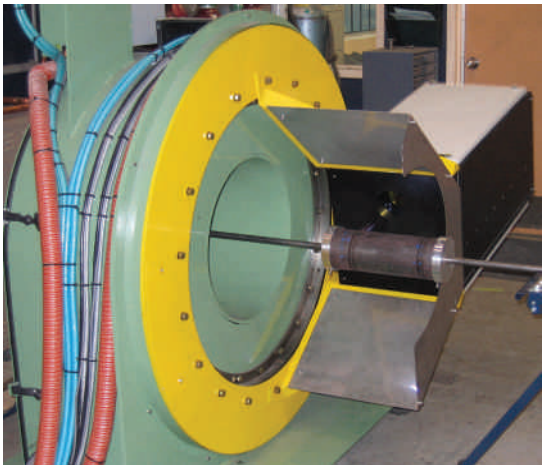
Using the LUT gauge, wall thickness is measured over the full circumference and full length of the shell, with mandrel bar still inside the shell, allowing eccentricities of different characteristics to be detected. These eccentricities can be relayed to upstream processes such as heating, piercing and elongating forming steps.

The results are used for the downstream process control, to correct 'out of tolerance' conditions of produced pipes, and for the readjustment of the upstream machinery to improve the specifications of the following shells. This strategy leads to better pipe quality, with closer wall thickness tolerance.

Closer tolerances are even achieved for the first few pipes produced, as the LUT data is used for downstream process control. Improved results can be achieved after optimisation of the upstream process, based on the same LUT data. Better wall thickness tolerances, concentricity and local/average wall thickness all contribute to improving plant yield.

With the accurate knowledge of the produced geometry, safety margins on the wall thickness can be reduced, and fewer pipes will be rejected in the finishing lines. The LUT gauge can measure true single wall thickness around and along the pipe, and the measurement is not affected by pipe bouncing or a harsh industrial environment.

Ingenieurbüro Gurski-Schramm & Partner is the worldwide exclusive representative of Tecnar's LUT gauge.



Tecnar's LUT gauge

Tecnar Automation Ltée – Canada
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Email: mchoquet@tecnar.com
Website: www.tecnar.com

Ingenieurbüro Gurski-Schramm & Partner – Germany
Fax: +49 203 37809 26
Email: info@gurski.biz
Website: www.gurski.biz

High-precision steel tubes

Joint-stock company PKP Metallist, Ukraine, produces tubes of round, square and rectangular sections, with wall thickness from 1.2mm to 2mm. These products are used for the manufacture of automobiles, machine-building industry, construction and the furniture industry.

The PKP product range includes steel profile tubes (GOST 13633-86), square tubes from 20x20mm to 40x40mm (GOST 8639-82), and rectangular tubes at 40x20mm (GOST 8645-68) made from cold-rolled metal (steel grade 08KP/ST2PS). The products have high surface quality, and the accuracy of the geometrical dimensions is within ±0.12mm to 0.30mm, according to EN10305-3: 2002 (E) and EN10305-5: 2003 (E).

PKP's products have high surface quality and excellent tolerance

The company uses new high-efficiency equipment for manufacture and quality control, in order to meet the requirements of strict world standards.

PKP Metallist – Ukraine
Fax: +38 062 332 0788
Email: info@metallist.dn.ua
Website: www.metallist.dn.ua

Expertise in cold drawn seamless tubes

Mahalaxmi Seamless Ltd (MLSL) is a leading manufacturer and exporter of cold drawn seamless carbon steel, alloy steel and stainless steel tube and pipe. These products are used in heat transfer equipment, automotive components, hydraulic equipment, fuel injection systems and precision mechanical applications as per ASTM, ASME, BS, DIN, IS and other specs.

These products are available in a substantial range of grades. The dimensional range of products is 4mm to 101.6mm OD, 0.70mm to 7mm WT, and lengths of up to 30m. 'U' tubes can also be supplied as per Tema standards.

Established in 1991, the company is an ISO 9001:2000 and PED/AD 2000 WO certified company. Mahalaxmi has also been awarded the title of 'Well known tube maker' and 'Well known pipe maker' by the Indian Boiler Regulation Board, allowing them the authority of self-certification.

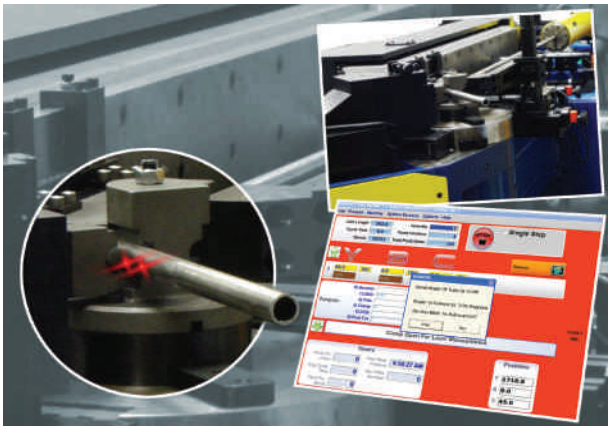
MLSL's plant is located at Nagothane in the Raigad district of Maharashtra, and has a production volume of 10,000 MT (5,000km) per annum. The company's domestic customers include Tata Motors, Reliance Industries, Larsen & Toubro, Godrej & Boyce and many others.

MLSL has also been steadily expanding its export base and export contribution has grown from a modest 5 per cent to an impressive 25 per cent.

Mahalaxmi Seamless Ltd – India
Fax: +91 22 55048987
Email: enquiry@mahalaxmitubes.com
Website: www.mahalaxmitubes.com

Laser measurement module to ensure tube bending precision

Unison, UK, has developed a laser measurement module for its all-electric tube bending machines that dynamically measures the accuracy of bend angles and automatically compensates for any errors.



Unison's laser measurement module measures the accuracy of bend angles and automatically compensates for errors

It allows manufacturers to bend tubing to the required angles without scrap. This can overcome the common problem caused by variances in the 'spring back' characteristics of materials from different metal production batches with minor differences in grain and temper. The new module is targeted at manufacturers of precision and high-value tubular parts, such as those used in shipbuilding applications.

The Breeze Angle-Sure non-contact optical measurement system measures bend angles by monitoring changes in the reflection distance of two laser beams. It takes a reference measurement from the straight edge of the tubing and then, after the bend is made, the system automatically commands the clamping die to move away. This allows the material to spring to its natural position, and takes a second measurement from which the actual bend angle is calculated.

Any difference to the programmed bend is displayed, along with a simple selection button that commands the machine to automatically re-grip the tube and apply an additional force to achieve the required angle. The system automatically calculates the required adjustment, taking into account the actual spring back characteristics of the tubing material from the first bend. It ensures that angles can be fabricated first time to accuracies of ±0.2°, and can be fitted onto Unison's Breeze family of tube bending machines for tubing diameters of 3" (75mm) and above.

Unison developed the Breeze Angle-Sure measurement system to support a recent order from a defence equipment contractor. This manufacturer typically produces precision tubular parts in single or very small batches just-in-time, to support ship production. As parts are often fabricated from exotic alloy tubing that can cost as much as US$2,000 per foot, the impact of scrap is significant.

Unison's new measurement system self-calibrates before each measuring cycle, and provides a robust automated system that is virtually maintenance free. Users also have the option of storing the results of each bending process, to help optimise bending programs and to monitor the quality and consistency of supplied tubing materials.

The low power category II lasers used will not cause eye damage unless stared at for an extended period. The beams are visible, and the system is further protected by automatic power-down when not in operation.

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Website: www.unisonltd.com

Horn Machine Tools (Unison agent) – USA
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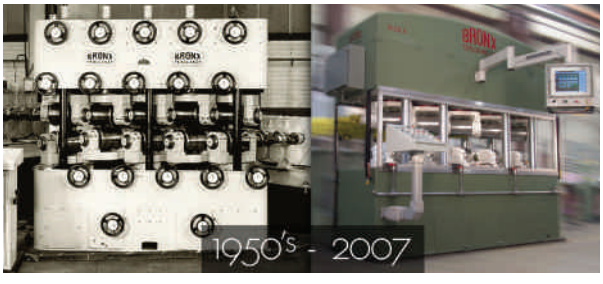
Email: hmt@sierratel.com
Website: www.hornmachinetools.com

Latest orders for Bronx straightening machines

Bronx/Taylor-Wilson, USA, has negotiated a deal to provide two upset pipe straighteners for leading pipe producer, Ipsco. The machines will process 7⅝" upset product and will be installed in early 2008 in Ipsco's Pennsylvania and Texas facilities. These latest additions will bring Ipsco's number of Bronx/Taylor-Wilson upset tube straightening machines to three.

A similar scenario is taking place with the TMK group, a producer of API pipe within the Russian market. TMK will also be installing three Bronx/Taylor-Wilson straighteners at Sinara, Tagmet and Volzhsky. Bronx straighteners have also been installed by pipe producer Baosteel. Two further OCTG pipe straightening machines are ready for final commissioning at KSP in Kazakhstan – one six roll machine and one in a ten roll design – which will be used to process 13⅜" API pipe.

An early Bronx machine, and its modern counterpart



Other recent contracts include upset drill pipe straighteners for Vallourec & Mannesmann and Grant Prideco, and a pipe straightener for Lone Star Steel (the company's fourth Bronx straightener since 1991).

Since The Bronx Engineering Co Ltd of England was formed in the 1940s, the company has designed and manufactured over 1,000 machines. In 2001, USA-based Taylor-Wilson (founded in 1896) and the tube and bar finishing division of The Bronx Engineering Co merged to become Bronx/Taylor-Wilson (BTW). All of the intellectual property and staff from this division became BTW and since then have designed and manufactured almost fifty straightening machines.

Bronx/Taylor-Wilson owns and holds all the intellectual rights, drawings and technical data for all historical to modern day 'Bronx' tube straightening machines, and so can supply not only new machines of the latest design, but also spare parts or service for existing Bronx installations.

Bronx/Taylor-Wilson – USA
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Email: sales@btwcorp.com
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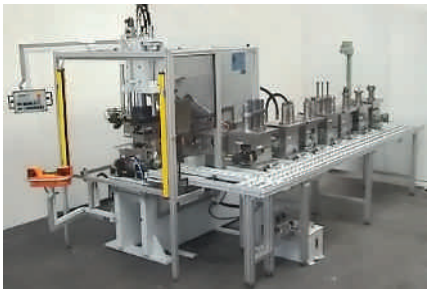
Latest version C-frame end-forming machine

EMS, France, has developed its latest C-frame end-forming machine, branded EMS 40 CC. Based on 30 years of experience, all EMS C-frame machines feature vertical clamping of the tube for operator comfort.

Offering quality and reliability, the machines also provide robustness and sturdy frame thickness. This ensures better stability and access to three sides. The machine is adapted to end-form bent tubes without risk of impact with the machine frame.

The latest C-frame end-forming machine from EMS has a multistage tool changing system



An advantage of the latest 40 CC machine is the multistage tool changing system, which allows several forming hits without laying down of the tube.

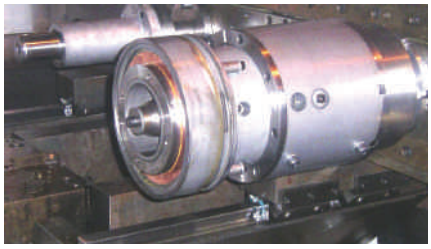
EMS can build tool-changing systems with up to 10 stages. These tool changing systems are set up in a horizontal configuration, which allows a better positioning of tools in front of the tube and thus better forming precision.

THE EMS 40 can easily be adapted to any environment

The multistage tool changing system is CNC driven via a screwball. Very fast tools setup is now possible by locking the forming tools and clamping them with a hydraulic flange system.

Another system innovation is that all working and clamping cylinders are driven by CNC control. The ram strokes are adjustable and range up to 500mm (19.66").

One of the most notable benefits of this machine is the availability of multiple functions mountable on the tool changing system. EMS has facilitated the combination



The machine tool changing systems are set up in a horizontal configuration

of ram forming, rolling and cutting operations under the same clamping movement. This brings a big saving of transfer time between several units.

The C-frame machines are also flexible in forming the tube on both ends. The EMS 40 CC model is easily adaptable, and can be integrated into any environment. Conforming to CE safety norms, the automated workcell can be completely integrated with bending machines or EMS cutting machines.

EMS – France
Fax: +33 3 8891 0537
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Website: www.ems-sa.com

Latest generation of roll-formed product stackers

Roll-Kraft, USA, has launched the Rapid-Konvert stacker, the latest generation of the Ardcor product stackers, specifically designed for 'nest-able' profiles. The unit consists of a pullout station, which transfers the roll-formed product out of the cut-off press and into the stacker.

The Rapid-Konvert stacker

Parts are stacked into a cradle assembly and tamped flush to a preset quantity. When the cradle assembly is filled with the predetermined number of pieces, the stacker can index to the next cradle position.

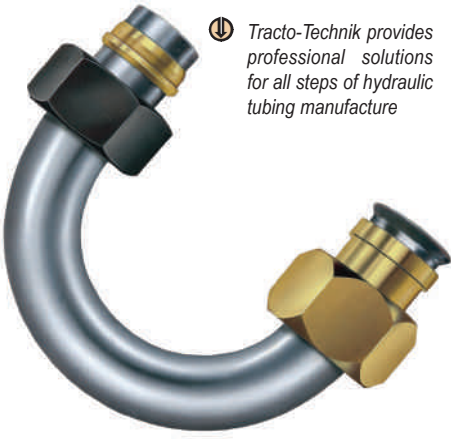
Labour costs are reduced, as one operator can do the work of two, and product is off-loaded from the unit in stacks, rather than individually. Cradles can be rapidly changed to accommodate various nested products. A simple pull-pin design allows for easy conversion between rolled products.

Product lengths from 6-20ft can be accommodated, and speeds of 400ft per minute can be achieved. Small to large capacity cradle assemblies are available to stack and index 300 parts or more, unattended, without being emptied from the stacker. Although the system is designed for the operator to empty each stack as it indexes towards them, it also incorporates sensors that automatically shut the line off, when all of the cradle assemblies are filled.

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

Professional bending solutions for hydraulic tubing

Tracto-Technik, Germany, provides a product range that covers CNC, semi-automatic and 1-axis-controlled tube bending machines up to 170mm OD.



Tracto-Technik provides professional solutions for all steps of hydraulic tubing manufacture

They also offer tube end-forming machines, tube measuring devices, and software and system solutions for tube fabrication.

Tracto-Technik's Tubomat 642 tube working centre

The company's Tubomat, first developed in the 1960s, is a versatile tube working centre that combines all steps of hydraulic tubing (sawing, deburring, bending, flaring, cutting ring assembly and chamfering) in just one machine.

To avoid leakage in hydraulic systems, a precise rectangular sawcut and clean internal and external deburring of the tube ends are as important as the safe connection of all components involved.

Whether by means of the Tubomat's integrated cutting ring assembly device or by the optionally available flaring device, the tube working professional can perfectly master both hydraulic connection methods.

The machine is available in two versions, with a tube diameter range from 6mm up to 48mm.

All of the tube working features integrated into the Tubomat are also available as separate functions in compact and powerful table-top units.

The Tubograt performs clean internal and external deburring of sharp-edged tube ends after sawing. The tube end is briefly pressed against the deburring tools and is burr-free within a few seconds.

To provide safe cutting ring or flaring connections in hydraulic systems Tracto-Technik has developed table-top assembly devices for both methods.

The Tractopress is suitable for fast and faultless cutting ring assembly, as the specific work pressure is automatically adjusted by set up of the tooling for each tube diameter.

The Variomat is a combined working machine for cutting ring assembly as well as for flaring of tubes up to Ø 42mm. Because of very short set up times, this device is well suited if both tube connection methods are in use.

Tracto-Technik GmbH & Co KG – Germany
Fax: +49 2725 9540 33
Email: tubomat@tracto-technik.de
Website: www.tracto-technik.de

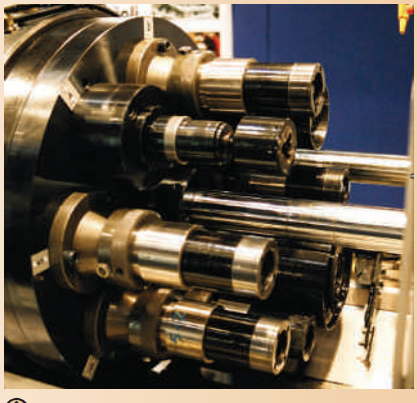
The Tractopress, Variomat and Tubograt table-top units for deburring, flaring and cutting ring assembly

Latest 8-station end-forming machine from Grazioli

The Grazioli Group, Italy, has launched a new end-forming line for effective tube processing. Based on 40 years of experience, this new generation of special equipment has a strong structure, precision assembly, and strict controls. The result is high performance and long life ensuring a very reliable product.

The advanced end-forming machine has 8 forming stations and is equipped with a new numerical control and Grazioli's remote assistance with live video support. The machine enables automatic forming via 1 to 8 forming stations through one working cycle. It supports 8 spinning units that can ram, cut, and roll with the maximum tube capacity of 90mm. The forming ram force can hold 10,000kg with a maximum working cylinder speed of 0.7 seconds.

Grazioli Group – Italy
Fax: +39 02 43988110
Email: info@grazioligroup.com
Website: www.grazioligroup.com



Grazioli's new end-forming machine has 8 forming stations

A range of products can be end-formed with the machine

High quality heated process pipework systems

A joint venture operation between UK companies Norward Process, specialists in the production of high purity process pipework, and Inditherm Industrial, a provider of heating solutions, has led to the production of quality heated pipework systems. These systems are used in the pharmaceutical, food, beverage, confectionary and chemical industries.

Norward Process pipework products can now be fitted with Inditherm Conductive Polymer Technology (CPT) heating. This is a carbon based flexible polymer that generates uniform heat over the entire surface area, eliminating both cold spots and localised overheating. The heat is generated via a low voltage supply which is both safe and efficient.

Pipe from Norward Process can now be fitted with Inditherm Conductive Polymer Technology heating

The flexible heating mat can be wrapped around pipework, as well as being cut to shape for use on associated equipment including valves and pumps. It is held in position with insulation that is banded on the outside.

Alternatively, when required for use in hygienic conditions that are subject to water-jet cleaning, insulated heated pipework can be clad with an outer metal sheath made from high grade stainless steel, without seams or rivets.

Ends are capped with stainless steel, with hygienic end fittings used to interconnect between pipework. Integrity of the inner pipework joint seals is maintained, and an external seal is provided for protection against water/dirt ingress.

Inditherm's CPT heating system can be used to replace traditional technologies of jacketed hot water or electrical trace heating, and provides temperature control to ±1ºC. This makes it suitable for process industry requirements from basic frost protection to product melt-out.

Heating management is achieved by fixed or variable control systems, including temperature monitoring and low temperature warning systems. More sophisticated centralised control systems that incorporate PLCs and 4-20mA outputs can be supplied.

The high purity process pipework is manufactured using the latest automated orbital welding techniques. Finished products conform to ASME BPE 2000 specifications, and comply with MCA and FDA standards.

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Website: www.norward-ltd.co.uk

Inditherm plc – UK
Fax: +44 1709 761066
Email: info@indithermplc.com
Website: www.inditherm.co.uk

Pipeline brushes ideal for U- and V-welds

Lessmann GmbH, Germany, manufactures pipeline brushes specially developed for professional use on U- and V-welds in the pipeline industry. Features of the company's pipeline brushes include long lifetime and quiet operation. The brushes are particularly narrow, making them suitable for cleaning all welds at tube connections.

Lessmann offer a substantial range of pipeline brushes

Lessmann's range consists of more than 10,000 brushes, enabling the company to supply the correct brush for any individual area of application. The brushes are used in all metal-working trades, including shipbuilding, foundries, construction and automotive, as well as in glass making, wood-working, paint and heating trades. The brushes can be used for coarse or fine work, and all stages in-between.

Lessmann GmbH – Germany
Fax: +49 9082 70778
Email: info@lessmann.com
Website: www.lessmann.com

High performance multi-coated carbide saw blades

Tru-Cut Saw, USA, manufactures the 'Aggressor' range of thin kerf, carbide tipped saw blades for cutting tube, pipe and solid ferrous materials in flying cut-off and re-cutting applications. Available with carbide and cermet inserts, the multi-layered coated blades cut at up to 1,200 SFM and offer performance gains over high-speed steel and friction saws.

Available with any bore and mounting pattern, Tru-Cut Aggressor saw blades range from 200-600mm in diameter

Test data on a 350mm x 2.8mm x 100 tooth blade running at 250rpm achieved a 3.7 second cut time, and was able to cut six square meters of 52100 bearing steel. A special C-shaped hooked chip breaker on the face of carbide or cermet inserts allows faster chip removal and more aggressive cutting speeds.

The company has its own PVD coating chamber, which allows the company to tightly control coating quality and uniformity, and allows adjustments for individual customer applications.

In addition to its Aggressor line of blades, Tru-Cut offers a full range of saw blades and services. These include custom and standard carbide tipped saws up to 3m, segmental saws and friction saws, and high speed steel saws from 100-600mm (M2 premium nitrite and M35 Cobalt). The capability also includes solid carbide saws available from stock, repair and regrinding services, and PVD coated drills, taps and milling cutters.

Each saw blade sent in for repair is inspected for broken teeth, cracks, excessive wear and other visible defects. The blades are straightened to industry standard tolerances (or better), and are inspected after each repair operation is completed. All critical dimensions and tooth angles are checked, and only blades that pass inspection will be shipped.

Tru-Cut Saw – USA
Fax: +1 330 225 4741
Email: trucutsaw@hotmail.com • **Website**: www.trucutsaw.com

Advanced induction heating systems

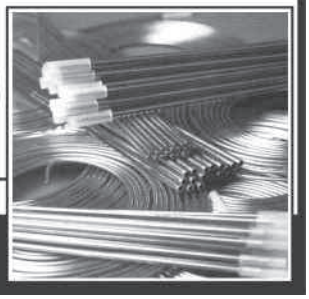
Applicazioni TermoElettroniche (ATE), Italy, has in-depth experience in the fields of industrial electronics, static energy conversion and electric heating for various industrial applications. This knowledge is the basis for the company's range of advanced induction heating systems.

Founded in 1987, the company invests in research and state-of-the-art technology to develop new applications, from initial study through to commissioning.

Induction heating equipment for the annealing of stainless steel tubes (1200kW/500Hz)

ATE's range of induction heating systems includes heating plant and thermal treatment of wires, bars, tubes and steel strips. The company also provide melting furnaces for ferrous and non-ferrous metals and precious alloys, induction heating systems for welding, and induction heating systems for hot assembly.

Applicazioni TermoElettroniche – Italy
Fax: +39 0444 406434
Email: info@ate.it
Website: www.ate.it



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- PERFORMANCE

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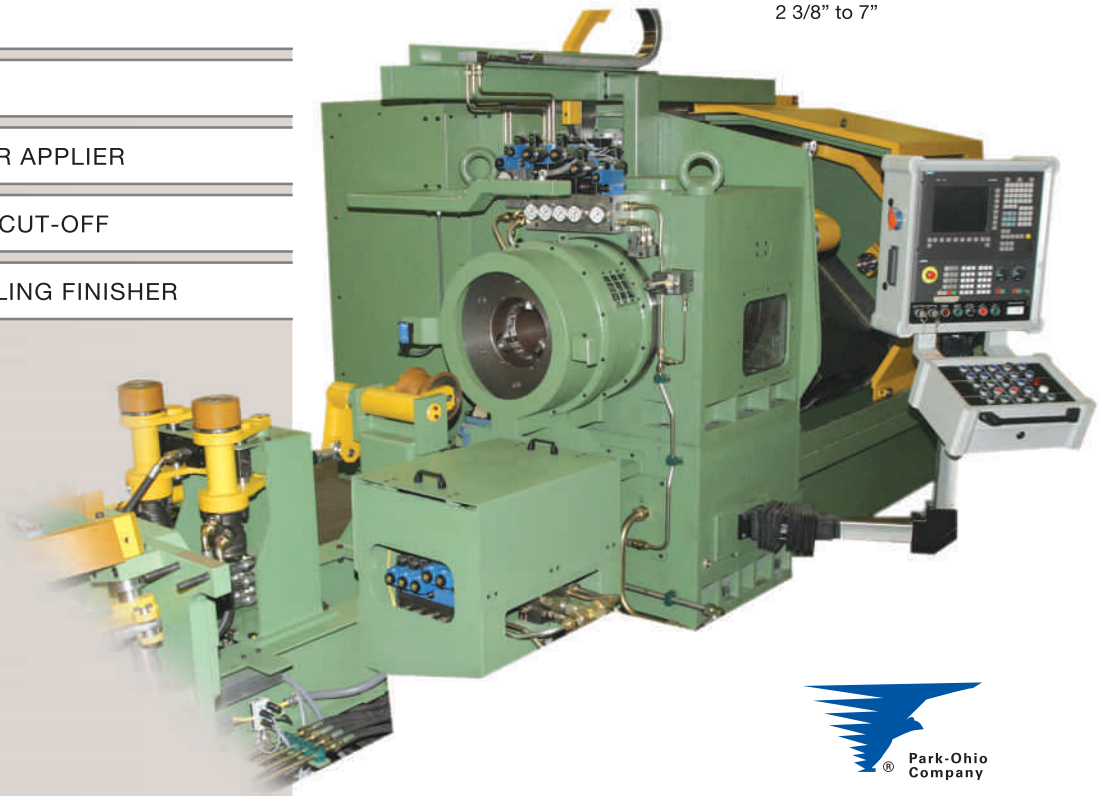
- CNC PIPE END FINISHER
- COUPLING STARTER & SCREW-ON
- CROP & SPLIT CUT-OFF
- BEVELER
- DRIFTER
- PROTECTOR APPLIER
- COUPLING CUT-OFF
- CNC COUPLING FINISHER

MODEL

RPP07-3

60.3mm to 177.8mm
2 3/8” to 7”



Park-Ohio Company

WORLD LEADER

IN TUBULAR FINISHING TECHNOLOGIES

www.pmc-colinet.com

Complete tube punching and piercing solutions

Multicyl Inc, Canada, provides advanced solutions for tube punching and piercing. The company's products cover a range of applications, whether one hole size or multiple hole sizes, one or two sides, clean or dimpled, and shaped or round.

An example of Multicyl's range is a mandrel punching station used to punch multiple clean holes up to 18" from the end of a shaped tube.

Interchangeable punch and die sizes allow for a complete product line to be punched. The company's 3 cylinder adjustable punching station punches 1-3 holes per hit in a 4" diameter tube.

The company has a complete line of standard tube piercing solutions, allowing for an easy 'building block' approach – stations and tooling can be added, removed or changed easily. Tooling can be removed and interchanged with standard unitised tooling such as Unittool or Unipunch, for added versatility.

Multicyl can also custom-design tube pierce tooling to suit user requirements, eg a custom mandrel punching tool with a double punch design and custom gauging to achieve multiple offset holes in adjoining walls of 1/8" wall 2.5" square tubing.

Multicyl Inc – Canada
Fax: +1 905 951 0672
Email: punch@multicyl.com
Website: www.multicyl.com

Pull-ring connection for pipe system installation

Jacob Pipe Systems, Germany, has launched a new earthing bridge for both initial and retro-fit installation of pipe systems. Using the Jacob pull-ring connection, installation is achieved in a few easy steps, and existing systems can be retro-fitted without welding. The earthing bridge provides electrical potential equalisation in galvanised and stainless steel pipe systems.

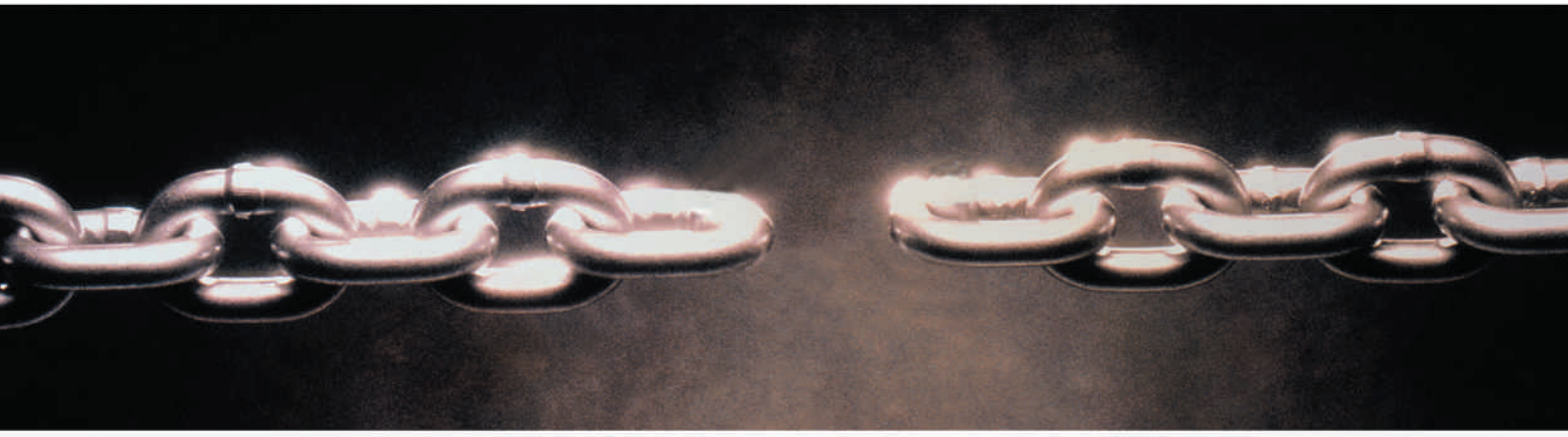
The company has also introduced a new 60mm diameter range, extending its catalogue to include diameters from 60mm to 800mm. The smaller diameter pipes, known as 'vacuum cleaner pipes', are designed to cover the areas of exhaust air ducting and dust removal for work place cleaning in explosion protection areas.

The most common applications for Jacob pipe systems are bulk material handling, dust extraction and exhaust air units for environmental engineering (cooling air/ exhaust air). With wall thickness ranging from 1-3mm, the company's steel pipes are produced using primed, galvanised or stainless steel.

Applications include the food industry, tobacco industry, chemical, pharmaceutical, plastics and glass industries, automobile manufacturing, concentrated feed plants, the chip industry, machine construction and paper and building materials industries.

Fr Jacob Söhne GmbH & Co – Germany
Fax: +49 571 9558 160
Email: post@jacob-rohre.de
Website: www.jacob-rohre.de

Are You Missing a Key Link In Your Coil Entry System?



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*A full range of **Shearwelders** is available for any coil joining application.*

*Our **Uncoilers** operate on all types of strip processing lines. Many options are available including single or double arm units.*

*Our **Flatteners** remove the hook and straighten old and new coil ends. They also feed new coil ends to the welder.*

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GUILD INTERNATIONAL

7273 Division Street
Bedford, Ohio 44146 USA
(440) 232-5887
(440) 232-5878 Fax
e-mail: sales@guildint.com

Automatic welding equipment specified for major pipeline project

CRC-Evans Automatic Welding, USA, a subsidiary of CRC-Evans Pipeline International, designs and builds automatic welding systems for land and offshore pipeline construction. In addition to renting or selling its systems to contractors, the division provides specialised services including engineering, on-site technicians, and training.

The company has been chosen to supply equipment for a major pipeline project under construction in the Welsh and English countryside. The pipeline will follow a 122 mile (196km) route, from a new compression station to a new pressure reduction installation, where it connects with the existing gas pipeline network. National Grid is the owning company.

The early stages of another X80 project in the UK: the start of 48" X80 mainline welding for Murphy in South Wales

Because a sixteen-mile section of the pipeline must pass through the scenic Brecon Beacons National Park in Wales, careful routing and environmental impact assessment took place from October 2004 to summer 2006, while consent and land

Providing the tubing products to power the world

According to the US Government, the world's demand for electricity is predicted to more than double in twenty years. With the production of new power plants and the maintenance and upgrading of existing power plants, the need for high quality tubing and pipe for heat exchangers, steam condensers, and feedwater heaters will also escalate.

RathGibson's tubing is available in a range of grades to meet the specifications of the power generation industry

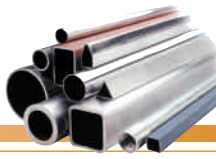
RathGibson, a leader in the manufacture of precision-welded straight lengths and coil, seamless, and welded and drawn tubing and pipes, is geared to meet the special requirements of the power generation industry.

"As the power generation market grows, RathGibson will be there to supply the products that help to supply the world's electricity," says Mr Harley Kaplan, president and CEO of RathGibson. *"From raw material selection through to production and delivery, RathGibson is dedicated to meeting and exceeding customer expectations. We have positioned offices throughout the world in order to respond quickly and effectively to our clients wherever they may be. Our efforts are part of our on-going commitment to the success of our customers in the power generation industry."*

RathGibson offers a range of grades that were specifically engineered to meet the specifications of the power generation industry. These include 304L/316L, duplex 2205 stainless steel, titanium – grade 2, and a variety of nickel alloys. These products are currently being used in installations throughout China, Asia, India, Europe, North America, and South America.

RathGibson is a worldwide supplier of highly engineered stainless steel, nickel, and titanium tubing for diverse markets such as chemical, petrochemical, general commercial, food, beverage, pharmaceutical, medical, energy and oil and gas.

RathGibson – USA
Fax: +1 608 754 0889 • **Website**: www.RathGibson.com



acquisition extended from winter 2005 to February 2007. Construction on this section began in February 2007. When completed, the entire project will deliver twenty per cent of the gas for UK consumption

For the Brecon to Hay on Wye portion of the pipeline (22 miles/35km), PPS Pipeline Services is working on the project as subcontractor to Murphy Pipelines, Ltd. Murphy will complete 45 miles/73km of the pipeline from Hay on Wye to Tirley.

Specifications are for 48" diameter pipe with wall thicknesses of 15.9mm and 22.9mm. Murphy and PPS are using the full CRC-Evans automatic welding system with the P260 external welder, to provide tip-to-work tracking, 32-pass programmable welding, and position-based parameter control.

CRC-Evans Automatic Welding – USA
Fax: +1 281 999 8724
Email: autoweld@crc-evans.com
Website: www.crc-evans.com

Successful delivery of 'Jumbo' tube processing machine

Following the order of a massive tube processing machine, twelve container lorries will be needed to transport the component parts of the BLM Adige Jumbo Lasertube cutting centre to Tubes (UK) Ltd.

Once installed, the aptly-named Jumbo Lasertube – the fourth to be installed worldwide – will process round tube up to 500mm diameter and 18.5m in length.

Commenting on this latest order, Mr Paul Lake, managing director of BLM Group UK Ltd, says the new machine "*represents a significant investment by Tubes (UK) and one that epitomises its willingness to invest in new tube processing technology to keep pace with customer requirements.*"

The BLM Adige Jumbo Lasertube processes round tube up to 500mm diameter and 18.5m in length

Twelve container lorries will transport the Jumbo Lasertube cutting centre to Tubes (UK) Ltd

Tubes (UK) Ltd stocks more than 5,000t of hot and cold formed hollow section material. The ISO 9001:2000-accredited company supplies the construction industry, railways and shipyards. Round, square and rectangular hollow sections are also supplied to manufacturers of heavy-duty trucks, earthmoving equipment, agricultural machinery and machine tools.

Tubes (UK) Limited – UK
Fax: +44 121 601 5051
Email: info@tubes-uk-steel.co.uk
Website: www.tubes-uk-steel.co.uk

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

Concentric holding of pipe, tube, bar and shaft

Arla Maschinentechnik GmbH, Germany, manufactures the Arla clamping device – a very stiff, centralised work-holding system. It is used to clamp workpieces such as pipe, tube and any other symmetrical workpiece.

The maximum outer workpiece diameter can be between ½" and 16" (OD 10mm to 410mm). Due to the mechanically synchronous clamping technology, a high clamping force can be achieved (7 to 175kN, according to the models). Workpieces can be placed into the system either axially or vertically, and the accuracy according to the repeatability is within a tolerance of less than 0.01mm.

Models are available with manual, pneumatic, or hydraulic actuation, and changeable jaw sets can be used to reduce the diameter as required, removing the need to adjust the height for every diameter change. The movement of the actuation arms is monitored by sensors, and special accessories are also available, including clamping plates and integrated prismatic workpiece support.

Typical applications for the clamping devices are found in the endworking processes of tube, pipe and shafts (end preparation and end fabrication), and also in special-purpose machine tools (transfer lines and trunnion machines). The company also offers complete solutions for endworking CNC controlled machines, and units for single or double sided end preparation.

Arla also offers flexible machining units (spindle, slide and table units) for professional endworking of tube and pipe. The machining units are driven by servo motors and are controlled by a powerful CNC. The units can be automatically adjusted and positioned in longitudinal direction according to the technical requirements of the manufacturing process. The workpieces can be fed from the top by special handling systems, such as those designed for the transportation of pipes in finishing lines.

Typical applications include facing, turning, tapping, threading, chamfering, boring and drilling, milling and deburring. A complete high-performance endworking machine can be designed either with a single-station, or as a twin-station machine with simultaneous machining from both sides, and with integrated facing heads.

Arla clamping devices can hold workpieces up to 16" OD

The company will present its work-holding systems at EMO 2007 (Hall 6, Booth A60) in Hannover, Germany, 17-22 September 2007.

Arla Maschinentechnik GmbH – Germany
Fax: +49 2267 6585 70
Email: info@arla.de
Website: www.arla.de

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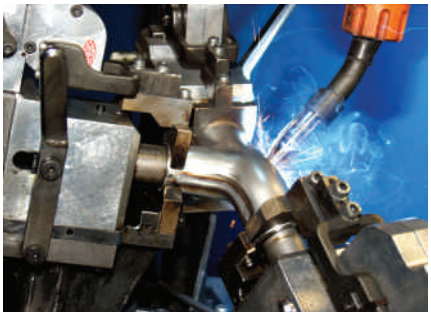
Cold welding of hot exhaust system parts

Presswerk Struthütten GmbH, part of the PWS Group, Germany, specialises in the production of metal-based components. Presswerk also offers solutions in the field of wire and pipe brackets, hydro-forming and the provision of operating resources.

The company specialises in the hot side of exhaust systems, where the parts for manifolds must withstand exhaust gases of up to 900° over many years. Such production requires high-quality materials, optimum design and appropriate production technology, and PWS only uses stainless steel plate for these 'hot products'.



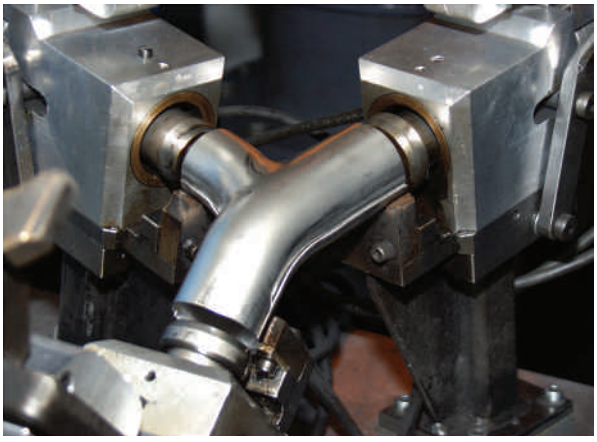
CP welding provides high welding speeds with low heat input into the component

Producing punched parts, the company found that welding technology requirements increased so considerably that the required quality and production throughput could not be achieved using the conventional process. According to Mr Michael Jud, technical managing director, "*These three-dimensional punched parts with plate thicknesses of around 1mm naturally show very different gap dimensions. In addition, the automotive manufacturers demand spatter-free components, because under the extremely hot conditions spatter can be released in the exhaust and destroy the catalysers, for example.*"

PWS decided on a new cold process (CP) from German welding specialists Cloos. While current pulsed arc welding processes are unipolar/positively poled, the Cloos cold process uses changing polarities, so the relative heat input in the wire electrode or workpiece becomes controllable. This results in a reduced heat input in the weld and in the welded material itself, and so reduces component distortion and the problem of crack formation. CP welds are nearly spatter-free, so rework on components is also reduced.

