

After 135 years in business, A.W. Chesterton Company continues to look for ways to innovate by growing its extensive portfolio of products, increasing quality and upholding its commitment to provide customers with reliable, efficient and economic sealing solutions.

Since its 1884 foundation, in Boston, Massachusetts, as a purveyor of steamboat and engineering supplies, Chesterton has expanded rapidly into a global, focused provider of sealing solutions for a wide range of process industries.

Valve World Americas had the opportunity to speak with Product Line Director Raman Hanjra, Engineering Manager Gregory Cole and Senior Application Engineer Warren Montgomery to discuss the company's investments in innovation, efforts to mitigate emissions and the promising future of the A.W. Chesterton Company.

By Sarah Bradley



A.W. Chesterton at India Street, Boston circa 1884.

A.W. Chesterton Company – quality, engineered sealing solutions

As a fourth generation family-owned company, Chesterton continues to build on its strong product solutions and service background to provide local support to its customers worldwide. Headquartered in Groveland, MA, Chesterton has a strong network of sales offices worldwide which allows the company to grow and maintain its position in the continually changing global industrial environment.

As the company moves forward through its second century in business, its long-term balanced and disciplined approach is focused on providing value to its customers. Chesterton has built a solid reputation in the industry by maintaining a very strong, technology-based, highly-engineered product offering. Its vast and varied product portfolio has given the company the ability to

solve a wide spectrum of customer issues. With products ranging from valve packing, polymeric sealing for ultra-high pressures, valve coatings for wear reduction, lubricants and mechanical seals, as well as engineering assistance and field support, Chesterton has a solution for most customer requirements.

Engineered Sealing Solutions

With customers endeavouring to reduce emissions while increasing safety precautions, Chesterton strives to act as a business partner and knowledge provider by supplying solutions that help them achieve their goals and reduce the total cost of ownership.

Providing knowledge-based solutions is Chesterton's primary focus in its effort to support its customer base. Understanding customers'



market dynamics, trends, applications and standards is crucial to determining what will work for them and what will not; depth of experience, consistent product reliability and engineering expertise provides Chesterton the ability to deliver meaningful and competitive advantages to its customers.

As the oldest remaining American packing manufacturer, Chesterton has always prided itself on its ability to build longstanding relationships with its customers that continue to endure over time; it is the fundamental basis of Chesterton's business model. That relationship is maintained through the company's effort to work with its channel partners and training sales staff to ensure that customers can rely on Chesterton's consistent ability to provide technical knowledge and assistance worldwide.

Investing in Innovation

Chesterton's packing and sealing product solutions are the result of a combination of high levels of knowledge, in-depth

engineering and rigorous testing. Chesterton segments the valve sealing industry into three areas of focus: End Users, OEMs and Service Providers, such as contractors and valve repair shops. Within each segment, Chesterton is able to provide tailored, engineered solutions for the valve sealing needs of a variety of industries such as: offshore, refining, exploration, mining, chemical, nuclear and fossil power. Considering the diverse number of client applications, which range from straightforward to highly demanding, Chesterton seeks ways to augment their product line in order to extend the service life of a valve and meet the ever-changing demands on Low Emissions (Low E) technology.

"There is a big push on the temperature limits of what is currently available for sealing to Low E. Currently, the API 622 and 624 standards require testing at 500 degrees F and we are seeing a few applications where end users want to be ensured that the packing going into the valve is actually capable of sealing at temperatures well above this. This has really been driving some innovation from our end to test new materials and different possible product combinations, whether it be new or existing products of ours, to see if they are capable of achieving these higher temperature limits," said Greg. "Whether it be the immediate future or the next few years, the API standards will likely be adjusted to higher temperatures and the blocking agents and materials typically used to help achieve Low E will no longer be as heavily relied upon. This is because most of those materials, such as PTFE, are not going to be effective at those higher temperatures."

