



SWI Valve – dedicated to critical service

SWI Valve Co., Ltd. a South Korea based industrial valve manufacturer has been achieving a number of successes from various projects worldwide. With its extensive experience in the design and manufacture of ball, gate, globe, check, cryogenic and bellows seal valves, this fast growing company has been recognized and approved by a huge list of major end users and EPC companies and has committed to meet the higher requirements from the global industry, especially from various critical service applications. Valve World went to Seoul city, Korea to visit SWI's headquarters and spoke with planning manager, Mrs Hyunjung Choi, to learn more about the company's business.

By Yuzhong Shen

When SWI Valve was founded in 1987 by Mr Y. S. Choi, the company's initial focus was mainly small size forged gate, globe, and check valves. With the business continuing to grow the company quickly started to add more products and develop

new markets. "We purchased the land and started building the company 26 years ago," says Mrs Choi, "Since then our business has been growing with a large number of approvals from well known clients, and as a result we've been expanding not only in terms of sales but also on product range. Later we became more interested in large diameter valves and more specialized product features

which require a much bigger production area combined with highly sophisticated manufacturing equipment, and in 2007 we purchased another location near Seoul and established our 14,500 m² facility which became our second plant."

Valves for critical service

Mrs Choi explains to us that currently SWI supplies a wide range of valve products covering a number of industries; however certain areas with critical service applications have been a focus within SWI. She continues: "We design and manufacture a wide range of products including ball, gate, globe, check, cryogenic and bellows seal valves. The small forged valve business is still substantial and important to us; we recently introduced a new product line being our bonnetless in-line maintainable Y pattern globe valve range to complement this business. However since 2000 we started to



get more sales in the US market which requires us to focus more on large diameter bellows seal valves. As the environment issue becomes a more and more important concern for the global industry, the application also requires higher performance from valves and the bellows seal valve is just one of the products that can answer the needs for those requirements. Actually bellows seal valves and technically emission free ball valves has become one of the most important products for us nowadays, we do have a lot of experience in this area and are pretty much known for having the largest size range of bellows seal valves than probably any other maker in the world.

Besides bellows seal valves, Mrs Choi tells us that the company's ball valve business has had exponential growth in recent years. "Ball valves have become the second biggest business within SWI and we are equipped to provide ball valves with sizes up to 72 inches. Our ball valve range covers various types from standard popular products like side or top entry ball valves to high integrity and technically emission free floating or trunnion mounted designs in pressure classes from 150# ~

2500#. SWI's valve products have been extensively used in the world's industries covering a wide range of services and applications including low temperature and cryogenics in LNG plants by most of the major end users and operating companies worldwide. At SWI these valve designs are available with extended bonnets and special preparation for applications in extreme temperature service conditions, including some features like advanced seat and seal design to minimize potential leakage, lower operational torque for reliable and smoother operation, rigid body construction to minimize effects of thermal shock, larger stem drive train for ESD applications, certified firesafe design and fugitive emission compliance as standard and so on."

In addition to manual valve products, SWI has invested in the automated valve business and gained significant recognition with more success expected to follow. "Another market area where we are gaining high recognition is in the automated valve business," she continues, "we have very good relationships with some leading actuator and controls manufacturers and we are building our stock and capability of supply to our clients with well-engineered automated valves and control systems. It's been 2 years since we opened our automated division and our team there has been very busy and already supplied and secured several prestigious contracts. These days we are in the middle stages of supply for the largest single contract awarded to SWI for motor operated valves to the TAKREER IRP-II Project in the Middle East. This contract



24" Class 600# top entry ball valve

not only covers motor operated valves but also includes the operating system and equipment plus site acceptance testing (SAT) and site integration tests (SIT). It's a very exciting project which we are very proud of, not only because of the project scale, but also the whole range of the items and services that we will supply and recognition in the market place for our automated and engineering ability. We see it as a great boost for the company, this project will allow our clients to truly recognize SWI as a potential single source for all their valve requirements, from manual to fully automated valves and control systems, be it pneumatic operated or motor operated, it can all be supplied by SWI".

With such an extensive range of valve products designed for critical applications, SWI has been serving some major market sectors including the chemical,



Motor operated trunnion mounted ball valves



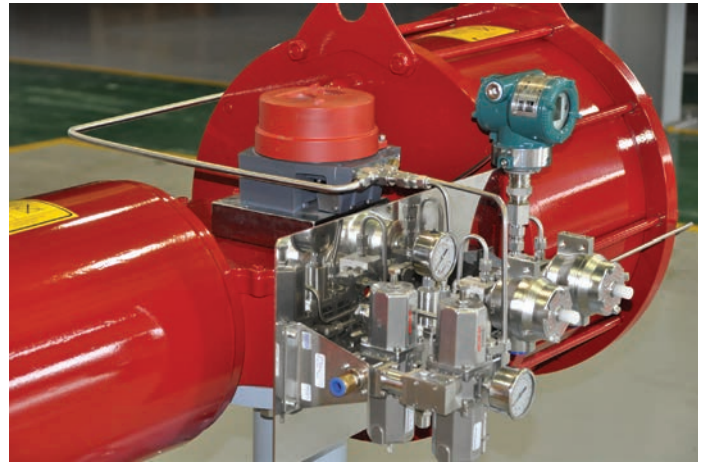
Forged Steel Class 2500# ball valves

petrochemical, offshore, oil and gas, power generation, LNG and marine industries, among which the offshore industry has been one in which SWI has been vigorously participating. Mrs Choi explains: "As a valve supplier for critical applications, a great part of our business is project based, especially in the offshore industry. Our experience within this industry is clearly helping us to be more competitive in terms of product quality and manufacturing capability, because it is a very demanding industry which requires newly developed materials and a higher level of specification. For example we are dealing with lots of special materials including Inconel, monel, alloy 20, titanium, hastelloy, duplex, super duplex and 6MO. On the other hand, our well known experience with various projects has also made us a reliable partner for many customers because firstly, we have the ability to understand various different specifications from customers and we are able to meet their needs for each different project. Even though the industry specification keeps improving and bringing more challenges to the manufactures, we are capable of reviewing and implementing these requirements in our design to meet the new specification; secondly, project business is very delivery sensitive. Clients need to meet the time for a launch of a FPSO or engineering milestones for the project so valve delivery time becomes extremely important, and SWI's experience allows us to combine good delivery times with top quality."