Whether high-strength sheet steel, aluminium or thin stainless steel plate, the cold process can join materials of up to 3.5mm wall thickness with low heat expenditure. In the pulse phase there is maximum spatter-free deposition from the wire. During the negative phase the arc surrounds the wire end, directing the heat into the wire and cooling the weld pool. Penetration is minimised due to the lower heat input with the cold welding process, resulting in a reduction in surface discolouration. Even in the case of coated plate, the surface remains in good condition.

"*Another benefit is the improved gap bridging ability which enables our punched parts to be welded*," explained Mr Tim Oppermann, who is in charge of welding technology at PWS. The Cloos cold process also makes higher welding speeds possible, resulting in shorter cycle times in production. At present, PWS manufactures approximately 15,000 manifold components a month. After many tests and optimisation trials with other processes, Mr Oppermann states that "*this is only possible with CP.*" The new process achieves welding speeds of 2.2m/min, even with complex PWS components which have welds with numerous bends and narrow radii.



The different gap widths of punched, complex manifold half shells can be reliably welded by the cold process

The Z2 compact production cell features two stationary work tables. While a finished component is unloaded from the first work table and two new half shells are loaded, the Romat® robot welds at the second work place. In an area of only 3.90m x 2.25m, the Z2 contains all the necessary components. These include the Romat 320 robot with

The almost spatter-free welds achieved by the cold process bridge high gap widths

water-cooled welding equipment, Duo Drive wire drive unit, and torch clean unit. The Rotrol® controller and the Quinto CP pulsed arc power source are also mounted on the base frame.

The cell has a protective housing with integrated safety technology. On the front side, the two work tables are located behind two sliding doors which are opened alternately. When welding is complete, the door opens automatically and the operator can remove the finished component.

Conversions for other components can be carried out quickly via the Rotrol controller and the coordinated characteristic curves of the Quinto CP pulsed arc power source. For this purpose, the system has a True Synergy Mode, which enables suitable welding parameters to be easily called up for the relevant component.

The complete cell can be moved by forklift truck if any changes to the production run are required, as the appropriate facilities for transportation are located underneath the base frame. The cell only needs to be connected to the electric supply, compressed air and shielding gas to be ready for work. PWS uses an argon/oxygen mixture with 2 per cent O_2.

The space-saving Z2 production cell contains all the necessary components, including the Romat robot with water-cooled welding equipment

The two work tables in the Cloos production cell are loaded one after the other

Article supplied by Dipl-Ing Walter Lutz. Photos: Dieter Holler/Cloos Schweisstechnik)

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Presswerk Struthütten GmbH – Germany
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Email: info@pws-gruppe.com
Website: www.pws-gruppe.com

Sales landmark for solid-state welder range

Thermatool, USA, a manufacturer of high frequency welders, cutoffs, and heating equipment for the production of pipe and tube, has announced the sale of its 1,000th CFI Series solid-state welder.

The company's CFI technology provides tube and pipe producers with superior weld quality, efficiency, low running costs and operational reliability. CFI Series welders are based on advanced technology that makes extensive use of standard, readily available components. This is unlike the older vacuum technology, where higher energy costs and concern with the declining availability of high voltage components are major concerns to tube producers.

In recent years Thermatool has pioneered the concept of genuine, selectable variable frequency on demand, giving tube and pipe producers the flexibility to select the optimum weld frequency on a CFI welder, in order to achieve the best weld results for a given material. Building upon its success in this area, the company has introduced HAZ (Heat Affected Zone) Control Technology which makes use of computer-based controls and a unique customer-specific production database, enabling a mill operator to repeat the optimum desired set of HAZ characteristics.

Thermatool Corp – USA
Fax: +1 203 468 4281
Email: info@ttool.com
Website: www.thermatool.com

Thermatool IHWT – UK
Fax: +44 1256 467 224
Email: info@ihwtech.co.uk

Comprehensive range of tube scarfing equipment

TSE GmbH, Germany, is an international operating company offering turnkey solutions in tube scarfing equipment. The company's equipment is used for the inside and outside weld bead scarfing (deburring) of high frequency longitudinally welded steel tube and pipe.

The company's aim is the optimization of productivity, with provision of solutions for a range of problems. TSE's product range includes complete tube inside weld bead scarfing systems (12-600mm ID), mechanical and hydraulic scarfing tools, and cutting rings for tube inside weld bead scarfing.

TSE provide a range of tube scarfing equipment

TSE also offers ferrite rods, epoxyglass tubes, special coated epoxyglass tubes, silglass tubes, inserts/holders for outer tube weld bead scarfing, bead chopper, strip shaving units, welding impeders (through and return flow), induction coils, and saw blades.

TSE GmbH – Germany
Fax: +49 6831 764 7675
Email: tube-scarfing@arcor.de
Website: www.tube-scarfing.com

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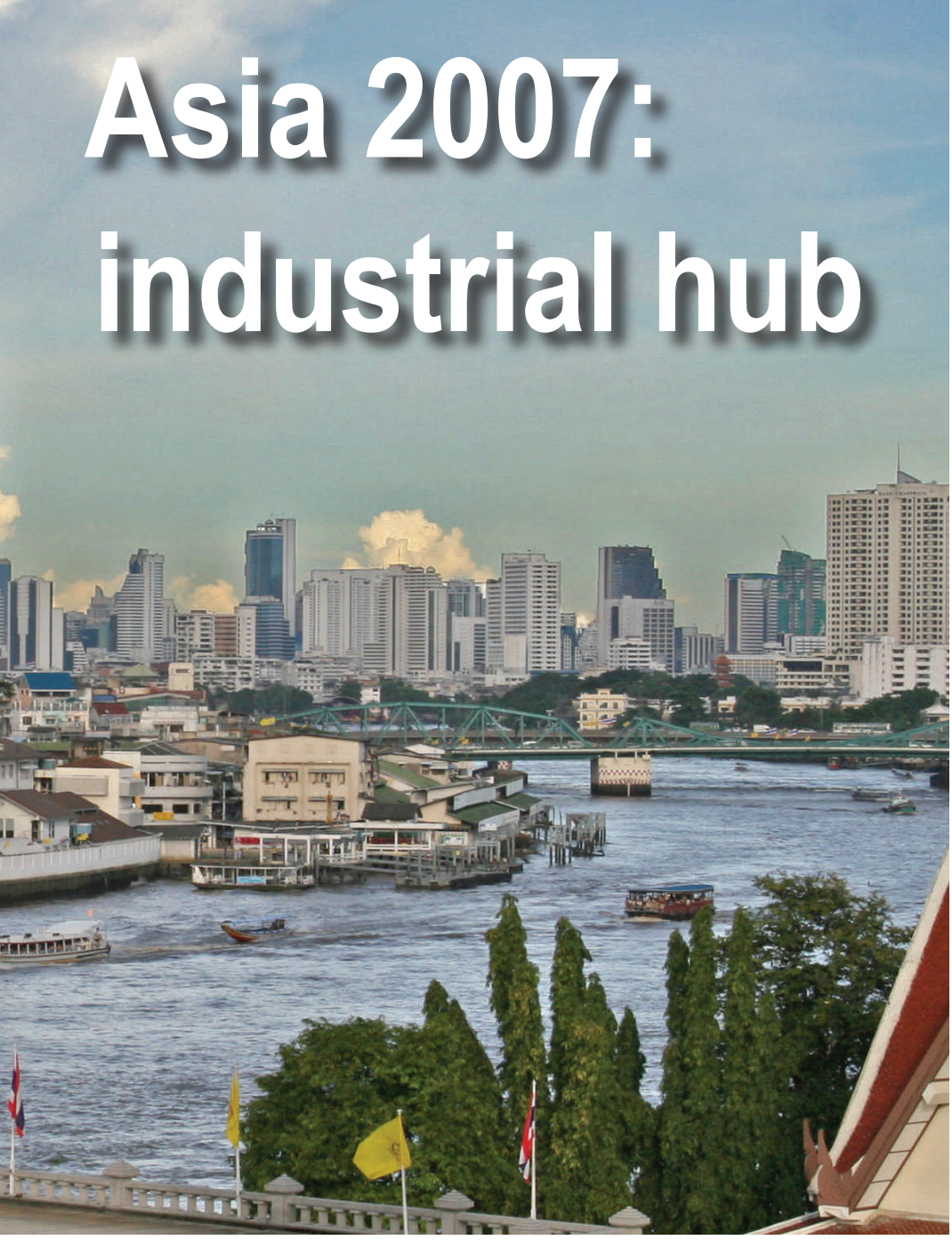
Tube Southeast Direct to the region's

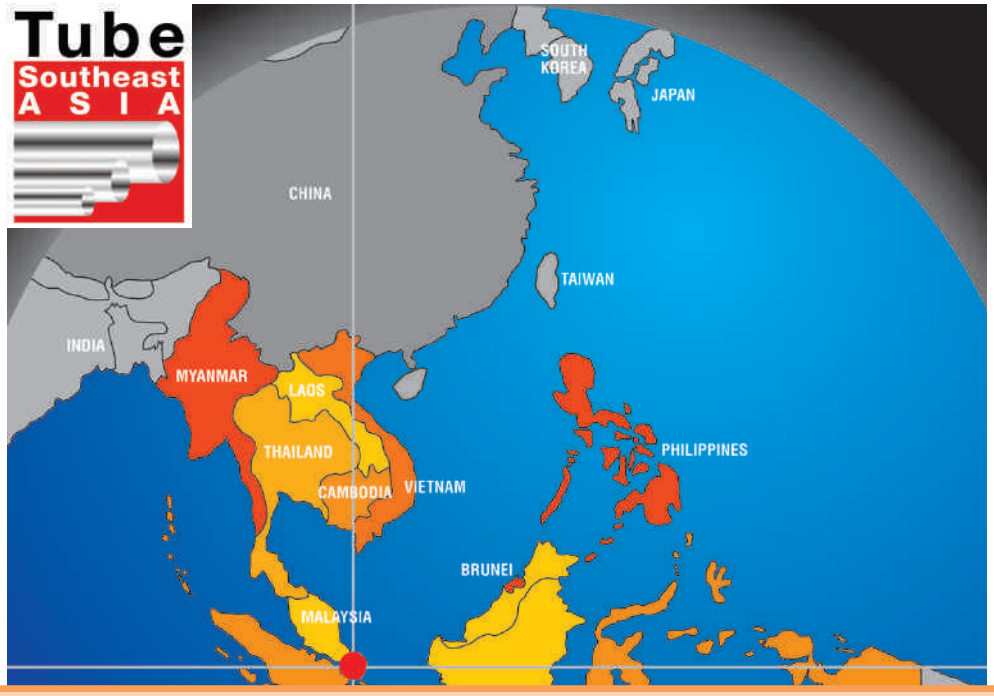
When Tube Singapore came to an end in 2005, it was only with a view to creating an even better show that would more comprehensively serve the entire working region of southeast Asia rather than just an exclusive centre of business. The whole region is currently glowing with industrial activity, international trade and investment, and more efficient free trade agreements (FTAs), with the tube industry at the heart of infrastructural regeneration and manufacturing.

Bangkok in Thailand was chosen as the new home for Tube Southeast Asia due to its secure and central location. A long time in conception and preparation, the show will finally open its doors at BITEC from 16-18 October 2007, with a warm welcome to over 120 tube exhibitors and more than 220 exhibitors at sister show, wire Southeast Asia. With a window onto this successful show, over the coming pages *Tube & Pipe Technology* will present a selection of exhibitor profiles and other essential information.

Asia 2007: industrial hub



Tube Southeast ASIA



SHOW FACTS

DATE

Tuesday 16 October –
Thursday 18 October, 2007

VENUE

Bangkok International Trade Exhibition Centre (BITEC),
Bangkok, Thailand

SHOW HOURS

16-17 October: 10.30am-6pm
18 October: 10.30am-5pm

ORGANISER CONTACTS

Messe Düsseldorf Asia Pte Ltd
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Website: www.tube-southeastasia.com

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Website: www.messe-duesseldorf.de

INTERNET RESOURCES

www.tripadvisor.com

EXHIBITOR LISTING

Please note: exhibitor list correct at time of going to press – for updates please contact Messe Düsseldorf

Abbey International	UK	DD02
Adler Steel Ltd	Canada	A20
Beijing Jinghua Co Ltd	China	A23
Bronx/Taylor-Wilson	USA	DD02
Buhlmann R-F-S GmbH + Co KG	Germany	C27
Byelorussian Steel Works	Belarus	D28
Changsu Walsin Co Ltd	China	TBC
Changzhou Tongchuang Co Ltd	China	TBC
Comco	Japan	C33
Condat	France	H26
D B Engineering (P) Ltd	India	C36
D K Jones Ltd	UK	D10
Dae Ryung Corp	South Korea	C12
Dalian Field Co Ltd	China	TBC
data M Software GmbH	Germany	D06
D-Stainless Co Ltd	Thailand	C25
DWT GmbH	Germany	D15
Ebner GmbH	Austria	H25
Eder Engineering GmbH	Austria	H25
Elestar SRL	Italy	D05
Elmaksan Makina San Ve Tic Ltd STI	Turkey	C23
Erne Fittings GmbH	Austria	C17
Eurolls SpA	Italy	D01
Fenn Technologies	USA	J10
Fontijne Grotnes	Netherlands	B36
Fort Wayne Wire Die Inc	USA	K11
Fukase & Co Ltd	Japan	J13
Gallium Industries Ltd	India	B35
Gandhi Special Tubes Ltd	India	A25
GH Electrotermia	Spain	A16
Grazioli Cesare SRL	Italy	D07
Guangzhou Hongda Steel Tube Co Ltd	China	D27
Hailong (Zhangjiagang) Industry Co Ltd	China	TBC
Hart BV	Netherlands	B24
Hisen Enterprises Co Ltd	Taiwan	B22
Ideal-Werk GmbH + Co KG	Germany	E26
Iljin Light Metal Co Ltd	South Korea	C22
Inductoheat	Australia	B01
Interalloys Piping Supplies Ltd	UK	A30
International Fittings Pte Ltd	Singapore	C35
International Tube Association	UK	E01
Jang Wuel Steel Machinery Co Ltd	Taiwan	C13
Jiangsu Guoqiang Industry Co Ltd	China	C15
Jiangsu Huacheng Co Ltd	China	TBC
JJ Advanced Products Co Ltd	Thailand	B15
Kaitec Polymer (Suzhou) Co Ltd	China	A41
Ernst Koch GmbH & Co KG	Germany	D18
Krais Tube Expanders	Poland	A39
Krollmann GmbH & Co KG	Germany	G23
Kusakabe Electric & Machinery Co Ltd	Japan	B16
LAP Asia Pte Ltd	Singapore	A45
Leman Commodities SA	Switzerland	C05
Maschinenfabrik Liezen GmbH	Austria	C18
Lingyi Sanyang Steel Pipe Co Ltd	China	TBC
Linsinger Maschinenbau GmbH	Austria	D35
Lohakit Metal Public Company Ltd	Thailand	A28
Lubrimetal SpA	Italy	H11
M&M Steel Pipe Co Ltd	China	B33
Maillefer SA	Switzerland	J27
Mair Research SpA	Italy	C04
Mannesmann DMV Stainless GmbH	Germany	DD16
Mannesmann Fuchs Rohr GmbH	Germany	DD15
Mannesmann Robur BV	Netherlands	DD13
Maus Italia F Agostino & C sas	Italy	D11
Metallurgical Council of CCPIT	China	TBC
Metalube Ltd	UK	E04
Multimetals Ltd	India	A27
Myung Jin Machinery Co Ltd	South Korea	DD36
Nakata Mfg Co Ltd	Japan	D08
Ningbo New-Era Steel Tube Co Ltd	China	TBC
Novaplast Plastik AS	Turkey	A36
Numalliance	France	J23
Olimpia 80 SRL	Italy	B18
Oto Mills SpA	Italy	B26
Panyu Chu Kong Steel Pipe Co Ltd	China	TBC
Queins & Co GmbH	Germany	G13
Rautomead Ltd	UK	DD11
RichardsApex Inc	USA	K03
Ringier Trade Publishing Ltd	Hong Kong	A22
Rohrwerk Maxhütte GmbH	Germany	DD17
Samchai Steel Industries Co Ltd	Thailand	C17
Schierle Stahlrohre KG	Germany	C14
Shangang Group Taian Senuo Co Ltd	China	TBC
Shanghai Want Industry Co Ltd	China	B27
Shree Ganesh Forgings Ltd	India	B13
Siam Charn Co Ltd	Thailand	D31
Sikora AG	Germany	D17
SMACO (M) Sdn Bhd	Malaysia	A13
SMS Elotherm GmbH	Germany	DD25
SMS Meer GmbH	Germany	DD25
SOFRATEST	France	DD34
Stappert Spezial-Stahl Handel GmbH	Germany	D13
Superinox Pipe Industry Sdn Bhd	Malaysia	A34
T&H Lemont	USA	A31
TGM Enterprise Co Ltd	Thailand	C03
Takeco Engineering (Thailand) Co Ltd	Thailand	B25
Tenryu Saw (Thailand) Co Ltd	Thailand	B10
Thai Rolling Machinery Co Ltd	Thailand	A31
Thai-German Products Public Co Ltd	Thailand	D25
Thermatool Corp	USA	B01
Timcal Ltd	Switzerland	A35
TMK	Russia	C01
Toyo Millennium Co Ltd	Thailand	C09
Tsingshan Holding Group	China	TBC
Tube & Pipe Technology Magazine	UK	E01
Tube Investments of India	India	DD07
UAS SA	Switzerland	DD06
Urbano Pensotti SRL	Italy	C08
Viar Meccanica SRL	Italy	D35
CJSC 'Tube Works Vsmpo-Avisma'	Ukraine	D30
Wafios AG	Germany	E25
Winner Stainless Steel Tube Co Ltd	China	C13
Juergen Witte Nederland BV	Germany	C32
Yantai Steel Pipe Co Ltd	China	A23
Yee Young Industrial Co Ltd	Taiwan	A15
Yu-Nion Machinery Co Ltd	Taiwan	B31
Zhangjiagang City Yiyang Co Ltd	China	TBC
Zhejiang Jiaxing Zhongda Group Co Ltd	China	B06
Zhejiang Jiuli Co Ltd	China	B29
Zhejiang Kanglong Steel Co Ltd	China	DD32
Zhejiang Lixue Steel Pipe Co Ltd	China	TBC
Zumbach Electronic AG	Switzerland	K39

EXHIBITOR PROFILES

Abbey International
USA/UK Stand DD02

Abbey International Ltd is a proven source for equipment used in the welded pipe and tube industry. The company designs and builds new pipe mills, tube mills, slitting lines, drawbenches, entry coil handling, exit tube handling, cutoff equipment, and other related systems.

Abbey International is also part of the Bronx International Group. The Group is a single source supplier of mills and finishing equipment with over 3,800 installations in 60 countries. The group also offers one of the largest ranges of ERW mills and pipe finishing equipment available on the market.

Abbey's patented Quick Change System™ can deliver automated changeovers in as little as 15 minutes and the TBS™ forming system can be retrofitted to mills, reducing roll tooling costs and changeover times.

Through partnership with Bronx Taylor-Wilson, a leading builder of finishing equipment, the company offers first class equipment at competitive prices, together with broad solutions for tube and pipe manufacturing. This capability includes complete turnkey processes as well as individual machines.

Website: www.abbeyintl.com

Bronx/Taylor-Wilson
USA/UK Stand DD02

Bronx/Taylor-Wilson provides metal finishing equipment solutions with a product portfolio that includes tube straightening machines in 6 and 10 roll versions, hydrostatic pipe testing machines, rotary cut-off and end facing equipment, bar section and profile straighteners, material handling and other ancillary finishing equipment.

The company's equipment utilises the latest revision of the company's highly proven Compass computer aided setting system,

Bronx/Taylor-Wilson's tube straightening machine is available in 6 and 10 roll configurations

which uses advanced industrial electronic technology to predict optimised roll settings based on operator input. The system provides the user with a consistently high quality product and throughput capacity, while size changeover times are reduced to under three minutes.

Bronx International also has within its group Abbey International, a leader in tube and pipe mill technology. The combined entities have completed over 3,800 installations in 60 countries and possess one of the broadest and deepest ranges of ERW mills, hydrostatic pipe testers and straightening machines available.

Website: www.btwcorp.com

Buhlmann Rohr-Fittings
Germany Stand C27

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

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

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

Website: www.buhlmann.de

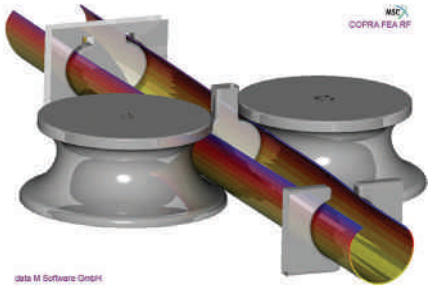
D-Stainless
Thailand Stand C25

Owned by Nippon Metal Industry Co Ltd, D-Stainless Co Ltd produces a name-brand austenitic stainless steel – also branded D-Stainless – containing nickel, chromium, manganese and copper. It has the equal mechanical properties and corrosion resistance to SUS304, which allows the end-user to apply D-Stainless in applications such as tower rail, computer/food machinery and household appliances.

Website: www.d-stainless.co.th

data M Software
Germany Stand D06

data M develops software to help engineers optimise tube properties and understand the strains a tube undergoes as it is manufactured and later fabricated. This knowledge can help engineers lower the amount of material necessary and also reduce or eliminate annealing, thus maximising energy and material costs.



The latest feature of Copra® RF is the possibility to integrate drawing dies within a roll forming tool set

Involving everyone in the production chain – the roll tooling engineer, tube mill operator, and the fabricator – is the key to making the greatest gains in efficiency. To introduce this ethic at Tube Southeast Asia, the company will present its new version of roll design and process simulation software, branded Copra® RF and Copra® FEA RF, which offers enhanced features for the design of roll tooling and the simulation/verification of the forming process.

Copra® RF, for example, now supports the automatic design and analysis of 4-roll fin passes and 5-roll welding passes and avoids user's manual interaction in these specific cases. It also allows for the design of cage forming and linear forming tooling.

In the production of extremely thin walled welded tubes the coil is often drawn to shape rather than rollformed. With the latest version of Copra® RF, it is also possible to integrate drawing dies within a rollforming tool set. This enables analysis of the complete forming process and the prediction and optimisation of the final tube properties.

Website: www.datam.de

DB Engineering (P) Ltd
India *Stand C36*

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, together with a metallurgical lab.

Atlas tube cut-off blades and alfa shears

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

DK Jones Ltd
UK *Stand D10*

DK Jones Ltd is a major stockholder of pipe, fittings and flanges in carbon, alloy and stainless steels. The company has also added a full range of high yield fittings and flanges to its growing stock range.

With a stock level of more than 2,500t of fully certified material and the support of many leading manufacturers, DK Jones regularly supplies a wide range of materials to the oil and gas, chemical, petrochemical and power sectors in more than 60 countries.

DK Jones decided to exhibit at Tube Southeast Asia as a response to the increasing volume of business received from the region. Products already supplied on a regular basis to customers in the southeast Asian region include seamless and welded pipe, butt weld fittings, forged flanges, forged high pressure fittings, and outlet fittings. Other complementary products supplied include a wide range in materials as diverse as carbon, low temp and alloy steels, stainless steel, duplex and nickel alloys.

DK Jones has a large stock of pipe, fittings and flanges

This wide ranging stock and the continued support from many major international mills enable DK Jones to supply complete packages of material from stock or on short delivery times.

Website: www.dkjones.com

DWT
Germany *Stand D15*

DWT has been the license manufacturer of portable pipe bevelling machines under the brand name Babcock for over six years. This product range was originally developed by boiler manufacturer Babcock based on the onsite knowledge of its workers.

Designed to improve the welding process, the rugged and compact machines have a high metal removal rate and are easy to handle.

The Babcock portable pipe bevelling machine from DWT

Especially designed for boiler walls, DWT offers very special applications for onsite operations with flexible and low weight machines.

In practice it has been proven that weld preparation of tube ends considerably influences the quality of the welding junction.

For applications that require welding of tubes with a high wall-thickness and for orbital welding technology, the welding engineer currently requires a perfect and effective weld preparation by use of mechanised weld preparation.

DALIAN FIELD HEAVY MACHINERY MANUFACTURING CO.,LTD

Field Machinery

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Tube WIRE&TUBE SOUTHEASTASIA 2007 AA05

ADD: No.39-8 Yongjing Street,Shahekou Dist,Dalian 116021,China
TEL: +86-411-84337661 FAX: +86-411-84348198
Http: //www.asiafield.com E-mail: field@asiafield.com

The machines have a high working speed and quick readiness to facilitate economic manufacture. Using DWT's complete product range, tube diameters of 12mm to 711mm ID can be machined onsite.

Website: www.dwt-gmbh.de

Elestar
Italy *Stand D05*

Elestar Srl is highly experienced in the manufacture of high and medium frequency systems for welding, hardening, annealing and melting. Longitudinal welding systems for tube are a focus of Elestar's technology, together with the ever-growing demand for new applications in induction heating.

The range of high frequency generators encompasses the welding of austenitic, ferritic and stainless steel tubes, carbon steel, copper, brass and aluminium. With in-depth knowledge of HF technology and material engineering, Elestar's machinery provides reliability in precision, speed, welding process control and final results.

According to its customer-orientated policy, Elestar can meet any application requirement with customised solutions, designed to match a variety of production parameters.

Website: www.elestar.it

Elmaksan
Turkey *Stand C23*

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

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

Elmaksan operates two large facilities, one located in Istanbul (5,000m^2) and another in Kocaeli (22,000m^2), staffed by over 150 people. More than 80 per cent of the total volume of production is exported abroad to 40 different countries all over the world.

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

Website: www.elmaksan.net

Erne Fittings GmbH
Austria *Stand C17*

Erne Fittings offers expertise in butt-welding fittings (elbows, tees and reducers) made of carbon, alloyed and stainless steel. Production takes place at the firm's four plants in Austria, Germany and Saudi Arabia where special demands for short production times are accommodated.

The company has a modernised and well stocked finished product warehouse, which features a high degree of product availability and ability to deliver on urgent demands.

Erne Fittings is a flexible and competent partner for both stockists and project specialists. The company's products are utilised worldwide in power stations, oil and gas fields, pipelines, refineries, chemical plants, ships and many other areas of industry.

Website: www.ernefittings.com

Eurolls SpA
Italy *Stand D01*

Founded in 1997, Eurolls SpA is a leading company in the production and design of rolls, made of steel and sintered materials. Eurolls capacity covers rolls for tube mills up to 24". With customers located worldwide, the company has a capacity to produce an average of 4,000 rolls per month including 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 offers advice on tube mill refurbishment 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. An ISO 9001 certified company, Eurolls is primarily concerned with the control of each step of production, starting from the entry of raw material to the final dimensional control of each piece.

Website: www.eurolls.com

Fenn Technologies
USA *Stand J10*

The Metal Forming Solutions Division of Fenn Technologies is a global supplier of metal forming machinery. Its extensive range of products includes rolling mills, wire flattening and shaping lines, turk's heads, capstans, spoolers, and inverted block drawing machines.

Fenn also provides swaging machines and feed units, impact cut-off machines, tube end forming machines and Torin® CNC spring coilers.

Website: www.fenntech.com

Fontijne Grotnes BV
Netherlands *Stand B36*

At Tube Southeast Asia, Fontijne Grotnes will promote its newly developed straightening system for mechanical expanders. This machine controls the straightness of pipes in all directions, where other systems only control straightness in the plane of the weld-seam.

Tolerances for ovality and straightness of pipes are becoming increasingly important to simplify the later laying of pipes in the field. This also applies when pipe sections are cut in the field as the pipes are sized over their full length.

Straightness and ovality are influenced by the use of higher material grades and the forming and welding processes prior to

expanding. Stresses inside the material are therefore released during the expanding process and cause bending of the pipes in all directions.

The new straightening machine avoids these problems and instead ensures constant mill production for size and mechanical properties.

A pipe expander including new straightener, expander heads, draw bar for larger diameters and several toolsets

The new straightening system guarantees straight pipes within API and DNV-standards. It is designed in such a way that it can also be mounted on existing expanders.

The grease system in the expander heads was also improved to withstand the consequences of using higher material grades. This process is completed by the company's equipment for pre- and post-washing installations.

Fontijne Grotnes BV has been supplying expanding equipment since the 1960s, when it introduced a mechanical expander for LSAW-pipes.

Website: www.fontijnegrotnes.com

Gallium Industries Ltd
India *Stand B35*

Gallium is an ISO 9001:2000 approved company with 20 years of experience in design and construction of advanced tube mills and finishing machines.

The company's product range is well established in the tube industry and includes high speed forming cold saw cut-offs, automatic bundling machines, multi-tube high pressure hydrotesters and universal forming mills.

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

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

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

Website: www.galliumindia.com

GH Group
Spain *Stand A16*

The GH Group offers an entire range of modern high frequency power supplies and equipment for induction heating applications, from MF IGBT inverters to HF Mosfet inverters

This complete range allows the use of the most suitable technology in every induction heating application, avoiding the need for obsolete and low efficiency technologies.

In the area of tube induction welding, which often requires frequencies up to 500kHz, the natural, most reliable and efficient component is the Mosfet transistor. This technology is provided by the GH Group's latest developments in variable frequency and automatic load adjustment.

The company has launched Transithermic® generator solid-state welders, which can weld any tube specifications allowing for any tube diameter, thickness and material. These machines provide flexibility and economy through a reduction in downtime and scrap material.

The GH Group has headquarters in Spain, with subsidiaries in India, Germany, China, South Korea, Brazil, France, Mexico and Argentina. The company can provide equipment and local support in every geographical market.

Website: www.ghe.es

Jiangsu Guoqiang Ind
China *Stand C15*

Jiangsu Guoqiang Ind Co Ltd has 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 very large stock 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.jsgq.cn

Hart bv
Netherlands *Stand B24*

With over 40 years of experience, Hart bv is a distributor of heat and corrosion resistant materials, supplying nickel, Monel, Incoloy, Hastelloy and titanium alloys globally to the chemical, petrochemical and offshore industries.

The company supplies complete packages of pipe, flanges/forgings, plate, bar and fittings to fabrication companies, contractors and engineering companies, and also directly to the oil and gas industries.

Hart keeps extensive stocks of material in order to fulfil orders, and holds long term agreements with major nickel and titanium manufacturers for the provision of larger quantities and longer-distance deliveries.

Website: www.hartbv.nl

Hisen Enterprises Co
Taiwan *Stand B22*

Founded in 1967, Hisen Enterprises Co Ltd is a manufacturer of transistor generators for pipe welding and heat treatment and high frequency machines.

The new transistor generator has been developed using Hisen's advanced technology that incorporates the latest transistor devices.

According to the company, it has drastically reduced the size of conventional transistor

GLOBAL TUBULAR SOLUTIONS

WWW.TMK-GROUP.COM

TMK is one of the leading manufacturers of pipe products in Russia and the world. The Company's production facilities are located in Russia and Romania. The Company's products are supplied to more than 60 countries around the world.

TMK's products are used in the oil-and-gas complex, in energy, machine building, construction, shipbuilding, in aviation, space equipment and in agriculture. TMK's products are certified according to international standards.

TMK representative offices operate in Azerbaijan, Kazakhstan, China, the USA, and also in countries of South-East Asia, the Middle East and the European Union. The company TMK Global AG is TMK's exclusive dealer outside the borders of Russia and the CIS.

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VOLZHSKY PIPE PLANT
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generators and caters to the diversified applications of tube welding and heat treating industries.

The features of this new generator include a frequency range of 500Hz to 440kHz at an output range of 2kW to 1,000kW, a power factor of 0.95, and power conversion of 90 per cent efficiency. In cases of short time heating, the generator provides increased output power to solve problems.

Because transistors are used instead of vacuum tubes, the level of input power can be reduced by over 22 per cent and cooling water can be saved by up to 50 per cent.

The comprehensive solid-state and low-voltage system forms a compact design that reduces the required installation space. A reduction to one-third of the space required by other conventional vacuum tube oscillator models has thus been achieved.

The water cooling circulation system (optional) helps to address concerns with water temperature levels and helps prevent problems.

In addition to Hisen's transistor generator, the company also provides quality high frequency machines such as high frequency pipe welding machines (transistor generator and vacuum tube), high frequency induction heaters (transistor generator and vacuum tube), and high frequency preheaters for the semiconductor and melamine industry.

Website: www.hisen.com.tw

Guangzhou Hongda
China *Stand D27*

Guangzhou Hongda Steel Co Ltd is a specialist manufacturer of steel pipes and tubes. Although its factory is primarily geared towards the manufacture of stainless steel tubes, it is also able to produce a range of other pipes, particularly seamless carbon steel pipes.

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

Website: www.hongda-steeltube.com

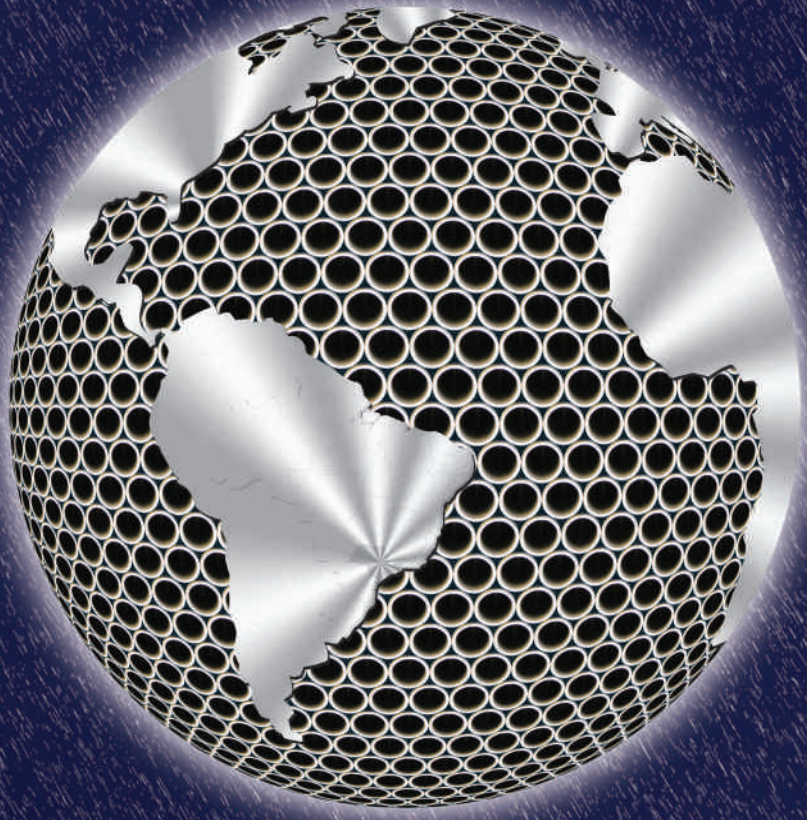
International Fittings
Singapore *Stand C35*

International Fittings Pte Ltd is the Singapore-based sales and marketing office for the Allied International Group (Italy) in the Asia Pacific Region. The company is specialised in the supply of butt weld fittings and piping products.

With a range of fittings and piping, International Fittings is the representative of Italy's Allied International Group

TUBOTECH

IV PIPES, VALVES, FITTINGS AND COMPONENTES INTERNATIONAL FAIR



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São Paulo - Brazil

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Free Entrance

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The company aims to cover any specification, destination country, delivery requirement and delivery standard.

The range – available in sizes from 1/2" to 80" and wall thickness up to 160mm – includes elbows/bends (SR, LR, 2.5D, 3D, 5D, 10D, 45º, 90º, and 180º), reducers/caps/crosses, and a range of tees (ie flow, barred, Y).

International Fittings can also supply a large range of piping products and flanges. Product materials used include carbon steel (WPB, WPC, WPL6, WPL3), and alloy steel (WP1, WP11, WP22, WP9, WP91, WP92). The company also uses stainless steel (WP304-304H-316-316H-321, 347, UNS31803, 32750, 32750), and high yield metal (WPHY42-52-60-65-70-80).

Allied International has a number of Italian production facilities, including Tectubi Raccordi SpA, Tectubi Stainless Steel Division, and Raccordi Forgiatti SpA.

In addition, the company has branches in operation in the USA.

Website: www.ifitting.net

International Tube Association

UK *Stand E01*

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 on-line material, product and equipment database).

In addition, all members receive a free annual subscription to the officially endorsed magazine, *Tube & Pipe Technology*.

ITA members will benefit from various facilities at Tube Southeast Asia, including telephone and fax services, Internet and email point, meeting area and interpreter services.

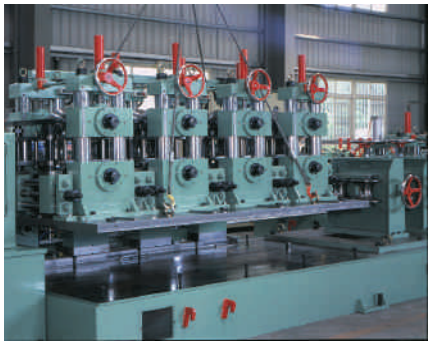
Visitors to the ITA stand will be able find out about the ITA's latest conference planned for Tube India 2008 in New Delhi on 13 February 2008.

Website: www.itatube.org

Jang Wuel Steel Machinery Co Ltd

Taiwan *Stand C13*

As part of a range of tube mills and other machinery, Jang Wuel will provide information on its newly developed quick-change system for tube mills. Using this system, the company claims there is no need to dismantle the universal joints, as it is designed to use a hydraulic unit and link device to allow the universal joints to depart from the forming stands.



Jang Wuel will exhibit its faster quick change system for tube mills

The operator is only required to use the hoist hanging the forming stand above the machine bed, then exchange a new size of forming stand, and reverse operate to connect the universal joints and forming stands.

When connecting the universal joints and forming stands, the height adjustment of the roller is operated by air cylinder and not by hand. It begins running soon after the roller size exchange, with no need for step-by-step adjustment.

The quick-change system is designed for time saving in roller changing operations, with an upgrade in quality and reduction of power consumption.

Website: www.jangwuel.com

Jiuli

China *Stand B29*

Zhejiang Jiuli Stainless Steel Pipe Co Ltd is a manufacturer of stainless steel tube and pipe in China.

Founded in 1987, the company has a product range including seamless tube from 6-273mm OD and welded tube from 9.53mm to 2,540mm OD.

The quality management system at Jiuli is approved according to ISO 9001 by IQNet and CQM. In addition, the company has the work approval of GL, DNV, BV, ABS, CCS, and holds PED and AD-W0 certificates from TÜV.

