

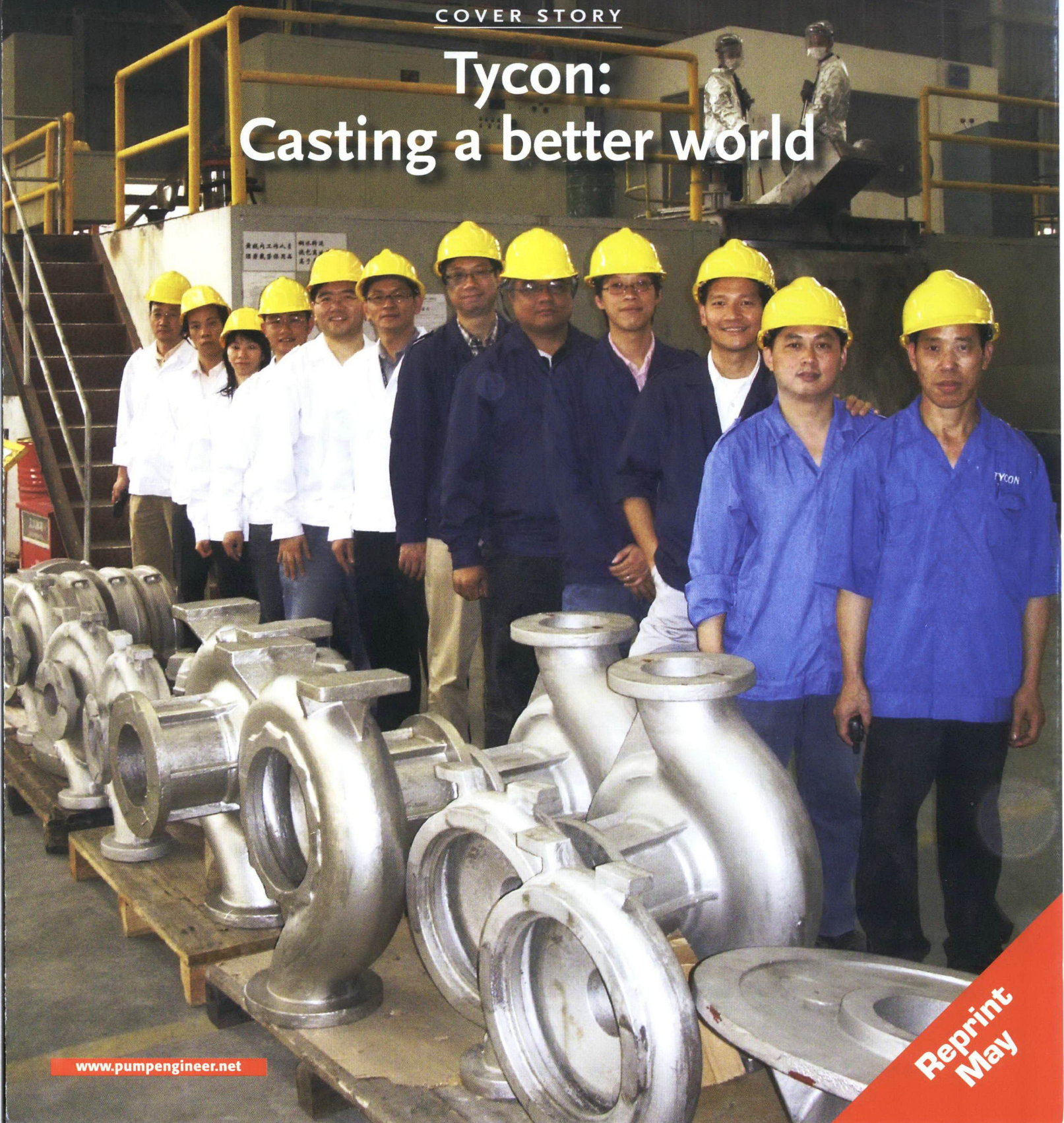
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COVER STORY

Tycon: Casting a better world



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With a company motto of "casting a better world" Tycon Alloy Industries has set its sights high. The company, which specialises in the production of metal castings and providing related technical services, is implementing ambitious plans to expand its market share, production capacity and product range. Located in Hong Kong and Shenzhen, China, Tycon services both Eastern and Western markets and effortlessly bridges the gap between these two spheres with an ease its competitors can only envy. With a keen focus on quality and flexibility the company is seizing upon a period of strong growth to fuel expansion at its main manufacturing plant. Pump Engineer visited Tycon at its headquarters in Hong Kong to find out how this company is setting the international pump market alight.