World-class facilities

In order to realize the company's ambition in the high end market, SWI has invested a significant amount of capital

in manufacturing facilities during the past few years. "We've been expanding," says Mrs Choi. "As we are developing new products to add to our production range, we obviously need to put a lot more investment into our facilities, especially after purchasing the second location for our new plant. Currently production is centered around our world class manufacturing facilities which are equipped with some of the most technically advanced and sophisticated machinery and testing equipment. For example, this 14,500m² Cheongbuk manufacturing plant includes some of the largest CNC horizontal and vertical boring machining centers to be found in the industry with full CAD/CAM capabilities, automatic tool change and tool wear compensation technology for precision machining of valve bodies and parts. At the same time we also have a fully automated robotic welding system, which was the only automatic weld overlay machine in



Control system with valve monitoring and PST

Korea when we purchased it. This system offers a cost effective solution compared to solid corrosion resistant alloys for valves 6" and larger. Valve bodies, balls, stems and trunnions may all be overlaid with corrosion resistant alloys such as 25% Cr Duplex or Inconel 625. Where highly corrosive or erosive services are involved, the life expectancy of a valve can be considerably extended by the application of local weld overlay to critical seal areas or full internal cladding to the valve's internal surfaces. In addition, we have various specialized test equipment to perform virtually any required test including full functionality DP testing of valve and actuator assemblies. Our in-house testing capabilities include hydraulic & pneumatic testing, high pressure gas testing up to 6000 Psig, cryogenic testing down to -196°C, vacuum testing, fugitive emission testing, thermal cycle testing and electronic torque measurement and so on. In 2011 we installed our paint shop



CNC vertical boring machine

and equipped it with the very latest blast cleaning, painting and drying equipment available. We are able to achieve level SA3 as standard. This additional investment further enhances our capabilities for the market as correct preparation, coating and preservation is increasingly becoming more critical in the products being supplied and working environments. SWI will soon be able to undertake any type of client specific painting requirement in-house regardless of on-shore or off-shore project, meaning that we can provide products with a higher quality paint finish."

Mrs Choi adds that all these facilities and experience has made SWI a competitive supplier in the global market: "What makes us different is that we can do everything we need in-house. If you look at the industry there are lots of companies which only part manufacture, subcontract design and product manufacture and testing involving significant outsourcing. We are one of the true valve manufacturing companies with full in-house capability incorporating all aspects of valve design, development and manufacture ensuring SWI can offer a degree of flexibility needed in our demanding industry."

Global market

Asking about its global market and customers, Mrs Choi tells us that SWI has been aggressively working on many geographical markets. She explains: "In the domestic market we have great relationships with major engineering companies including Samsung Engineering, Hyundai Heavy Industry, Daewoo E&C, GS Construction and so on, all of which

have been doing business with us and helping us to gain a lot of experience over the years. We are also proud to be able to say that we have a long list of customers worldwide. Right now we are working on several projects from major end users such as Total, Saudi Armco, ExxonMobil, Chevron and DOW Chemical etc.... At the same time we are also dealing with engineering companies. SWI has built some strong partnerships with authorized stocking distributors on nearly every continent. We believe that a lot of investment is going on in the world and we need to adapt our business accordingly. For example, at the moment there are lots of Middle East projects going on and we have been involved in some projects in the UAE and actively developing those markets. Of course the US market is also a big and stable market for us, and we have very good relationships with our partners there including stock, actually we have been working together for more than 10 years. In Europe there is the MRO business that requires our products and whilst we do have strong distributors helping us with this market, we seek to expand our business opportunities further."

Mrs Choi tells us about SWI's future strategy of expansion to meet the demand from global markets. "We have been expanding for the past few years and we are going to continue to do so, not only in terms of penetrating different markets but also to add more products to our production line. For example fully welded pipeline valves and more specialized valves are in our sights. This said, our project business does absorb all of



Gate/Globe valve testing station

our time due to continuous tweaks and changes or differing requirements from global operating company specifications resulting in products being enhanced and specifically manufactured to meet their needs in terms of materials, testing, local overlays etc.... This is one of SWI strengths and reason why we need to be flexible and keep increasing the lines. Geographically we are already a global company but there are still many markets we are seeking to cover especially niche markets in China, South East Asia, South America and so on. We are looking at the global market in a true sense not only by exporting products and expanding the company but also we are endeavouring to get closer to the market with an international staff team, which are all necessary in order to realize the company's ambition: to be a global player with reliable performance.



Bellows Seal valves

Facts & Figures

Name:	SWI Valve Co., Ltd
Founded:	1987
Head Office & Plants:	Head Office & Anyang Plant – 1 Cheongbuk Plant – 2
Key markets:	Offshore, Chemical, Petrochemical, Oil & Gas, Power, LNG, Marine
Main products:	Gate, Globe, Check, Ball, Cryogenic, Bellows Seal & Automated Valves
Employees:	128