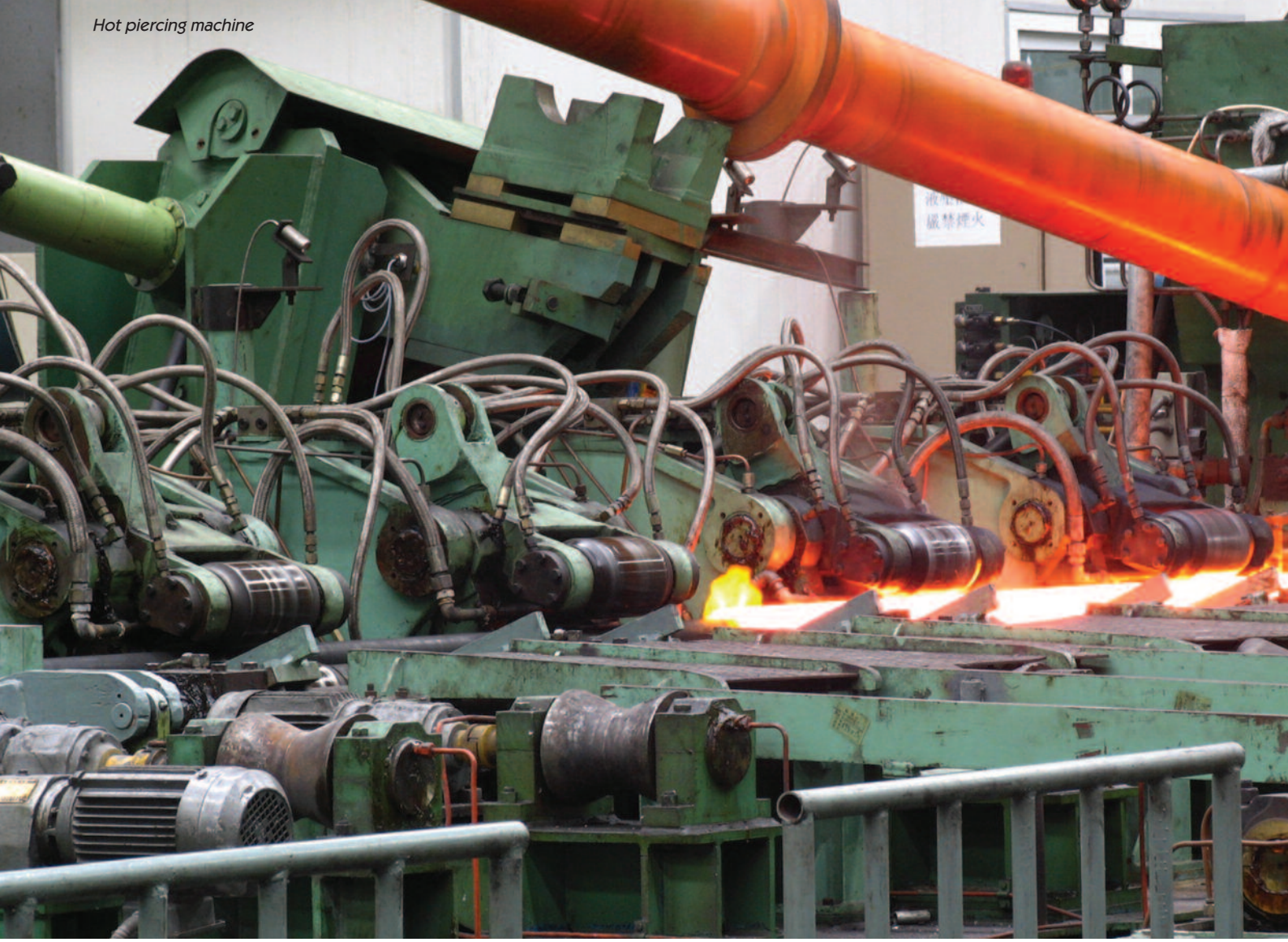

Hot piercing machine

Changshu Walsin triumph in nuclear and special metals market

Changshu Walsin Speciality Steel Co. manufactures stainless and high alloy steel pipes and tubes in Changshu City, about 100 km from Shanghai. Since its foundation in1998 the company has grown to export more than 50% of its products and has also gained a strong foothold in the domestic nuclear power generation industry. The company is about to embark upon a large-scale expansion plan which will double its production capacity, putting it among the top three producers of stainless steel seamless tubes in the world. Stainless Steel World travelled to the company's Changshu plant to see the changes first-hand.