Jiuli is currently applying for ISO-14000 and LR qualification, which all equates to high product quality.

The company's tube and pipe products have been supplied to an increasing number of worldwide companies serving international projects, such as BP, Exxonmobil, and Aker Kvaerner.

In the past two years the company has also been endorsed by renowned boiler manufacturers, and currently supplies boiler tubing on regular basis.

From 2004, Jiuli began the construction of a 3,500t hot extrusion project for seamless

Jiuli manufactures seamless tube from 6-273mm OD and welded tube from 9.53mm to 2,540mm OD

stainless steel pipes to ensure higher product quality.

The hot extrusion plant – established to make Jiuli more competitive on the international scene – is now ready for production.

Website: www.jiuli.com

JJ Advanced Products
Thailand *Stand B15*

JJ Advanced Products (Thailand) Co Ltd is a leading supplier of products from high performance alloys for high temperature and corrosion resistant applications.

Industries that require the company's products include chemical, petrochemical, oil and gas, offshore, power generation, oil refining industries, shipbuilding and mechanical engineering.

Products include seamless and welded pipe, fittings (BW and SW), flanges, forging, outlet, round bar, hollow bar, sheet, plate, explosion clad plate, tube, fin tube, U-tube, fasteners, wire, rod, and welding products.

The products can be supplied in a wide range of material grades, including hastelloy (grade C276, C22, C4, C2000, B2, B3, G30, X), incoloy (grade 800, 800H, 800HT, 825), inconel (grade 600, 601, 617, 686, 690, 718, X-750), monel (grade 400, K-500), and nickel (grade 200, 201).

Other grades include titanium (gr.1-12), molybdenum, tantalum, zirconium, duplex/super duplex (321, 321H, 904L, 316Ti, 310, 347, 317L, 304H, 316H, 254SMO, 17-4PH), and copper nickel (90/10 70/30).

With 10 years of experience in the industry, all the company's materials are certified in accordance with international standards ASTM, DIN, and JIS.

Website: www.jap-thailand.com

Kusakabe
Japan *Stand B16*

Kusakabe is a leading manufacturer of tube and pipe mills and associated equipment.

The company's products include a universal forming mill for API pipes and HSS tubes (without the necessity for roll change), and a QHQ forming mill suitable for SUS exhaust tubes, consisting of a turret mill, cage, and modular sizing (3 rolls type sizing).

Huaxia is one of the biggest manufacturers of Special Metal such as Titanium, stainless steel, Nickel, Tungsten, Molybdenum etc, form with Tube / Pipe, Sheet / Plate, Bar / Wire and Clad Material in Shanghai, China.

厦

Welcome to China
Welcome to Shanghai
Welcome to Huaxia

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Tel: +86-21-58770100, 58770128 Fax: +86-21-58770148
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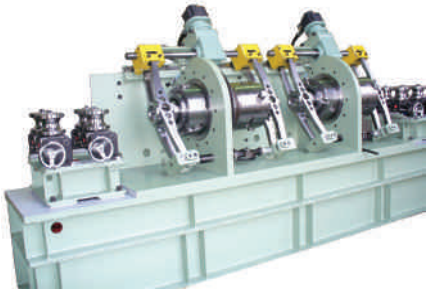
Http://www.nonferrous-metal.com



Kusakabe's rotary sizing mill

The company also produces a milling cut-off machine for API pipes and HSS tubes, featuring reduced noise, fast cutting, and easy maintenance.

Website: www.kusakabe.com

Liezen und Gießerei
Austria *Stand C18*

MFL is a manufacturer of sawing and milling machines supplied worldwide to producers of precision and seamless pipes. The company favours customer-specific models over standard machines, which removes the restrictions on material and dimension capability. The company is a specialist in sawing stainless steel, iron and aluminium (in the form of solid materials, pipe, extrusions and plate). Specific sawing machine requirements can be met for pipe, extrusions, billets and plates.

The HK 1200 L-132 model of sawing machine from MFL

Each of the machines is designed to use carbide tipped saw blades, which ensures high capacity, low costs and a long service life. The sawing machines are controlled by Siemens S7 technology. The company also supplies edge milling machines for processing the edges of welded tubes.

The latest MFL development is a mobile rail milling machine for milling worn underground railway track without demounting. MFL is an expert in the field of machining and supplies both turnkey plants and individual machines for modernising and increasing capacity of pipe production units.

Website: www.mfl.at

Linsinger Maschinenbau
Austria *Stand D35*

Linsinger Maschinenbau, Austria, is the manufacturer of an advanced range of sawing and milling machines. Equipment for large pipe includes plate edge milling machines for welding edge preparation,

Linsinger provides an advanced range of sawing and milling machines, including the KSA 1600 L

and pipe bevelling machines for bevelling both ends simultaneously on pipe up to Ø 60".

For spiral pipe, the company supplies strip edge milling machines for spiral steel tube lines using coil up to 2,000mm width and 1" sheet thickness. For ERW-lines, Linsinger manufactures strip edge milling machines for longitudinal seam tubes (HF-lines up to 24"), and multi-cut tube cut-off machines for longitudinal edge tube lines (up to Ø 600mm tube).

In the area of seamless pipes, the company offers carbide circular sawing lines for steel billets and single tubes (up to Ø 630mm), and multiple tube layers (up to 1,250mm width).

The company also produces carbide circular saw blades for forging mills (steel billets up to Ø 630mm).

Linsinger produces the necessary carbide saw blades and miller only for Linsinger machines. In Europe, the company also offers a full re-sharpening and repair service.

Website: www.linsinger.com

Lohakit Metal Plc
Thailand *Stand A28*

Lohakit Metal Plc is a steel service centre and a leading manufacturer of ornamental stainless steel tube in many grades both of round and square.

The company is committed to quality and customer service, with support for growth in the stainless tube market and provision of high quality products.

Website: www.lohakit.co.th

Maillefer SA
Switzerland *Stand J19*

Maillefer, the extrusion and winding specialist, will present its portfolio of wire and cable manufacturing solutions for the energy, fibre optic cable and telecom industries.

Meanwhile, tube visitors will be presented with solutions for heating and plumbing pipe.

In the area of heating and plumbing tube, the PCL and PXL lines are ideal for manufacturing five layer PEX constructions and for PE-Al-PE aluminium composite pipe.

Energy applications cover the latest designs from building, automotive to high-speed MV cable manufacturing and optimum curing for CV lines. The CV lines balance speed and layout length for the highest productivity of quality cables reaching up to 500kV.

For HV and EHV cables, the new conical THC 70/160 crosshead with bi-flow distributors for triple-layers will be highlighted.

From the fibre optic team, visitors will be able to learn more about the OEL lines used throughout every step of loose tube fibre optic cable production.

The OEL 40, 41, 70 and 60 lines represent, respectively, solutions for tight buffering, secondary coating, SZ stranding and jacketing.

The telecom products range includes voice, data and LAN to micro-coax, mini-coax, CATV, drop and trunk, and large RF coax. The newest developments can be found in LAN and micro-coax cable.

For micro-wires used in hand-held devices, overall diameters are shrinking down to the order of a tenth of a millimetre for solid insulation. Physically foamed dual layer constructions are slightly larger.

Website: www.mailleferextrusion.com

Mannesmann DMV Stainless

Germany *Stand DD16*

Mannesmann DMV Stainless is a manufacturer of seamless stainless steel and nickel alloy tube and pipe.

These products are manufactured to the highest quality and precision, supporting both stockist and project business. Together with its technology partners, the company develops new processing techniques and materials in line with market requirements.

Mannesmann DMV Stainless manufactures seamless stainless steel and nickel alloy tube and pipe

The company's tube and pipe products are available in seamless stainless steel and nickel alloy grades. Products include boiler and furnace tube and pipe, oil and gas tubes, OCTG and umbilicals, heat exchanger tubes, instrumentation tube and pipe, mechanical tube and pipe, and seamless stainless steel and nickel alloy tube and pipe.

The range of application includes oil and gas industry (upstream and downstream), chemical and petrochemical industry, power generation (boiler), fertilizer industry, environmental technology, mechanical application, and the automotive industry.

Website: www.mannesmann-dmv.com

Maus Italia

Italy *Stand D11*

On the market since 1961, Maus Italia F Agostino & C is an ISO-9001 certified leader in the production of a complete range of tools and equipment for heat exchangers and boiler assembly and maintenance.

Turkish Firms Directory

www.trfirms.com

MEETING POINT FOR TURKISH FIRMS

With comprehensive R&D capabilities at modern and efficient headquarters, the company has in-depth knowledge of the technology for manufacturing shell and tube heat exchangers.

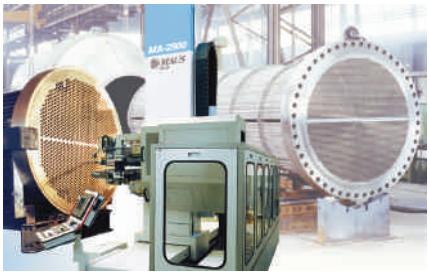
The company's product range consists of a large number of expander models, tools and special machines. It covers most user requirements, from the smallest tube expander to a complete CNC automatic working centre, and the simplest tube cutter to a family of tube bundle extractors.

Tube expansion equipment includes tube expanders, torque controlled air rolling motors, electric rolling motors, CNC automatic centres, a hydraulic rolling expansion machine (via hydraulic motors), and a hydraulic expanding machine (via water power). For tube facing, the company supplies facing tools and machines and CNC automatic working centres.

The Maus range also includes equipment for tube-to-tubesheet welding, comprising orbital welding machines and CNC automatic centres. Other equipment includes hydraulic bundle inserters, testing guns and instruments, internal tube cutters, bundles saw machines, bundle extractors, hydraulic pullers (automatic and semi-automatic), and cleaning equipment (mechanical and hydraulic).

Website: www.mausitalia.it

Maus offers a large range of heat exchanger and boiler assembly equipment



Rohrwerk Maxhütte
Germany Stand DD17

MH-Rohr produces a large range of quality seamless tubes from Ø 21.3mm to 139.7mm and 2.3-11mm wall thickness. The company supplies a range of applications in Germany and abroad, including mechanical engineering, steel construction, construction/plumbing trade, boiler and plant construction, and the ball bearing industry.

The company's range includes black threaded tube, galvanised threaded tube, water-boiler tube, linepipe (up to 4" OD), boiler tube (quality grade I and III), and ball bearing tube. These products are available in steel grades including St 35.8, TTSt. 35, St 37, St 52, 15Mo3, 13CrMo44, 10CrMo910, 100Cr6, and others according to specific requests.

MH-Rohr undertakes quality testing during and after the production process using stationary and mobile testing units. Non-destructive testing of the products is conducted on the straightening lines via stray flux or ultrasonic methods using modern NDT test equipment. This is carried out in combination with either eddy current testing or positive material identification units (PMI).

A hydrostatic pressure test using water can also be carried out up to a test pressure of 500 bar. Mobile analytic equipment is available for positive material identification.

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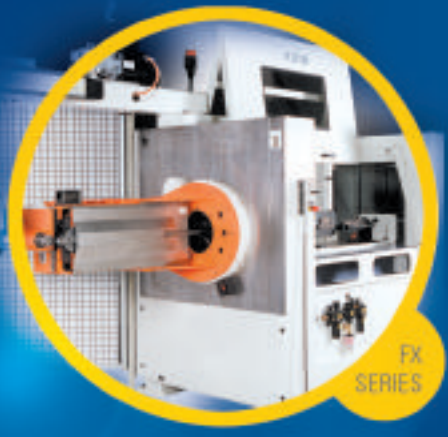

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Alternative testing can be carried out at the plant's testing laboratory for metallic materials. This mechanical and technological testing includes tensile tests according to DIN EN 10 002, hardening tests based on Brinell, Rockwell, and Vickers (ie mobile hardening test Equotip), and notched bar impact bend testing.

Microscopic testing includes metallography (for microstructure, degree of purity, particle size, decarburisation etc), non-destructive testing/spectrometry, mobile US-testing, layer thickness measurement, magnetic particle testing, dye penetrant inspection, wall thickness measurement, and Spectrometrical testing.

Website: www.rohrwerk-maxhuette.de

Multimetals Ltd
India *Stand A27*

Multimetals Limited is a manufacturer and exporter of seamless extruded drawn copper and copper alloy tubes. The company supplies applications including

Multimetals manufactures seamless extruded drawn copper and copper alloy tubes

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, cupro-nickel, 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 export excellence awards in the last 13 years.

Website: www.multimetals.in

Myung Jin Machinery
S Korea *Stand DD036*

Myung Jin Machinery, Korea, is the manufacturer of an advanced tube mill (ERW 1-24") and a host of related equipment.

The company has recently launched the latest strip accumulator, which has been developed with a range of features. The accumulator incorporates an innovative mechanism to pull the skelp (strip) from its inside, ensuring that the skelp is not crumpled as the accumulator winds.

The strip accumulator from Myung Lin

Operator safety is also ensured as there is a safety device to stop the operation if skelp (strip) inside the accumulator runs out before the welding process is complete.

The accumulator is easy to use as it retains the stored amount until the strip on the uncoiler is finished. Stopping the process is simple because once loaded, the accumulator processes strip at the same speed as tube mills.

With virtually no noise and dust, changing strip size is also straightforward, as the width of the side guide can be adjusted.

Website: www.mjmmill.com

Ningbo New-era Steel Tube Co Ltd

China *Stand TBC*

Ningbo New-Era Steel Tube Co Ltd is involved in the manufacture and export of seamless steel tube and pipe. The company provides products including cold drawn tubes (5mm-76mm x 0.5mm-10mm), and cold rolled precision tubes (10mm-90mm x 0.5mm-18mm).

The company's tubing is manufactured according to a range of standards, including US standards (ASTM: A53, A106, A179, A192, A199, A210, A213, A519), German standards (DIN: 17175, 2391, 2393, 17121, 1629), European standards (EN10208, EN10216, EN10305, EN10255), Japanese standards (JIS: G3461, G3462, G3463, G3441, G3444, G3452, G3454), and British standards (BS3059, BS6323, BS7191, BS1717, BS6323).

Ningbo's ERW tubes are supplied according to ASTM A 53/A 500 and EN 10219. Product materials include ST 52.0, ST37.0, ST 35.8, T11, T22, P11, P22, SAE 1020, SAE 4130,34CrMo, 35CrMo, 30CrMo, and 37Mn5.

With products in increasing demand, Ningbo has exported to regions including Korea, India, Argentina, Ecuador, Italy, Romania, Mexico, Iran, Australia, Egypt, South Africa and southeast Asia.

Website: www.xjygg.com.cn

Novaplast Plastik San Ve Tic AS

Turkey *Stand A36*

Novaplast Plastik San Ve Tic AS is a leading plastic piping system manufacturer, and is recognised at international level for its Vesbo pipe systems. The Vesbo PP-R brand of pipe and fittings (PP-R, PEX, PE and PVC) is designed for hot and cold-water applications.

Since 1994, Vesbo products have offered solutions mainly to the water transport requirements of the construction sector in residential and commercial buildings. Applications include hot and cold water supply, wastewater discharge, underfloor heating, natural gas transport, sewerage systems and rainwater drainage systems.

All Vesbo products comply with the international quality requirements and are certified by the most prestigious testing authorities in the world. Vesbo PP-R products have DVGW, Hygiene-Institut and Kreis Recklinghausen certification from Germany, Aenor quality certification from Spain, and GOST-R quality certification

from Russia. In Europe, Vesbo also has test approvals, quality and hygienic suitability certificates from Belarus, Ukraine, Latvia, Hungary, Slovakia and Bulgaria. In Asia, Vesbo products are widely used and preferred in the Far East, with quality approvals from Singapore, Malaysia, Philippines, Vietnam and China.

Novaplast is one of the few companies in Europe producing PP-R pipes and fittings under the inspection of the South Germany Plastics Center, and is authorised to use the SKZ logo on its products. This quality approval is complemented by the company's wide distribution network in 54 countries worldwide.

Website: www.vesbo.com

Olimpia 80 srl
Italy *Stand B18*

Olimpia 80 Engineering is a leading company in the design and construction of complete mills for the production of welded tubes. With substantial experience, the company offers both individual equipment and complete lines, suitable for TIG, laser and HF welding.

A stainless steel tube mill with laser welding system

The machinery is designed for material including stainless steel, carbon steel, titanium, copper and other non-ferrous materials. The company also offers a wide range of equipment for strip handling, tube cutting, inline bright annealing and inline and offline tube finishing. One of the latest projects developed by Olimpia 80 is the revolutionary satin and mirror polishing machine for round tubes.

Olimpia 80 can also supply turnkey systems, develop personalised solutions and provide complete after-sale technical services and personnel training. Stand personnel will include Travini Vittorio (president), Tarana Gianluca (sales manager), and Silvia Travini (sales and marketing manager).

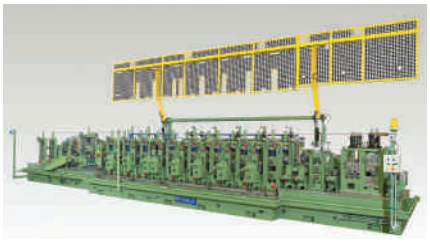
Website: www.olimpia80.com

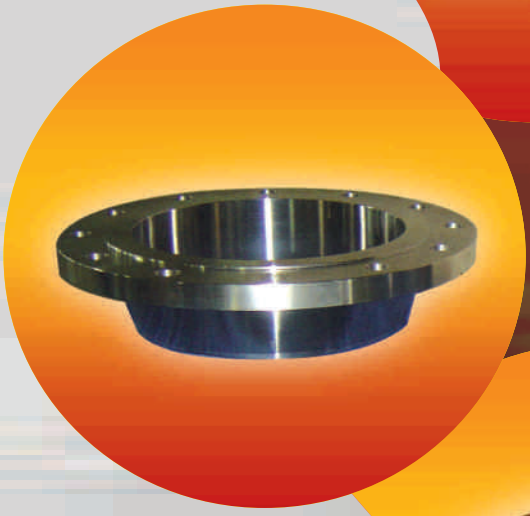
Oto Mills SpA
Italy *Stand B26*

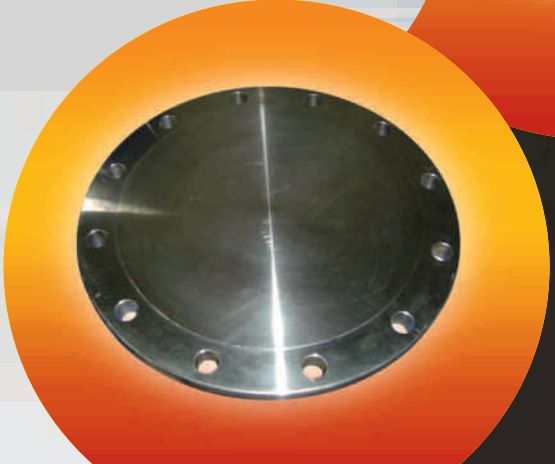
Oto Mills develops new tube mill products in the range from 10-220mm, and offers a full catalogue of solutions for carbon and stainless steel applications.

Among the company's most recent innovations is a line of high precision

The Oto 1276 RTC rapid tool change tube mill







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Website: www.otomills.com

Samchai Steel Ltd
Thailand *Stand C17*

Samchai Steel Industries Public Company Limited is a manufacturer of steel tube and pipe (round, square and rectangular).

With over 20 years of experience, the company has a manufacturing capacity of 430,000t per annum.

One of the largest ERW steel pipe manufacturers in Thailand, Samchai produces tube and pipe in various sizes.

Samchai Steel manufactures large tube and pipe using Flexible Forming and roll box technology

The company claims to have been the first Thai manufacturer to supply large steel tube and pipe in the range from Ø 8-18" and maximum thickness of 16mm.

This large tube and pipe is manufactured using the latest technology from Japan called Flexible Forming (FFX) and roll box.

The company offers the guarantee that its steel tube and pipe is manufactured and delivered according to the highest quality standards.

Website: www.samchaisteel.com

Shanghai Want Industry
China *Stand B27*

Shanghai Want is a manufacturer of seamless stainless steel pipe, fittings and flanges that meet ASTM, DIN, JIS, and GB standards. Material is available in 304, 304L, 316, 316L, 321, 310,Ti, Monel, and AL.

The company has obtained ISO-9001 certification and FED from DNV Norway. The seamless range comprises stainless steel pipe from $^1/_2$-24" and butt-weld pipe fittings from $^1/_2$-28". The welded range comprises $^1/_2$-58". The company also provides forged flanges from $^1/_2$-36", and bends from $^1/_2$-36".

Website: www.asiapipefitting.com

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Shree Ganesh Forgings
India *Stand B13*

Shree Ganesh Forgings Ltd, established in 1982, is a leading manufacturer of forgings/flanges and pipe fitting components, all compliant with international standards. The company supplies Indian and international industries including oil and gas, petrochemical, pharmaceutical, dairy, brewery, nuclear, defence and automobile.

With a total current installed capacity of 25,000 MT per annum, the company can supply a wide range of forgings weighing from 0.5kg (1.1lb) to 1,000kg (2,200lb).

The company is equipped with all necessary technical facilities such as design and estimation, die and tool making, cutting, heat treatment, grinding shop/finishing, testing and laboratory, and machining and CNC machining.

The company's product range contains flanges including weld neck, slip on, blind, threaded, lap-joint, and automotive forgings.

Shree Ganesh's products conform to international standards including ASMEB 16.5-2003, EN 1759 – 1:2004, DIN, AS 2129:2000, API 6A-2004, NFE 29-203-1989, BS 4504, BS 10:1962, JIS flanges EN 1092 – 1:2005, and ASMEB 16.11 screwed and socket weld fittings.

Shree Ganesh has a comprehensive range of product certification from authorities including ISO-9001:2000, AD-2000 MerkblattWO and pressure equipment directive, Canadian Registration Number (CRN) OB 1054.95 (for all 13 Canadian provinces), together with Syncrude, Suncor, EIL, IBR, PDO, Oman Oil, Qatar Petroleum, BARC, and ONGC.

SGF manufactures an extensive range of flanges and forgings

SGF has also been awarded a 'certificate of excellence' by the Engineering Export Promotion Council of India for a successive number of years starting from 1990, including a trophy in 2002-03.

The company is undertaking ongoing expansion at its Mumbai plant and is also substantially increasing its capacity. This has involved the addition of automated forging press lines of 4,000t and 2,500t, together with a fully automated CNC robotic line.

The company also plans to set up a manufacturing facility for other piping components.

Website: www.shreeganeshforgings.com

Sikora AG
Germany *Stand D17*

Sikora AG, Germany, is an expert in the field of measurement, control and test equipment. The company manufactures the Laser 2000 series of measurement and control equipment for all kinds of tube and hose.

The smallest gauge head in the range, the Laser 2010 XY, offers XY-diameter measurement for product diameters from 0.1mm to 10mm. Progressive CCD-technique, in combination with impulse-driven laser diodes and powerful processors, allow short exposure times of 0.2µsec, providing precise, non-contact measurement. Product vibrations have no influence on the measurement, and the gauge head does not include any optical elements. The small, powerful gauge head is suitable for use at virtually any point on the production line.

The Laser 2000 series features highly durable laser diodes, and avoids maintenance due to a measurement principle requiring no moving parts. The mean time between failures – the average time after which a device shows a repairable defect – is claimed to be 15 years.

Several of the laser systems (Laser 2030 XY to Laser 2300 XY) feature a swivelling gauge head that can fold upwards from the working area, protecting the gauge head from dirt and water drops falling into the measuring area.

For the online-acquisition of tube and hose profiles, the Laser 2000 Profil defines distinctive positions of a profile in the measuring field, from the functional equations of tangential laser diodes.

This device is suitable for the measurement of round or oval profiles, even if the profiles are arranged in an inclined position. The design of the gauge head is downwards/ open, providing protection against dirt or water.

Sikora's Laser 2010 T, Laser 2025 T and Laser 2050 T triple-axis gauge heads

Interfaces such as RS 485, Profibus DP, Canbus, ethernet or analogue interfaces are integrated in the gauge head, for use in extrusion lines that are controlled by a production line processor.

All gauge heads of the Laser 2000 series have an RS 232-C interface for a PC or notebook connection.

For extrusion lines without production line processors, Sikora produces processor controlled display and controlling systems, including Ecocontrol 1000/2000 and Remote 2000.

The Ecocontrol 1000/2000 indicates, apart from the numerical and graphical presentation of the measured values, an automatic control of the diameter or wall thickness of the product. It collects precise statistics and trend values, saves data and records the measured values. The Remote 2000 is a processor-based system suitable for panel mounting or for installation on the gauge head support.

Sikora also produces x-ray based measurement devices, for products with up to three layers. Diameter, wall thickness, eccentricity and ovality can be logged and recorded. The system quickly and precisely controls the expulsion of the extruders or the velocity of the production line.

Website: www.sikora.com

SMS Meer GmbH

Germany Stand DD25

The merger between SMS Schloemann-Siemag AG and the metallurgical plant division of Mannesmann Demag AG in 1999 to form SMS Demag AG created a world leader in the construction of plants for the steel, aluminium and copper industries.

The merged companies provide a complete process chain extending from crude iron production right through steelmaking, continuous casting, rolling mill and tubemaking technologies, up to processing and finishing lines for hot and cold strip.

Within the structure of SMS Demag AG, SMS Meer was established from the former 'Tube and Copper Plants' business unit of Mannesmann Demag Metallurgy.

In 2001, the 'Long Product Rolling Mills Division' was integrated into SMS Meer.

As part of a reorganisation in 2003, SMS Meer became part of the 'Tube, Long Product and Forging Technology' business area of the SMS Group.

The product range of SMS Meer essentially consists of: manufacturing plants and automated finishing systems for seamless and welded steel tubes (diameters from 4-1,800mm), hydraulic presses such as open-die forging presses and powder presses, and casting and rolling plants for sections, wire rod and bar steel.

This is in addition to casting and rolling plants for extrusion billets, strips, wire rod, anodes and tubes made from non-ferrous and precious metals, plants for the production and further processing of aluminium billets and slabs as well as plants for the recycling of aluminium.

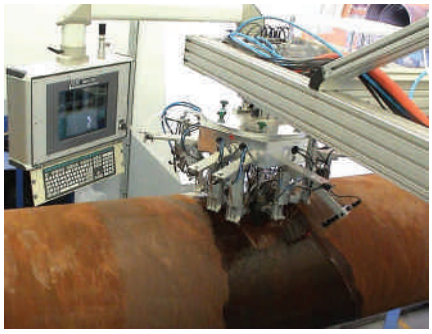
Website: www.sms-meer.com

Sofratest

France Stand DD34

Sofratest is specialised in the manufacture of NDT (non-destructive testing) equipment for longitudinal and spiral welded pipes.

The company has pioneered developments in computer based solutions for NDT,



Sofratest's NDT testing of the SAW process

including ultrasounds and electromagnetic techniques.

The company's main standard products are automatic ultrasonic and eddy current systems for weld and parent material inspection of ERW and SAW process.

They also offer multi-channel control (up to 32) for high-speed inspection of the plate before forming. This advanced technology can be supplied both for turnkey systems and automated inspection systems with full traceability, according to a number of high standards.

Website: www.sofratest.com

T&H Lemont

USA *Stand B01*

T&H Lemont provides technologies for the manufacturing of products such as stainless steel hypodermic needles, communication cables, flexible tubular products, high strength welded and rollformed shapes, and large diameter API pipe. The company supplies complete production systems, and offers complete spare parts and rebuild services for almost every machine manufactured by T&H Machine and T&H Lemont.

The company provides a variety of components and additional services to the tube, pipe and rollforming industries. Services include tube and pipe roll design, mill alignments and operational consultation.

Components offered by the company include welders, cut-offs, entry equipment, accumulators, pre-punch, post-punch, seam orientation stands, weld boxes, edge conditioner, OD bead scarfing systems, straightening systems, single point adjustment systems and dedimplers.

Website: www.thlemont.com

Takeco Co Ltd

Thailand *Stand B25*

Established in 1993, Takeco Engineering (Thailand) Co Ltd is a representative of Japanese and other leading trading firms, including Oto Mills, Thermatool, DGP Hinoday, Julia, Lennartz, Dee Tee, Pruftechnik, and T-Drill.

The company distributes accessories and equipment for manufacturing steel pipe and stainless steel pipe. Takeco can supply a wide range of quality products such as

Takeco represents a range of equipment from leading manufacturers, including a range of saws and rolls

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ferrite cores, carbide inserts, HSS saw, friction saw, band saw, ID scarfing tool, tube mill, cutting machine and other machines.

Website: www.takeco.com

Thai-German Products
Thailand Stand D25

Thai-German Products PCL (TG-Pro) is one of the largest Thai manufacturers of high quality stainless steel tube, pipe and sheet. With over 30 years of experience, TG-Pro claims to be the only company in Thailand that uses automatic lines together with laser welding technology.

With ISO 9001:2000 certification, the TG-Pro range includes industrial pipe (ASTM A-312) for chemical and petrochemical applications, pulp and paper industry, and condensers in fossil-fired and nuclear power stations (OD up to 20"). The company also supplies boiler, super heater, heat exchanger and condenser tubes (ASTM A-249), based on a unique thin-wall stainless steel tube production technique.

Thai German manufacture a range of stainless steel tube, pipe and sheet

General services tube (ASTM A-269) is provided for various industries, especially the heater industry. In addition, sanitary tube (ASTM A-270) is supplied for the dairy, food and beverage, pharmaceutical and other industries.

Requiring a high level of cleanliness, the company's perfect welding and polishing enables the inside wall to be as smooth as seamless tube. This not only prevents contamination and micro-organisms from being stuck inside, but also enhances the hygienic condition.

Ornamental tube (ASTM A-554) is used for the construction industry – both interior and exterior decoration – and has a glossy surface suited to any building. This can be used for producing the handrails of subway stations and sky-trains, balconies, terraces, doors and gates, kitchens and furniture.

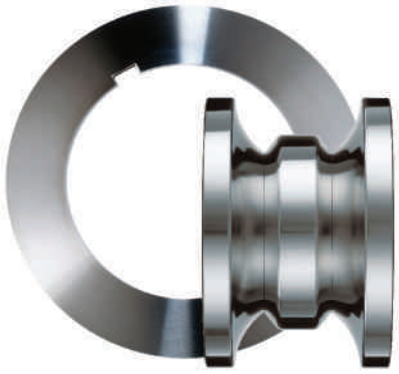
Website: www.tgpro.co.th

Thai Rolling Machinery
Thailand Stand A29/A31

In operation since 1984, Thai Rolling Machinery (TRM) is a major supplier of tube mills throughout the southeast Asian region.

The company has customers in Thailand, Japan, Malaysia, the Philippines, Indonesia, Oman, Pakistan and China.

These tube mills are supplied for the production of round, square, rectangular, and special profiles in a size range of ½" to 8".



TRM manufactures tube mills and high quality rolls

TRM's dedicated team of engineers and technicians undertake constant R&D in order to provide high-quality, durable and reliable machines.

Related high-quality products are also supplied such as TRM rollers and slitter knives. Roll planning and CAD system design is also available to accurately customize submitted designs.

TRM products are produced on CNC machines with performance tools and precision measuring equipment by skilled staff to ensure a very fine quality finish.

Website: www.thairolling.com

Thermatool Corp

USA/UK Stand B01

At Tube Southeast Asia 2007, Thermatool will introduce its new HAZ Control Technology (HCT). With this technology, the company can provide the ability to vary the welding frequency at the operator's console in 1kHz increments from 150kHz to 400kHz. According to the company, this has revolutionised the high frequency welding process.

Thermatool has now extended the capabilities of variable frequency HF welding to its HAZ Control Technology™. The company claims that, for the first time, an operator will have the information required to consistently make the best weld.

The combined effects of weld power, frequency, vee length, impeder function, and wall thickness are now displayed on the operator's console in a simple way.

This development provides the mill operator with the knowledge of their exact position in the weld process window.

Consequently, the operator can easily and repeatedly achieve the optimum weld HAZ.

Thermatool's HAZ Control Technology enables the operator to consistently make the best weld

Once the optimum weld HAZ is determined it can also be stored to ensure repeated production of quality products on every production run.

Thermatool Corporation – USA
Website: www.thermatool.com

Inductotherm HWT (Thermatool Europe) – UK
Website: www.inductotherm-hwt.co.uk

Timcal Graphite & Carbon

Switzerland *Stand A35*

Part of the HMF Group, Timcal Graphite & Carbon is a specialist in the manufacture of high-grade graphite and carbon powders. The company also has expertise in the development and end-user application of lubricants and scale treatment agents for hot metal forming processes.

These activities fall into three categories: products, application equipment and technical services, collectively forming Timcal Rollit® technologies. Designed for mandrel bar lubrication, the Timcal Rollit® DS and DP product lines are designed to withstand high pressures, temperatures and friction during the rolling process.

Offering other ecological benefits, mandrel bar lubricants are based on high-grade Timcal graphite, selected organic and inorganic additives and water. They can be supplied in either powder or liquid form.

For scale treatment and shell lubrication, the Timcal Rollit® EZ product line is used for treating scale in shell interiors and/or for lubricating shell. The product is supplied in powder form, based on mixtures of Timcal graphite and special organic and inorganic salts.

The Timcal Rollit® DF range comprises forging lubricants, used to improve metal flow, increase tool life, quality and lower rejects or improve the yield in the forging industry. These forging lubricants are based on the high grade Timcal graphite and ecologically safe inorganic and/or organic additives and water.

Website: www.timcal.com

Tube & Pipe Technology Magazine

UK *Stand E01*

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.

Tube & Pipe Technology is now also available as an online e-zine, which will reach even more worldwide readers, with selected content available free to all and the entire digital version available on subscription. Readers of the e-zine can click on hyperlinks to be sent directly to websites, while advertisers are able to incorporate video-movies into their adverts.

Visitors to Tube Southeast Asia can pick up a free copy of the latest edition at the *Tube & Pipe Technology* stand, together with information on subscription, advertising and the new e-zine. 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.

Website: www.read-tpt.com

Tube Products of India

India *Stand DD07*

Tube Products of India – a division of Tube Investments of India – is a leading Indian manufacturer of precision CDW/DOM and ERW steel tubes. The company is certified according to TS 16949, ISO 9001, and OHSAS 18001/140001 (BVQI).

The company's range includes ERW tube available from 15.88mm to 127mm OD and 0.70mm to 6.25mm wall thickness. CDW tube is available from 10mm to 101mm OD and 0.9 to 5.5mm wall thickness.

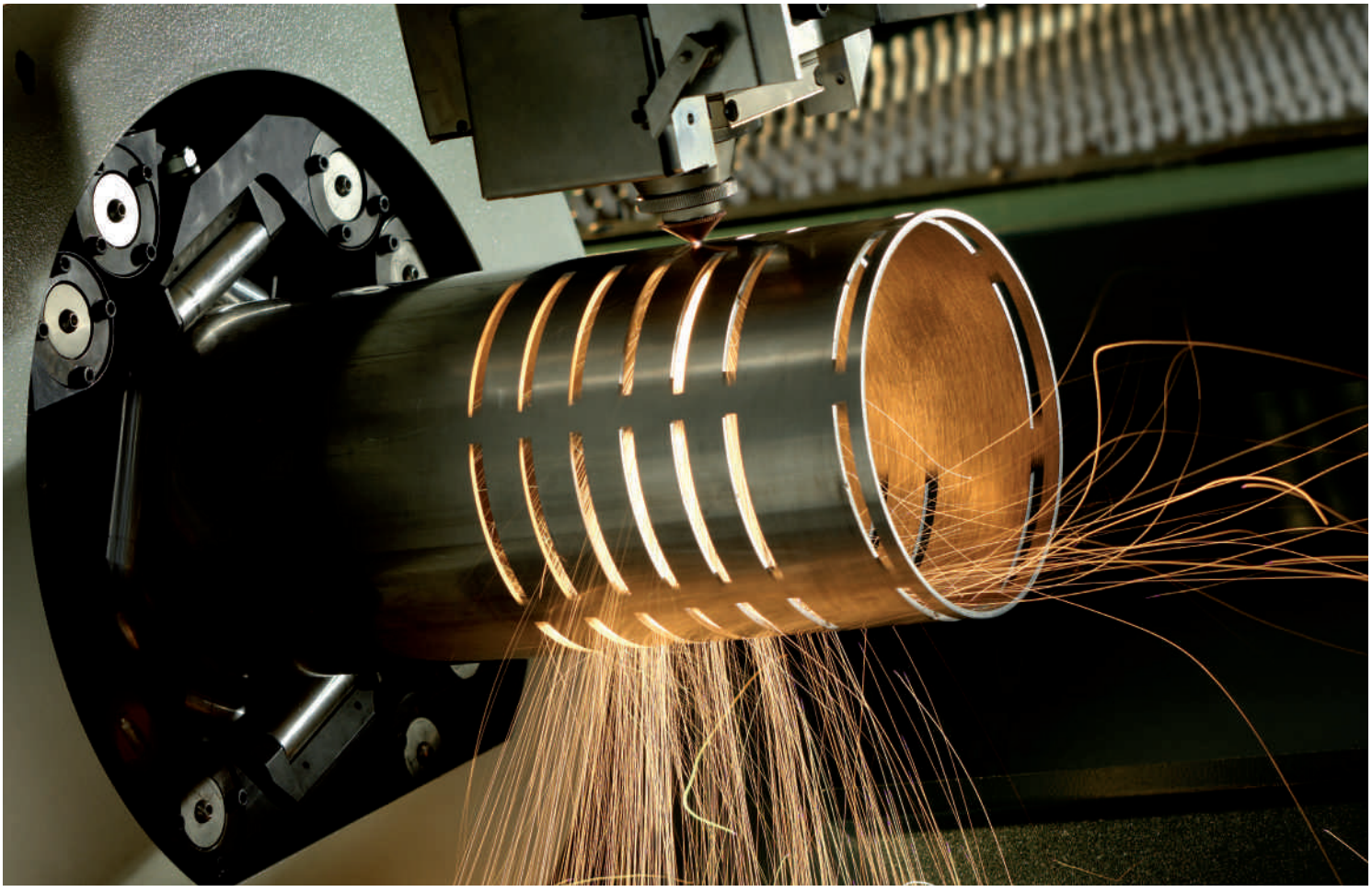
These products are supplied to the automotive industry for a range of products including steering columns, side impact beams, drive/propeller shafts, axle tube, gearshift lever, spacer tubes, seat frames and shock absorbers. They are also provided for hydraulic cylinder/SSID tubes, and other non-automotive tubing.

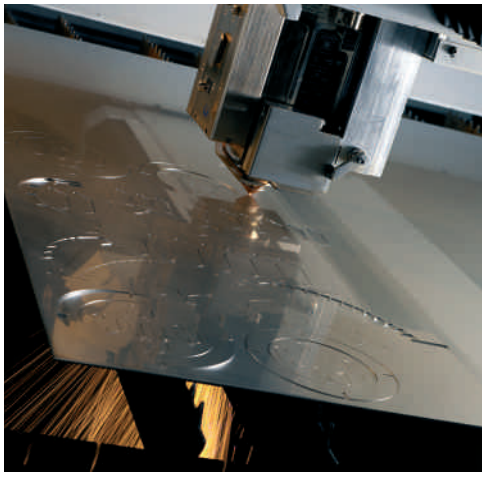
Website: www.tubeindia.com

Unitest Group

Russia *Stand DD05*

Unitest Group is the Russian based association of manufacturers of NDT equipment for industrial applications. The company develops individual solutions for every testing standard and testing





LT COMBO

A “combination” laser cutting system for tube and sheet.

