



# SHK: focus on severe service valves

*Founded in 1993, SHK Valve Group has been an active player in the Chinese valve industry. Today, it is widely recognized as one of the leading manufacturers in China. With its continuous investments in the advanced manufacturing facilities, and long term cooperation experience with major end users in a wide range of critical applications, SHK has committed to becoming a professional supplier of severe service valves, providing valve solutions to meet the critical demand in the oil & gas, Chemical, Petrochemical, Coal Chemical, LNG, Power generation industry, Air separation and so on. Valve World visited SHK's headquarters in Shanghai, China and met with the marketing manager Mrs Xiang Yanmei, to learn about SHK's history, strategy and expertise.*

By Yuzhong Shen

As one of the most recognized names in the Chinese valve industry, for the past 20 years SHK Valve Group has been dedicated to the manufacturing and R&D of special valves applied to long distance pipelines, petroleum, petrochemical processing devices and other harsh working conditions. We begin by asking Mrs. Xiang about SHK's history in the valve business. She explains: "SHK Valve Group was founded in 1993, at the time when the company was still a Chinese-Singapore joint venture. In 2005 we reformed the company and became a wholly private held company with the name 'Shanghai KVC Valve Co., Ltd'. In 2009 we formally established the SHK Valve Group with a

few subsidiary companies. As of today, SHK Valve Group has completed the share and business restructuring, with 4 major subsidiary companies covering different product lines and service solutions in the valve business. Among these subsidiaries, in addition to SHK Valve's focus on severe service valve products, Anke special valve company is a supplier for Chemical Fiber Industry, Newtork Flow Control Co., Ltd is a professional actuator and control valve supplier, and Keywins severe service valve technology Co., Ltd provides a maintenance and repair service to high end valves from major end users." After 20 years of development in both China and the international market,

SHK has a clear focus about its target business, which covers major severe service valve products and critical requirements such as anti-abrasion, high temperature, high pressure, cryogenic, fugitive emission, and other harsh application conditions. Mrs. Xiang tells us: "We position ourselves as a professional valve supplier for critical applications and severe services, especially for some of the most demanding applications like long distance pipelines and various critical devices in the petrochemical process. SHK's main product lines include metal seated ball valve series, high temperature/high pressure and cryogenic valve series, special valves for flow control and air separation units, plus other special engineered products for different fluids. We do have a wide range of products for those harsh conditions – however ball valves are among the most popular products of SHK Valve Group, especially the metal seated ball valve. For example in the petroleum, petrochemical industry, we provide a series of high temperature/high pressure metal seated ball valves to compete with many international brands; our abrasion resistant and High-frequency switching ball valves, rising stem ball valve have been widely used in delayed coking, desulfurization, refinery combined, hydrogen combined, clinker oil, mining and other slurry application. For ethylene, hydrogen, oxygen, nitrogen, gas application we can provide cryogenic and high temperature gate, globe, check and ball valves, and both fully welding and bolted bonnet pipeline ball valve/ rising stem ball valve use in crude oil and gas application, actuator slab gate valves for tank farm. In addition, in the coal gasification and coal chemical industry, we have lock hopper, lock slag, lock ash valves



and rotating disc valves certified for Shell gasification, as well as use in Texaco, Lurgi Process, other valves such as angle valves and eccentric rotary valves for black water application."

## World class facilities

During the past decade, in order to control the valve and components quality, as well as to expand testing capability, SHK has made huge investments in improving its manufacturing facilities. Thanks to its continuous commitment, a world class manufacturing plant has been established within SHK's Shanghai base, which has also become a well-known plant within the Chinese valve industry. Mrs. Xiang explains: "SHK's core manufacturing facilities have been developed to cater for the production of metal seated ball valves. We have made really huge investments in some of the



most advanced equipment. For example we have imported two grinding centers from Italy to achieve the highest machining precision of ball grinding. They are 5 axial machining centers with processing capabilities up to 56 inches. Another example is that we have been working with Shanghai Jiaotong University to develop a series of grinding and machining equipment for the balls as well as the valve metal seats. These capabilities allow us to achieve the best production quality of ball valves. In addition, we have a unique clean workshop here to produce shut off valves for some critical gas application such as hydrogen, oxygen and nitrogen. This clean factory is about 500 square meters size, where we can finish these valve products with dust and oil-free assembly and pressure testing. Another important piece of equipment we need to mention is the JP8000 HVOF system from Praxair; as of now it is the biggest HVOF system in the world and we have 2 sets here in our plants."