By Joanne McIntyre

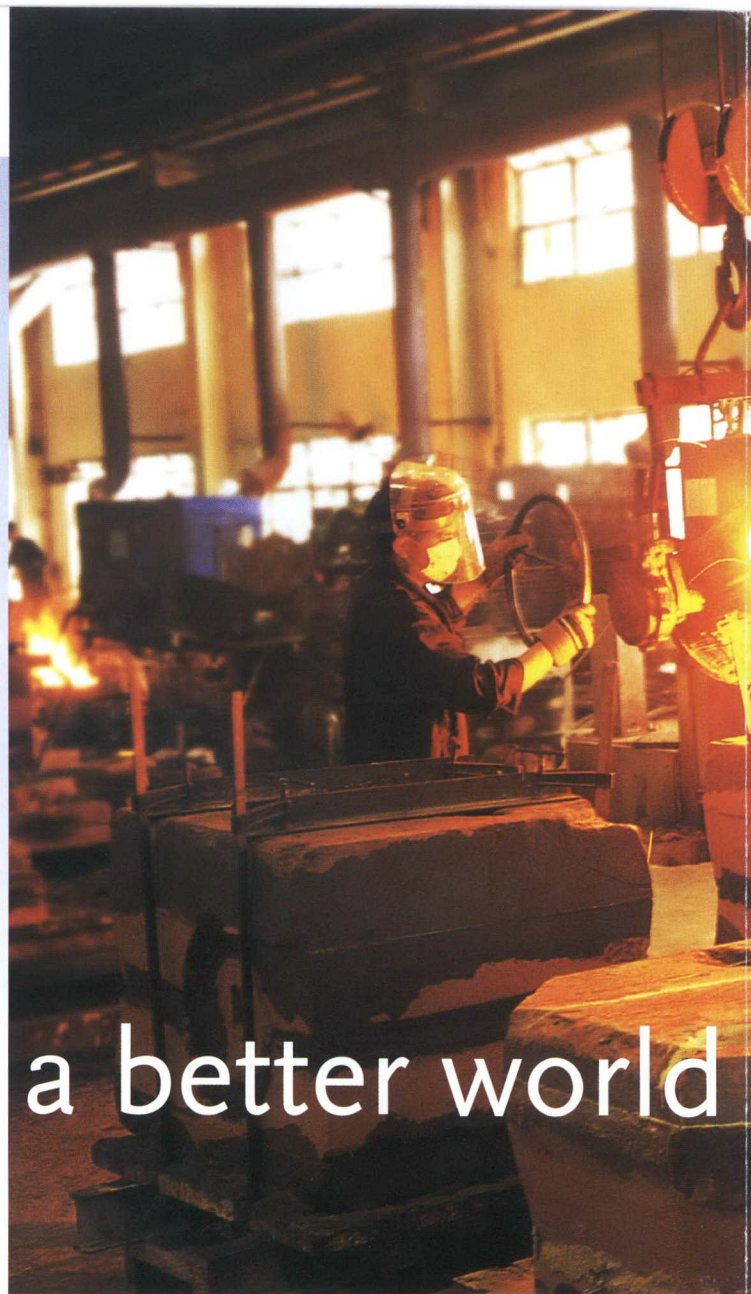
Tycon: casting a better world

"Our flexibility to operate in both the East and West truly sets us apart from the competition. Hong Kong, where Tycon's parent company, Fong's Industries Co., Ltd. is listed on the stock exchange, has traditionally been a cultural melting pot and continues to be an ideal location for setting up our headquarters" explains Mr. Frederick Chan, Sales Director of Tycon Alloy Industries.

Tycon is actually a 'dual identity' enterprise with operations in both Hong Kong and Shenzhen, mainland China. "This gives us increased flexibility when trading with foreign companies, which are best serviced through our Hong Kong office, while Chinese customers can utilise Tycon Shenzhen to take advantage of local tax requirements" says Mr. Chan. "It's all about offering the best possible service and cost efficiency for our customers."