This, “two-systems-in-one”, allows the automatic laser cutting of tube from 16 to 225 mm diameter and sheet with a choice in capacity from 3000 x 1500 mm to 3000 x 8000 mm.

LT COMBO, by its versatile design, can be configured in a variety of formats to ideally match the application in terms of: automation levels, productivity, capacity, available floor space etc.

The perfect solution where laser cutting of both sheet and tube is required - but the production volumes, of both, does not justify individual, dedicated machines-or where factory floor space is a restricting factor.

BLM GROUP

the tube processing technology

www.blmgroup.com

BLM GROUP UK LTD. tel. + 44 (01525) 402 555 - fax. +44 (01525) 402312 - email: sales@blmgroup.uk.com - **www.blmgroup.com**

application. Adaptable to all specifications, the product range provides quality and flexibility.

A highlight of the range is the fully automated magnetic particle inspection (MPI) systems, which offer all-round automation. This eliminates the principle drawback of the conventional systems – continuous operator observation of the resulting magnetic particle patterns. These solutions therefore reduce routine operator work and increase efficiency and reliability of inspection.

Features of MPI include automatic feeding of test pieces to the inspection line, automatic magnetisation and magnetic suspension distribution, video camera monitoring of magnetic-particle indications on the test piece, and image input to the computer.

MPI also provides image-processing software for automatic search, recognition and highlight of magnetic particle indications. Also possible is automatic monitoring of UV radiation intensity, magnetic suspension quality, test piece magnetisation and demagnetisation.

With integration into production processes, MPI users can create inspection protocols and archive test results and parameters.

Unitest also supplies a range of x-ray inspection systems. These include universal and customised x-ray systems for radioscopic or radiographic testing, x-ray television systems, stationary cable x-ray units (with metal-ceramic or glass inserts up to 450kV), and portable x-ray units (with glass inserts up to 250 kV).

This capability includes software for x-ray image processing and storage, and x-ray crawlers for pipe diameters from 530-2,000mm and wall thickness up to 40mm.

Website: www.unitest.com.ru

Vsmpo-Avisma Tube Works

Ukraine *Stand D30*

CJSC Tube Works Vsmpo-Avisma is a producer of titanium alloy tubes and the daughter company of Russia's JSC Corporation Vsmpo-Avisma, which supplies the company's billets.

Vsmpo-Avisma manufactures an extensive range of cold-finished titanium tubes

During 2003-2006, there was a fourfold increase in Vsmpo-Avisma's production of cold-finished tubes.

The company's annual production capability includes 350t of cold-finished titanium tubes, with a diameter range of 6-130mm and 0.5-9mm width thickness.

Also, in cooperation with CJSC Nikopol Tube Company, the company manufactures 200t of hot-finished titanium tubes (114-325mm OD and 7-30mm WT).

The company offers a number of specialised tube products

The success of the company has been bolstered by company reorganisation and R&D for new technologies in titanium tube production. For example, the company now offers octahedral and ribbed tubes, a special kind of thin tube for accordion boots, and long-length tubes production.

CJSC Tube Works Vsmpo-Avisma has all the necessary equipment for conducting tests, which ensures products meet requirements of international and national standards.

CJSC Tube Works Vsmpo-Avisma
– Ukraine
Website: www.tw-vsmpoavisma.dp.ua

Carl Edblom Titan AB (head office)
– Sweden
Website: www.ceta

Wafios AG
Germany *Stand E25*

Wafios is a manufacturer of wire and tube processing machines and also plays a large role in the cold forming industry. The Wafios Group has about 1,400 employees throughout the world.

At Tube Southeast Asia the company will exhibit its tube bending model BMZ 41, a fully electronic CNC tube bending machine. With a tube diameter range of up to 25mm, this bender is used for the production of two- and three dimensionally bent parts from tubular and solid material. It offers a combination of rotary-draw and freeform bending and the potential of right and left bending in one clamping.

The BMZ 41 CNC tube bending machine

Website: www.wafios.de

Yu-Nion Machinery
Taiwan *Stand B31*

Yu-Nion Machinery Co Ltd is a leading tube and pipe machinery manufacturer with over 27 years of experience. The company's high quality machinery and equipment is designed for the tube and pipe industry and steel processing industries.

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

This year, Yu-Nion secured a contract to supply a carbon pipe-making machine with PVC/PC coating. This production line will be used for household cleaning products, such as broom handles. The handles are made of carbon steel or stainless steel and can be covered with PVC or PE coating.

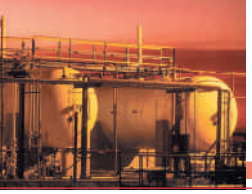
Website: www.yunionm.com.tw

Zhangjiagang City Yiyang Pipe
China *Stand TBC*

Zhangjiagang City Yiyang Pipe Producing Co Ltd is a manufacturer and exporter of tube and pipe, serving industries including the automobile industry, bearing industry, chemical industry, and machinery engineering industry.

The company's main products include bearing tubes, carbon tubes/alloy steel tubes, cut-to-length tubes from different material, titanium tubes, and bearing rings with or without hardening.

Website: www.yiyangzg.en.alibaba.com



Five-year forecast: an accelerating rise in world oil use and a possible squeeze on supplies

The International Energy Agency, which advises 26 industrial nations, has predicted that world oil demand will rise faster than previously expected over the next five years while production slips, threatening a supply crisis.

A report issued by the Paris-based agency on July 9 sees global oil demand rising by an average of 2.2 per cent a year from now to 2012, up from a forecast in February of 2 per cent annual growth from 2006 to 2011. The share of world oil consumption represented by the developing world, including emerging industrial economies, is seen rising from 42 per cent to 46 per cent of global demand by 2012.

Reviewing the IEA report in the *International Herald Tribune* (July 10), James Kanter noted that the pressures on fuel supplies are expected to grow because booming Asian economies are using more fuel to power their manufacturing industries, notably automotive. Rapid growth in the petrochemicals industries and the spread of low-cost airlines are also lifting demand.

"Amid these demand factors, there is a scarcity of refining plants and the personnel to operate them," Mr Kanter wrote. *"Supplies are also a concern because of deteriorating output from some countries outside the Organization of the Petroleum Exporting Countries."* He cited the view of Lawrence Eagles, head of oil markets analysis at the energy agency, that the world *"needs more than three million barrels per day of new oil each year to offset the falling production in the mature fields outside of OPEC."*

Other analysts discerned signs that energy habits were moving in two directions. In developed countries, and especially the European Union, governments are acknowledging an obligation to conserve energy and use renewable sources of energy, a trend that is expected to ease pressure on oil supplies.

"But that trend is being offset in developing nations," Mr Kanter wrote. *"While they still use far less energy per capita, they are making goods for rich buyers elsewhere and are increasingly adopting heavily energy-consuming lifestyles that include the use of cars, refrigerators, and air-conditioners."*

©Richie Lyon. Image from BigStockPhoto.com

Mr Eagles of the energy agency said that stepped-up investment in refining capacity could help reduce petroleum prices over the next three years, but that, beyond 2010, *"tightness in OPEC's spare capacity will reassert itself."* And by 2012, he warned, there would either have to be limits on demand or additional supplies to avoid further price increases.

The International Energy Agency was founded by the Organization for Economic Cooperation and Development (OECD) in 1974, following the oil crisis of that period. Its primary goal is the prevention of disruptions in the supply of oil.

French oil giant Total signs on to Russia's Shtokman natural gas project

Total, of France, will form a consortium with Russia's Gazprom to develop one of the world's largest offshore natural gas deposits. Under the agreement announced July 12, Total is to own 25 per cent of the operating company that will develop the area, the Shtokman field some 340 miles north of Russia's Arctic coast. The operating company will also help finance the field.

The Shtokman field is unquestionably one of the most technically daunting energy projects anywhere. Lying high above the Arctic Circle, it is in darkness for six months of the year and is buffeted by winds and storms. Icebergs are a threat. The extracted gas would have to be transported by undersea pipeline to Russia's northern coast.

But the field promises a large reward for effort. It holds 3.7 trillion cubic meters of gas and 31 million metric tons of gas condensate, enough to furnish the entire gas supply of the 27 countries of the European Union for seven years. Expected to go online in 2013, it could also supply the East Coast of the United States, if US-Russian relations should improve by that time.

Gazprom will hold the license to the field through a subsidiary, the largest Russian company said in its statement. Russia's insistence on retaining control of its resources prompted the forced sale last year of a majority stake held by Royal Dutch Shell in a development project. And in October Gazprom abruptly halted talks on Shtokman with five foreign oil companies – Total; Norsk Hydro and Statoil (both Norwegian); and ConocoPhillips and Chevron (both American) – and said it would develop the field on its own.

But the chief executive of Gazprom, Aleksei B Miller, presented the Total-Gazprom deal in a positive light, possibly hoping to promote easier relations with technically proficient foreign firms. For its part, Total offers an example of the coming model in energy development: the majors, which historically controlled such projects, as junior partners to national companies.

If Total can adapt to its role in Russia, its prospects there look promising. According to the Paris-based International Energy Agency, Russia commands the world's largest reserves of natural gas and eighth-largest reserves of oil.

An adjustment of roles for Gazprom and BP in the development of the vast Kovykta natural gas field

In another example of the shift in Russian policy to favour government control over major reserves, BP Plc on June 23 was moved to agree to sell its 62.8 per cent stake in the Kovykta field in

eastern Siberia, near China, to Gazprom. The British company and its partners had invested hundreds of millions of dollars in Kovykta, whose estimated two trillion cubic metres of natural gas is sufficient to meet total world demand for one year.

Gazprom agreed to pay $700 million to $900 million for BP's holding in the field and for the 50 per cent stake of the local joint venture TNK-BP in East Siberian Gas Co, a smaller company that is developing a gas distribution network in Siberia.

BP's compensation will include a position in a new joint venture with Gazprom to invest more than $3 billion in Russia and elsewhere, although few details were disclosed. TNK-BP was also given options to buy back 25 per cent of the Kovykta field – the largest foreign investment in Russia when it was set up in 2004 – if and when the venture is deemed successful. This would be consistent with a Russian strategy of leveraging access to the country's domestic energy reserves toward the goal of making Gazprom into a global energy player.

- In other news of Gazprom, Russia's natural gas export monopoly said on June 29 that its profit doubled in 2006, to a record $22.6 billion, beating previous estimates. The profit totaled $22.6 billion at the average ruble rate for the period and is 8.2 per cent higher than the median estimate of six analysts in a survey conducted by *Bloomberg News*. Rising prices in Europe, where Gazprom has a quarter of the market, and increased shipments to former Soviet nations drove the gain in earnings, the highest ever reported by a Russian company. Gazprom relies entirely on exports for profit; it loses money on sales within Russia, where prices are capped.

Elsewhere in oil and gas . . .

- BP Plc has signed an agreement with the state-owned National Oil Corp (NOC) of Libya to explore for natural gas in that North African country. The announcement, in late May, of the $900 million deal coincided with the arrival in Libya of outgoing British Prime Minister Tony Blair at the start of a tour of Africa. Mr. Blair's office had earlier said that BP's return to Libya reflected the company's recognition of a warming in relations between London and Tripoli.

  Certainly the agreement – which arose from negotiations, not a bidding round – is the most significant BP initiative in Libya since the British oil and gas company's assets there were nationalized by Libyan leader Muammar Gaddafi in the early 1970's. Libya has increasingly drawn the interest of international oil companies since 2004, when the European Union and the US eased sanctions in return for Mr Gaddafi's pledge not to pursue the development of advanced weapons.

- Lawmakers in Iraq acknowledged on July 22 that there were still many difficulties in the way of proposed legislation for managing oil revenue, the country's most lucrative resource, making its passage unlikely before the autumn. The oil law, which would set up a system for developing and administering Iraq's oil resources and would have a companion revenue-sharing law that would apportion oil income among various groups, had been considered the most likely to be passed before the Iraqi Parliament broke at the beginning of August for its month-long summer recess.

©Omar Ariff. Image from BigStockPhoto.com

Shell UK Ltd has announced that, together with the ExxonMobil subsidiary Esso Exploration and Production UK Ltd, it would market its equity interests in a number of northern North Sea assets on an open, competitive basis. Shell produces some 350,000 barrels of oil equivalent per day (boe/d) in the UK. The assets announcement of June 14 will affect some 25,000 to 30,000 boe/d.

Shell UK Ltd is operator in the UK sector of the North Sea on behalf of Shell, Esso, and others. According to Tom Botts, executive vice president, Shell Exploration & Production in Europe, relinquishment of the *"relatively high-cost assets"* reflects active management of the company's European portfolio. Shell, he said, *"remains committed to Europe and the North Sea as a core business area and holds a key strategic position in security of energy supply to the UK."*

Ecuador, the fifth-largest oil producer in South America, is conducting a review to determine whether private oil companies have breached their contracts with the nation. Alberto Acosta, the oil minister, said on June 7 that a nine-member committee of energy officials and specialists is examining exploration and development contracts let by Ecuador. These are mostly held by foreign oil companies including Petrobras of Brazil and Repsol-YPF of Spain. *"[The] committee will look into all contracts," Mr Acosta said. "It will review all we need to review and we are seeking transparency."*

Venezuela has signed a preliminary agreement with Belarus to further develop two mature Venezuelan oil fields, as reported on the website of the state-owned oil company Petróleos de Venezuela (PDVSA) in mid-July. Writing from Caracas for *Dow Jones Newswires* (July 17), Peter Millard said that one of the fields is located in eastern Venezuela; the other, Block 10 of Lago Medio, in Lake Maracaibo in the west. Officials from PDVSA and Belarus will form a technical team to do a feasibility study for a joint venture to commercially exploit the fields.

Mr Millard noted that Venezuela has been making an effort to improve economic and political ties with landlocked Belarus, in Eastern Europe. The two countries are also planning a joint-venture project to develop an area of the Orinoco river basin in Venezuela and Colombia, containing the world's largest hydrocarbons deposits.

Oil & Gas **News**

- Oil refineries in the US have experienced a record number of fires, power failures, leaks, spills, and breakdowns this year. Fully a third of the country's 150 refineries reported interruptions to their operations since the beginning of 2007, and at mid-year dozens of them had cut production or shut down temporarily. Refining disruptions averaged 1.5 million barrels a day in the first quarter, compared with 700,000 to 900,000bpd from 2001 to 2005.

  Meanwhile, demand has been rising relentlessly, providing little time off for the nation's aging energy infrastructure. Because of the high cost of construction, no refineries have been built in the United States in over three decades, Instead, refiners have been expanding their existing plants and running them full-bore to take advantage of high oil prices. Analysts say the industry is suffering now from the postponement of necessary repairs.

- The US Air Force is pushing development of a new type of fuel to power its bombers and fighters, mixing conventional jet fuel with fuels from non-petroleum sources that could eventually limit American military dependence on imported oil. The plan, announced by US officials at the Paris Air Show in June, can be expected to set off a race by fuel refiners and other companies to produce a jet fuel composed of no more than 50 per cent petroleum.

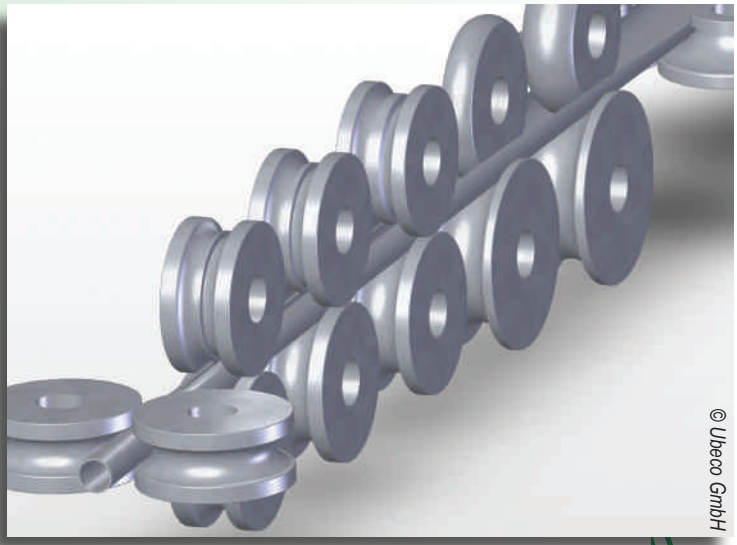
  While airlines in the US are reacting to economic and political pressure to use less fuel, the Air Force needs a reliable supply of fuel in the event of a conflict or domestic crisis. Washington also hopes to ease the impact of rapidly rising international oil prices. The Air Force burned 3.2 billion gallons of aviation fuel in fiscal 2005, or 52.5 per cent of all fossil fuel used by the US government.

- SK Corp, the largest oil refiner in South Korea and fourth-largest in Asia, has said that it planned an outlay of close to $600 million on global exploration and production in 2007. On 2 July the company announced it would thereafter conduct operations under a new structure as SK Holdings and SK Energy, and on 22 July the energy unit announced that it had bid for and won a 100 per cent exploration and development stake in a block in the Trujillo basin offshore Peru. From Seoul, SK Energy's president Shin Heon-chol said in a statement (in the *Korea Times*), *"Considering its proximity to major oil production sites in Peru, and a number of discoveries in the region, Block Z-46 looks very promising."*

- Reliance Industries Ltd, of Mumbai, announced 17 July that it had struck oil and gas in the deepwater Cauvery basin off the east coast of India, in what it called a significant discovery for the region. The company said that, during drill-stem testing (DST), its new well in the Dhirubhai-35 block produced 31 million cubic feet of gas with 1200 barrels of condensate per day from the main zone. Another, lower, zone produced around 550 barrels of oil per day with 1 million cu ft of gas. RIL, which is India's largest private-sector company, holds a 100 per cent interest in the block.

Developments in **D**esign, **P**roduction & **M**anagement **S**oftware

Software is software. *Or is it?* The website of a company that creates custom software for companies and organizations presents a comparison between software as most of us understand it, and software for industrial purposes. Quite clearly, this second category is another proposition altogether.

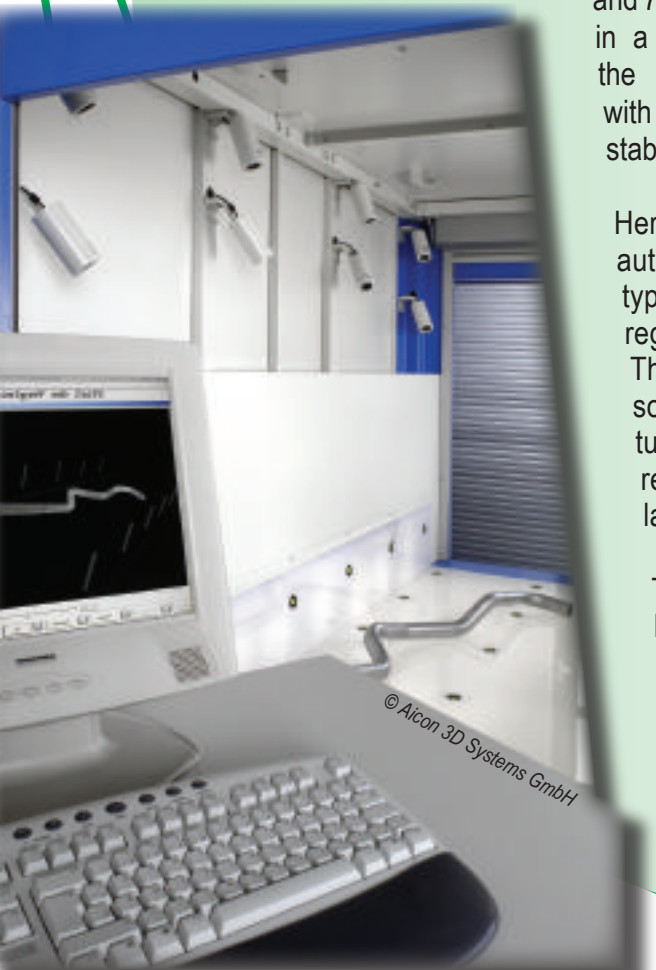

© Ubeco GmbH

The differences of scale, complexity, and volume may remind readers of a certain age of CP Snow's theory of the 'two cultures' – science and the humanities. But the first sentences of the first section, on code-writing for 'academic' vs. industrial software, seem more likely to put tube and pipe makers in mind of the fail-safe preoccupations of their own business:

Net code is the part of a program that actually solves the problem if all goes according to plan. Gross code covers all the additional lines of code required in order to handle errored input and data and to trap supposedly impossible system errors.

Since defence against 'supposedly impossible errors' is never far from their minds, tube and pipe professionals are squarely in the gross-code camp, where the software has a net/gross quotient of 0.5 to 0.25. This means that between 50 per cent and 75 per cent of the lines of code in a given program go beyond the basic application to deal with issues such as robustness, stability, ease of use, and reliable operation.

> ***Since defence against 'supposedly impossible errors' is never far from their minds, tube and pipe professionals are squarely in the gross-code camp***


© Aicon 3D Systems GmbH

Here, too, are found the lines of code for help functions, authorization, checking, logging, and the like. By comparison, typical university [net code] exercises have a quotient in the region of 1, and correspondingly fewer and coarser duties. The importance of small net/gross quotients in industrial software development is very readily grasped in the tube and pipe industry, where every production run reinforces the correlation between small steps and large consequences.

The software company whose information has been drawn on boasts that its product is tailor-made and intended to live long, and that it is therefore structured carefully – by means of object-oriented methods. It is a declaration that resonates long and loud with tube and pipe makers.

Advanced version of analysis and simulation software

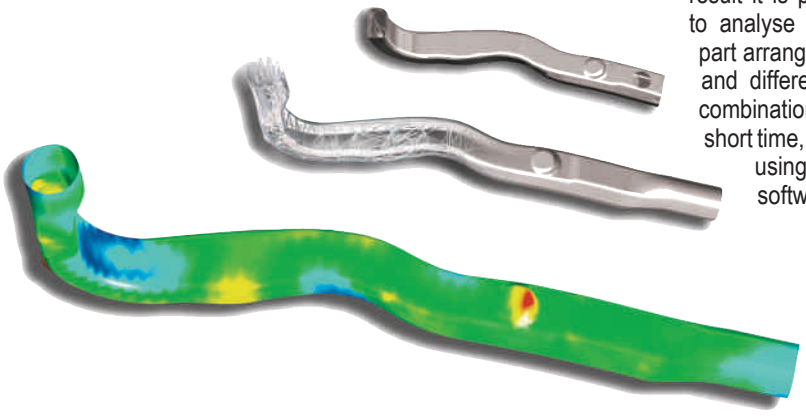
AutoForm, Germany, develops and markets specialised die face design and simulation software for the automotive and sheet metal forming industries. The company has released version 4.1 of AutoForm Hydroforming, a tailor-made software solution for rapid analysis and simulation of tube bending and hydroforming processes.

The software is used by parts designers, process engineers and tool/die makers to evaluate hydroforming tool designs and process layouts.

In version 4.1, productivity and quality have been increased particularly in the handling of multiple parts. This new option allows several parts to be imported, copied, arranged and tipped relatively to each other.

After arranging the parts, they can be connected to build a chain, and as a result it is possible to analyse several part arrangements and different part combinations in a short time, without using CAD software.

AutoForm Hydroforming software enables users to evaluate hydroforming tool designs



The software provides an automatic cross-sectional part analysis, and includes automatic filleting of sharp edges, automatic creation of the addendum and inner fills, and generation of the tools separation surface.

The bending line can be generated automatically, and all required bending tools and steps can also be designed and positioned automatically, removing the time-consuming manual definition of bending tools and processes in a CAD system.

The user is guided step-by-step from the import of CAD geometry to the generation of alternative tooling concepts and their tryout using process simulation.

Complex semi-finished products, such as conical tubes and profiles, are supported as well as tailored-welded tubes with varying wall thickness and/or material properties.

AutoForm Engineering Deutschland GmbH – Germany
Fax: +49 231 9742 322
Email: stefan.werner@autoform.de
Website: www.autoform.com

Practice-orientated software tools for pipe production management

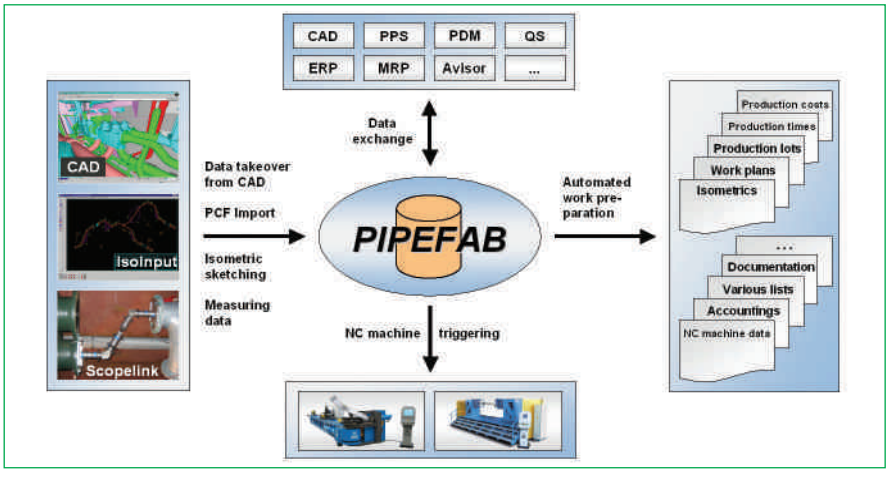
Tracto-Technik, Germany, offers practice-oriented software tools for the management of pipe production, providing complete system solutions for the piping industry.

The modular-designed Pipefab software package combines the generation of isometric drawings, work preparation and production control for pipe pre-production.

It organises material and time management, and supplies all the required production dossiers for the pipe workshop.

Pipefab evaluates isometric drawings originating from different input channels. The data is made available by direct input into an integrated isometry tool, by transfer from a 3D CAD system or from a pipe measuring system. The software performs complete calculation of the piping geometry and supplies the data required for the pipe production in the form of lists and files.

Pipefab software provides the whole lifecycle of pipe systems from engineering and design over procurement, production, assembling and operating, up to service and maintenance



In combination with ERP/MRP-systems, PDM-systems and standard accountancy systems, all data and isometrics necessary for carrying out the project and its control are produced, working packs are created, production times and costs are determined, additional material is calculated and work schedules set up. All results for project and data management, quality control and NC machine triggering are available as automated, machine-readable files.

All modules and components of the Pipefab product family are compatible, and make up the base for an integrated, all-in-one solution.

Tracto-Technik also develops and fabricates tube bending and working machines up to Ø 170mm OD.

Tracto-Technik GmbH & Co KG – Germany
Fax: +49 2725 9540 33
Email: tubomat@tracto-technik.de
Website: www.tracto-technik.de

Unified software interface for integrated pipe production

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

The interface can include CAP (P&I diagrams and planning), CAD (design, coordination), CAM (machine control, production control), CAQ (quality control), CAE (calculations and engineering), PPS (process organization, human resource optimization, basic data management). These individual areas often overlap and cannot be clearly separated.

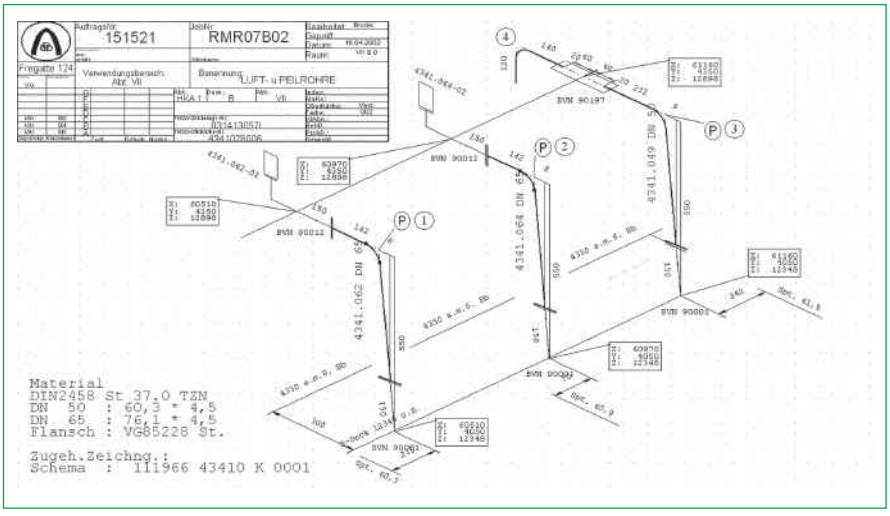
This interface is designed to tackle tube and pipe production problems including delivery times for special materials, internal flow of material and transport, storage of fabricated parts, changes in design, backflow of modifications and inflexible structures.

However, in this field the problems are often so complex that the development of a global strategy is simply not realistic and feasible. 3R Software therefore offers a centralized software solution, which concisely illustrates the synergy effects of all production areas. It allows the user to react economically, prevent errors, and quickly make the right decisions.

Based on 30 years of experience, 3R software solutions have been specifically developed to meet the demands of users, with a high level of flexibility and adaptability. This leads to advantages such as increased work speed and quality, and decreased training time. The cost reduction resulting from these three points should not be underestimated.

In tube and pipe production one consistent and unified system, covering everything from design and planning to construction and fabrication, ensures exhaustive knowledge of the entire process. It also makes the development of suitable interfaces unnecessary, because they have already been integrated.

> ***One unified system, covering everything from design and planning to construction and fabrication, ensures exhaustive knowledge of the entire process***



RoniR2D is used to produce P&I diagrams used for the development and rough planning of process facilities

One central database allows every application to access the information of all other applications, creating no new problems for the user when it comes to analysis and tracking modifications. Although it is impossible to develop one piece of software to suit all user requirements, 3R Software provides solutions that streamline the systematically similar or unchanging processes.

P&I diagrams (RoniR2D) are used for the development and rough planning of process facilities, and can reduce task handling time by 50 per cent.

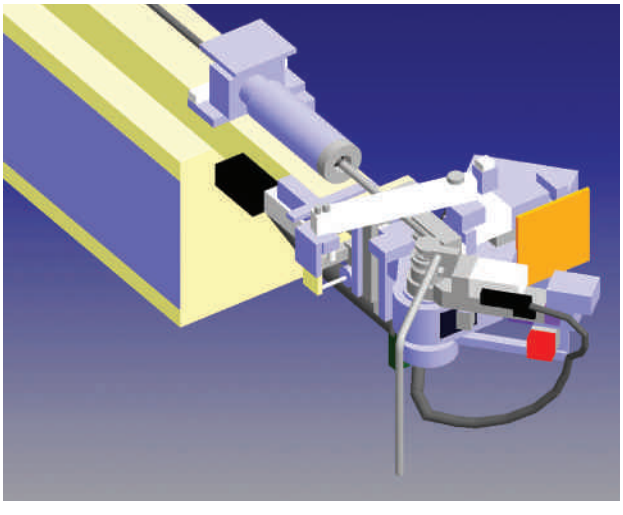
During creation of P&I diagrams the basic dimensions, type of fittings and tube material (including diameter) are selected from a database. Due to the integration into this centralized database the client can, even in this early stage of the process, have access to a multitude of information. Ordinarily, this information would require weeks to be derived from, for example, an Auto-CAD drawing.

This time reduction can be a great advantage, especially when it comes to the tracking of modifications and changes. The system automatically assigns tube and fitting numbers according to the user's input within fractions of a second.

A manual preparation of an index would require substantial time and effort with every modification or change, and the risk of mistakes during numeration would not be eliminated. Instead, when using RoniR2D lists for parts and fittings are automatically created.

Further systems can utilize the information derived from the P&I diagrams. Since this information can be stored in a centralized database, no interface is necessary. Data redundancy, which can be both storage intensive and prone to mistakes, is generally avoided.

Kolli 3D bending simulation software can test the producibility of tube and pipe



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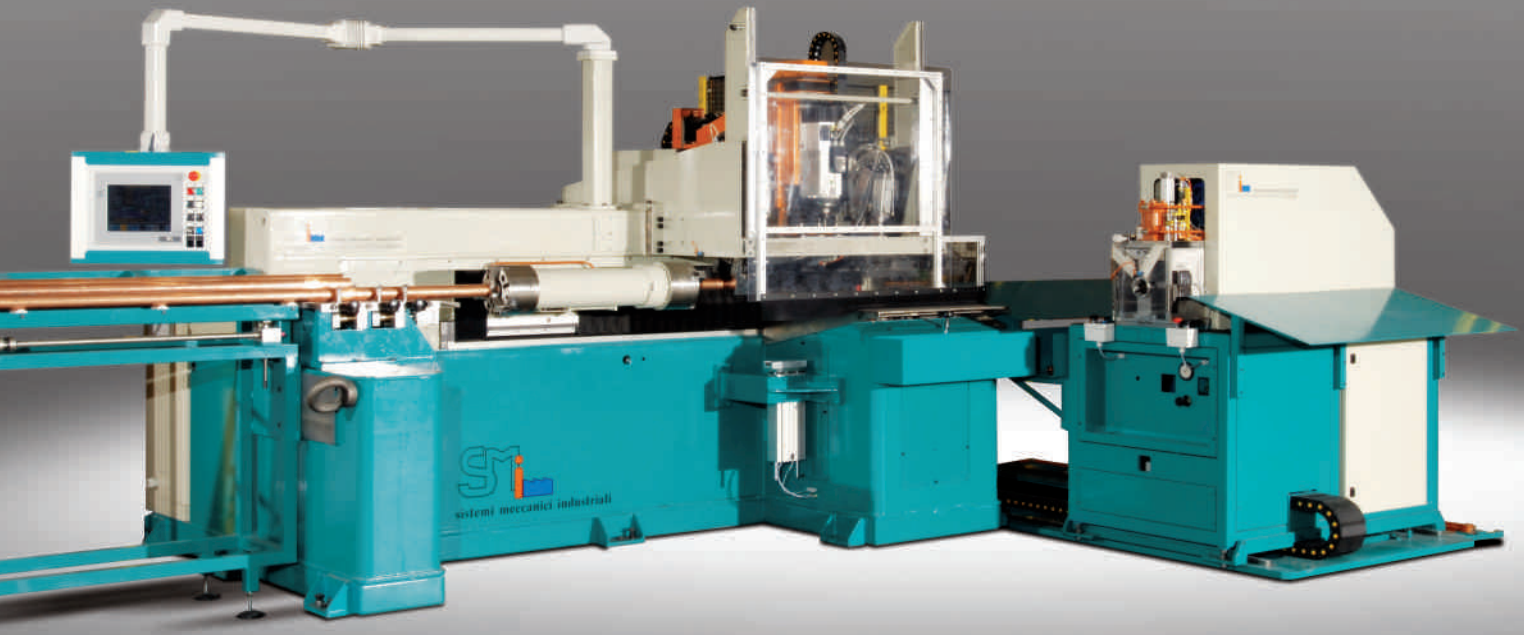

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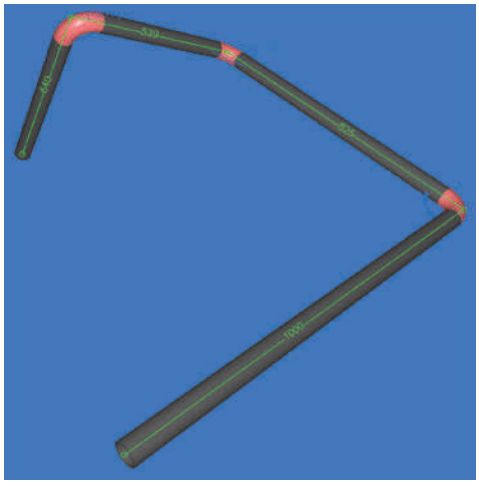

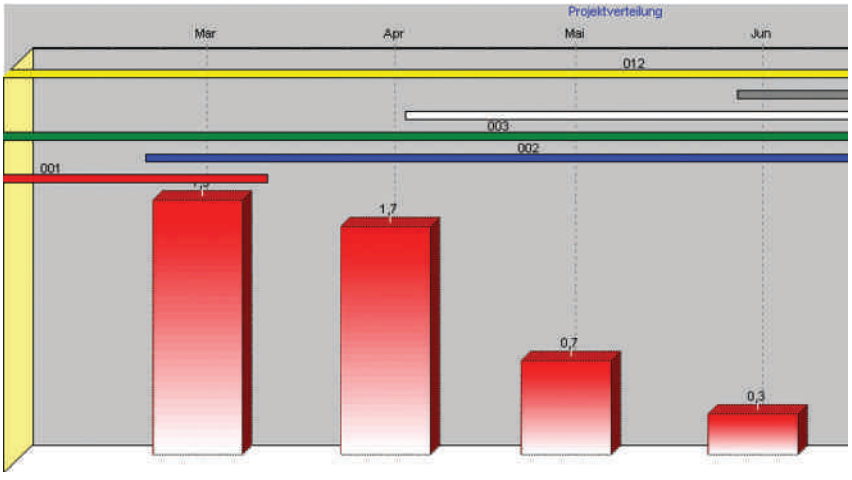

(Above left) with a centralized database, RoniR3D coordinates 3D tube and pipe production; and (above right) using Ramp, production can be optimized with part lists, drawings, worksheets, and graphs

RoniR3D is a user-friendly, easy-to-learn system for the coordination of tube and pipe production. In contrast to known 3D-systems, whose features are not streamlined towards special requirements, the user of RoniR3D can resolutely coordinate 3D tube and pipe. The spatial geometry of the tube can be added using various import interfaces.

Because the system, like all 3R-systems, uses the centralized database, the client can load entire schematic drawings and use them as coordination templates.

The user can employ RoniR3D to exactly position fittings and tubes, as well as add flanges and bends. Every 3R data element exists as a 2D schematic symbol, a 3D symbol, and an Iso-symbol. This ensures complete consistency for all production steps.

RoniCAD is used for isometric projection, and displays a 3D volume model at any point during the design phase. One of the earliest versions of RoniCAD was developed more than thirty years ago. The modern Windows-version has also been used for years by many shipyards, plant constructors and in the chemical industry. Thus RoniCAD offers a proven and efficient 2D- and 3D-design platform, and can also be used with Kolli bending software for analysis of a tube's isometric image during the design phase.

All data necessary to fabricate an isometric projection are calculated automatically. The software includes import interfaces to load and edit tube drawings from several large systems (Unigraphics, Tribon, Medusa, NupasCadmatic).

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

3R Software's Ramp software can achieve the entire work preparation for industrial tube production, with creation of work packets via use of filter functions. For each fabrication step and selected workstation the user has the option to create part lists, drawings and worksheets including all fabrication relevant information.

Ramp includes process optimization, with automatic availability of transferable CNC

files, while station worksheets are created and sorted efficiently. Ramp is also used to process tracking and for expediting, using both the date structure of the job numbers and the calculated times for each isometric image.

With generation of completion notices at each individual workstation, the current stage of the fabrication process can be determined and visualized at any time. It is therefore possible to eliminate bottlenecks or planning mistakes at an early stage.

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

Kolli is a 3D bending simulation designed to test the producibility of individual tube and pipe. As a subprogram of RoniCAD or as stand-alone software, Kolli offers solutions for the bending process of given tubes, so they can be fabricated.

