Wisdom, tradition and innovation in the development of Shanghai Zengxin

YFB-D type hydraulic valve test bench.

Shanghai Zengxin Machine Electron Technology Co., Ltd. is a professional enterprise dealing in valve maintenance and inspection. Its products and services cover China nationwide and are exported to the United States, Britain, France, Russia, Canada, South Korea, Israel, Singapore, Iran and many other countries.
The company was established in 2001, and is located in the Waigang Town Industrial Park in Shanghai. The chairman of the board, Mr. ZengHong Hu, recalls the early years when their first factory was rented and the output of the valve test bench was only 1 million RMB (EUR 100,000) in the second half of 2001. When Zengxin moved to a new factory building turnover had reached almost 9 million RMB and by 2012 this had grown to 50 million RMB. Now the company covers an area of 15,000 square meters, with more than 20 million RMB in fixed assets and over 40 production units. More than 70 employees include 8 senior engineering and technical personnel. Zengxin has also achieved 16 national utility model patents and 3 invention patents and, in just fifteen years of development, has created a reputable brand.

By Li Chaoran

Innovative consciousness and core competencies

In the years after its establishment, the company's business development happened very quickly. We asked Mr. Hu what was responsible for this rapid development. Mr. Hu's reply consisted of a few key words: quality; R&D capabilities and internal management structure. These, he told us, constitute the company's philosophy and explained further: "We are committed to ensuring product quality, and maintaining responsibility for the customer, pursuit of excellence, meeting customer demand and providing cost effective solutions for the most appropriate equipment are the things we consider important."
Compared with its competitors, Mr. Hu explained, Zengxin's products are more targeted, based on the maximum and minimum limits of users' valve size and pressure, to develop the most suitable compliance testing equipment for users. "There are family businesses in Zhejiang, which will inevitably be affected by the family connections which could result in problems in the course of business. The Internal management of Zengxin is composed of non-related professional managers who have a responsibility to the company. We have chosen this way to operate to avoid the shortcomings of traditional enterprises," he added.
The common 'rule of thumb, dependent on plagiarism' approach of some companies who rely on cheaper prices in the market to survive is not the business philosophy of Zengxin who are willing to invest heavily in design and research and development and to achieve this the company has established a dedicated design team

Internet + concept

Zengxin's main products are the valve performance testing equipment, flow resistance coefficient of the valve testing system, valve life test equipment, valve opening and closing torque test equipment, PTT automatic valve test equipment and valve sealing surface grinding equipment. These are widely used by valve manufacturers, end users, valve and valve installation maintenance units and third party testing organizations.
The company has made a number of successful leaps forward down the technological innovation road. In 2007 a successful trial of the YFB-D1400-type top pressure valve test bed was carried out and the user's response was good. In 2008 a "one Touch" automatic valve test bench, test automation to complete a valve was successfully developed and was the first creation in China. in 2009 a 3200t top

pressure test rig was successfully designed, the maximum valve test specifications 48 "900LB and 56-600LB, equipment weight 110 tons; also in 2009 Zengxin successfully developed a testable DN3000mm oversized hydraulic butterfly valve test stand. The 320Q test stand increases the valve test computer monitoring function, and also enhances the degree of automation equipment.

We asked Mr.Hu what's next in line at Zingxin. "We have been exploring advanced technology in production and testing processes in science and technology which will be designed to minimize disruption to the workforce," he told us. "In addition valves must have the minimum amount of leakage allowed and we have, therefore, developed a leakage detection system. The system has been put into use for detection program settings API 598, API 6D, GB13927 standards so that when the valve is detected the menu can be called at any time." Mr. Hu also explained China's active "Internet +" concept – the combination of Internet and traditional industries. The government has thought about how to meet the increasing demand for immediate, concrete action to implement a national strategy to actively seek win-win cooperation. On the one hand, drawing support from Internet platforms, resources and technology to effectively improve the level of information and Internet services capability. On the other hand, making full use of Internet technology to advance concepts, bring about continuous optimization and enhance services and capabilities, to form a closed-loop service experience.

Shanghai Zengxin Machine Electron Technology Co., Ltd company building.

Test results via cloud platform

On May 29th this year Zengxin held its 15th anniversary celebrations and released news. Mr. Hu: "We are considering building a cloud platform for valve test results, such as the detection of emissions from a station valve to be used specifically where there has been no failure. The idea is that emissions can be monitored in the background and any problem identified and viewed directly. To do so, however, the valve must have a signal source so in May we invited experts to come and inspect the valve to determine whether a sensor can be installed and, if so, we will be looking for sensor manufacturers to tie up with. If the valve is fitted with an intelligent sensor that can detect valve leakage or internal leakage, and we can see the cloud platform, we will be able to give this feedback to the valve manufacturer, to let them take timely measures."

Growth in overseas markets

Following the impact on certain domestic valve markets suffered over the last two years, Zengxin has, in recent years, maintained a growth in overseas business. Said Mr. Hu: "2014 foreign sales totalled more than 14 million RMB, of which Russia accounted for 50%, followed by the United States, the Middle East and India. Sales rose last year in the United States as the result of our participation in an exhibition. Russian business fell last year due to economic

Binhai quality supervision.

YBF-QM ball lapping machine.

sanctions by the West but we did see a little improvement in the Middle East market. In short we sell our products through direct sales channels and trading companies, total sales to more than thirty national users which, in the main, are valve plants."

According to Mr. Hu, there are three major sales channels in the international market. The first is directly promoted through the Google search engine. Secondly, foreign investors who come to China to purchase goods and, thirdly, foreign trade companies who also do a certain amount of valve sales, however this third channel is relatively small.

Compared to the domestic market, overseas market operations are more challenging. The reason, according to Mr. Hu, is the idea that the overseas test and maintenance business is a mature market. As for long-term cooperation, demand is relatively stable and not necessarily related to the quantity purchased since a customer may buy from us this year after an interval of two to three years, and will not come back to us to buy until the year after next.

In the valve maintenance market, China has not yet expanded its operations to cover this. Mr. Hu affirmed: "The domestic situation of valve maintenance and inspection is piecemeal at the moment. Maybe a dozen people have set up companies through acquaintances and have obtained some valves to repair. There are no regular maintenance companies, including after repair in accordance with the criteria identified, and repaired after the life of the product, etc. – there is a lack of accurate determination. Therefore, we are optimistic about the market, evaluating against the relevant standards."

Finally, Mr.Hu told us that he was hoping to build relationships with a number of end-users. "I believe that the end-user market is great, but the problem faced by end users is the purchase of fixed assets requiring layers of approval. This leads to the result that they often use simple tools to do the testing. There are exceptions, however, such as Changqing Oilfield who have their own intelligence testing center and have bought 6 million yuan of equipment from us. Each detection device is connected to a computer, then these computers are connected to a local area network, and finally integrated into Changqing Oilfield's network. Each valve is identified with a bar code which means that by just clicking on the link each valve's use, testing and maintenance details can be viewed instantly."

We understand that the system and technology is mainly through joint development by Zengxin and Changqing Oilfield. Detection is broadly divided into hydraulic performance tests, leakage tests and valve safety tests. "The Intelligent Valve quality inspection system is part of the cloud service," said Mr. Hu, adding "and now that the "Internet +" technology has developed rapidly, and if you can identify each valve's affixed bar codes, install an intelligent member, then connect 24 volt power supply, you can monitor online. This includes industries such as oil refineries where, immediately a valve leakage is detected, an alarm will sound in the control room providing 24-hour monitoring, via the cloud service.

Field use.

4600T super large screw top pressure valve test bench (Tianjin Cameron).

Valve intelligent detection system.