Chesterton's ability to custom blend and manufacture specific materials gives the company the capability to handle some difficult challenges. The company takes higher end manufactured polymers and loads them to create a seal. For instance, the company is producing five different blends of PEEK polymer material and is able to control the quality - which is critical when tough applications demand flawless material. When no one else can tackle the challenge, people know Chesterton can handle the tough applications.

"We are always investing in R&D. We are always pushing ourselves, pushing material limits, whether it be on existing or new products to try to achieve the best available solution for not only what is currently on the market, but to support the challenges we foresee for our customers," explained Warren. "Without innovation we could not have lasted successfully for as long as we have. If we are just a 'me too' company or product, we would have vanished long ago. Innovation has always been our foundation and it is not just in terms of product innovation, it is innovation around multiple areas, in all the business processes," added Raman.

Importance of Performance Testing

"Our biggest contribution and our greatest asset is the knowledge we have at hand. We have many knowledgeable employees that are able to contribute not only to the advancement of the technologies, but to the standards themselves, and once we know where the market is going we can really get a jumpstart on developing the technology to meet those demands," said Greg. "It is more



A.W. Chesterton Company headquarters.

than just product knowledge, but also how we can qualify, how those standards apply to the valve.”

With the significant role that valve sealing plays in the reduction of emissions, Chesterton has made a significant investment in extensive testing of its products for e.g. testing its Low E technologies to latest standards such as API 622 (Packing Performance Testing). With construction of new facilities to increase the testing capabilities of their current test labs, Chesterton’s engineering team works together with OEMs, end users and aftermarket repair representatives to offer valve qualification services to API 624 (Valve Type Testing Low Emissions), API 641 (Type Testing of Quarter-turn Valves for Fugitive Emissions), ISO15848-1 (Valve Type Testing for Fugitive Emissions), TA Luft (German Standard for Fugitive Emissions testing for Packing and Valves) and other special variations for certification standards required. Testing can be performed with methane, helium, and steam. This helps end users make sure that the valves they use are working at the highest level of efficiency and functionality. The investment in on-site testing allows Chesterton to work with OEM valve manufacturers’ to test various types of valves, sizes and pressure classes to current and future standards, and also to troubleshoot by replicating issues and environments that may occur in the field. “There is a void in the current industry testing methodology, because API 622 and 624 are restricted to 500 degrees F. Even if you have a product that exceeds those temperatures, you do not have a standardized test to prove it and that becomes a challenge for us,” revealed Raman. “Not only do we need to devise new products to meet these new demands, but



A.W. Chesterton Company employees.

we have also developed our testing labs to be able to simulate the actual high temperature environment, to meet these new customer requirements. We have very comprehensive testing capabilities and from an R&D standpoint, we really push the limits and test our products to temperatures and cycle limits beyond those standards. It has helped to make us a technology leader in this sphere.” “Having these testing capabilities in-house is really beneficial from an R&D standpoint, because we get to see the test results live and to troubleshoot something that may or may not work. With mechanical packing it is really beneficial to see the failure modes up front and not just a compilation of data,” said Greg.

Counting on Quality

Ensuring customers of the highest level of products is important to the company’s brand, and while cost effectiveness is always

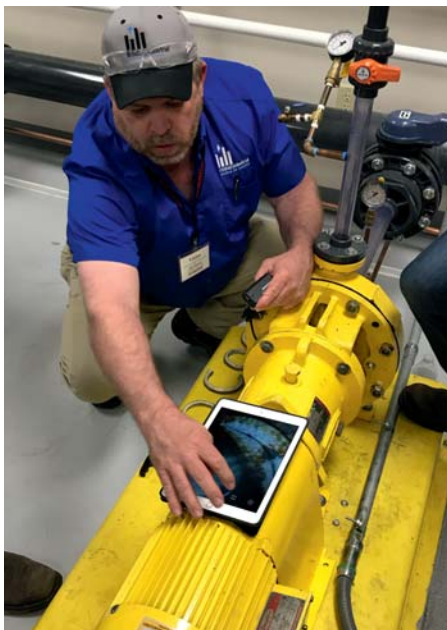
a goal, quality is never to be compromised. Chesterton is an ISO-9001 certified company, dealing with the most regulated industries on an everyday, global basis. Quality is built into the product from the conceptual, design and development phases, so the end result is a high performance product.