Currently, SHK's total company base covers an area of over 130,000 square meters, of which the plants occupy about 80,000 square meters. Mrs. Xiang tells us that the plant 2 is where major components machining and production is carried out, and is also equipped with a series of advanced testing facilities, especially anti-abrasion testing, environment simulation testing, high temperature testing and external loading bending testing. Mrs. Xiang explains: "Plant 2 is the major factory for SHK's core component production, including those most important parts of a ball valve such as the ball, seat, stem. The highlight of this plant is that we have developed various kinds of type testing devices in order to prove the reliability of SHK's products. In China



we are working with major end users on some project with localization valve. Within these projects we often need to do different kinds of tests to make sure the valve will have expected performance in those critical devices. For example we have developed some anti-abrasion and high temperature testing devices, as well as ball valve type testing devices for Sinopec's S-Zorb Sulfur removal technology process. In addition, we have developed our own environment simulation equipment to simulate the outdoor conditions for pipeline ball valves. In some cold places such as Russia or Xinjiang Province, the temperature influence on the valves and sealing performance has to be evaluated and tested. This testing device will simulate environment temperatures from -50 to +93 Celsius. Needless to say, normal high temperature/low temperature testing devices are already installed here as well." Mrs. Xiang also reveals that the SHK's plant 3 will be ready to use in March 2015. Says Mrs. Xiang: "Plant 1 will become a manufacturing plant for control valves and actuators, whereas the newly built plant 3 which will be ready in March, will further facilitate the manufacturing need for valve body machining and assembly, as well as bigger stock demand in the future."

### Tackling the international market

With these high end products and manufacturing capabilities, SHK has already established an very stable market in the Chinese industry. The company has thus made its next planning to further develop its international market share, especially to introduce specialized ball valve products to global end users and EPCs.



The strategy from the management is that SHK will continue working on getting more approvals from major end users and EPCs, to have the possibilities of catching international project and stockholder business. Mrs. Xiang continues: "currently the export business represents about 15% of SHK's total business, which is not really a big share. However our target is to greatly push the export business to 60% of the total in the future, which means it will be even bigger than the domestic business. To achieve this target we have been working hard on getting end user and EPC's approval, and take part in end users' projects through EPC companies. In addition, we are working on getting more framework agreements in place with existing end users and stockist clients. For ball valves, some framework agreements are already arranged.

SHK is continuously working on improve their facilities and personnel to be more and more competitive on an international level. In order to achieve this, we are recruiting foreign talent to work in Shanghai, such as QC, Design Engineers, Application Engineers, international sales staff." Needless to say a good client base also contributes to SHK's ambitious planning. SHK does have some impressive references from major international end users and projects, including end users such as Shell,

KNPC, PDO, PETRONAS, NIGC, NIOEC and engineering companies such as Linde, Air Liquide, GS, Samsung, TECHNIP and so on. Mrs. Xiang tells us: "In terms of international customers, one of the highlights is our long term cooperation with Shell Gasification. Since 2009, we have already supplied metal seated ball valves to



a value of over 80 million RMB. In Middle East, Europe and Indian markets we also have good client bases. In the Middle East where we have already obtained approval from KNPC, PDO, NIGC, NIOEC and other global EPC companies, we are still working on getting approvals from the Gasco and Takreer, as well as KOC."



Further, SHK is looking for agents to supply their metal seated ball valve, pipeline ball valve, rising stem ball valve and control valve plus one special valve in each country.

### Strategy for the future

According to Mrs. Xiang, SHK sees great potential in the Middle East and Russian markets in the near future, and planning has been made to further develop these areas. Says Mrs. Xiang: "with the current political and economic situation, we see Russia as a good market for us, and we are preparing to further develop it. In addition, we are also considering setting up plants and offices abroad, especially for the Europe and Middle East market. For example we are currently working on a 10 year framework agreement with a Middle East. If this is successful we will set up a plant there in 3 years' time." Asking about SHK's key to standing out from the huge number of valve suppliers, Mrs. Xiang answers: "We are selective in terms of product lines and markets, because we don't do everything but focus mainly on the severe service valve products. In China, there are hundreds of valve companies and some of them are actually good suppliers. However their product might still be general commodity valves with big stock onsite, which is not what we have been doing. 80% of SHK's products are special or severe service valves, this can be seen especially in the domestic market, where Chinese end users never ask us to make cheap commodity valves. We have only one manufacturing base located in Shanghai, where the cost will never be competitive, so the quality and the added value of products are crucial to us. We see challenges in developing the severe service market and we will keep our focus there. I believe a good market can also be expected in the near future."