An aerial view of the foundry at Shenzhen, China.



Another major benefit is that Hong Kong has a legal system which is very similar to most European countries and the US, so copyright and intellectual property rights are well protected. "It's important our clients realise that their designs are in safe hands. All of our contracts are signed under the protection of Hong Kong law so our customers never need worry about copyright issues. Their ideas are safe with us. This is clearly an important issue in the pump industry, particularly when dealing with exclusive designs," Mr. Chan affirms.

Currently celebrating its twelfth anniversary, says Mr. Chan: "Our core business is stainless steel casting. Although Tycon has made over 10,000 different types of castings since 1995, we have ended up with a strong focus on casting components. We've reacted to strong demand in the market for stainless steel castings for all sorts of applications so this is where we have directed our attention."

AMBITIOUS EXPANSION

Tycon is investing heavily in an ambitious expansion plan which has been accelerated following explosive growth in 2006. "Last year we approved USD 6 million to fast-track our expansion plans," says Project Engineer Mr. Tim Chen. "By June this year our capacity will reach 600 tonnes per month at the Shenzhen plant, 90% of



which is dedicated to stainless steel casting. The expansion plan covers the foundry, machining, human resources and the computer systems. While the Shenzhen plant originally incorporated both sand and investment casting, we are now moving the sand casting to another building on the same site. New buildings will greatly increase the available space on site, expanding by 38% from 27,000 m² to 35,000 m². While this is a substantial expansion, we are also planning to build a brand new machining shop to centralise all machining in one location," says a proud Mr. Chen.

Investments are not restricted to the creation of more space, as 19 new CNC machines will be installed at the Shenzhen plant, further expanding the company's state-of-the-art machining capabilities. In addition Tycon is investing strongly in man-power to boost their capacity: from a staff of 650 in 2005, numbers for the entire Tycon group rose to 1,100 by the end of 2006 and will continue to increase as more staff is recruited, mainly from Hong Kong.

About one third of Tycon's production capacity is dedicated to the pump industry, with that percentage increasing gradually. The company's most important markets geographically are Europe - which accounts for over 60% of sales - and the USA which is Tycon's leading export destination country. Comments Mr. Chan: "Europe and the US are the two leading pump manufacturing regions. We

are witnessing a trend for rapid growth in the US and the fact that we sell directly to pump manufacturers makes this a very important market for us."

Tycon has ambitious plans to increase its market share in both Europe and the US. "The economy in general is flourishing for us," says Mr. Chan. "Most applications which require pumps are enjoying strong growth; waste water, ethanol projects in the US, oil and gas, marine and power generation including nuclear."

While any major Chinese manufacturer is a potential client for Tycon the company recognises that developing a quality-focused share in the local market will take some time. Mr. Chan: "The domestic market is booming and it will have to adopt the same quality principles as the western world so we're sure we will see our market share here grow too."

MAXIMISING POTENTIAL

One of Tycon's strengths is that it is capable of producing very complicated castings. "Many pump components are difficult to cast, especially impellers," continues Mr. Chan. "We are able to produce high quality, smooth surfaces which are critical to get the required performance out of a pump. Our customers are very impressed with the quality of our impellers. The superior quality



State-of-the-art testing facilities are used to guarantee the highest quality to comply with all recognised international standards.



of our castings means that several customers have actually been able to revise their catalogues and performance indexes because we have been able to provide a better impeller than they had before. They brought us their own design, which we have been able to improve on during manufacturing so they could revise their specifications. Essentially we are able to deliver better components than they could get before so they are able to increase the performance index of their whole pump assembly. This produces the obvious benefit in that the pump components they buy from Tycon are more cost effective."

The company has wide experience in all sorts of pumps including centrifugal, diaphragm, submersible, piston and gear types. "Tycon produces a very wide range of pump parts in different materials that customers can choose from. The range of material grades means our pump components can be found in a variety of industries: we are currently working with a company to develop pumps for the nuclear industry which is one of the most demanding applications," notes Mr. Chan.