“The quality process is constantly monitored and tracked. We maintain detailed records of incoming raw material orders and customers appreciate the detail in which we are able to trace all aspects of our packing components. This allows us to know everything there is to know about the products we manufacture,” said Warren. “Every product we send out is labeled with a lot or batch number that is traceable all the way through our systems, not only to our end product quality control standards, but also to bulk material quality control standards. That traceability gives us the ability to really make sure the product is the same every day, whether it is incoming inspection of raw materials, which is done on every received lot. For individual custom solutions, which are a variation, there are quality control inspection criteria that we document and it is traceable from end user all the way back down to our bulk raw materials.” This attention to traceability and proper tracking of products and materials is made simple and convenient for customers through access to online asset management tools. These tools provide customers with access to their equipment information, history of their orders and other information to help optimize their sealing solutions at any time.

“We have made some great advancement recently by expanding the capabilities of our online tools, giving customers the ability to manage some of their equipment information from the Cloud. Allowing for Cloud-based, remote Asset Management is a convenient way for our customers to have



Fully automated test lab – packing and valve testing.



A training session.

materials quoted quickly, keep track of the sealing solutions currently installed in their equipment and further advance their sealing capabilities,” explained Warren. “The database can store a great deal of helpful information on equipment size, type, what specific valve is to be repacked by the history of the materials used in the past, and how or if it was live loaded. They can also update any changes in tolerances or dimensions and run calculations on specific equipment. It will also provide the dates which can help improve efficiencies on the next turnaround if they are trying to advance their sealing by trying different sealing technologies.

“Over the past few years, the LDAR requirements in refineries and different processing plants ha really been driving a cultural change in how plants and refineries



Fugitive emissions testing.

manage their assets. Valves that have a sealing solution that has been processed through this tool are now trackable and we can use the same identification number that a plant or refinery might use in their own LDAR systems to help track any changes not only to the valve itself, but specific to the sealing solution,” said Greg. “There has been a big shift over the past few years, with a lot of plants taking the initiative – whether it is consent decree-driven or not – to have robust asset tracking capabilities and we are trying to supplement that by having those same capabilities accessible through the Cloud, so it can be accessed anywhere 24/7.”

Low Emissions Solutions

Chesterton currently has certified low-leaking sealing technology options for both isolation

and control valve applications in both rising stem and quarter turn configurations. These solutions have passed stringent testing standards such as API 622 packing standard and valve type testing standards such as API 624, API 641 and ISO 15848-1 low leakage requirements without packing adjustments. Large critical valves and demanding applications are being reliably sealed from turnaround to turnaround with Chesterton’s unique live loading technologies. Its cartridge live load system with outer guides provides consistent packing load with a visual indicator to quickly identify loss of load. This not only helps in increase the packing performance but also the overall sealing reliability, as it allows operators and technicians to take preventative measures before failure.

Off-the shelf valve packing repair kits for popular control valves come with a Chesterton five-year warranty. Using these products and solutions, a control valve can be ensured to leak below 100 PPM for five years with proper training on the installation procedures. Engineered control valve sealing kits are also available for less popular control valves. Expanding into the future, A.W. Chesterton Company will continue to pursue growth by further investing in the products that set them apart in quality and engineering. “Chesterton has tremendous brand recognition for quality and performance and our ability to provide local support is outstanding,” said Raman. “Our subject matter expertise on Low Emission sealing enables us to provide value to our partners and customers, by helping them in making their equipment more reliable, efficient, safer and compliant to latest environmental standards.”



Automated braiding machines.