Starting with version 7, Kolli includes a machine editor, a tool editor, and a material manager. These tools are used for the individual display of the local settings and conditions of each tube and pipe shop, in order to perform an exact producibility analysis.

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

Using a selected bending machine, Kolli determines if the tools are available to fabricate a tube design. The software also determines the machine sequence needed to ensure a collision-free and successful bending process. The program can even accommodate flanges, with rotation calculation of the flange during bending.

3R Solutions – Germany
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Email: g.schulze@3-r.de
Website: www.3-r.de

Software with an 'open mind' to CAD/CAM solutions

Open Mind Technologies AG, Germany, is a leading developer of CAD/CAM software and post-processors for the design and manufacture of complex moulds and parts.

The company offers an extensive range of products, from 2D feature-oriented solutions for milling standard parts through to software for 5-axis simultaneous machining.

The company's hyperMill® software is used in automotive, tool and mould manufacturing, high performance engineering and aerospace industries. The high-performance and geometry-oriented CAM software offers 2.5D, 3D, HSC and revolutionary 5 axis machining strategies. With one uniform user interface, hyperMill® is the ideal CAM solution, particularly for complex and demanding machining tasks.

hyperMill® offers 2D features for contour milling, pocket milling and drilling cycles, 3D cycles or Z-level roughing and finishing. It also provides special machining strategies such as trochoidal and fillet machining for HSC milling, and sophisticated 5 axis technologies for manufacturing turbine blades, tubes and structural parts.

The software includes intelligent features such as Rapid Result technology to automate routine work and reduce programming complexity.

Efficient machining strategies are made possible to optimise tool movements and avoid unnecessary fast travel. Reliable collision checks and automatic collision avoidance modules ensure top-notch process stability.

A range of functions can be carried out including hole and pocket milling, feature-based solid machining, freeform surface machining, deep cavity and dome machining, tube machining and turbine and impeller machining.

Open Mind has recently increased its activities in China, Taiwan and India by opening new branch offices.

Open Mind Technologies AG – Germany
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Email: info@openmind-tech.com
Website: www.openmind-tech.com

Essential rollforming software for auto parts production

Given the variety of their applications, open or closed roll formed sections have taken on increasing importance in recent years, finding their ways into new sectors like the automobile industry. The reasons for this include the introduction of new materials and improved possibilities for designing roll tools.

Advantages that go along with the overall process are the large choice of cross-sections and the work hardening of the material. This results from the forming operation, which can be utilised in many cases by applying the right design skills. For this reason, optimum tube and profile quality requires optimum roll tool engineering.

The development of a new set of rollforming tools and the subsequent production of a proper metal tube might seem without serious considerations. Nevertheless there can be problematic hurdles such as down times of the rollforming line during installation, startup and try-outs of tool sets. Internal strain and work hardening in the rollformed material might cause deformation of the end-product.

In the past, the only way to create a properly functioning roll set was through practical trials on the machine. Today there is an alternative...

Due to these difficulties rollforming or manufacturing welded tubes used to be treated as a black art. A software program for rollforming supports the steps in the development of open or closed profile cross-sections.

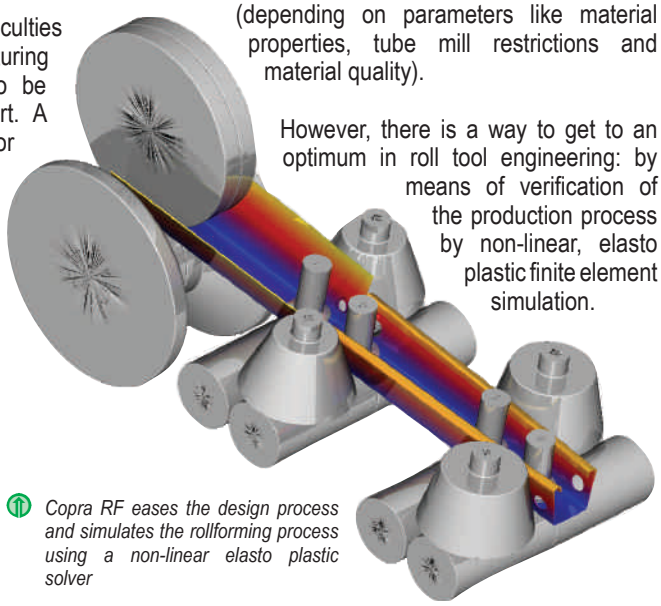
These steps include the design of the final cross-section to be produced, through definition of the various shaping steps (passes or flower) to generation of technical documentation (ie production drawings, parts lists, CNC programs).

In the past, the only way to create a properly functioning roll set was using practical trials on the machine. Today there is an alternative with simulation via finite element analysis (FEA), which speeds up this time-consuming and costly set-up process, and avoids any reworking of the tools altogether.

Launched a few years ago, Copra® FEA RF (finite element analysis for rollforming) is a software module for this purpose, which has been continually developed for twelve years via extensive research and user feedback.

Experience gained from industrial application and research at various institutes has shown that there is no formula or guideline that provides an 'optimum roll tool layout'. The only way to optimize a roll tool set is to tailor it to a specific application (depending on parameters like material properties, tube mill restrictions and material quality).

However, there is a way to get to an optimum in roll tool engineering: by means of verification of the production process by non-linear, elasto plastic finite element simulation.



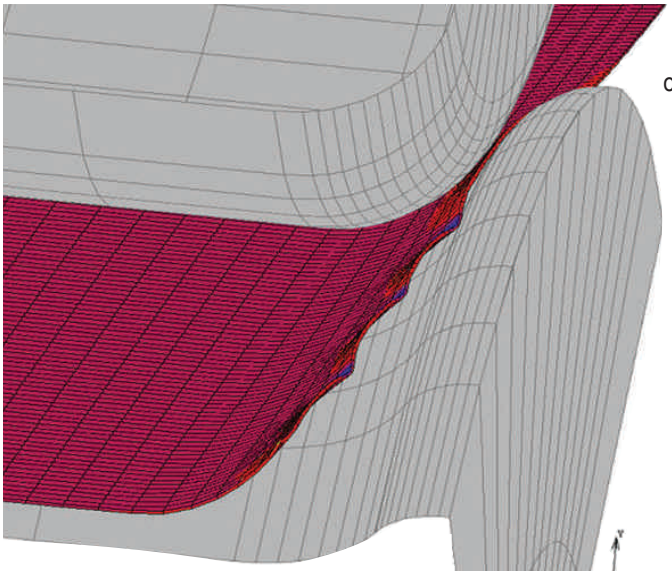
Copra RF eases the design process and simulates the rollforming process using a non-linear elasto plastic solver

In addition to verification of how a roll tool set will perform, this method also provides decisive information on what is actually happening with strip material during the forming process. It also shows how the properties of a tube or profile may change.

Although this may sound sophisticated, the user is not required to closely manage the definition of the finite element computing model, selection of suitable element types or definition of boundary conditions. Fully integrated into the software process chain, these factors are considered automatically by the software.

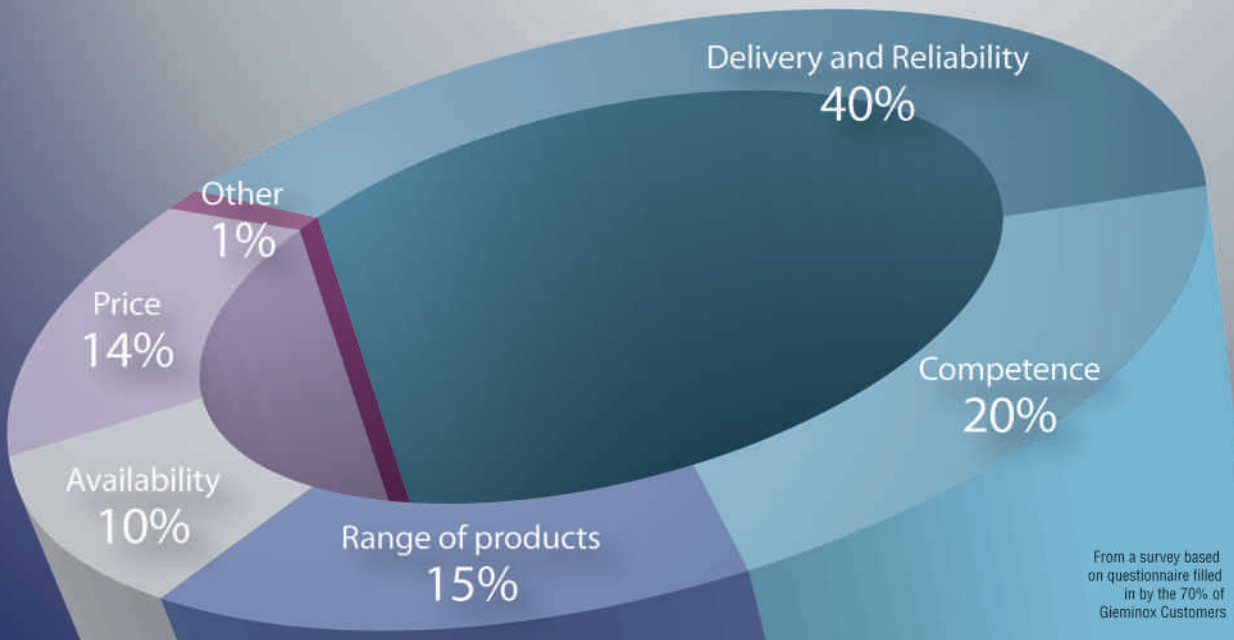
Both the finished tube or profile design and the individual shaping steps are presented in 3D, colour images. The user can utilize

Finite element simulation by Copra FEA RF. Strip edge waviness due to residual stress after first breakdown pass (below); strip edge buckling after fin passes in practice (below right)



Seven reasons to choose **Gieminox**

welded pipes and fittings



From a survey based on questionnaire filled in by the 70% of Gieminox Customers

Any reason to choose someone else?

Since 1980 Gieminox has been established on the market focusing on both needs: of its customers and of the market in which it operates, committing itself to a continuous improvement. It has highly improved advanced technologies concerning manufacturing and welding procedures that represent an indissoluble and strongly acquired patrimony.

Manufacturing program

- **Longitudinal welded pipes**

Outside diameter range: from 3" up to 100" as per ASTM/ASME/DIN standards. Wall thickness range: from 3 mm up to 60 mm.

- **Welded fittings**

Elbows: from 3" up to a 40" as per ASTM/ASME/DIN standards.

Stub ends: outside diameter from 3" to 48" as per MSS and ANSI standards. Collars: as per DIN/ANSI standards.

Material range

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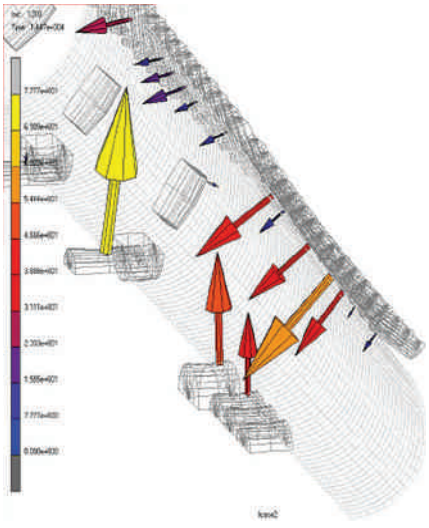
a number of effective analytical functions to predict the profile quality or material properties, such as the changing wall thickness distribution and work hardening effects.

A feature of Copra® is the possibility to design and model any type of rolling cage – often referred to as straight edge forming method. Using this feature, respective rolls are not only modelled but also transferred to Copra's integrated finite element software package Copra® FEA RF and simulated respectively



In addition to information on the quality of forming, the software generates values relating in particular to material strain and inner stress or quite simply to the forming forces or moment. It provides the user with important data about possible problem areas in metal forming.

Visualization of defects means that the empirical trials required in the past and adjustments to the rollforming line can be dispensed. Instead, a new tool set is optimized ready in the design phase.

The properties of rollformed profiles or longitudinally welded tubes can be predicted reliably by this finite element analysis software. This is of particular importance for the design of new tool sets in the use of high strength material and as regards their suitability as semi-finished product for subsequent forming processes.

Rollformed structures are being used at an increasing degree in the automotive industry with regard to sustainable manufacturing and safety issues. They can be found in a huge variety (ie as sealing profiles, motor cradles, door profiles, seat rails, bumpers or structural or side impact beams), post-processed by bending, stamping or hydroforming operations.

Material modeling is particularly vital in order to predict damage and failure behavior of a car body. Automakers have started to use this Copra® FEA RF software program to predict the properties of materials and profiles they incorporate into the design of their vehicles.

The possibility to predict the properties of rollformed products is turning an art into science. Profiles of utmost complexity can now be realized.

The increased use of new materials, design- and simulation software technologies and related engineering possibilities open the industry into a growing market.

This article was supplied by Mr Albert Sedlmaier, president of data M Software GmbH, Germany.

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Software modes essential to accurate in-line measurement

The dimensions of profiles made of metal, plastics or rubber must be continuously measured and monitored in the manufacturing process. Samples are commonly measured on a profile projector or similar apparatus, but this method can be inaccurate because of the many steps requiring exact and careful handling.

Optical inline measuring technology using standard laser diameter gauges or CCD cameras cannot measure indented or concave parts of profiles such as connecting rails or grooves.

Zumbach, Switzerland, manufactures Profilemaster® systems as a practical solution to this problem. Up to four laser/camera modules continuously measure the cross section of the moving profile online. One or multiple lasers (depending on the number of modules) project a visible laser contour around the profile, and this is registered by matching CCD cameras.

A powerful PC based processor adds together the partial pictures made up of straight lines and radii, to provide a cross-section of the profile. All relevant dimensions, including width, height, angle and radii, are combined to form the full cross-sectional picture.

Nominal values for the profile can be directly imported from the CAD construction, which allows easy programming. Changes in speed and twist within normal limits have no effect on the measurement. Nearly all the geometrical data of a profile can be collected, and an operator-friendly graphic display of this data allows the product to be monitored during the production.

The software developed for the Profilemaster has three working modes. 'Operation' mode is used for measurement during production. 'Entering product data' involves the entry of measurement requirements and definition of the processing method.

'Service and system configuration' allows functions to be selected according to the operator's requirements during the initial installation of the system.

A single Profilemaster sensor module can usually provide the desired product contour. A two-module configuration allows many types of profiles to be 100 per cent measured. Four modules are required to fully measure profiles with indented areas.

Zumbach Electronic AG – Switzerland
Fax: +41 32 356 04 30
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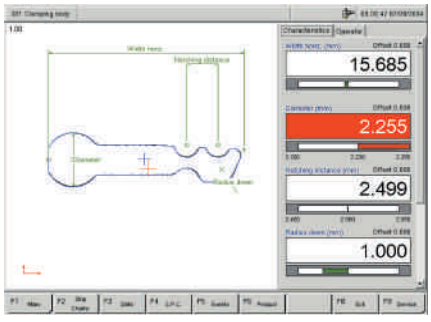
(Below) Zumbach's Profilemaster measuring unit; and (bottom) a typical display from Profilemaster



Everything under control: full inspection for tube manufacturing

Aicon's TubeInspect has been securely established in the area of optical 3D tube measurement for several years. Due to continuous development, the measurement system is now suitable for 100 per cent inspection in high volume production.

TubeInspect allows for the inspection of different tubes from several bending machines. Furthermore, by incorporating a robot for placing a tube into the measuring cell, the inspection is conducted fully automatically.

TubeInspect allows for high-precision measurement of tube geometries, determines set-up and correction data and transmits them to bending machines. The time required to inspect a tube is small: for short fuel pipes, the measuring results are available after three seconds.

TubeInspect for optical 3D tube measurement

The inspection of a complex brake pipe can be conducted in less than 60 seconds. TubeInspect is thus able to entirely replace mechanical gauges.

The connection to the present handling system and the applied bending machines can easily be set up. Remote control of the system can be carried out with the help of a trigger signal. Moreover, a complete remote control is possible including robot selection, further processing of the acquired data, analysis and SPC process control.

TubeInspect can transmit set-up and correction data to bending machines

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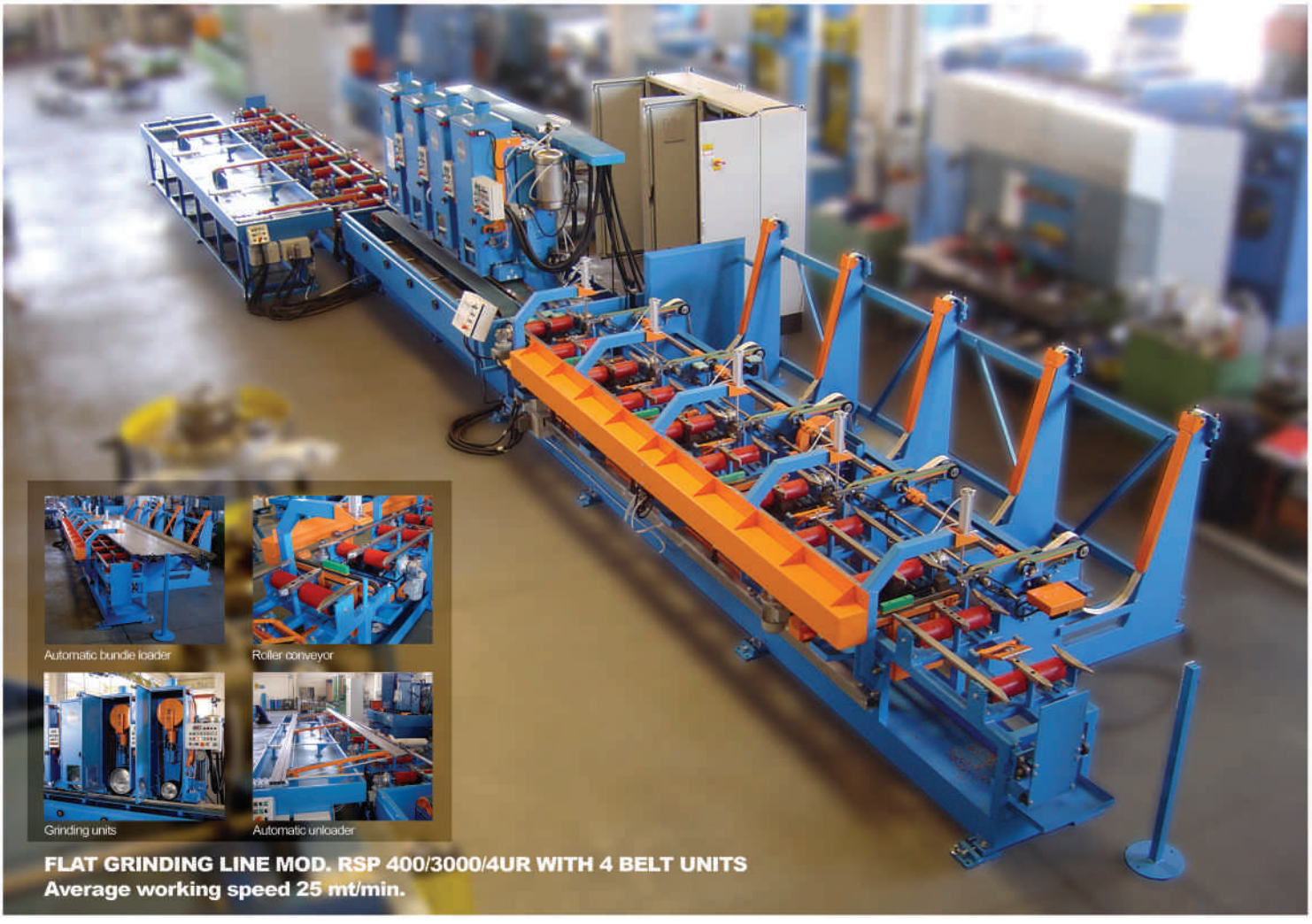

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Latest software technology for non-contact tube measurement

AddisonMckee, USA, has introduced AddiCheck, a non-contact tube measuring and inspection solution. Incorporating specialised software, it is designed for easy component inspection, measurement and data collection. The machine benefits from the development expertise that was used to create the AdData 'G' Plus measuring solution.

AddiCheck models are suited to mid-market tube manipulation organisations, and afford greater accuracy over contact tube probe inspection machines.

AddisonMckee's AddiCheck non-contact tube measuring and inspection system, alongside the AdData machine

AddiCheck is designed to interface directly with AddisonMckee's range of modern DataBend and PowerBend CNC tube bending machines. AddiCheck will also provide the necessary coordinates data to set up non-CNC machines.

Operators simply place the component to be measured on the system's portable workbench, key in the relevant data and use the non-contact probe to achieve totally distortion-free measuring where two points on each straight section between bends are to be probed.

This process can be done from either end of a bend, as the system automatically reverses the ends, if required. The principle is to sweep the probe into the tube areas adjacent to each bend tangent or end point. This is something the operator can achieve single-handedly as the probe initialises itself for the next measurement automatically.

The direction of flow is from one straight to the next, stopping only for measuring the ends or shallow bends. For added simplicity, the AddiCheck machine provides an audible tone as each step of the measuring process is completed.

The mathematical relationship between bender moves Y, B, C and the X, Y, Z coordinates is non-linear. This means there is no direct one-to-one relationship between a change in bending machine moves and the resulting X, Y, Z deviation. A best-fit routine is therefore utilised, where the tube is measured against a master set of data.

After completion of the measuring sequence, if the optional printer is fitted, a print out documenting end lengths and angles can be produced along with X, Y, Z and Y, B, C data. A longer report, detailing the deviations of the tangent points and the deviation in length, angle and rotation can also be printed. The part number, time and date are also recorded on both reports.

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CAD/CAM productivity for laser tube machinery

Multi-axis and CNC tube cutting machinery – including laser, plasma and waterjet – is a fast-growing global applications marketplace. Tube components produced using these machine tools range from the very small (eg medical devices) to the very large (eg tubular roof constructions), and all diverse application inbetween such as furniture, automotive and aerospace.

These machines operate with tools that require CNC program generation, with program engineers having at least 3 axes to contend with, and often even 5- or 6-axis simultaneous movement. There is a need for CNC machine users to keep these highly productive machine tools supplied with a complete and accurate cutting tool path.

CAM software solutions have now been available for these applications for a number of years, with developments regularly delivering advances in functionality and productivity. An established system, PEPS SolidCut Laser Tube from Camtek, delivers significant gains in productivity for increasing numbers of programming staff and production managers.

Camtek – part of the Vero International Group of CADCAM software development companies – has recently launched version 6 of the SolidCut software. This version includes an enhanced user interface, improved user help files, cycle-time calculations (for estimating purposes), and improved collision-detection.

The solution is based upon Solid model component and machine-simulation objects, each with fully integrated Solid model design. Engineers can create models of any tube required, whether using the range of standard tubes available or by drawing specialised freeform cross sections.

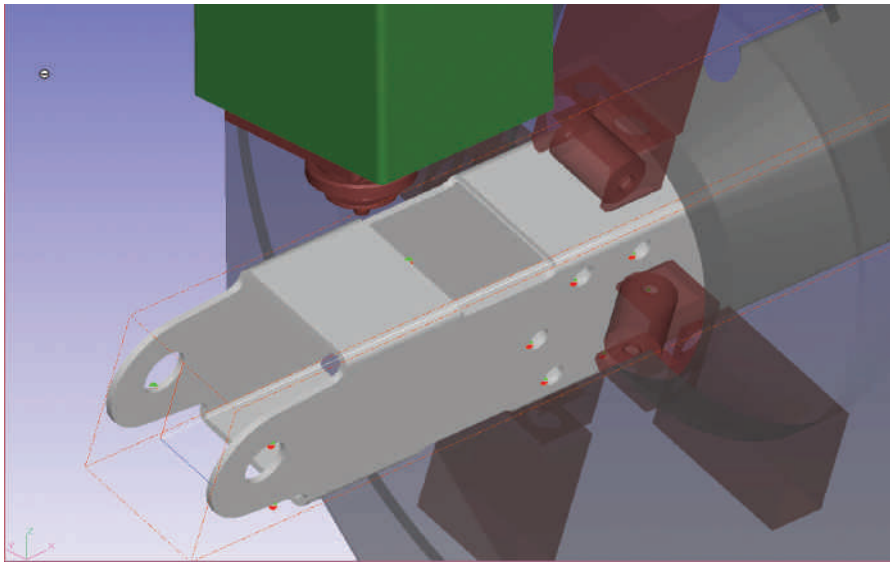
Apertures and tube ends can also be modelled using the extensive library, and also with user-defined freeform sections. Powerful tools such as pattern-repeated and wrapped apertures complete the design toolkit. All definitions of a tubular component, tube ends and apertures are parametric. Dimensions and positions can therefore be modified at any later stage, with quick re-calculation of the entire model to incorporate the changes.

Companies who use CAD design solutions aim to avoid re-creating designs in the CAM system. The SolidCut range of CAD translators includes free integrators for Solidworks, Solid Edge, Autodesk Inventor and IronCAD, plus IGES and Parasolid x_t. Together, they deliver tightly-integrated CADCAM solutions, with CAD native files used in virtually all cases. Integrators for Catia, PRO-Engineer and Unigraphics are optional additions.

Generating a complex multiaxis laser path in SolidCut Laser is made very easy for the user. The systems can be used either automatically or interactively, giving flexibility and preference. Feature-finding tools quickly identify areas to be machined, and the user can control appropriate cutting technologies to be applied to any trim cut.

Cutting head orientation to the component surface can be set as a default and then

PEPS SolidCut Laser Tube can be used for multiaxis, CNC tube cutting machinery



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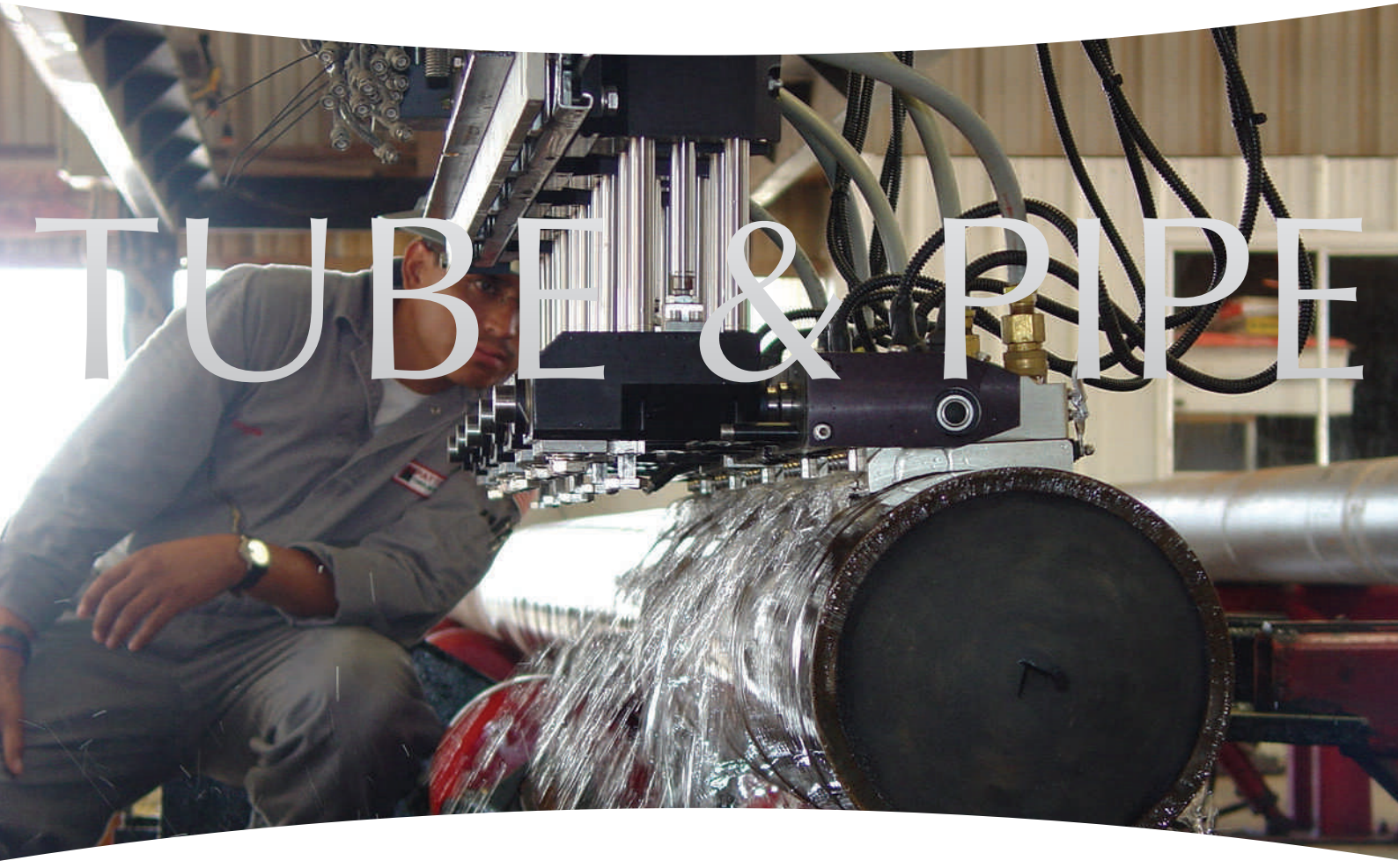

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Phased array ultrasound offers fast and comprehensive inspection of both surface breaking and non-surface breaking defects. Phased array provides flexibility and control of all inspection parameters.

OmniScan *i*X

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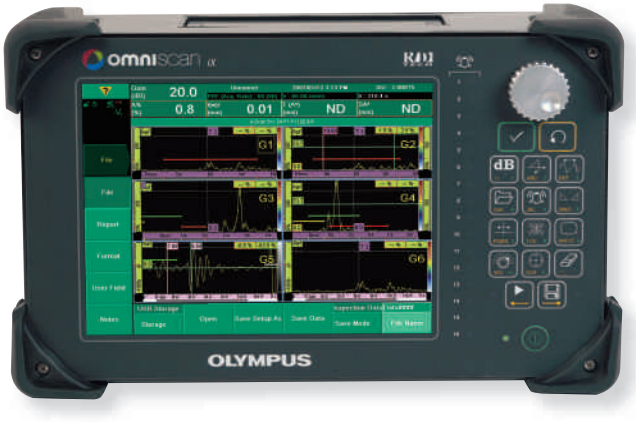
The compact OmniScan *i*X industrial flaw detector is designed for high-speed pipe and tube inspection. This rugged, powerful instrument is available benchtop and rack-mount versions.



API 5UE Software Option

This software allows defect sizing according to API recommended Practice 5UE and is available with most EPOCH ultrasonic flaw detectors.

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changed as required. Options include 'surface normal', 'fixed angle' and 'follow face'. On any trim, at any position, the user can introduce 'change points' where changes in orientation, technology or details such as micro-joints can be applied.

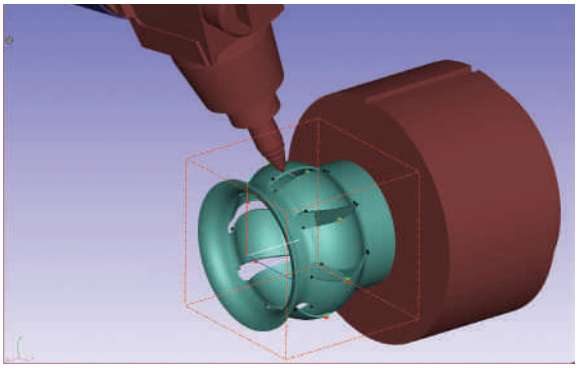
A tube part nesting facility can be used to prepare part programs for varying numbers of components that are to be manufactured from the same material section.

Once the toolpath has been generated, full simulation including motion using the kinematics of the machine axis relationships can be used. This ensures accurate verification of the program using rendered solid graphics. Construction and simulation requirements of machine tools are many and varied, but all kinematic relationships can be handled by the simulation setup.

Errors such as collisions of the laser head and moves that cause over-travel conditions are identified and reported by the software. Collision conditions can be removed automatically – which generally means compromising on the orientation of the laser head during the problem area of the toolpath.

Alternatively the use of change points enables the programmer to introduce safety moves interactively. This is done by either setting appropriate axis values or by interactively manipulating the head.

Apertures and tube ends can be modelled using the software's extensive library



There is a demand for very high percentage up-time for tube manufacturing machine tools. The single most important product of any CAM system for any CAM operation is CNC code to run the machine.

This must be generated to a high standard and be technically accurate. Support for features such as hole and slot cycles on the machine controller should be supported.

SolidCut Laser products have an impressively large – and increasing – range of proven post processor solutions for all machines in use today.

SolidCut Laser combines excellent graphical simulation and prove-out on the PC, together with high-quality, proven code for the target machine. This virtually eliminates first-off prove-out at the machine, which is particularly important when only a one-off is required.

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Laser measuring software for freeform bent tubes

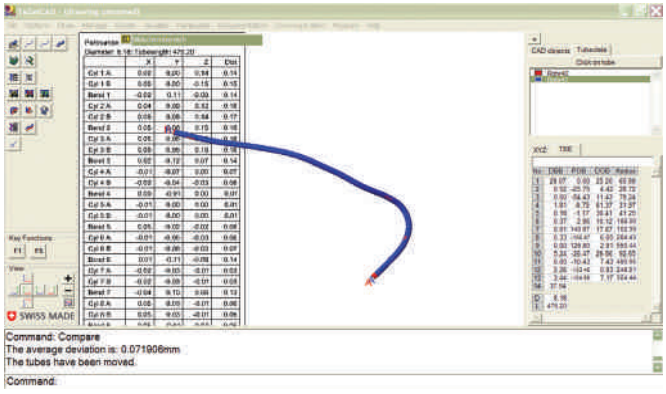
TeZet, Switzerland, produces TeZetCAD, tube-specific software which features a new laser measuring module for freeform bent tubes. Freeform bending requires highly developed software for tube measurement, which also incorporates tube editing and processing software.

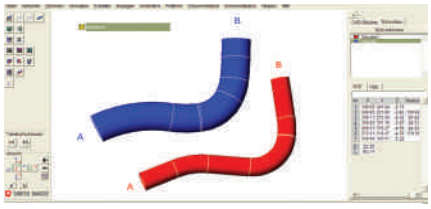
In a CAD design department, tubes are generated out of planes, and no longer based on the traditional centreline. These theoretical freeforms have to be read into the software via a special 3D IGES module, and are converted to bending data for processing by the tube bender to produce a freeform bent tube. Such tubes do not use the traditional tube bending procedure, which was generated from straights and bends.

Because a desired value and the actual value are often poles apart, the software should not only trim traditional points, but whole fields must be sorted to a repeatable correction computation formula. If the freeform bent tube fits in a reliably repeatable way after no more than two or three bending tests, the loop is closed.

Because a freeform bent tube has no reproducible fixed length and radii, it cannot be measured either in the traditional tactile way or with a non-contact infrared fork probe.

(Below left) a freeform bend measured tube with complete data sets for correction against CAD and bender; and (below right) masterpiece inspection of 2 freeform bent tubes (deviation 0.071906mm)





Laser measured bent hose, providing parallel visualisation for correction against CAD-data and bender

Instead, a 3D line laser is used to provide numerous points – better known as 'point clouds'. These points are straightened out from their undefined chaos by a complex computing algorithm, to produce a satisfying result. This method is flexible and versatile, to allow for the merging and diverging bends of a freeform bent tube.

Parallel to the measuring procedure, the graphical image formation of the measured tube on the monitor is fast because of the real-time calculation of tube data.

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Popularity of measuring software leads to launch of new machine

ITP Group Ltd, UK, has launched a new measuring centre specifically for the inspection of manipulated or bent tubing. This introduction follows the popularity of the company's software package for the measurement of manipulated tube, mostly used on standard coordinate measuring machines. The new machine has been specially created for tube applications.

Available as a manually operated system, the machine can be upgraded to full CNC control if required, predominantly for the measurement of fixtured tube. It is constructed of high quality black granite in sizes that range up to 4,000mm x 1,000mm x 1,000mm, specifically to accommodate entire automotive exhaust systems and tube-based aircraft industry assemblies.

The accompanying software package has also advanced tremendously. Added to the standard XYZ (Cartesian) dimensioning method, the new ITP Group machine offers full measurement capability for YBC dimensioning (Y = length between bends, B = rotation between bends, C = angle of bend), as well as bracket/flange orientation. The software can also perform a 'best fit' of the tube measurements and graphically depict the point being measured.

However, rather than being a coordinate measuring machine for tube applications alone, the new machine can also measure standard components, featuring a full geometric 3D measuring software package. This is important for tube manufacturers who want to measure items such as flanges and brackets as well as tubes.

The new machine makes use of a touch-sensitive trigger probe, which generates an electronic signal each time the probe contacts a point on the workpiece. This eliminates the influence of operator touch on measurement results. Many different types of styli tips and attachments can be accommodated.

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Tube bending software sets new standards

Unison, UK, has produced a range of new software utilities for its all-electric tube bending machinery. The tools in the latest release of the Unibend Control Software include detailed torque analysis software for each axis to allow fabricators to track tubing quality and compare suppliers.

The software also includes a utility that captures usage data to assist productivity analysis, and the ability to dynamically control the profile of the carriage push cycle, for fine control of bend quality.

Unison's Breeze family of tube bending machines use servo motors instead of hydraulic force to control the bend process, including clamp, pressure die, mandrel and follower.

Unison's Unibend control software has been enhanced to include several new utilities

This all-electric actuation provides benefits in repeatability and energy consumption. Following set-up, all operating parameters are stored, allowing machines to be configured for further batches of parts in a few minutes, and without creating any scrap.

As the actuation elements of the machine need energy only when a bend is being made, total consumption is reduced. The Unibend Control Software is a key element of the machines, and exploits the underlying architecture to deliver versatile tube-bending capability.

A major addition in the new software release is 'graph analysis'. This utility captures data on the torque values that each machine axis applies during a programmed tube bending operation.

By comparing the torque data required to bend new material batches against a 'golden' example, the information can help to identify any changes in the quality of material.

Another utility, called 'performance analysis', has been enhanced to record more information on machine usage, including the timings of start and stop button presses, idle time and parts produced.

This raw data on the productivity of a manufacturer's tube bending capital equipment can help to generate a detailed picture of shop-floor operations, to aid in the analyses of operational efficiency and productivity.

A third major software addition is 'carriage push', a utility that allows programmers to dynamically control the movement of the carriage using a profile. This complements the programmable control already available over clamp, pressure die, mandrel and follower action.

This feature is expected to be of particular interest to users such as aerospace manufacturers, as it gives finer control over the bending process, to ensure quality results even when using the most expensive and thinnest-wall tubing materials.

Numerous other machine management functions are included in the software as standard, such as a bar code reading capability, 'black box' style tracking of all actions for remote diagnosis in the event of a problem, and the ability to control access rights to software.

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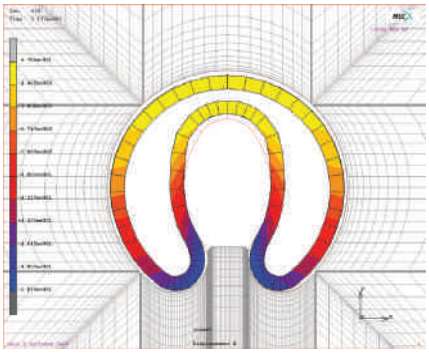
FE-analysis services for the cold rollform process

Somass, Germany, offers a range of services at its roll design office, including verification of roll designs using finite element analysis. Tool sets are designed for profile manufacturers and machine builders on the rollform market.