By Sjef Roymans

Mr. Hsueh Chih-Hui, General Manager of Walsin, and Mr. Zhang Rui, Manager of the Sales Department, were keen to show off the company's facility at the huge Changshu plant site. As we walked through the well organised and neatly laid out mills and workshop it was clear that the company has invested in a high level of automation and quality assurance equipment. With state of the art testing facilities and a dedicated R&D department it was clear that this is a professional and competent organisation. A wide range of modern equipment was in use, including cold draw bending, cold rolling machines, a hot piercing mill, straightening machines and heat treatment furnaces. Yet despite the enviable facilities already in place, Changshu Walsin is in the midst of an ambitious expansion plan which will see its capacity almost double from 27,000 tons to 50,000 tons per year. "The expansion will start at the end of 2009," explains Mr. Hsueh. "We are already well prepared for the work to

begin and any disruption to our ongoing operations will be minimal.
Construction of the buildings will take about six months, after which we will use up to four months to install new equipment including an extrusion mill. In addition to the extrusion mill, we have utilized our accumulated experience and knowledge in refining the design and capability of newly purchased equipment such as pilgering mills, heat treatment furnaces, and an acid pickling plant, with the assistance from our research department and equipment makers".
This huge expansion will be carried out in two steps. The first equipment to be installed will be the extrusion press, which will help to increase capacity by an extra 15,000 tons per year. Mid-2010 the remaining equipment will be installed and commissioned, raising total capacity to 50,000 tons. Once complete the expansion in capacity will mean that Changshu Walsin will be amongst the top three producers of stainless steel seamless tubes and pipes in the world.

Meeting demand for special metals

For the past 11 years Changshu Walsin has produced an extensive range of seamless pipe and tube in the 300 series austenitic grades. The company has also recently expanded its product portfolio to include duplex and super duplexes with billets sourced from Europe. Plans are also underway to add nickel and titanium to their range shortly.
Mr. Hsueh continues: "In China there is a strong trend towards using higher grade steels such as duplex and super duplex. We have been involved in several refinery projects for Sinopec (China Petroleum and Chemical Corp.) to supply them with special grade steels and duplex and our product offering in special metals will grow significantly in the coming years. Once our new expansion is complete we will use a hot extrusion press to guarantee the quality of higher alloyed grades such as duplexes, super duplexes and lean duplexes. We have also developed our own unique MES production control system to further refine the production technology for higher grade materials including high nickel alloys and titanium. This plan is still being implemented and should be ready for commercial production next year, by which time we will be able to melt special steels, nickel alloys and titanium in-house."
Changshu Walsin has the very significant advantage of strong support and financial backing from its large parent company, Walshin Lihua Corp., a public corporation listed on the Taiwan stock exchange. "The company recently built an additional melting shop in Northern China which is currently undergoing commissioning and materials testing for qualification. With an electric arc furnace, MRP (Metal Refining Process), and VOD (Vacuum Oxygen Degassing) the facility will be well equipped to supply most of our billets. This means that we will soon have our own source of raw materials in mainland China, which is much more competitive than importing billets from abroad. It's a very significant competitive advantage to have control of your raw materials in China from upstream to downstream, and this will facilitate a more streamlined production process within the year," explains Mr. Hsueh.

Nuclear power projects

The nuclear power generation industry is an important and growing market for Walsin Changshu. The company is already certified to supply material to the domestic Chinese nuclear industry, and hopes to achieve ASME III certification - which will allow them to export to foreign nuclear markets - within a year. "We produce a complete product range for the Chinese nuclear market," explains Mr. Zhang, "and can cover all nuclear power requirements. Just last month we received an order to supply 700 tons of material for a nuclear power project, and this is second such order of this size we've had this year. China is planning to build 25 new nuclear power generation plants in the coming years so the importance of this sector to our business will continue to grow substantially. We are in the midst of the process of attaining ASME III which will allow us to export products for the nuclear power generation abroad. Unfortunately it takes up to a year to

An artist's aerial view of Changshu Walsin.

Cold pilger machine

A creep test machine for boiler tubes

obtain ASME III so in the mean time we are concentrated on expanding our already substantial presence in the domestic market."

A standard known as RCCM is applied to products destined for the nuclear industry, which is quite different to the standards applied to commercial steel grades explains Mr. Zhang. "The standards for the nuclear industry are completely different to other applications. The 304 and 316L grades of stainless steel have different chemical compositions and product requirements for nuclear projects. Our well equipped R&D and QA departments have been instrumental in our success in entering this most demanding and rigorously controlled market," explains Mr. Zhang.