Flexibility also means providing the extra services that customers require, for instance machining components. "Our on-going investments in sophisticated equipment is just one way that we can add more value to our products," says Mr. Chan. Our castings are not only very precise, we also provide added services such as machining to ensure that the product dimensions will meet – or even exceed – the customers requirements."

In addition to a range of material choices Tycon also offers clients two types of castings; sand casting (resin sand) and investment casting (lost wax). Mr. Chen explains: "For some pump component castings it is more cost effective to use investment casting, whereas for larger components it is often more cost effective to use sand casting. We can also cover a huge size range, from 0.5 to 500 kg castings. We have recently commissioned a new furnace which will enable us to cast pieces weighing up to 1000 kg, an investment which will help us to serve the market – and particularly the power generation industry - even better. Basically Tycon Alloy is a one-stop shop able to offer the dimensions, material choice and complementary services that our customers demand. However we are constantly seeking to further improve. For example, our colleagues at the Shenzhen plant are about to take delivery of a new five-axis machining centre capable of working on pieces measuring in excess of 1000mm."

GUARANTEED QUALITY

As casting quality is without doubt a key determinant for the performance of any pump, Tycon has invested heavily in both time and money on testing. "European customers are always concerned about the quality of products coming from the East. Personally, I like to compare casting with cooking; you need good ingredients to make good dishes" explains Mr. Chan with a smile. "We are fortunate in that we have access to very good ingredients, by which



Inside the machine shop at the foundry in Shenzhen, China.



Seeking to constantly improve, Tycon invests in quality equipment such as this four-axis machine centre.

I mean scrap metals. One of our sister companies, Fong's Steels Supplies Co., Ltd., is able to keep us amply supplied. This enables us to closely monitor the quality of the scrap we use, affording us better raw material control than others. We know exactly where our material is coming from. Another advantage is that this is a secure source, allowing us to offer significantly shorter delivery times; we seldom suffer from a shortage of raw materials."

During the casting process Tycon has many controls in place and is very particular about controlling the quality of its products. The Shenzhen plant for example has a spectrometer which can test a wider array of metal and non metal elements which means it can make a diverse range of products. In addition, the company is continually improving its casting ability and providing an increasingly precise casting service. Comments Mr. Chan: "We have reached the stage where our casting service is so precise that very little work needs to be done to the component afterwards, which reduces costs for the client by avoiding further machining."

Without doubt, the price/quality ratio is an important element when customers make their final purchase decisions. According to Mr. Chan, the Tycon policy is therefore to provide a higher quality product, and so put itself in a better position than its competitors. "Tycon is able to produce better quality than many of our Chinese competitors due to the emphasis we put on testing, examination, and quality to ensure we get the ideal price/quality ratio," he concludes.

While Tycon enjoys a solid reputation for making castings in conventional varieties of stainless steels such as 316 and 304, it is responding to increased demand for more complex materials by making a range of duplex and nickel based products. Mr. Chan explains more: "A recent addition to our range is an aluminium copper alloy which is highly suitable for marine applications. Pump applications are becoming more demanding and environmental issues have become more important, therefore material requirements are becoming more stringent and pumps must be able to work in increasingly difficult environments. Conventional stainless steel may not be suitable for the job so we have to turn to duplex or nickel based alloys instead. Tycon is meeting these requirements by expanding its use of higher grade alloys."

At the end of the interview, an upbeat Mr. Chan is quick to point out that it is Tycon's ability to consistently provide high quality products that keeps customers returning to them time and again. "It is imperative to maintain our quality to meet our customers' demands. Customers will only keep coming back if a company can demonstrate that it can maintain the quality of its products." ●

Facts & Figures

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| Name: | Tycon Alloy Industries (Hong Kong) Co., Ltd |
| Product Range: | Cast products in stainless steel, carbon steel, duplex, nickel alloy; experienced in centrifugal, gear, submersible, diaphragm and piston pumps, & semi/full pump assemblies. |
| Staff: | 1,300 |
| Locations: | Hong Kong and Shenzhen, China. |
| Key Markets: | Power generation, marine, oil and gas, chemical, textile, food processing, medical |



Mr. Frederick Chan enthusiastically explains about Tycon Alloys' investment plans to Mr. Sief Roymans, Editorial Director of Pump Engineer.