The company also provides development of forming strategies, flower and roll designs, and supports companies with in-house and external design services. Somass roll designs are used to produce round and rectangular tubes, trapezoidal sections, roofing profiles and special profiles (eg for the automobile industry).

Finite element analysis services are supplied by Somass



The company has recently been successfully certified by DIN EN ISO 9001:2000. The company has also invested in 3D machine designing software. Somass can now design special tool holders for rotated side rolls and the design of complete side roll tables.

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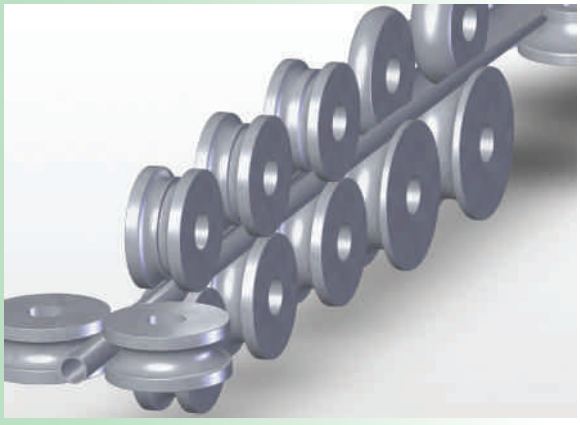
Direct transfer of 3D rollform models into SolidWorks/AutoCAD

Following the design of new rollform tools in rollform software Ubeco Profil, the 3D CAD model can now be directly created in SolidWorks and AutoCAD. The rolls of a single pass or all passes of the machine can be transferred, together with the deformed sheet within the machine if necessary. In this way, the roll tools are installed in the prepared 3D drawing of the rollform machine or tube forming line.

To transfer the drawing, the modern ActiveX interface of SolidWorks and AutoCAD is used. This means that the drawing is created directly in the CAD document that is currently open, with no file transfer necessary.

Because Profil is an independent Windows program, it works in any CAD version without special CAD drivers or software that has to be installed in the CAD system.



Tube forming line in SolidWorks

2D drawings of the flower pattern and roll tools – together with 3D drawings of the deformed sheet within the machine – can be transferred to any CAD system by using the ActiveX interface or the file formats DXF, IGES or MI.

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Enhancement to computer controlled welding systems

AWS Monitor from Weldlogic Europe Ltd, UK, is a Windows-based, real-time data acquisition system, designed to run on a standard PC or laptop.

The system measures and records all of the main TIG welding parameters (arc voltage, welding current, weld-head travel, wire-feed speed and process time). It is designed to provide the quality assurance information for high-quality welds, traceability and certificate of conformance.

Features of AWS Monitor include visual AWS150 indicator panel or dashboard, component serial number or automatic batch file recorder, visual weld inspection record, weekly text report of visual inspection record, set-up panel for comparison limits, and limits calculation manual editor.

The system monitors the AWS150 welder, capturing all data up to 4 times a second, including machine serial number or weld-cell number. Real time data can be compared with master comparison files (with limits). One or more data fields can be compared – voltage, current, travel and wire feed. Files can be analysed and graphs produced using applications such as MS Excel and MS Access.

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From the **AMERICAS**

Foreign Policy

The US-Russia relationship may be souring – but not for Boeing-Aeroflot

Boeing Co (Chicago) on 9 June announced the sale of 22 of its new 787 Dreamliner planes to the Russian national airline Aeroflot, for a catalogue price of $3.5 billion. The mid-sized wide-body planes, to be assembled in Everett, Washington, for delivery to Aeroflot in 2014, will replenish the Russian fleet of Soviet-era aircraft built by Boeing and its European rival Airbus.

Boeing announced its big sale to Aeroflot at the 11th St. Petersburg International Economic Forum, a gathering of business leaders from more than 200 companies. The event was billed by the Russian government as a kind of Davos for emerging markets – a reference to the Swiss city that hosts political and business elites at the annual meetings of the World Economic Forum.

Recent growth in the Russian oil-driven economy has been defying expectation that the worsening political climate between Russia, on the one hand, and the US and European Union might deter investment in Russian industry. In the first quarter, Russia's gross domestic product grew 7.7 per cent, and foreign investment was up 150 per cent over the comparable period of 2006.

- The Russian nuclear power company Atomstroyexport is actively seeking to meet global demand for nuclear power, mainly from developing countries. The state company, a former branch of the Soviet atomic energy ministry, is building seven nuclear reactors in Iran, China, Bulgaria, and India: more reactors, it claims, than any competitor including General Electric and Westinghouse of the United States. Westinghouse, which designed 45 per cent of the world's operating reactors, has contracts for four new reactors in China, but has not begun the work.

Russia's President Putin wants to see regional economic alliances supplanting the IMF and WTO

The economic meeting in St Petersburg at which Boeing announced its big sale to Aeroflot (see above) provided an opportunity for President Vladimir V Putin of Russia to generate some news of his own. Mr Putin called for a new global economic framework that would play down the role of global institutions like the International Monetary Fund and the World Trade Organization and instead emphasize regional trade pacts.

The Russian president told an assemblage of international corporate executives that advanced industrial economies dominated the institutions of world trade in an 'inflexible' manner, even as the share of global wealth held by emerging-market economies is growing. The system he proposes would, he said, more accurately reflect the decline of the United States, Europe, and Japan, and the ascendancy of Russia, China, India, and Brazil.

On the long-term trend, Mr Putin would appear to be on firm ground (the global investment bank Goldman Sachs has predicted that, by 2050, Brazil, Russia, India, and China will be the world's dominant economies). Likewise in his assertion that more than 60 per cent of the world's industrial output is produced outside the Group of 8 industrialized countries.

The world, the Russian president said, needs a *"new architecture of international economic relations based on trust and mutually beneficial integration. Today protectionism, which the WTO is meant to fight, often comes from developed economies."*

If his criticism of the WTO consorted oddly with his nation's active pursuit of membership in the Geneva-based forum for economic disputes, Mr Putin ignored any inconsistency. He also withstood the tepid response from the foreign officials in his audience.

But the 11th St Petersburg International Economic Forum – held to reassure business leaders and officials from around the world that Russia is committed to free trade and open to foreign investment – could be judged a success. According to the organizers, some 30 deals worth $13.5 billion were signed.

Economics

The US economy is seen as growing but retarded by the housing slump. *"The leading index has slowed in recent months, suggesting a possible softening of the overall pace of economic activity later in the second half of this year,"* conference board labour economist Ken Goldstein said in a statement accompanying the group's latest report for the US.

The ongoing slump in the housing industry will take a deeper toll of businesses and consumers, to judge from the closely watched gauge of future business activity, published 19 July. The index of leading economic indicators fell 0.3 per cent in June, steeper than the 0.1 per cent drop analysts were expecting. The index had risen 0.2 per cent in May after dropping 0.2 per cent in April.

Conference Board reports, designed to forecast economic activity over the ensuing three to six months, track ten economic indicators. Negative contributors to the latest US report were building permits, unemployment claims, consumer expectations, vendor performance, and interest rate spread. Positive contributors were weekly manufacturing hours, new orders for non-defence capital goods, and stock prices. Manufacturers' orders for consumer goods and materials and real money supply held steady in June.

The index of leading economic indicators had gone up and down over the previous few months, suggesting that US economic growth is likely to continue in the near term, but at a slower pace. In a second day of testimony before Congress on July 19, Federal Reserve chairman Ben Bernanke endorsed this view, reiterating the Fed's belief that the economy will grow gradually for the rest of the year, restrained by the housing slump.

Based in New York, the Conference Board is a global, independent membership organisation in the public interest. Its reports on leading economic indicators for many countries may be accessed free from the press release archive at the website www.conference-board.org.

Steel

Canada's last independent steel maker considers a sale amongst other options

Stelco Inc (Hamilton, Ontario) has confirmed that it is in *"very preliminary"* talks that could lead to a sale of all or part of the

company, Canada's last domestically owned steel maker. Other options under a review begun 1 June include mergers, partnerships, and status quo – although that seems an unlikely course. Stelco reported a net loss of C$39 million (US$36.8 million) in the first quarter of this year and a net loss of US$136.7 million in the last quarter of 2006.

Stelco emerged from bankruptcy in March 2006, restructured but obligated to discharge, over a ten-year period, US$695.5 million in debt and with a pension shortfall of US$636.1 million. The company's main resources are integrated steel operations in Hamilton and Nanticoke, also in Ontario, producing high quality value-added hot rolled, cold rolled, coated sheet, and bar products. The Lake Erie mill at Nanticoke has been renovated and expanded, and the upgrade continues. The much older Hamilton works is outdated and outright unprofitable.

Even with its burdens – including a contentious relationship with the United Steelworkers union – Stelco is one of Canada's largest steel makers and attractive on that score alone. Rodney Mott, its president and chief executive officer, said the company aspires to be *"an integral part of a larger, globally competitive company."* While Mr Mott's statement did not identify potential buyers or partners, the trend in steel industry consolidation suggests that these would not be Canadian.

Foreign buyers have gradually taken over Canada's other steel companies, most recently Ipsco Inc, which is being acquired by Sweden's Svenskt Stal AB (SSAB). Deutsche Bank, of Germany, expressed interest in Stelco during its prolonged period in bankruptcy, as did Severstal, the second-largest steel company in Russia. Severstal established a foothold in North America with the purchase from Ford Motor Co of Rouge Steel Co in 2004. The Rouge mill is in Dearborn, Michigan, nearby Stelco's businesses in Ontario.

Wind turbines circulate on a storied Bethlehem Steel site

Steel Winds, a 'wind farm' in the upstate New York city of Lackawanna, occupies the site of a former Bethlehem Steel plant which closed down in 1983 after 80 years of production. Now, eight windmills with 153ft blades harvest 56,000 megawatt-hours of electricity per year from the winds off Lake Erie: enough to provide power to 7,000 homes.

At its peak during and following World War II, Bethlehem employed more than 20,000 people in Lackawanna. But the jobs vanished, and today the last vestige of the steel behemoth is a small finishing mill for galvanized steel, operated by Mittal Steel. Mittal acquired bankrupt Bethlehem's assets in 2005 in a merger with International Steel Group.

Steel Winds is the largest such operation within city precincts. And, according to the state Department of Environmental Conservation, it is the first to rise on land overseen by New York's program to recover so-called brownfields: the low-level toxic waste sites concentrated mainly around abandoned factories.

"It's a way to convert the Rust Belt to the Wind Belt," said Christine Real de Azua, of the American Wind Energy Association.

- Strong market demand for plate products has prompted Mittal Steel USA (Chicago) to schedule for September a restart of its idled 160" plate mill in Gary, Indiana. The mill, which underwent a major modernization in 1990, has capability for production in lengths to 1,500". CEO Shelby Pixley, of Mittal Plate USA, said, *"Plate demand has grown significantly for large-diameter line pipe, wind towers, transmission towers, and tank cars."*

Elsewhere in energy . . .

The Spanish power company Iberdrola plans to buy Energy East Corp (New Gloucester, Maine) for $4.5 billion in cash, representing a 27 per cent premium over the value of the stock in the regional utility owner. Iberdrola, based in Bilbao, said in Madrid on June 25 that the purchase fits its strategy for international expansion. Energy East owns utilities in New York, Connecticut, Massachusetts, and Maine. The deal is expected to close next year.

Oil and Gas

Mexico seeks to ease the tax strain on its oil monopoly Pemex

Mexico collects less than 11 per cent of its gross domestic product (GDP) in taxes, well below the average of about 16 per cent for South American countries and 25 per cent for developed countries. In an effort to raise the country's tax collection rate to offset future declines in oil revenue, President Felipe Calderón presented a tax package to Congress that would close loopholes used by businesses to reduce their taxes.

Under the proposed measure, companies would be taxed at the higher of two rates: the current corporate income tax of 28 per cent or a new flat tax of 19 per cent, assessed on sales after cost deductions for raw materials and investment. The tax measures, to be phased in throughout Mr Calderón's term in office, would raise receipts by an additional three percentage points of GDP.

But the Mexican Congress was not set to reconvene until September, and it was unclear whether a special session would be called to take up the tax-reform proposal put forward on June 20. The Mexican government has made up for its tax shortfall by heavily taxing the state oil monopoly Petróleos Mexicanos, which last year financed 40 per cent of government spending. Starved for investment money, Pemex now faces stagnant production and declining oil reserves.

ConocoPhillips chief calls for incentives for infrastructure investment by Big Oil

On the eve of a deadline to accept or refuse terms offered by Venezuela, the American oil companies Exxon Mobil and

ConocoPhillips said they had decided against commitments to stay in four multi-billion dollar heavy-crude upgrading projects that are being nationalized. The government of President Hugo Chávez had proposed deals under which Venezuela would take at least a 60 per cnet stake in projects valued above $30 billion with the capability of producing 600,000 barrels per day.

While four other companies (Chevron Corp, also US; Norway's Statoil; Britain's BP Plc; and Total, of France) continued working toward an accord that would keep them involved in the projects, the *New York Times* ran an interview with James J Mulva, chairman and chief executive of ConocoPhillips. It indicates that his concerns go well beyond Venezuela, where the third-largest American integrated energy company was poised for a pull-out and a $4.5 billion write-off.

Following are excerpts from Mr Mulva's interview with the *Times*'s Clifford Krauss (*'Oil Giant Sees Some Strains in the System,'* June 30):

Q: *You have announced support for a national mandatory framework to address greenhouse gas emissions. Is this a new day for ConocoPhillips and the oil industry – or simply green marketing?*

A: Neither. The science is quite compelling. Climate is changing. We are concerned with greenhouse gas emissions. As a company and as an industry we need to participate in the development of a national policy and framework to address climate change.

Q: *According to the Department of Energy, the US will consume 28 per cent more oil and 19 per cent more natural gas in 2030 than it did in 2005. Where will we find all that oil and gas?*

A: I question whether the supply will be developed to meet those demand expectations. I believe demand is going to be constrained by supply.

Q: *What would you like to see in the new federal energy legislation that Congress is working on?*

A: The legislation under consideration does nothing to add supply, or to encourage investment or conservation or efficient use of energy. Effectively, in a somewhat punitive way, it is adding taxation with the unrealistic expectation that we can increase the fiscal take, lower the price of energy, and encourage investment to add supply. I would promote more access, by the oil and gas companies, to a substantial amount of acreage onshore and offshore that is not available for drilling. [Right now] we have no real incentives to make infrastructure investment to add pipelines, transportation, terminals, and refining capacity.

Q: *You have a noncontrolling stake in [Russia's largest oil company] Lukoil at a time when Russia has not been the most friendly country to the US and market reforms there have been uneven. How are your operations going in Russia?*

A: It's unfortunate that energy development between Russia and the US has not [advanced] more quickly. For ConocoPhillips, our experience as a 20 per cent owner of Lukoil has been very good. Everything that Lukoil and the Russian government indicated they would do, when we made the investment, has come to pass exactly as indicated. We look for opportunities to invest more with Lukoil and with Russian companies inside and outside of Russia, both upstream and downstream.

The first US refinery in a generation is under consideration

A Texas investment firm may respond to the Conoco call for more US refining capacity. As reported by *Bloomberg News* (14 June), Dallas-based Hyperion Resources is looking at a tract of land in South Dakota, as well as at other sites in the Midwest, for an oil refinery with capacity of 400,000 barrels a day. South Dakota abuts the states of Minnesota, Nebraska, and Wyoming.

Hyperion said that its project could cost as much as $10 billion. A spokesman, Eric Williams, declined to discuss how it would be financed or how long it might take the company to gather the necessary permits. In the experience of other refinery entrepreneurs, this can be a long process.

A refinery proposal by Arizona Clean Fuels Yuma waited five years for a main air quality permit to be issued, the company said last year. During the waiting period Yuma struck a deal with the Mexican government to build a $650 million pipeline that would link the refinery to the Mexican coast.

Construction of the South Dakota refinery would take four years, Hyperion said. The company's chairman is J Louis Frank, former chief of Horizon Offshore, a Houston oil and natural gas contractor.

The last refinery in the US was built in 1976; the last in Canada, in 1984.

Of pipelines new and old

Kinder Morgan Energy Partners, the second-largest publicly traded pipeline partnership in the US, has won approval from Washington for a rate plan intended to fund a $400 million expansion of its California-to-Nevada fuel pipeline. On 19 July the Federal Energy Regulatory Commission (FERC) approved the plan for the 550-mile Calnev pipeline, which ships gasoline, diesel, and jet fuel from Colton, in southern California, to Las Vegas. The company plans to build a 16" diameter pipeline to increase capacity on the system by 43,000 barrels a day, to 186,000 barrels.

As reported by *Bloomberg News* (July 20), several users of the existing pipeline – including Exxon Mobil Corp, ConocoPhillips, Valero Energy Corp (all of the US), and Britain's BP – protested the rate plan, claiming it would put the entire financial risk on them, the shippers, and allow the partnership to impose unreasonable fees.

But the proposal by Kinder Morgan (Houston, Texas) for increasing capacity on its system was supported by several state officials and members of Congress. Commissioner Jon Wellinghoff said in a statement released during the FERC meeting, *"This project is vital to the economy of southern Nevada."*

The expanded pipeline could be operating by late 2009 or early 2010.

The pipe that exploded in midtown Manhattan during the evening rush hour on July 18, killing one person and injuring 40 others,

was part of an underground network of mains and service pipes that delivers steam for air conditioning and heat to thousands of customers including the Empire State Building, Rockefeller Center, and the United Nations. The rupture in the 83-year-old asbestos-insulated steam pipe, which sent up geysers of steam, dirt, and asphalt, was a stark reminder that New York City's infrastructure includes a complicated underground system.

Consolidated Edison, the utility in charge of Manhattan's 105 miles of steam pipes, claims the age of the steel pipes is not an issue because they are well maintained. But the pipes, wrapped in layers of insulation, encased in concrete, and buried as deep as 15 feet underground, have exploded before. Nearly 20 years ago, a steam pipe blast killed three people. It also exposed residents in the area to particles of asbestos in the pipe insulation.

While Con Ed said it is spending $20 million this year on the system's upkeep, it was not reassuring that the damaged steam pipe had just been inspected and declared sound by a utility crew, a routine procedure after a rainstorm.

Automotive

› Ford Motor Co opened its largest European dealership on 16 July, in Moscow. In marked contrast to its lacklustre performance in the US, Ford has seen its sales in Russia – Europe's fastest-growing car market – go up 122 per cent in the first six months of the year, compared with the same period of 2006. As a benefit of the oil boom that has lifted middle-class wages in Russia, Ford is meeting demand for compact family cars. Ford has moreover made a speciality of consumer financing at its dealerships in 93 Russian cities. The company was the first foreign automaker to open a wholly owned production line in Russia, in 2002, in the district around St Petersburg that has become known as Russia's Detroit.

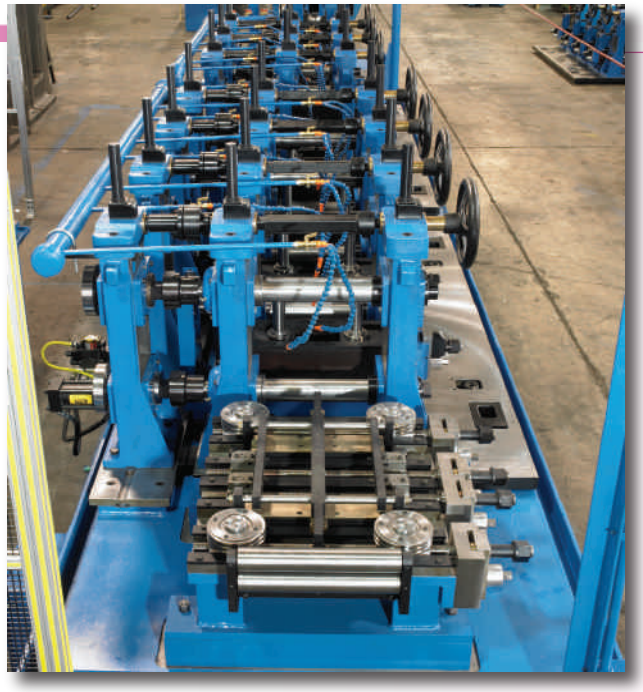
› In Detroit, on 16 July General Motors said that it was buying 50 per cent of the Italian diesel engine maker VM Motori from Penske Corp (Bloomfield Hills, Michigan) and would jointly introduce a new high-performance 2.9-liter V-6 turbo diesel engine. VM Motori is to have responsibility for the engine's design, development, and testing, and will build the new unit at its plant in Cento, Italy, for scheduled use in the GM Cadillac CTS in Europe, in 2009.

› The auto parts maker Delphi Corp (Troy, Michigan) said July 18 that on its exit from bankruptcy it would accept as much as $2.55 billion from Appaloosa Management LP and other investors in return for preferred and common stock in the company. On July 9, Delphi said it had ended a previous financing agreement with a private equity group headed by Cerberus Capital Management LP, from which it hoped for an infusion of up to $3.4 billion.

Delphi was expected to file motions seeking an expedited hearing and approval of the new agreement in the US Bankruptcy Court for the Southern District of New York. The struggling auto parts supplier said the agreement is supported by both of its court-appointed committees as well as General Motors Corp.

Dorothy Fabian, Features Editor (USA)

Tube Mills: Rolling & Forming Methods



Advances in rolling and forming processes are at once subtle and critical, like the recrystallization temperature reading which marks the boundary between cold forming and hot forming. An almost negligible difference on the thermometer has large ramifications for annealing and tempering, hardness and ductility, brittleness and cracking.

Tube rolling and forming has evolved over generations of hands-on practice, and continues to develop with advances in computer numerical control (CNC) equipment. It is difficult to gauge 'progress' year-to-year in these closely related state-of-the-art processes.

A perhaps more useful exercise would be to note how little attrition takes place in tube rolling and forming, in comparison with basic processes in many other industries. Here, the valued methods of yesterday are not supplanted but preserved and enhanced; time-tested skills are kept up; and modifications in established procedure are always a possibility.

Because tube form accuracy and repeatability are paramount, the rolling and forming archive is scrupulously maintained. Under the big tent which is our remarkable industry, nothing of real value is ever lost.

Welded tube production without marking

In many instances of tube production, marking of the tube occurs due to large speed variances between the tube and roll surfaces. Furthermore, when these variances are large, roll wear is accelerated. To overcome such problems, rolls are often designed by using rotating flanges to help reduce the amount of speed mismatch.

New turks head unit designed and manufactured by S+C Märker

Usually, the flanges rotate on ball or roller bearings but when the rolls are small there is insufficient room to install bearings. In such cases, the flanges normally rotate 'steel on steel' on the centre roll journal, often resulting in wear and sticking.

S+C Märker, Germany, offers a solution in order to solve these problems. The surfaces are coated with an ultra low friction solid lubrication film that provides free rotation of the roll parts. The coating process is carried out at low temperatures thus eliminating the risk of roll distortion. It has a final film thickness of 5 microns with a low co-efficient of friction of $\mu = 0.03$.

The Schmidt + Clemens Group supplies a full range of high precision roll products from its manufacturing plants S+C Bowers & Jones (UK) and S+C Märker (Germany). The complete in-house service includes extensive in-depth technical advice on rolls, plus design and development.

Tube rolls made by S+C Märker

In addition to the manufacture of roll tooling, S+C Bowers & Jones are able to assist in a range of other areas. These include design and manufacture of roll forming lines, mill parts and equipment, design and manufacture of special purpose machines, mill refurbishment and repairs, mill upgrades and modifications, and mill and tooling inspection and status reports.

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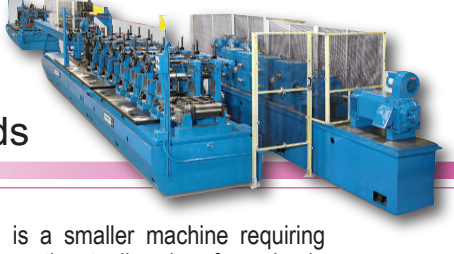


Rotary sizing mill for tube and pipe manufacturers

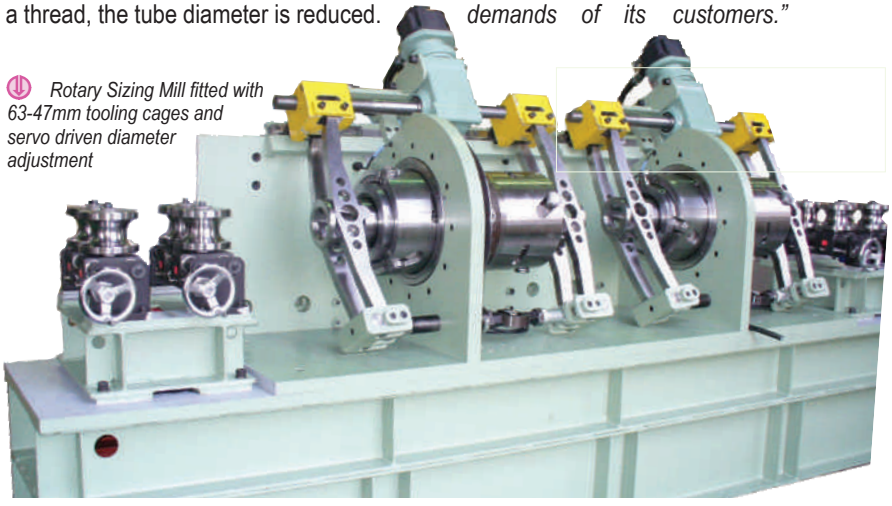
Kusakabe Electric & Machinery Co Ltd, Japan, an innovative tube and pipe mill manufacturer, is continuing to develop and expand the applications for its Rotary Sizing Mill (RSM). The company has recently completed a number of sales to Australia, Japan, Europe and the USA.

This Rotary Sizing Mill is an alternative to sizing tube and pipe with a diameter range from 25-650mm (1 to 25.6"). The RSM concept uses two cages of cylindrical rolls in a planetary configuration around the tube.

The internal diameter of the cage of rollers is set smaller than the incoming tube. As the cage of rollers rotate around and along the tube, in a similar manner to a nut on a thread, the tube diameter is reduced.

This technology is being applied to both online applications on tube and pipe mills and offline applications where the outside diameter needs to be reduced and surface finish improved or laminated tube is required. The variable diameter setting of the RSM makes the machine ideally suitable for sizing small production runs of odd sized tubes without the need to purchase extra tooling.

Mr Mike Kusakabe, executive marketing manager, states, *"RSM technology brings a totally new concept to the ERW, TIG and laser tube and pipe industry. We are confident the many advantages and lower costs of the RSM make it an effective alternative to current technologies while assisting the industry to better meet the demands of its customers."*



Rotary Sizing Mill fitted with 63-47mm tooling cages and servo driven diameter adjustment

The RSM is a smaller machine requiring less tooling; the tooling is of a simple parallel design that is easy to manufacture and maintain. The internal diameter created by the cage of rollers is infinitely adjustable within the upper and lower limits of the cage configuration.

Surface finish improvements over the original strip in excess of 30 per cent have been achieved with roll marks and pick up eliminated, thereby reducing polishing costs. Tooling wear, in metres of tube sized, is less than conventional tooling but has the added advantage in that the wear has no impact on the quality or precision of the tube sized.

Improvements in diameter accuracy are achieved and in some cases come very close to drawn tube capabilities. The RSM offers a large range of cost saving opportunities. For large mills the cost is considerably less than that of a conventional sizing mill. In other areas savings are made in energy consumption, floor space, reduced tooling, tooling replacement, maintenance costs, and changeover times and reduced scrap.

With 47 years of experience in the tube and pipe industry, the company provides an innovative and comprehensive range of tube and pipe mills and associated equipment to meet the industry's needs.

Kusakabe Electric & Machinery Co Ltd – Japan
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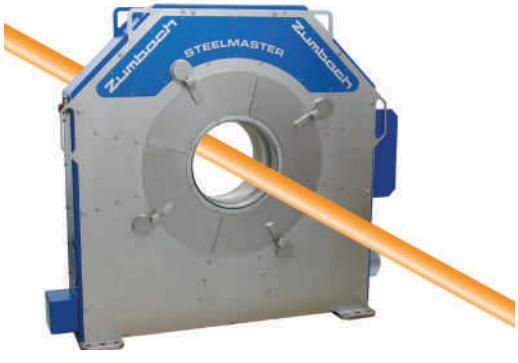
New measuring gauges for hot rolling mills

Zumbach Electronic, Switzerland, has added new models to its Steelmaster range of gauges for diameter and dimension measurement on hot rolling mills. The new appliances are available in two designs (SMO and SMS models), and for two different measuring ranges: 60mm (2.4") and 100mm (4").

Zumbach's SMO 100 measuring gauge



The SMO oscillating models are suitable for round and non-round products such as wire, rod, squares, hexagonals and flats, and are designed for up to six measuring axes and an oscillation angle of up to 180º, enabling short times for capturing the full profile over 360º. Simple and wearless mechanics result in practically no maintenance.

The SMS static models are compact and easy to install. Most suitable for round products, they do not require maintenance and are designed for shortest measuring distances in longitudinal direction.

The new models feature a high measuring rate of 1,000 measurements per second/axis (ie up to 6,000 measurements per second).

An industrial PC is used for operation without hard disk, providing a stable and reliable system. Installation requires only one fibre optic cable between the measuring gauge and the data processing unit.

Sophisticated Steelmaster software allows easy operation, and the additional Steeldatabase software provides archiving and reviewing facilities. The Multigauge concept allows connection of up to four measuring gauges at Host.

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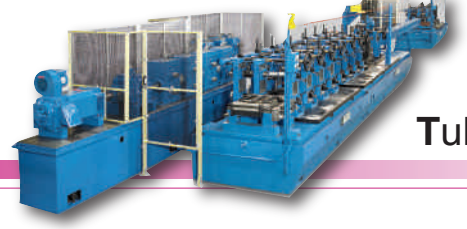


The evolution of quick change on mills

In this age of lean manufacturing, many tube and pipe producers face an apparent contradiction between just-in-time production and the long changeover times of their current mills. On large pipe mills, for example, changeover time is often measured in days and hours.

It can be extremely expensive to affect any major time improvement if the tube mill is not supplied as original equipment. Therefore, the contradiction is tolerated and changeover improvement is focused mainly on incremental strategies.

Preparation, training and the use of commercially available power can assist tools or material handling equipment. Tube or pipe production below 8" can open up more opportunities, and the smaller the tube or pipe the easier it is to accommodate a 'Kanban' production system.

After establishing preparation in the working culture, a producer will next turn to a variety of incremental quick change methodologies

A quick change third-stand tube mill

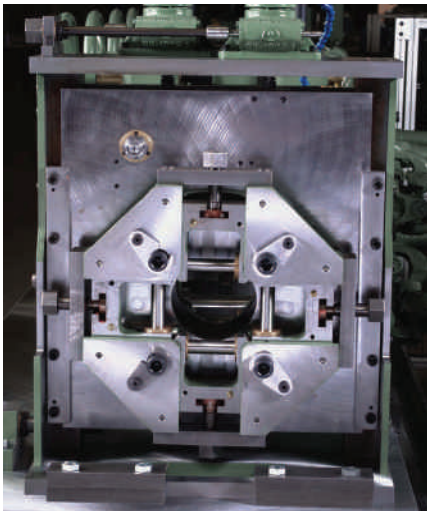
T&H Lemont is the manufacturer of tube mills, rollforming machines and complete production systems, together with a whole range of other components (welders, cut-offs, entry equipment, accumulators, weld boxes and straightening systems). With a great deal of expertise in this area, T&H Lemont offers mill upgrades and advanced training and consulting.

The company has established a number of evolutionary steps that a typical producer might encounter while focused on continuous improvement in changeovers.

First and foremost is preparation – meaning, never being caught off-guard by a changeover, having all necessary hand tools and roll tooling available, and an experienced changeover crew at the ready. This usually requires a management driven zeal that cannot be delegated easily. Typically the cost of preparation is low and the payback large.

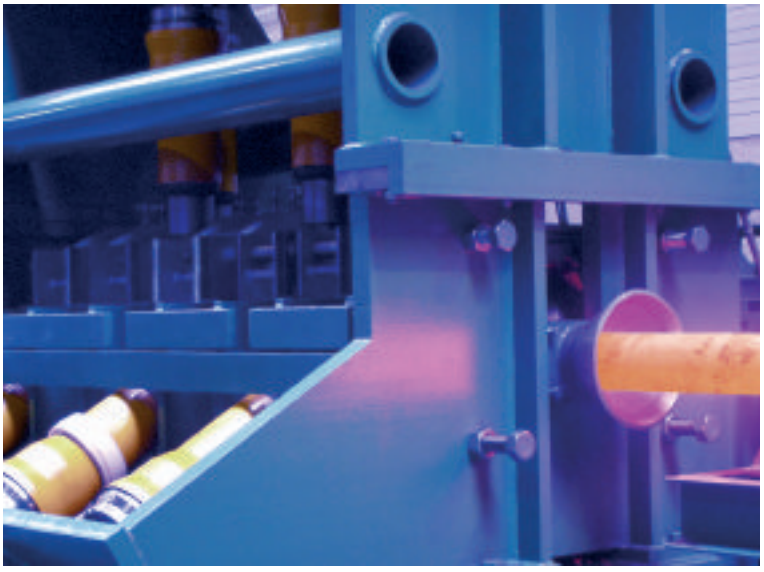
After establishing the preparation in the working culture, a producer will next turn to a variety of incremental quick change methodologies. These can include:

- Power tools suspended (for easy one hand access) over the forming mill, sizing mill and cutoff
- Half nuts, jett nuts, and low profile nuts with 'C' washers to facilitate the release of the outboard retaining nuts and/or the outboard stand bolts – a goal of 30 seconds to release and remove each outboard stand is not unreasonable
- A flip-top clevis on side stands for speed removal of the side rolls
- 'T' nuts/bolts, wrenches, thumb screws, and cam tighteners can be employed on the entry guide weld box, seam guide, ID scarf and ironing pass; the goal here is to eliminate or reduce the use of hand tools for changing/adjusting these devices
- Single point adjusters with dial/digital indicator that ties the inboard and outboard stands together for adjustment as a unit
- Weld box with quick change clevises
- Turks head with quick change clevises/motorized adjustments
- A quick change removal cutoff die mounted within the shoe



A turkshead with quick change clevises

3-roll Stretch Reducing Block [SRB] Resulting from Experience and Innovation



Decades of experience in stretch reducing of tubes and numerous references with adjustable 3-roll stands in highly reputable companies worldwide. These two elements combined with our steady innovation result in today's 3-roll technology for tube production.

The 3-roll Stretch Reducing Block [SRB] in "star-drive" design featuring individually driven rolls is the latest development in this area. The SRB strengthens your market position granting you great advantages over your competition in terms of product quality and plant economy:

- top quality
- high market flexibility
- reduced operating costs
- increased mill utilization and high yield
- high ROI and short investment recovery period

FEATURES:

- "star-drive" design with individually driven rolls
- adjustable 3-roll stands with quick roll change
- small stand spacing
- production with only a few stands
- computerized production planning and mill configuration
- remote control adjustment of rolls in mill line
- "free-size" pass design to roll different sizes without roll change

ADVANTAGES:

- ➲ tight tolerances
  = top quality
- ➲ "free-size" rolling
  = any possible diameter requested by customers
- ➲ "chance free" rolling
  = producing any size at any time with reduced inventory
- ➲ considerable reduction of changing times
  = increased utilization with higher productivity
- ➲ reduced operating costs
  = higher profit

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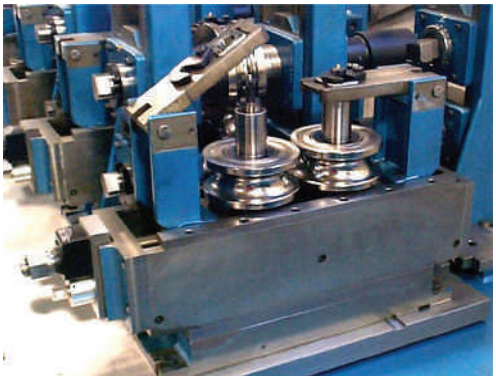
KOCKS
Know-how for tomorrow



Quick change flip top side pass design

A more innovative approach to quick mill changeover is to consider some paradigm shifters, which can help significantly, as long as they do not interfere with product quality. Some ideas include:

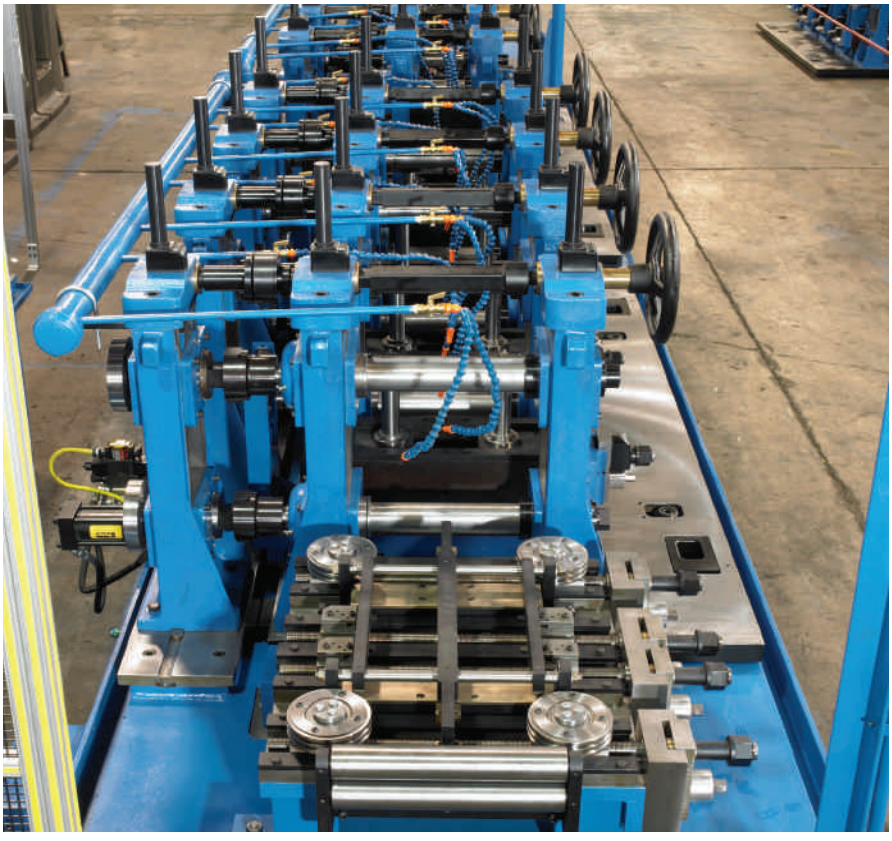
- Universal breakdowns to remove the necessity for changing out the rolls, which may require a change in tool design philosophy
- Elimination of the seam guide, which may necessitate more precise alignment of the mill
- Practice and perfection of end-to-end threading of the mill, at a fast jog or slow run. This may require precise alignment, use of lead-in-appliances at key points and the ability to weld at slow speeds while jogging
- Elimination of the outboard stand on the ironing pass

A discretionary next step in improvement for some producers might be the automation of the single point adjustors, usually through specialized servo controllers for each set of stands. This approach usually employs a presetting computer to record last set positions and interface between new presets for the next set of tooling or product.