"We have already captured 40 - 50% market share for supplying seamless pipe and tube to the Chinese nuclear power generation industry and it's likely that we will get another one or two projects before the year ends," continues Mr. Zhang. "At least four more Chinese nuclear power projects will start the procurement process this year, so the market is certainly very important for us and one in which we feel comfortable in supplying high quality products."

Geographical markets

"This year sales to the domestic Chinese market will make up almost 50% of our turnover," continues Mr. Hsueh. "Total sales turnover for 2009 will increase by around 20%, due largely to an increase in our domestic market turnover. Total production in 2009 will be more than 28,000 tons with exports topping 15,000 tons.

In terms of exports, USA is our largest market, closely followed by Europe. When we first entered the export market we focused on commercial steel grades which were sold through stockists and distributors. However in 2008 we decided to develop our range of boiler and instrumentation tubing which is a more specialized market.

One challenge we face is that the global economic downturn has caused consumption to slow significantly in Europe, plus there are many tube manufacturers in this very competitive market. These two factors prompted us to change our strategy in the European market to offer more a competitive price and faster delivery to achieve our target of filling the same quantity of orders as last year."

Asia of course remains a very important export market for us; for instance Taiwan and Korea have a limited number of local suppliers so imports to those countries are quite significant," says Mr. Hsueh.

"Walsin will continue to further penetrate the Chinese market, not only in the nuclear power generation industry but also for oil gas refining and petrochemical industries which have a strong focus on the use of higher alloy grades such as duplex, super duplex, nickel etc. This was a long term strategy was decided upon three years ago and we will continue to develop in this direction."

Looking to the future, Mr. Hsueh remains optimistic despite the current global economic climate. "It does not seem likely that consumption in the European market will return to the previous level in the short term," he

Facts & Figures

Name:	Changshu Walsin (part of Walsin Lihwa)
Founded:	1998
Products:	Stainless steel and alloy seamless tubes and pipes
Equipment:	Cold Drawn Benches, Cold Rolling Machine (LG40~LG110H), Hot Piercing Machine (76, 130, φ89, φ160), Straightening Machines, Heat Treatment Furnaces, Bright Annealing Furnace
QA equipment:	Metallurgical Microscope, Hardness Tester, Universal Test Machine, High-Temperature Mechanical Tester, Creep Test Machines, Optical Emission Spectrometer, Intergranular Corrosion Tester, Ultrasonic Testers, Hydrostatic Testers, Eddy Current Detectors, Endoscopes.
Key markets:	Petrochemical, boilers & heat exchangers, instrumentation, shipbuilding, nuclear power generation, oil and gas.
Production plants:	Taiwan, Shanghai, Changshu
Turnover:	USD 220 million (2007)
Employees:	1,200
Website:	www.walsintubing.com

U-tubes packed ready for shipment to the client

The bright annealing line in the factory.

says. “However it seems evident that consumption in the Middle East will continue to increase should the oil price return to a reasonable level, while in China plans put into place by the government to stimulate industry developments should cause consumption to rise in the coming 2-3 years. Based on the entire market situation, I believe that the total consumption for seamless tubes and pipes in 2009 will remain at the same level as it was in 2008, and then gradually increase in 2010. One effect of the economic slowdown is that consumption is rising more slowly than production capacity is increasing because foreign stainless steel manufacturers are continuing to increase their production capacity in China. This is prompting us to focus on expanding our market share in China and the Middle East in particular. Within China, Changsu Walsin will continue to focus it resources on gaining ground in the nuclear and petrochemical industries. In other overseas markets we will focus on gaining approvals in the oil and gas market; we have already attained approvals from Shell, BP, Technip, Fluor, Saipem, Samsung, Dow Chemical and several large EPC companies. Regardless of our expanding market share it is still our intention to reduce production costs in future, which combined with our on-going commitment to high quality will lead to additional benefits for our customers,” concludes Mr. Hsueh.

Changsu Walsin seamless tubes and pipes

Available Grades:	410, 321 / H; 304 / 304H / 304L; 316 / 316L; 314; 310S; 317L; 347/347H S31803; S32750; 904L; 2522 ; UNS30432; 347HFG; 310HCBN; P/T91
Outside Diameter:	6 - 426 mm
Wall Thickness:	0.5 - 32 mm
Standards:	GB/T 14975; GB/T 14976 ; GB 13296 ; GB5310 ASTM: A213; A269; A312; A511 ; A789 ; A790 ; B677, A355 DIN; 17456; 17458 JIS; G3459; G3463 EN;10216-5 RCCM 3303, 3304

Stringent quality control and inspection is of major importance before products are allowed to leave the factory