Following an extreme set of incremental adjustments, a producer would then most likely be faced with a quantum leap to rafting of tooling stands and appliances. This can be carried out on existing mills but the expense is often close to that of a new mill. This is usually not considered unless the expense is considerably less than that of a new replacement mill installed.

A clear trend in new mill projects below 6" is rafting. This is because the initial cost is small compared with the rest of the total project. A range of variations on rafting are worth reviewing for anyone considering future specifications:

Quick change third stand mill with hydraulic raft disconnect



> ***A producer would then most likely be faced with a quantum leap to rafting of tooling stands and appliances***

- Simple rafting, over posts, configured to maintain alignment from tool-set to tool-set (often employing lifting rings attached to the raft for crane removal or with design cavities for forklift access)
- Simple rafting requires a basic means to disconnect the drive source so quick release universals are required
- Third stand rafting, as the name implies, describes a third stand (driven stand) which is mounted to the mill base, behind the inboard stand (raft mounted). It employs quick coupling techniques to power the raft stands. In this arrangement, various creative scenarios can be applied to move the raft about. These include:
  1. Raft removal by crane
  2. Raft removal by forklift
  3. Raft removal to the cart system that also ferries in the change raft
  4. Raft removal to the cart system that rotates to deliver the change raft
  5. Other options (in development)
- Advanced third stand rafting that includes a self aligning system for third stand hubs to accommodate pre-setting the offline raft

It is important to recognise that there are many ideas for mill changeover improvement, and varying effects of mixing and matching incremental and quantum improvements. It is difficult to be certain of the results in terms of improved changeovers, whether it is 2 hour or as little as 15 minute changes.

As a note of caution to those embarking on a quick change improvement program, it is vital that preparation is the first methodology to be mastered. Otherwise, the results from all the other small and large scale improvement efforts may be inconsequential.

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ENGINEERING

Stainless steel tube mill with LASER welding system and complete with vertical strip accumulator - max. production speed 20 m/min

Tube mill for production of stainless steel H.F. welded exhaust tubes - max. production speed 120 m/min

TUBE MILLS

Stainless steel tube mill with TIG-PLASMA-TIG welding system for production of thick wall tubes bead rolled (33.7 mm O.D. x 4.6 mm wall)

OLIMPIA 80 s.r.l. Engineering

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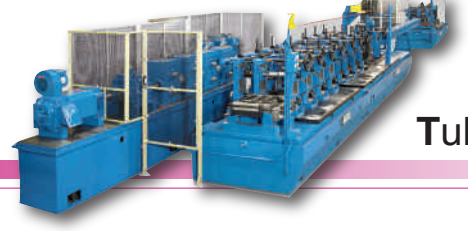

Mill management and control tool for advanced stretch reducing mills

Friedrich Kocks GmbH & Co KG, Germany, have launched the Kocks Stretch Reducing Block (SRB), a highly flexible tool for finish rolling of tubes. This new technology features individually driven stands (and even rolls), quick roll changing, adjustable stands and remote control, that enables the user to handle production in a more advanced way.

A range of technological features can increase the mill output. These include short stand spacing to minimize the heavy end losses, dynamic drives that allow individual speed control for each stand (eg for wall thickness control), and 'free-size' rolling that enables rolling of different dimensions without roll or stand change.

Even though previous Stretch Reducing Mills (SRM) were equipped with technological functions such as heavy end control (HEC) and automatic wall thickness control (AWC), their effect was limited due to the characteristics of the group drives.

In order to handle all the new features, Kocks developed an integrated management and control system – branded Tumicon – which is generally applicable to all types of stretch reducing mills. The Tumicon system consists of software tools for setups, roll management and visualization, and real-time hardware components for speed control of the main drives and an intelligent remote control for the adjustment of the stands.

All systems are connected to an Oracle database and interact with each other. Technological functions such as heavy end control (HEC) and automatic wall thickness control (AWC) are especially developed for the new Kocks SRB with individual roll and stand drives by means of new methods.

The Tumicon remote control with intelligent visualizations gives easy access to the adjustable stands inside the block. If the new 'free-size' rolling pass design is used, different outer diameters (and wall thicknesses) can be rolled without changing stands by adjustment only.

Most of the components of the Tumicon system can be applied to each type of stretch reducing mill, thus significantly increasing both the output and quality of the rolled tubes.

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– Germany
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Email: v.d.Heiden@kocks.de
Website: www.kocks.de

Tube mills for a size range of ½" to 8"

Thai Rolling Machinery (TRM) is a major supplier of tube mills for the production of round, square, rectangular, and special profiles in a size range of ½" to 8". TRM's dedicated team of engineers and technicians undertake constant R&D in order to provide high-quality, durable and reliable machines.

Related high-quality products are also supplied such as TRM rollers and slitter knives. Roll planning and CAD system design is also available to accurately customize submitted designs.

TRM products are produced on CNC machines with performance tools and precision measuring equipment by skilled staff to ensure a very fine quality finish.

Thai Rolling Machinery – Thailand
Fax: +662 463 1616
Email: contact@thairolling.com
Website: www.thairolling.com

EUROLLS

TUBE SELECTOR

ROLLS AND ACCESSORIES FOR TUBES AND PROFILES

Natural **perfection**

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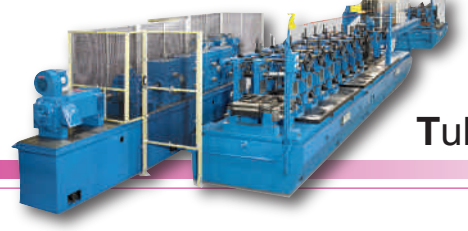


Complete systems for welded tube production

Oto Mills, Italy, has over 20 years of experience in the design, manufacture, and installation of complete systems for the production of welded tube and/or profiles. The company is a member of the Marcegaglia Group, a leader in the production of welded tube and open profiles.

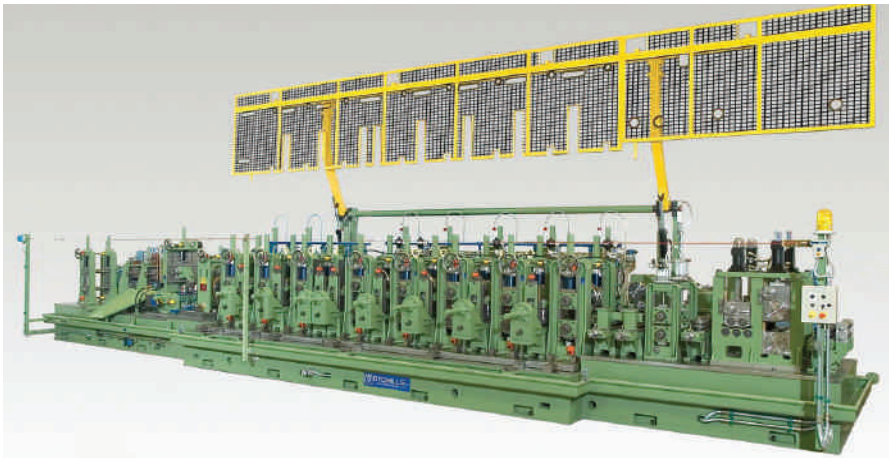
Including around 20 models, the tube mill range is from 10-220mm, with a full catalogue of solutions for carbon and stainless steel applications. These tube mills include the conventional line and rapid changeover model, up to the high precision model, with a range of accessories and optional equipment.

Among the company's most recent innovations is a line of high precision tube mills designed to meet the rigorous specifications of quality automotive tubing applications. A new generation of cold saw cut-offs provides an extremely clean tube end, and tight and consistent length tolerances at high speeds. In the final stage of development is a state-of-the-art automatic entry system handling up to 51" wide strip.

All aspects of the tube mill line are catered for, including decoilers (single mandrel to fully automatic models), strips joiners (manual, semi-automatic and automatic), and strip accumulators (vertical floop, vertical FBS, horizontal, and customised solutions).

Oto Mills also supplies flying cutoff units designed to provide cutting to length of the tube arriving from a continuous production tube mill. The range includes cutoffs for normal steel, stainless steel, and aluminium. These cutting systems can be supplied with friction saw, cold saw, shear, rotary knives, laser or bandsaws.

The Oto 1276 RTC rapid tool change tube mill



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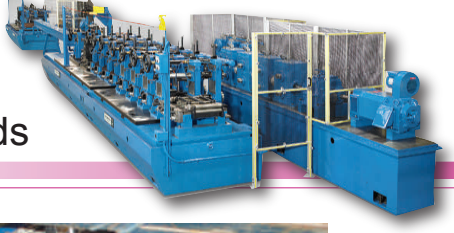
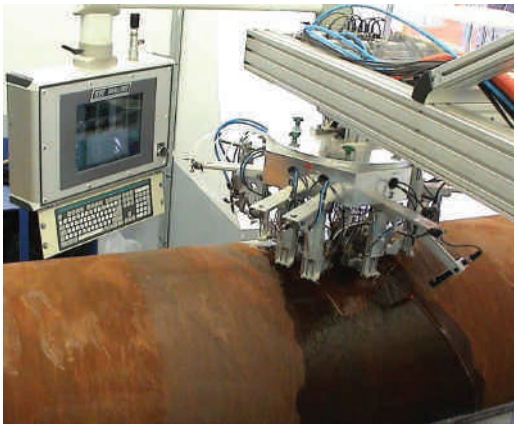


Ultrasonic inspection on welded pipe mills

Sofratest SA, France, specialises in pipe mill inspection systems using the ultrasonic method. These inspection systems are fully compliant with standards such as API5L, Shell, Aramco and IPS.

The inspection systems can be used for a range of jobs on spiral arc welded (SAW) pipe mills (diameter 219mm to 3,000mm and up to 25mm thickness). These include examination of strip lamination (up to 2m width), edge lamination (before forming in the first 50mm), body lamination (using an oscillator), and weld examination before cutting (including HAZ). The inspection systems can also perform offline examination of the weld (longitudinal and transversal defects), HAZ, ends and body laminations.

Sofratest manufactures pipe inspection systems for applications such as spiral pipe mills



For ERW pipe mills (diameter 50mm to 600mm and up to 16mm thickness), inspection systems can be used for examination of strip lamination (up to 2m width), and edge lamination (before forming in the first 50mm).

Online examination is available for weld scarf monitoring (for thickness and profile measurement) and weld/HAZ. Also possible is inspection of offline weld, HAZ, ends and body laminations, in addition to full body lamination examination. Offline examination of weld and pipe ends is available for longitudinal UO saw pipes (thickness up to 35mm).

Online weld examination

All systems are PC-based, and use high integration circuitry allowing multi-channel configurations (up to 32). The company has also developed dual-channel boards, reducing the size of equipment, and making maintenance easier.

For all configurations, data processing is performed for traceability, per coil or per pipe. All relevant information concerning the product under test is associated with a full record of the measurements of all channels in process. All information is linked with the mill tracking system or pipe history system.

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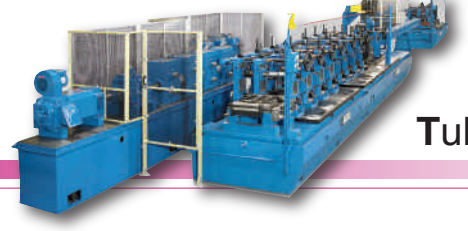
Website: www.sofratest.com



Single mill for expansion of wide diameter product range

Abbey International Ltd, a leading manufacturer of advanced tube and pipe mills, has supplied an entire ERW mill line (8KHH) to a Korean tube and pipe producer.

The mill will be used to manufacture pipe with an OD range of 38.1mm (1.5") to 219.1mm (8.625"), which will be supplied to the gas, oil, and automotive industries.

Two mills would commonly be required to cover this wide diameter range. Offering this capability with one mill provides a number of advantages including less capital investment, overheads, and operating costs, together with greater flexibility, better mill utilization and a larger target market.

This mill also has capabilities of producing tube and pipe in wall thicknesses from 3mm to 15.9mm (D/T ratio as low as 6:1). The line also includes Abbey International's patented Continuous Cart Transfer (CCT) system for quick change, which is designed to receive sub-plated mill sections during changeover of the mill.

The forming base incorporates a powered rack and pinion push off, pull back and auto location to accommodate the sub-plated mill stands. With this system, the use of cranes during mill changeover is minimized and a very fast changeover time is possible, thus substantially reducing mill downtime.

The payback on this system is extremely quick especially when frequent tool changes are required. In addition to the reduction in downtime, it also offers additional benefits such as a reduction in finished inventory requirements and associated storage, quick responses to market demands and reduced cost associated with short mill runs.

Features on this mill include a high speed traveling rotary cutoff with pre-bevel capability, delivering cut and pre-beveled lengths from the mill exit.

The mill is also designed to run downhill to drain the mill coolant and eliminate the potential for stream build as a result of the heat introduced at the seam annealers.

Abbey International – USA
Fax: +1 419 874 8200
Email: info@abbeyintl.com
Website: www.abbeyintl.com

Abbey's 8KHH ERW mill for 38.1mm to 219.1mm OD

Multifunctional cold tube forming equipment

Shijiazhuang Forever Mechanical & Electronic Equipment Co Ltd, China, has developed a range of multifunctional cold forming equipment that can form square, rectangular and round tube in large sizes. This range of mechanical-electronic equipment is both designed and manufactured by the company, and utilised in the fields of metallurgy and environmental protection.

The machines are designed to improve working efficiency by combining techniques and processing methods, eg a combined shaping roller, lifting the erected roller and four side adjustable rollers. Reduced wear rate and roller replacement times are additional benefits.

The company's heavy mould forming mill features advanced assembled roll and roll cushion which can be quickly disassembled. The machine can also produce open, closed and complex profile cold bar and tube.

The company's products have been distributed to over twenty provinces in China, in addition to exports to south-east Asia and the Balkans.

Shijiazhuang Forever Mechanical & Electronic Equipment Co Ltd – China
Fax: +86 311 8383 9990
Email: maojinlai@sohu.com
Website: www.frv.cn

Tough roll technology for reduced wear

Roll Machining Technologies and Solutions (RMTS), USA, has launched the newly designed 'Super Roll'. Super Roll is the company's latest effort to prolong the life of tube and pipe mill tooling.

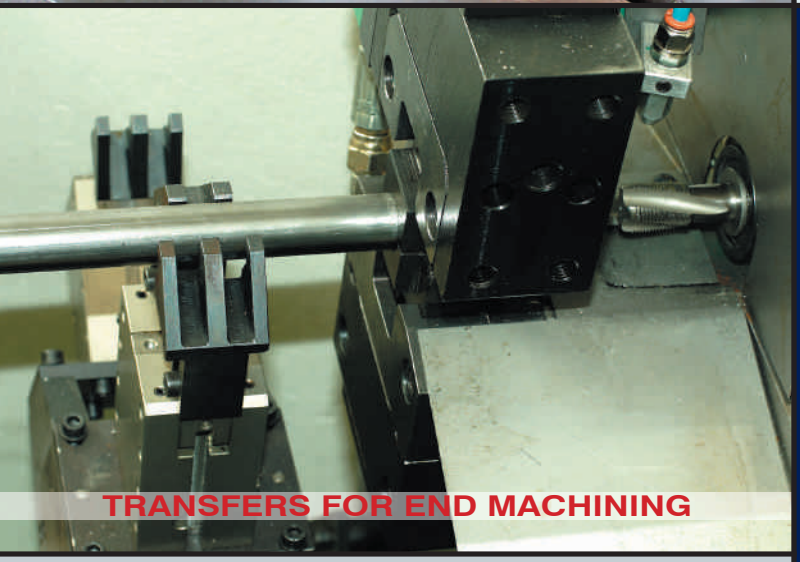
The new process uses the same basic D2 HCHC, but encompasses a new heat treatment method along with innovative design and manufacturing techniques.

Claimed benefits of the new product include more footage between regrinds, reduced roll marks, reduced bore, face, shaft and spacer wear, and reduced ID/OD internal flash.

Roll Machining Technologies and Solutions Inc – USA
Fax: +1 815 372 9105
Website: www.rollsolutions.com

TUBE CUTTING LINES

MEASURING SYSTEMS



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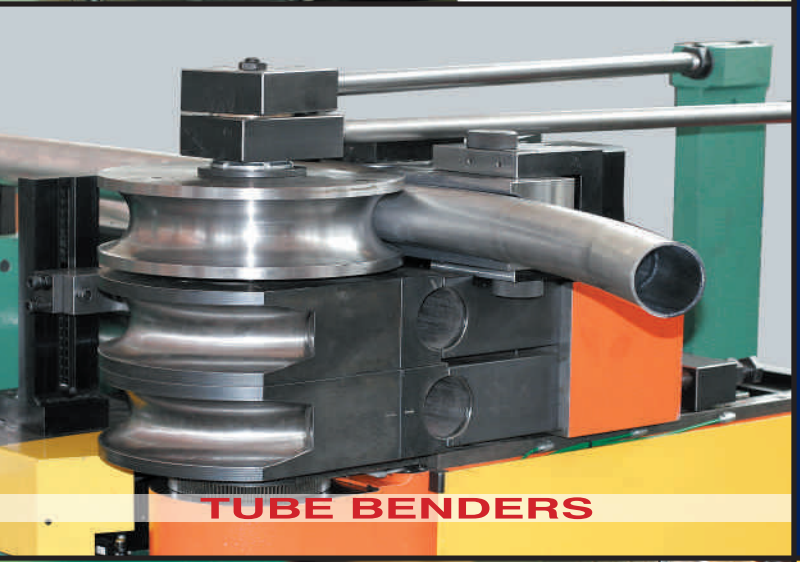
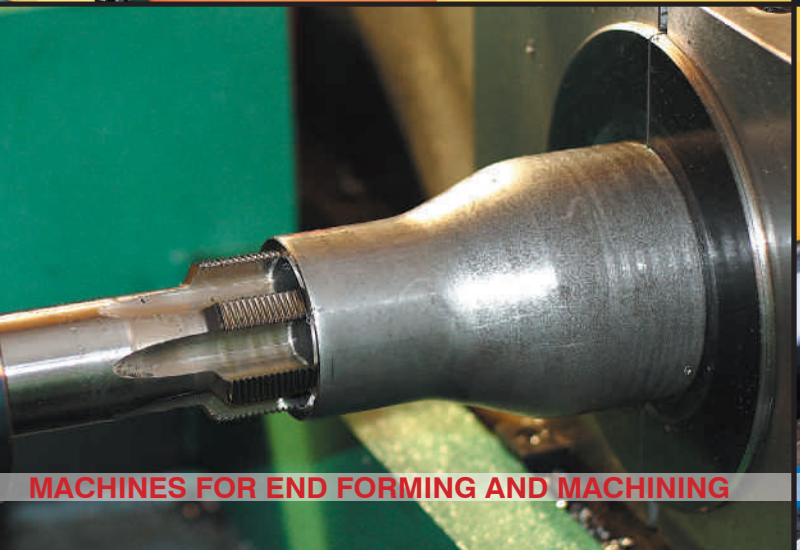
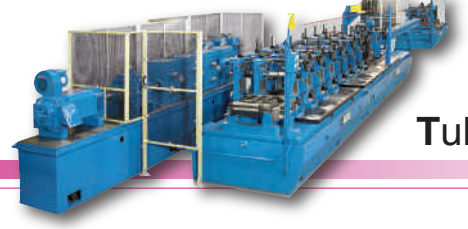


TUBE BENDERS



MACHINES FOR END FORMING AND MACHINING

DEBURRING SYSTEMS



Eddy current inspection system for tube mills

EddyTech Systems Inc, USA, is the authorised North American agent for Prüftechnik-NDT, a provider of eddy current inspection equipment for the tube and pipe industry.

For seam-welded tube producers, the company's on-line systems continuously monitor the welding process, delivering instant feedback to the mill operator when deteriorating conditions occur that may lead to weld seam failure.

The Eddychek-5 Advanced includes a colour touch-screen display

The new Eddychek-5 Advanced is housed in an environmentally controlled enclosure, and features a large, colour LCD touch-screen display. The unit provides outputs for all required marking, warning and sorting devices. It includes networking capabilities along with the Windows XP 'Embedded' operating system, which makes the system virtually hack-proof.

Coupled with Eddytrend digital recording software, the Eddychek-5 becomes a powerful data collection and archiving system. Using new data compression algorithms, 100 per cent of the amplitude and vector component signals from each tube are retained. Signals may then be played back in real time for later analysis. In addition, they can be printed in document form or emailed as HTML.

EddyTech Systems, Inc – USA
Fax: +1 440 234 4810
Email: support@eddytech.com
Website: www.eddytech.com

Experienced manufacturer of advanced tube mills

Gallium, India, is involved in the design and construction of advanced tube mills and finishing machines. The company's product range is well established in the tube industry and includes high speed forming cold saw cut-offs, automatic bundling machines, multi-tube high pressure hydrotesters and universal forming mills.

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

The company also supplies other equipment including double mandrel uncoilers, horizontal accumulators, and tube straightening machines.

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Progressive technology for seamless tubes by piece-by-piece reduction

There are essential drawbacks to the existing technology of hot and cold piece-by-piece tube reduction, which has been established for over 50 years. These drawbacks include a limited wall reduction that equals 8-12 per cent (maximum 35 per cent in the reducing mills with 25-28 working stands).

Other drawbacks include a formation of thickened sections at both tube ends that have to be cropped to waste (resulting in a reduced output), and a significant cross-sectional wall thickness variation in tubes (up to ±12.5 per cent). Cold tube reducing also makes it impossible to obtain tubes with a reduced wall.

This technology is based on the use of tensioning tubes between the reducing mill stands. Since 1955, in the calculation of the reducing parameters with wall reduction, plastic tension factors have come into use instead of kinematical tension factors.

With the aim of eliminating such drawbacks of hot and cold tube reducing, Ukrtruboprom Association has developed a new technical approach. This technology is based on the cubic strain solution when undertaking tube rolling in a closed pass of any shape. The general and partial solutions of this problem have made it possible to combine the three basic deformations taking place in the rolling process with other parameters including the starting and final tube dimensions.

Based on the solution of the cubic strain problem, a procedure for the calculation of the new technology parameters has been extended. Following this development, three experiments were carried out in the production conditions at an operating TPA 140 tube reducing mill. The objective of these experiments was to verify the new technology and determine its potential in comparison with the conventional technology.

In the course of all three experiments, mother tubes (130mm x 6mm) were rolled to obtain tubing (73mm x 5.5mm). Analysis of the results from the first experiment showed that the new technology obtained the usual tubing at the above dimensions.

Experiment number two had the objective to check the possibility of obtaining tubes with a wall reduction higher than 0.5mm. For this reason, the tube wall thickness was increased by 2.38mm in the first seven stands of the 15-stand group and decreased to 5.32mm in the remaining eight stands. The resulting tube wall thinning was 0.32mm per stand.

When the operational conditions were implemented for reducing the tubes at the above size, an average thinning of 0.033mm per stand was obtained. Thus, the new technology demonstrates its ability to obtain the wall thinning 9 times higher than in the case of conventional technology.

In experiment number two, the plastic tension factor was of essential interest. Its value was conditionally determined by the use of a known formula and was equal to 1.12 (its allowable value was 0.5 to 0.65). Rupture of the tube usually takes place under these conditions. However, this emergency situation did not occur using the new technology, which is due to the absence of tension between the stands.

The objective of experiment number three was to obtain a tube with shorter thickened end sections. Measuring of the final tube has shown that the thickened end section length was 2 to 2.5 times shorter. Later, the procedure was developed to accomplish tubes with a complete absence of thickened ends.

The experiment results reveal advantages of the new technology over the conventional method. Results showed the possibility of an extension of the size range of thin-walled seamless tubes that cannot be presently produced by conventional technology. For example, by using a 130mm x 7mm mother tube with just one wall thickness, tubes with a wall thickness of 6.5mm, 6mm, 5.5mm, 5mm, 4.5mm, 4mm and 3.5mm can be obtained. by line 8KHH varying the speed regime of the tube reducing mill.

Other conclusions show the possibility of obtaining tubes free of thickened ends without using electronic control devices. There was also the possibility of an essential increase in tube wall thickness accuracy and tubes with no cross-sectional wall thickness variation. Finally, it was noted that there was the potential for saving fuel in preheating tubes by 25 to 30 per cent and even higher.

All these advantages can be achieved without any capital outlays and production costs but just by calculating adjustment parameters. Because the calculation procedure for the

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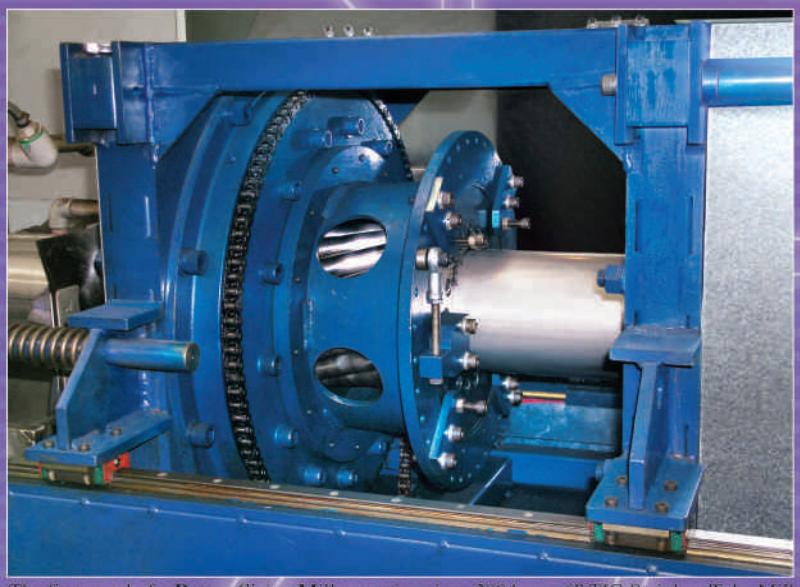

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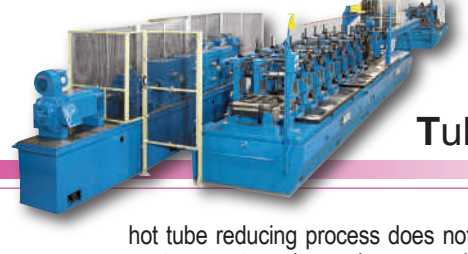

hot tube reducing process does not depend on temperature, it can be comprehensively used in the cold tube reducing process.

Analysis of the data obtained from the new tube reducing technology makes it possible to claim that this method is highly competitive when compared to other technology (eg drawing or rolling in the cold tube rolling mills).

The new tube reducing technology is considerably more productive in comparison with conventional technology. It is capable of attaining a wall thickness reduction of up to 75-80 per cent while using less stands (10-15).

It can be concluded that when taking into consideration the advantages and potential of the new tube reducing technology, its use is technically expedient and economically advantageous.

This article was supplied by FD Davydov (senior specialist), L Ksaverchuk (general director) and N Koryaka (specialist), Ukrtruboprom Association

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Latest deburring and welding systems for tube mills

Kent, USA, has developed a new Burrmaster model to complement its line of tube end deburring machines. The new system is designed to remove the burr from tube ends, rollform shapes and welded shapes. The machine is manually loaded and deburrs one end at a time.

The steel deburring brushes rotate at high rpm, while the whole brush head slowly rotates a full 360º to deburr every edge and corner. The burrs from cutoff saws and shear blades are removed for safer part handling.

Larger, more automatic machines are also available. The large machines can be loaded directly from the mill or manually into a magazine. The parts are then picked up one at a time and transferred through the machine by chain driven fingers. Both ends are deburred at the same time, at speeds of up to 3,500 parts per hour.

Kent has also developed a new double cut coil end welder for tube mill and strip process lines. The new version of the model DSAA coil joiner was developed to endure demanding tube, pipe and process line applications.

The heavier edge guides, shear and new torch guiding system can be cycled two to three times as much as older designs. The coil ends are both sheared at the same time, and indexed together to reduce cycle time.

Automatic TIG welds easily pass through press and rollform tooling. By welding coils together, downtime is reduced when set against re-threading of the process line. Scrap and tooling damage is also reduced on press lines. For less demanding applications, portable coil end welders are available up to 15" wide.

Kent Corporation – USA
Fax: +1 440 230 9608
Email: info@continuouscoil.com
Website: www.continuouscoil.com

the tube mill specialist

OTO MILLS

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Tel. + 39 0522 481211 Fax + 39 0522 964188 otoinfo@otomills.com

www.otomills.com

Achieving the best weld on mills with HAZ control

Thermatool, USA, has further developed its new HAZ control technology, which enables the tube mill operator to vary the welding frequency at the operator's console in 1kHz increments from 150-400kHz. According to the company, this has revolutionized the high frequency welding process.

The capabilities of variable frequency HF welding have now been further extended to Thermatool's HAZ control technology™. The company claims that, for the first time, an operator will have the information required to consistently make the best weld.

The combined effects of weld power, frequency, vee length, impeder function, and wall thickness are now displayed on the operator's console in a simple way.

This development provides the mill operator with the knowledge of their exact position in the weld process window. Consequently, the operator can easily and repeatedly achieve the optimum weld HAZ.

Once the optimum weld HAZ is determined it can also be stored to ensure repeated production of quality products on every tube mill production run.

Thermatool Corporation – USA
Fax: +1 203 468 4281
Email: info@ttool.com
Website: www.thermatool.com

Inductotherm HWT (Thermatool Europe) – UK
Email: info@ihwtech.co.uk
Website: www.inductotherm-hwt.co.uk

Mills for heavy walls and high yield strength

Rafter Equipment Corp, USA, is a leading supplier of heavy wall and high yield strength tube and pipe mills. These mills are being used for production of pipe and tubing for many demanding applications including oil country tubular goods (OCTG), hollow structural sections, DOM and the medical and automotive industries.

Examples of products that can be produced on the company's mills include Ø 2.375" x 0.440" wall at 75,000psi yield for re-draw use, Ø 12.750" x 0.5" wall at 65,000psi yield for structural use, and 10" square x 0.5" wall at 55,000psi for structural use.

The mills can also be used for 6.625" x 0.322" wall at 75,000psi for OCTG, and Ø 0.625" x 0.083" wall stainless steel at 80,000psi for food grade and medical applications.

Rafter supply mills for heavy wall and high yield strength

In conjunction with the high wall thickness to diameter ratios, these heavy walls demand a robust mill design, engineering expertise and sound manufacturing practices to ensure a reliable process and high product yield.

Rafter also designs and builds tube and pipe mill equipment used to produce tubing from carbon steel, stainless steel, titanium, copper, brass and other exotic weldable materials.

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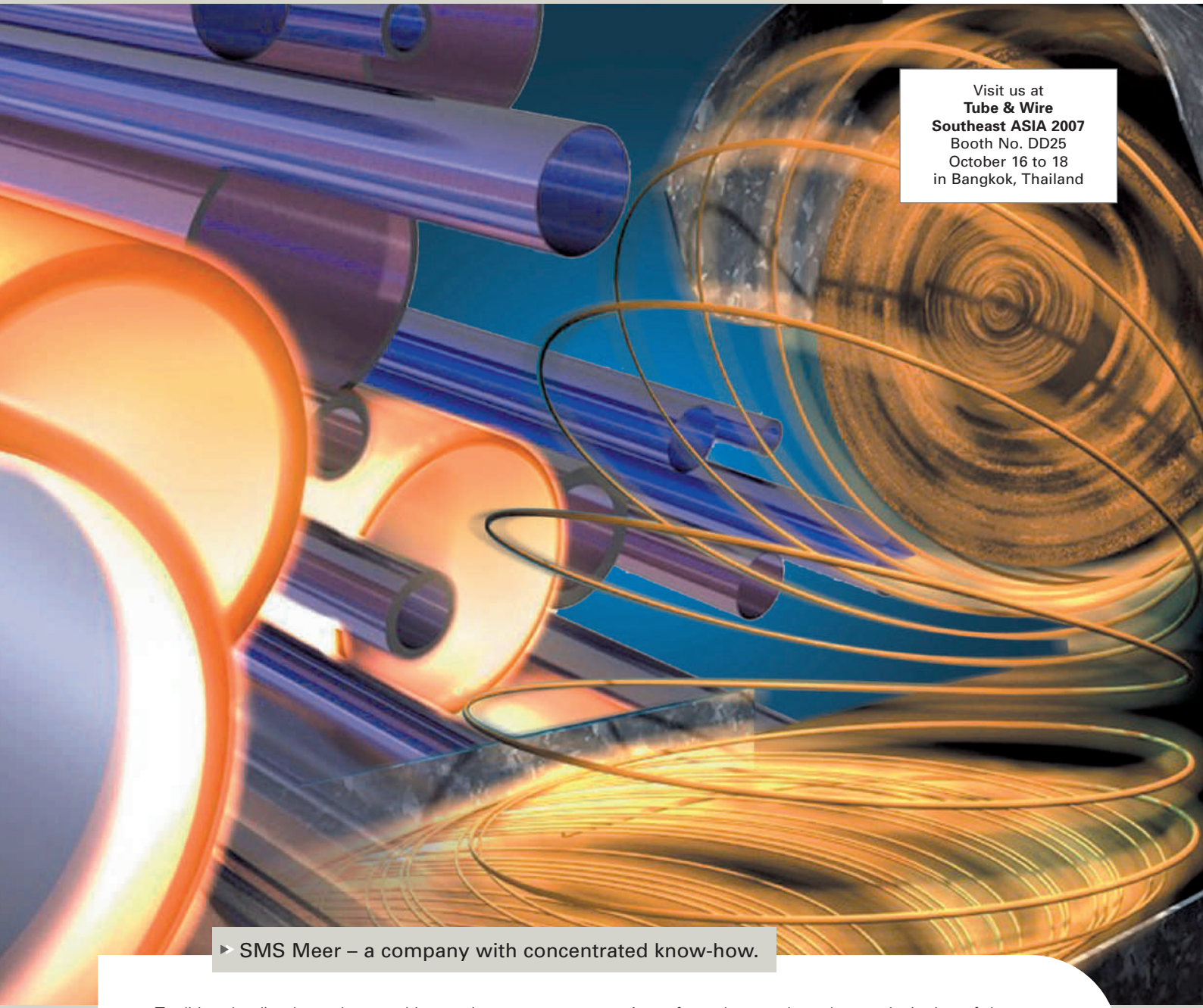

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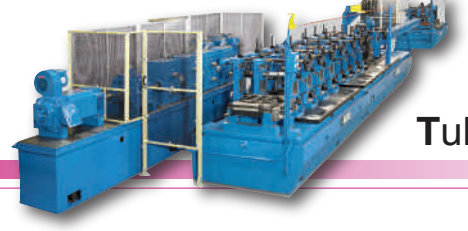
MEETING your **EXPECTATIONS**



Developments for cold stretched reduced tubing

Formtek Metal Forming Inc, USA, has developed a new concept within the carbon steel, small diameter tubing markets, specifically aimed at the cold stretched reduced tubing market. Under the Yoder brand name, the cold stretched reduced process assists tube producers in manufacturing tubing that is usually used in the automotive fuel line, appliance refrigerator, and other small diameter markets.

The new process specifically targets tubing that is too small for high frequency induction welding (where impeders are too small for this range). Producers of this tubing need the speed that high frequency or square wave welding can offer to meet production requirements.

Cold stretched tube reducing mills are not new, as the Yoder Company has pioneered them for many decades. Using this technology, a mother tube diameter of sufficient size is used for high frequency induction or square wave welding.

The tube diameter is cold reduced down to sizes as small as $^{3}/_{16}$" (4.76mm). Wall thicknesses are approximately 0.026" to 0.028" (0.66 to 0.71m) during the creation of the mother tube. The size can typically be slightly increased or decreased.

Since acquiring Yoder in 2001, Formtek has added new innovations to its product family and one of these was to change the cold reducing process. As mentioned, a mother tube is reduced to tubing of smaller diameters by multiple rolls stands that cold work the tube pass-by-pass. When a different diameter is required, roll passes in the reducing section are rearranged with certain sizes requiring the addition or subtraction of working passes. Even though the passes are rafted or sub-plated, a few (or sometimes several) hours would be required for a changeover.

Formtek has introduced a new method so that only the final 'finishing pass' is changed without affecting the other reducing pass arrangements. Instead of switching rafts, roll passes are 'engaged' or 'disengaged' quickly to compensate for the various diameters. The company's extensive knowledge of roll tooling design and manufacturing was an important factor in the success of this process change.

The finishing pass is changed so that final, proper sizing is applied to produce tubing within a diameter tolerance of ±0.003" (0.08mm). Changeover times are reduced by 50 per cent so that producers are quickly up and running on the next diameter. Even lower changeover times are possible if multiple finishing passes are used, which essentially 'dedicates' the tooling to the pass.

Formtek Metal Forming has already implemented this concept to a major tier 1 automotive supplier with great success and has recently received a second order from an international producer. This process has also been expanded so that the tubing manufacturer can produce tubing in the cold stretch reducing process. This is in addition to tubing in the conventional mill process up to 1" (25.4 mm) diameters.

> ***Instead of switching rafts, roll passes are 'engaged' or 'disengaged' quickly to compensate for the various diameters***

By rafting the mother tube forming sections, rafting the reducing section and adding a cutoff, tube producers have the ultimate flexibility in offering reduced tubing or conventional tubing in a diameter range from $^{3}/_{16}$" to 1" (4.76 to 25.4mm). This is a minimum to maximum diameter range of over 1:5 when most other tube mills are only capable of offering 1:4. This can be accomplished at speeds of up to 600ft/min (180m/min) for the smallest diameter.

This processing technology has been applied to larger diameter products as well. Formtek has secured orders for a reducing section to cold reduce stainless steel pipe at Ø 1.875" (47.6mm) down to Ø 1.720" (43.7mm) without changing a single roll.

Formtek Metal Forming Inc – USA
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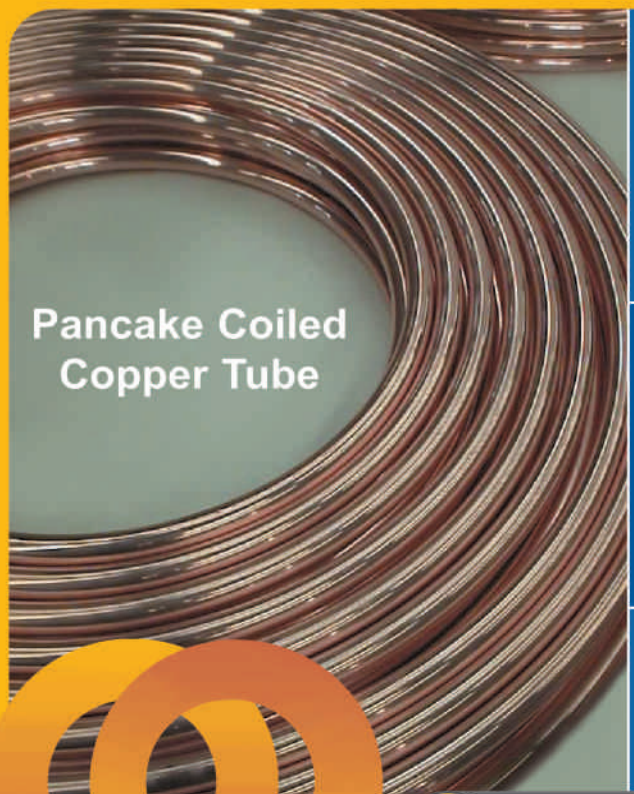

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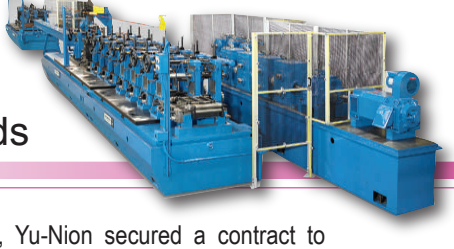

Mills for ERW carbon steel/stainless steel pipe

Yu-Nion Machinery Co Ltd, Taiwan, manufactures a range of tube and pipe machinery including ERW carbon steel/stainless steel pipe mills. The company, a leader in this field with over 27 years of experience, supplies high quality machinery equipment to the tube and pipe industry and steel processing industries.

The ERW carbon steel/stainless steel pipe mill can produce various sizes on just one manufacturing line by changing rolls. It comprises of a coil entry section, shear and welder, horizontal accumulator, forming mill, welding mills, cooling section, sizing and turk's head section, and a cut-off machine.

The company manufactures a range of forming and sizing mills, built with a strong steel structure and high quality forming rolls. A cut-off machine is also provided for continuously producing cut pipe in required piece length by flying saw or rotary disc.

Yu-Nion also supplies slitting lines, hot rolling mills, finishing lines, testing/finishing equipment, and complete plant equipment.

This year, Yu-Nion secured a contract to supply a carbon pipe-making machine with PVC/PC coating. This production line will be used for household cleaning products, such as broom handles. The handles are made of carbon steel or stainless steel and can be covered with PVC or PE coating.

Yu-Nion Machinery Co Ltd – Taiwan
Fax: +886 5 2370890
Email: yunionm@ms39.hinet.net
Website: www.yunionm.com.tw

Large range of used tube mills and rollform machinery

Universal Tube (utube), USA, offers a large selection of used tube, pipe, and rollform machinery. The company can supply new control systems and tooling, which can be easily added to update any line.

The company's product inventory includes tube mills (HF/ERW, TIG, and lockseam with a range of welders), entry line equipment (coil car, shear welders, turnstile and uncoilers), sheet and strip equipment (accumulators, cut-off, slitting lines), and rollforming machinery.

The U-Trak length control system

Universal Tube also provides a host of tube finishing machinery such as benders, cut-off machines, deburring machines, end-finishing machines and straighteners. One of the company's machinery highlights is the U-Trak length control system.

Universal Tube & Rollform – USA
Fax: +1 419 874 2825
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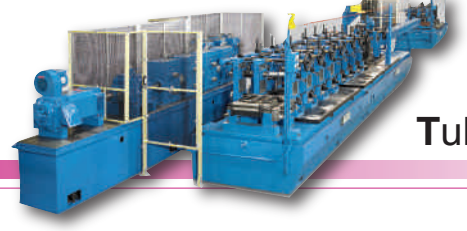
Website: www.utube.com



'Two-stage process' for spirally welded large-diameter pipe

W + K IndustrieTechnik GmbH & Co KG, Germany, has received a large-scale order for a tube mill and related equipment from Berg Spiral Pipe Corp, USA. The supplied machinery and equipment will be used to manufacture spirally welded large-diameter pipes.

Berg Spiral Pipe Corp, a newly founded subsidiary of Berg Steel Pipe Corp, manufactures longitudinally welded large-diameter pipes in lengths of up to 12m according to the three-roller bending process. Berg Steel Pipe Corp is a 100 per cent subsidiary of Europipe GmbH, one of the world's leading companies in the steel pipe sector. Europipe manufactures over one million tonnes of fabricated pipes per year (around 3,000km) in the diameter range of 500-1,500mm.

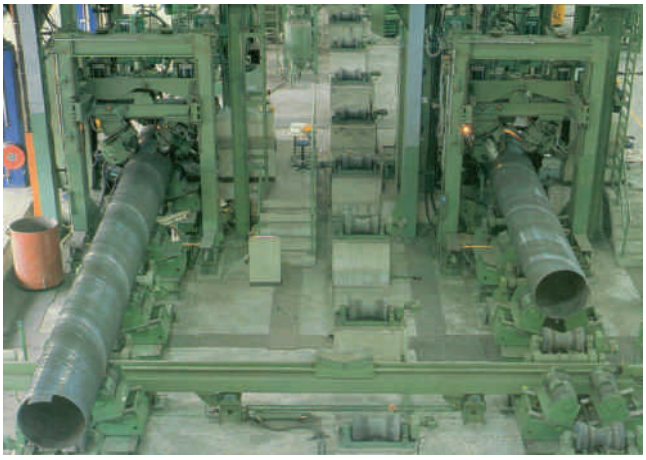
The machinery supplied by W + K will produce steel pipes in a diameter of 600-1,500mm, which will be used to transport oil and gas. Following installation in early 2008, Berg is expected to have the capability to manufacture around 200,000t of high-quality spiral pipes per year.

The new pipe mill will be technologically supported by both Europipe GmbH and Salzgitter Großrohre GmbH, a member of the Europipe group of companies. The two-stage fabrication process technology applied by W + K IndustrieTechnik was first developed at Hoesch (Germany) and Salzgitter in the 1970s.

According to the two-stage process, spiral pipes are based on so-called coils (ie sheet strips wound up into steel rolls with weights of up to 45t).

In a first step, they are formed into a pipe and then tack-welded. The subsequent final welding of the pipes is carried out on three welding stands arranged in parallel using the submerged-arc multi-wire welding process for the pipe inside and outside welding.

Before the pipes are ready, they pass through additional processing stations and are subjected to various hydrostatic and non-destructive tests. These tests ensure the pipes are entirely safe and suitable for use as oil and gas pipelines.



Spiral pipe production on two submerged arc final welding stands

The new spiral pipe mill of the Europipe group is claimed to be the first in the USA to apply this two-stage process for the manufacture of quality pipes.

Over its 10 years in operation, W + K IndustrieTechnik has constantly improved its spiral pipe manufacturing machines and installations. Approximately 50 people are employed at the company's Dortmund location.

Since 2005, W + K has been a partner of the Graebener Group, supplier of hydraulics, electrics/electronics and mechanical engineering.

Part of the spiral pipe forming and tack-welding machine

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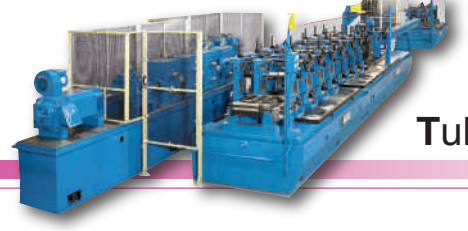

FQM™ seamless steel pipe plants

Following the success of the Retained Mandrel Mill (RMM) process, Danieli has pioneered the FQM™ (Fine Quality Mill), an enhanced and progressively modified version of the first generation RMM.

The company has been active in the field of pipe plants since the early 1980s, as a sub-supplier or partner in projects for both seamless and welded pipe. However, it was only in 2003 that Danieli increased its development in the area of seamless pipe steel plants.

Together with the knowledge and technology exclusively supplied by Kocks for finish rolling, Danieli Centro Tube can supply the whole technical package – including mechanical, electrical, automation, and reheating systems. This leads to advantages such as smoother coordination through all stages of a project.

Danieli Centro Tube provides the process technology and mechanical design of the machines; Danieli Centro Combustion provides heating systems; Danieli Automation develops process automation and related electrical systems; and Danieli Centro Maskin contributes with auxiliary machines.

The FQM™ process offers technology to produce seamless pipes with high quality features (close wall thickness tolerances and very smooth surfaces), at low production cost. It is based on the continuous rolling principle, which relies upon rolling passes on a cylindrical mandrel that moves at a constant controlled speed during the whole rolling phase. The rolling mandrel speed is calculated according to the deformation scheme and is less than the outlet tube speed from the first stand.

The material therefore moves faster than the mandrel; consequently friction forces between the material and the mandrel are in the rolling direction versus a longitudinal material flow. The elimination of the transversal metal flow in the roll gap direction and the inline extraction of the tube from the mandrel (immediately after rolling), allow the use of a very close pass design.

Moreover, the process offers a high degree of production flexibility, versatility and efficiency fully supported by process control features like automatic gap control and wall thickness inline measurement.

The difference between the 2-roll RMM and the 3-roll FQM™ are significant. The smaller difference of the peripheral speeds between the groove bottom and the flange of the rolls leads to a more uniform deformation in the pass of an FQM. It is more uniform both in the steady phase and in the transient phases (biting and release). This benefit results in less redundant transversal material flow, lower specific average and, particularly, peak pressures on the mandrel and rolls. A higher degree of stability of the mandrel in the pass is also achieved.

Danieli's FQM™ seamless steel pipe plant

Danieli – Italy
Fax: +39 02 262451
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Website: www.danieli.com

Complete mills for welded tube production

Olimpia 80 Engineering is a specialist in the design and construction of complete mills for the production of welded tubes. The company offers both individual equipment and complete lines, suitable for TIG, laser and HF welding.

Stainless steel tube mill with laser welding system

The machinery is designed for material including stainless steel, carbon steel, titanium, copper and other non-ferrous materials. The company also offers a wide range of equipment for strip handling, tube cutting, inline bright annealing and inline and offline tube finishing.

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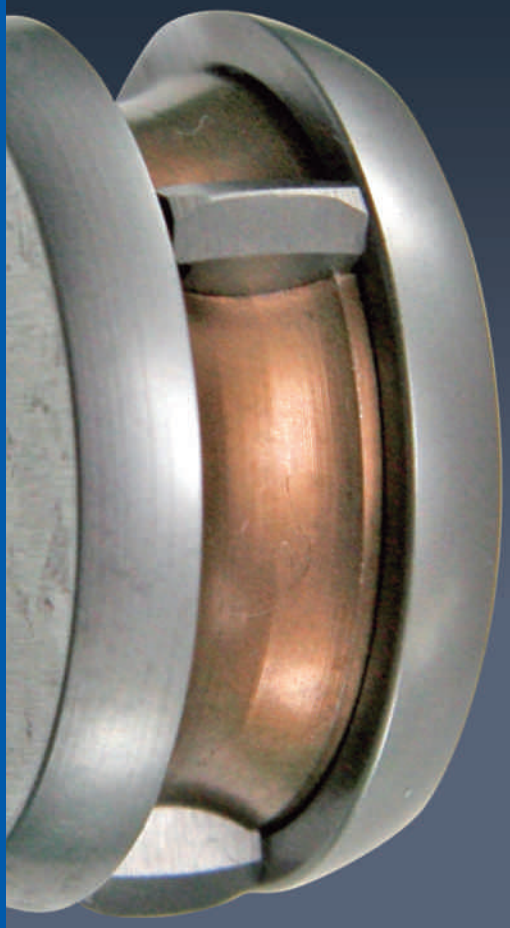

Blissenbach high quality range of Mechanical I.D.-scarfer with integrated notching wheel

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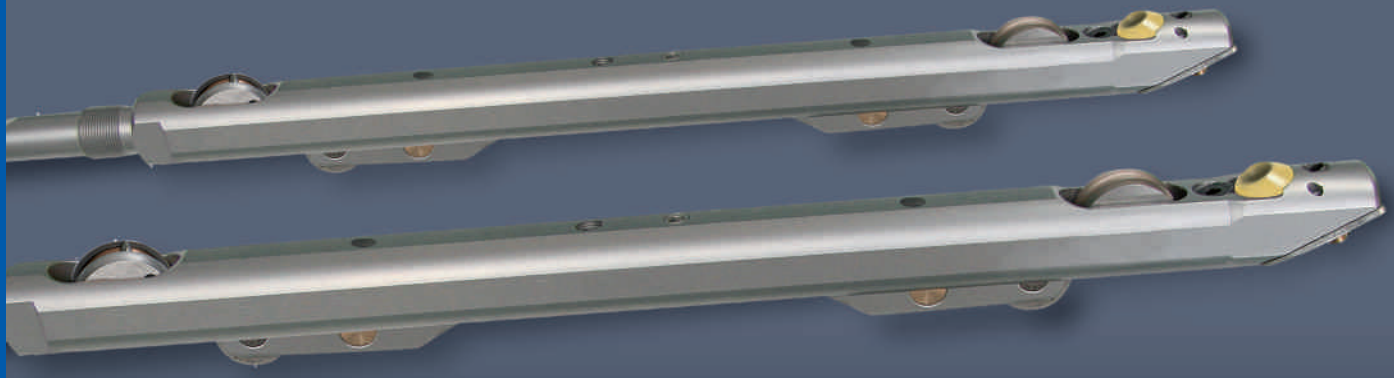
- Lateral wear protection ring in the vicinity of copy rollers, (notching rollers) and pressure rollers ensures maximum service life of tool base body and lifting lever



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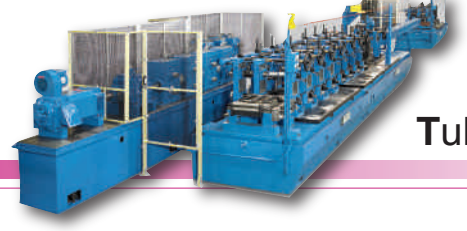

Top grade and high chromium rolls

Shandong Province SiFang Technical Development Co Ltd, China, is a manufacturer of top-grade rolls, with a focus on high chromium rolls. Such rolls are made from high chromium alloy material through casting.

The rolls have properties including good wear resistance, uniform hardness from surface to core, and high tenacity. Steel rolled by high chromium rolls also has a brighter surface.

High chromium rolls can be used in seamless pipe straightening and ERW pipe welding. Performance results supplied by users show that the service life of high chromium rolls is two to three times that of forged steel rolls made from traditional materials like 9Cr2Mo, Cr12 and Cr12MoV.

According to SiFang, who specialises in producing rolls with high wear resistance capacity, the popularity of high chromium rolls is increasing among companies manufacturing seamless pipes. SiFang also produces high-level rolls for cold bending shape steel and welded pipes. The company manufactures rolls of up to 2m OD and up to 10t in weight.

Shandong Province SiFang Technical Development Co Ltd – China
Fax: +86 531 8887 6693
Email: sdsf@vip.163.com
Website: www.cnsdsf.com

Hot-rolled seamless steel tubes using pilger mill technology

VVT-Vitkovice Valcovna Trub, a division of Trinecke Zelezarny, is one of the largest Czech producers of thick-wall seamless steel tubes. These products are currently manufactured using the Mannesmann technology of hot rolling of seamless steel tubes (pilger mill).

The VVT range includes carbon and alloy steel products with an OD range of 60.3mm to 406.4mm and wall thickness 6.3mm and above. With an annual capacity of 100,000t, the company's entire volume is produced on 2 rolling mills: the 'big Mannesmann' for tubes of 168.3-406.4mm OD, and the 'small Mannesmann' mill that makes tubes of up to 168.3mm OD.

The big Mannesmann line is currently undergoing a large-scale revamp and refurbishment, which will be finished in the second half of 2008. In addition to the overall increase of capacity, the main benefits will be better tube surface quality and dimensional accuracy. Other improvements will include the production of thick-wall tubes in larger lengths and increased capacity of non-destructive testing. The company's product portfolio will have an increased range of alloy steel tube and OCTG.

The Mannesmann technology of seamless steel tube production is composed of four basic operations: preheating of the steel input, perforating on the punching machine, pilger hot rolling and calibrating the hot tube on the sizing line. The periodical rolling process is a discontinuous method achieved against the advance motion, with rolling executed only by the calibration part of the sizing rollers perimeter.

A trajectory of the feeding machine motion takes place, in which the mandrel grips the semi-finished product, and leads it into one

VVT pipe is used for a range of applications, including nuclear, power, chemical and OCTG

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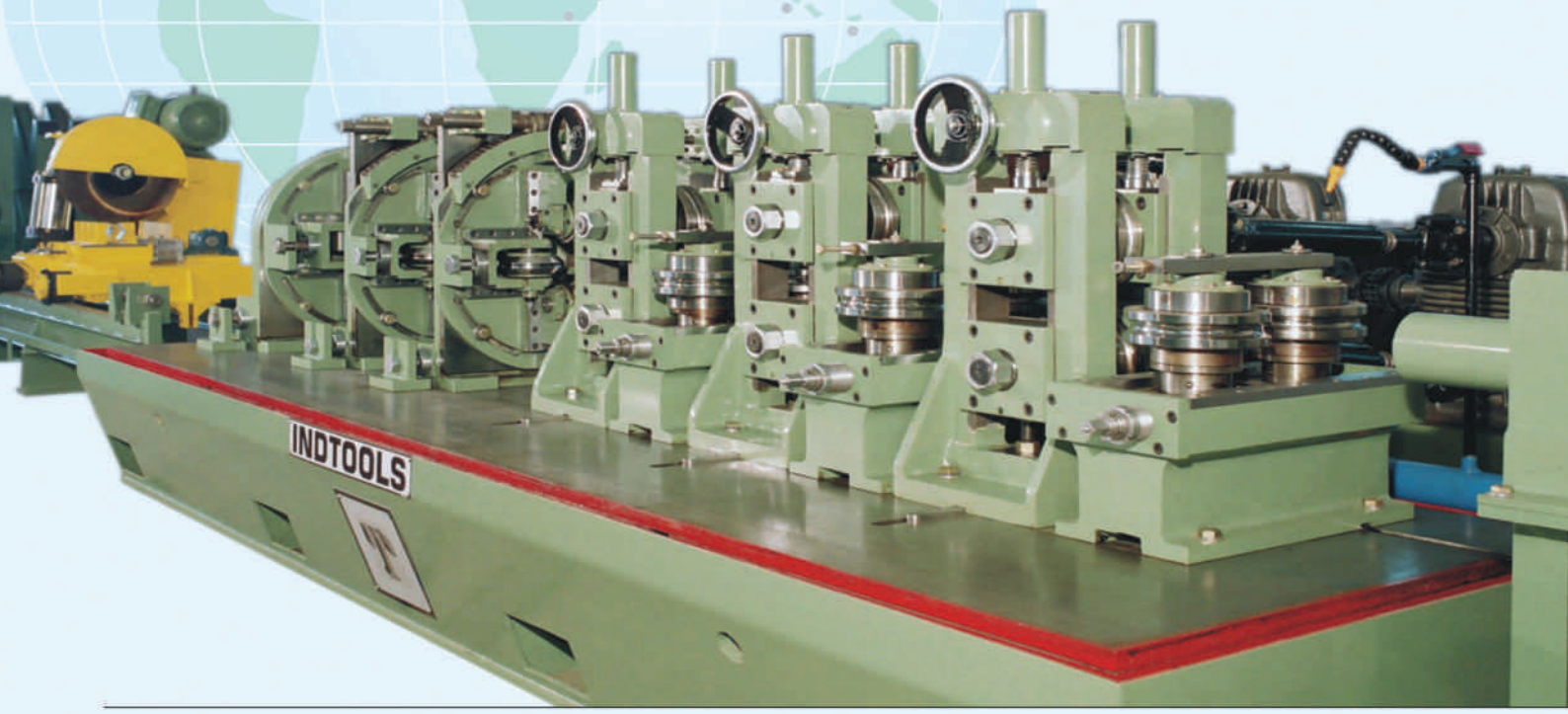

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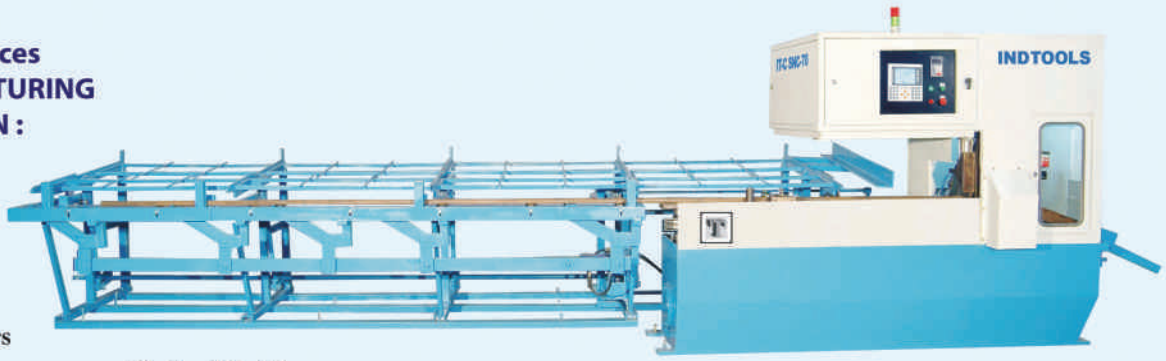

Cutting Machine

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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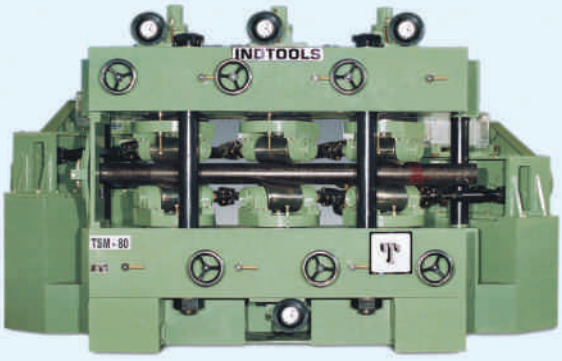

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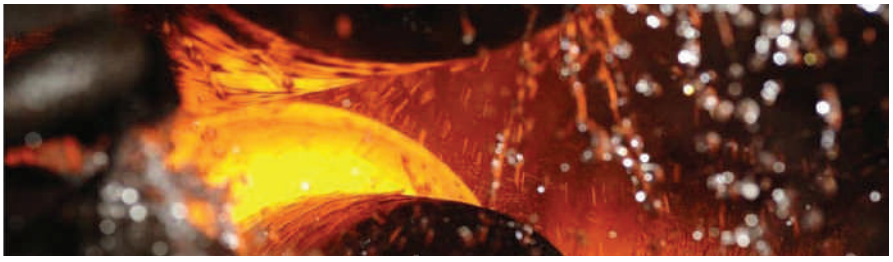

VVT's pipe is manufactured on 2 rolling mills: big and small Mannesmann pilger mills

turn of the rollers. This way, the material is deeply and perfectly worked during the production process. It gives the final product very unique, incomparable mechanical and physical quality characteristics, suitable for use in highly demanding conditions.

The products are mainly used for piping systems (steam pipelines) for the nuclear and classic power plants or heat exchangers. These pipelines are resistant to the chemical impact of the circulating media. Power engineering often requires low alloyed creep-resistant steels based on molybdenum, or dispersive-strengthened steels using vanadium carbide particles (e.g. 16Mo3, 14MoV63). However, middle-alloyed high-temperature steels – based on chromium-molybdenum-vanadium-niobium (eg P91, X10CrMoVNb91) – are more commonly required for power plants.

The chemical industry requires tubes based on chromium-molybdenum steels (13CrMo45, 10CrMo910, 11CrMo910 and 25CrMo4), used in high pressures and temperatures above 450°C. These grades are also resistant to the hydrogen action, with the field of hydrogen application currently a major part of VVT's R&D.

VVT tubes are also used in the area of oil, gas and water exploitation and distribution. The production of casing pipes includes cutting of the threads on the ends of the tube and on the inner surface of the couplings for the thread protection. The ends are beveled on pipelines produced in accordance with API 5L for the trunk distribution frame of the oil and natural gas, as are the tubes produced in accordance with EN10208-2 (linepipes for combustible fluids).

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Advanced cleaning methods for tube and pipe: tube super-cleaning

By Dott Chiara Di Pierro, Fismet Industriale Srl, Italy

1. Introduction

Tube and pipe is a necessary material for life and progress, and can be supplied in a range of diameters and materials. It is available in sizes across the spectrum, ranging from large dimensions for booster, oil-hydraulic cylinder, and oil pipeline applications, to tiny diameters for needles, capillary, and cannulae.

The use of tube is increasingly varied, with growing requirements for products such as fibre optics and oil pipeline. In the future, the use of tube is set to increase, with a whole raft of innovative applications, such as goods transportation or high-speed trains being enclosed in tube.

In order to facilitate the safety and smooth operation of these applications – from old to new – it is vital to develop and implement the most advanced tube cleaning methods possible. Fismet Industriale Srl is dedicated to the production of industrial cleaning systems and ultrasonic cleaning systems. In developing its equipment and technology, the company aims to take the best care of operator safety and environmental protection.

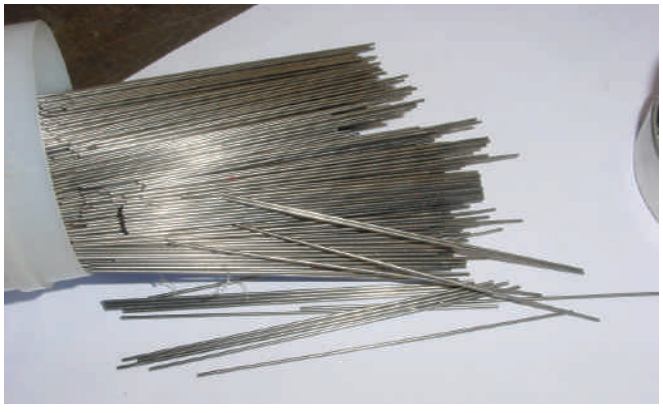
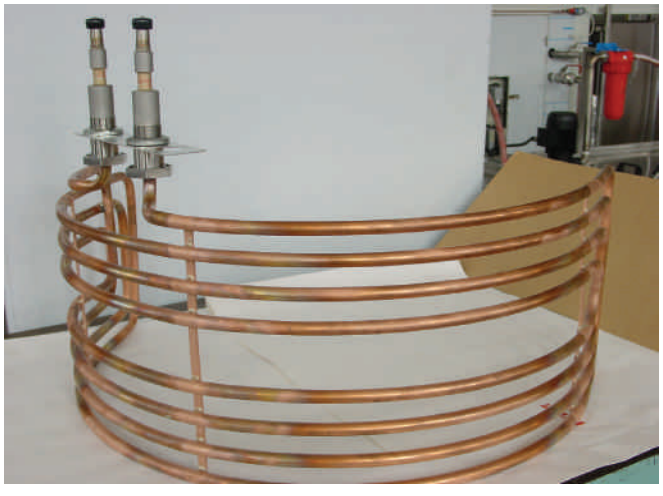


Figure 1: *Medical cannulae in stainless steel*

Figure 2: *Copper pipe coil*



Due to the growing demand for industrial cleaning in manufacturing, Fismet invests substantial resources into the research of advanced and alternative cleaning processes. Fismet's equipment range includes:

- Super-cleaning machines
- Ultrasound systems
- Carbon dioxide machines
- Dry saturated steam high pressure generators
- Sandblastings

2. Effective cleaning for inner and outer tube surfaces

In order to best utilise tube and pipe, it is necessary to achieve perfect inner and outer tube cleaning. This is the case even at the superficial boundary layer of tubes. However, the level of perfect cleaning is not an absolute value good for every production sector. Instead, it is relative and depends on the type of production field, operating conditions and application of the tube. Therefore, the best cleaning methods always take into consideration the end-use in relation to the manufacturing phase in which the tube has to be washed.

The purpose of a tube-cleaning machine is to entirely remove lubricants used during manufacturing phases. These residuals cannot be removed by a simple chemical immersion bath, because contaminants are strongly fixed.

The requirement of perfect pipe cleaning treatment is essential in the ultimate phase, but it can also be integrated into the intermediate phases of the tube manufacturing process. In the latter case of intermediate cleaning, the washing machine has to fit into the manufacturing line without loss of productivity. This means the washing machine should have no negative impact upon production line efficiency.

The perfect cleaning of tubes allows the highest level of efficiency and relies upon advanced equipment integrity. An increasingly important factor, the tube cleaning process is becoming more difficult because tubes are being manufactured with more complicated specifications, either in dimension and structure or constitutive material.

Figure 3: *Small tubes in different metal for household apparatus and appliances*

Furthermore, it is absolutely necessary to invest in research of advanced cleaning technologies to take into account a range of important issues. These include worker safety and health, environmental protection, reduction of water and electricity consumption, reduction of waste and use of ecologically compatible chemical detergents. For this reason, it is necessary to always develop machines with a totally closed cycle. It is also important to develop accessories for cleaning equipment in order to avoid any dispersion and to recover, filter and treat all fluids and vapours produced by the cleaning process.

The excellent performance of a cleaning machine depends on the coexistence of certain conditions. These conditions are advanced technical features, an effective cleaning cycle, optimum working temperature, and efficient chemical detergents. However, one technology that can substantially improve performance is ultrasonic technology.

In order to obtain the most effective ultrasonic action it is necessary, first of all, to choose the best type of ultrasonic technology (eg magnetostrictive or piezoelectric). Once this has been selected, it is necessary to establish, for each particular case, the best setting frequency, power, ultrasonic transducer shape, and ultrasonic transducer dimension/position. These settings must all be achieved according to liquid density and tube weight and shape.

3. The definition of tube 'super-cleaning'

The main problem faced by all producers of industrial cleaning systems, is the penetration of the superficial boundary layer on tubes to be cleaned. This procedure is otherwise known as 'super-cleaning'. Contaminants are usually bound to the tube surface by hard cohesion stresses, which are due to electrostatic phenomena and contaminant chemical composition. The smaller the contaminant particles, the more difficult it is to remove them.

There are only a few renowned methods used to penetrate the boundary layer. The most effective are ultrasound technology or the use of special fluids (eg carbon dioxide). In both cases, the contaminant particles acquire the necessary energy to detach themselves from the tube surface. However, this mechanical removal action has to be added to a thermal action (either heat or cold helps remove the contaminant).

Super-cleaning is gaining increasing benefit from the development and implementation of mechanical actions such as ultrasound, agitation, rotation, balancing, hydrokinetics, and spraying. In addition, research and development into alternative detergent solutions is also improving the effectiveness of super-cleaning, especially since traditional solvents are regarded as dangerous for health and the environment.

4. Precision requirements of medical tube cleaning

The cleaning of medical tubes, needles and cannulae represents a very complex and difficult washing problem, comparable with human body prosthesis cleaning. During drawing and subsequent manufacturing operations, the tube becomes dirty with oil and grease, while metal porosity is also a problem. A number of tests have proved that a washing cycle activated by ultrasound permits

Panel 1: Examples of very difficult tube cleaning processes

In the panels on pages 163, 164 and 165 are cases of tubes and tube cleaning machines representing the most difficult and actual cleaning problems.

In the first panel (figures 11, 12, 13 and 14) the problem and solution concerns the achievement of premium tube cleaning under a high productivity output. The cleaning operations have to be totally automatic and the machine is inline, strictly connected with the manufacturing machine. The goal is more difficult when the main manufacturing line has a high output per hour and the cleaning cycle cannot delay production. Therefore, the cleaning machine has to reach the best performance in a very short time.

Figure 11-12: *Automatic equipment (outer and inner) for ultrasonic cleaning, rinsing and drying of aluminium tubes for fumes discharge of house heating plant (productivity of 1 tube every 30 seconds)*

Figure 13-14: *Automatic high productivity equipment (outer and inner) for ultrasonic cleaning, rinsing and drying of stainless steel tube for pipelines. This machine is automatically connected with the manufacturing equipment*

Panel 2: Examples continued

Another very complicated cleaning problem occurs when tubes are produced from one very easily alterable material such as, for instance, copper, ceramic, aluminium or carbon steel. In this case, the temperature or chemicals can change their shape and dimensions (figures 15, 16 and 17).

Figure 15: *Automatic equipment (outer and inner) for ultrasonic cleaning, rinsing, passivation and drying of carbon steel tubes for air conditioning and heating plants*

Figure 16: *Automatic equipment (outer and inner) for ultrasonic cleaning, rinsing, and drying of ceramic insulators*

Figure 17: *Ceramic insulator*

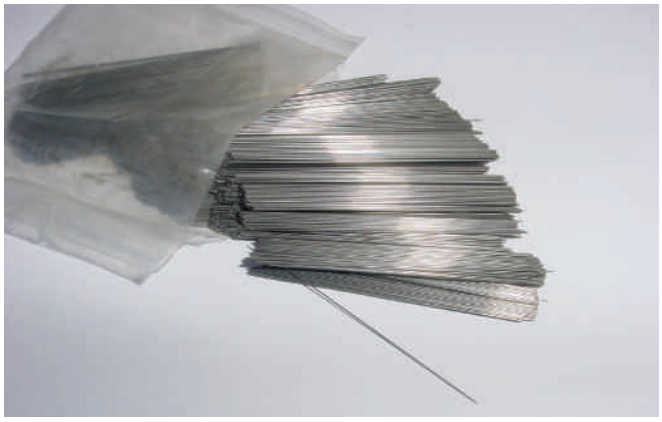


Figure 4: *Stainless steel medical needles*

the achievement of good cleaning results. However, this kind of machine can be very complicated (ie a minimum of 10 treatment phases in 10 different tanks, using more than 1 type of detergent).

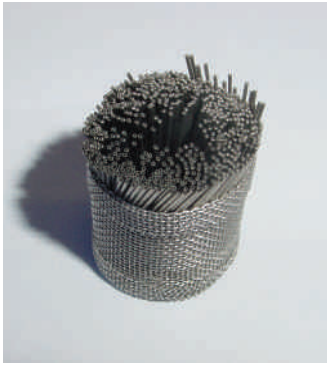


Figure 5: *Stainless steel medical needles in a cleaning basket*

The continuous search for better solutions has led to a very efficient and compact machine with an advanced mode of ultrasound associated with the dedicated flux action. With these technological innovations, the most recent washing machine now consists of only one multipurpose tank, allowing better cleaning performances and reduction in consumption.

To attain a set of positive characteristics, this multipurpose machine firstly depends on the fact that there is only one process tank. In this process tank it is possible to achieve all the required treatments such as cleaning with water based detergents, rinsing, drying, degreasing, pickling, and passivation.

The process tank, containing a dedicated ultrasonic group, is in stainless steel AISI 304. It is connected, through pumps and a valves system, with two or more reservoirs. One reservoir is

Figure 6: *Cleaning equipment (inner and outer) for ultrasonic washing, rinsing and drying of stainless steel medical cannulae*

Figure 7: *Multipurpose single tank with ultrasounds*

dedicated to detergent solutions, and has a separating oil system and recycling/filtering group, in order to recover and recycle the dirty washing solution for later reuse. Further reservoirs are also included (depending on the kind of detergent) for rinsing water (demineralized or not).

The detergent reservoir is also connected with the condenser of a suction collar, positioned in the upper part of the process tank in order to recover all bath vapours. It is also possible to achieve a rinsing with high-pressure saturated steam. If no other phase is needed (eg passivation), then the machine begins the drying phase with hot air.

The only two manual operations consist of loading/unloading of the basket containing tubes to be cleaned and automatic cycle start-up (ie pushing a start button). Therefore, the machine operates automatically with PLC (a programmable logic controller for the control of the system cycles and the safety integrated devices). All required treatments can be undertaken automatically, as the process tank is designed to activate every system necessary in each fully adjustable treatment phase. This machine is closed cycle equipment without any liquid or gaseous dispersion.

Figure 8: A *liquid or supercritical carbon dioxide cleaning machine*

Panel 3: Examples continued

Many tubes have a very complicated shape because they have no simple cylindrical form. Instead, they may have a lot of clearance holes, dead holes, interstices, curvings, threads, and fins etc (figures see 18-22). In case of tubes with clearance cavities that are very hard to clean, another cleaning technology is required: a dedicated internal flux (figure 23).

Figure 18: *Small tubes employed in research laboratories*

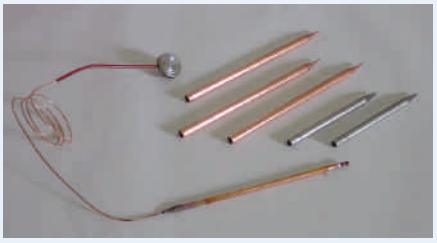


Figure 19: *Small tubes in aluminium and copper for thermo-regulation applications*

Figure 20: *Finned aluminium tubes for heat exchangers*

Figure 21: *Stainless steel injectors (automotive)*

Figure 22: *Curved shape tubes*

Figure 23: *Tubes that need internal cleaning flux*

5. Carbon dioxide as a solvent

Advanced research and a high number of tests have been carried out in order to ensure Fismet cleaning machines are of the highest standard. Two issues are continually at the top of the R&D agenda: operator safety and environmental protection. In particular, recent research has focussed on the use of carbon dioxide to solve tube-cleaning problems.

Carbon dioxide is becoming one of the most attractive substitutes to chlorinated and CFC solvents. This is because it has an extraordinary solvent power compared to 1.1.1. trichloroethane (TCA), used in the past and now widely banned. Cleaning using carbon dioxide does not cause the increase of total carbon dioxide in the air. In fact the quantity used in the industrial cleaning process is mostly recovered, as residual of other productions; after use, it is definitively scattered.

The benefits of carbon dioxide include non-flammability, non-combustion, and non-corrosion. Therefore, it is possible to verify that carbon dioxide is a high value alternative to traditional cleaning systems, even because it is easy to find and has a very low purchase cost.

Figure 9: *Semi-solid (as snow crystals) carbon dioxide system*

Figure 10: *Solid (as ice pellets) carbon dioxide sandblast equipment*

In industrial cleaning, carbon dioxide can be used in every one of its four states. It can easily achieve changing temperatures and pressures during each of these four states. The four states are supercritical (allowing chemical extraction and removal of organic contaminants); liquid (for degreasing); snow (for removal of microscopic contaminant particles and lightly organic contaminants); and ice (for strong removal of organic and inorganic contaminants).

In tube cleaning technology, the use of carbon dioxide is highly appreciated, mostly in manufacturing sectors such as medical, aeronautical, aerospace, and nuclear. It is also highly beneficial to sectors that have recently raised required cleaning parameters, such as automotive, air conditioning, heating and heat exchanger applications.

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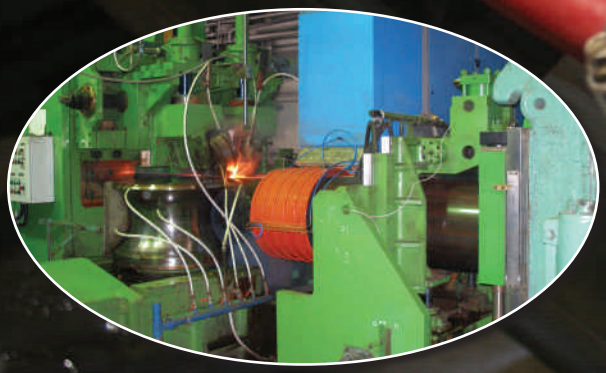

THERMATOOL
An Inductotherm Group Company

JSC Novomoskovsk in the Ukraine has recently completed a major capital investment plan to retrofit their existing 530 mm (20 inch) diameter API mill. The company increased the yield on the API pipe mill with an upgrade to a new Thermatool CFI 1200 kW HF Induction Welder and VIP 1200 kW Seam Annealing system.

Key features which make Thermatool the best choice for API pipe producers:

- Welding of the complete range of API pipe materials and sizes at a weld frequency of 150 kHz. This results in optimal Charpy Impact Toughness in the weld HAZ.
- Automatic seam annealing of API pipe using Thermatool's orbital seam tracking system.
- One company delivers both the critical welder and annealer to ensure the highest quality API product, with the best yield.

Thermatool continues to deliver the advanced equipment technologies required to help API producers meet the latest product specifications for P110, L80, N80, X80 and higher grades.

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