

# Ward Vessel & Exchanger: Focusing on people first

As a manufacturer of industrial heat transfer equipment, Ward Vessel & Exchanger is committed to providing second-to-none service and exceptional value, while enhancing the success of their employees, customers, and suppliers.

The company's main mantra is, 'It is not what we do, but how we do it', and their focus is 'People First', whether it be employees, family, or communities served – which are at the heart of the company's core values.

*Heat Exchanger World* had the opportunity to speak with Jon Ward, President of Ward Vessel & Exchanger, about what sets them apart in the heat transfer industry, and why having a people-first focus has been a cornerstone of the company's values throughout its history.



➤ 'People First', whether it be employees, family, or communities served – people are at the heart of Ward Vessel & Exchanger.

By Brittani Schroeder and Sarah Bradley

In 1982, on the heels of the energy crisis recession, brothers John and Don Ward decided to start a business together: Ward Tank Corporation, based out of Charlotte, North Carolina, U.S.A. They started off in a small building just outside the downtown area and the company quickly grew requiring a relocation in 1987 to its current location on Harris Blvd. The facility has undertaken many expansions over the years to handle the continued growth. In 1996, the company's name changed to Ward Tank and Heat Exchanger, to highlight that they were also building heat exchangers. Ultimately, in 2017, the company rebranded for the final

time and officially became known as Ward Vessel & Exchanger. "In our industry, there is a perceived quality difference between a heat exchanger and pressure vessel, versus a tank. Heat exchangers and pressure vessels fall under the ASME Code, whereas tanks fall under the API Standard. We weren't building field erected tanks and/or traditional shop tanks anymore and needed to ultimately align the company name to be a better representation of the sophisticated, quality work we were doing at the time, so the renaming in 2017 was necessary," said Jon Ward.

In 2003, Jon Ward, son of founder Don Ward, was promoted to President of the company. He started working at the company during his college years and decided to pave his own path out West in construction for 5+ years

after graduation. John Ward, his uncle, retired in '96, and Jon eventually came back to the family business in 1999 when the discussion of succession planning was high on the Founding Father's minds. Jon's dad, along with another principal, Gerald White, ended up officially retiring at the end of 2002, while working part time for a few more years. "By the time 2003 rolled around, in the wake of another recession post 9/11/01, it was time to turn the company over to the next generation," Jon explained. When Jon Ward took over as President, Bob Besh and Tim Ramsey were both promoted to Vice Presidents of the company.

In 2005, after hearing the call to action by many of their customers, the company opened a grassroots facility in Houston, Texas, U.S.A. "We did a lot of work in the Gulf states, but over time, we realized that Texas was the place we needed to be with brick and mortar." Says Ward. The question from their customers was, 'Why are we going to North Carolina to buy a vessel when we could be buying them here in Texas?' Everything is bigger and better in Texas as the saying goes so the company dove in both feet first. "Originally, we leased a small location and hired some local employees in Pearland, TX; a year later we bought a facility a couple of miles down the road, and ultimately built a state-of-the-art modern fabrication shop in Fort Bend County, Houston, in 2015." Following their developments in Texas, the company built a new 4,500 SF machine shop in Charlotte and is now in the process of expanding their corporate office into a new 13,000 square-foot facility located next to their Charlotte, NC fabrication facility.

### Specializing in Heat Transfer with a Unique Approach

Ward Vessel & Exchanger is a leader in the heat transfer business, which specializes in fabricating complex and sophisticated units that are involved in industrial heating and/or cooling processes. "We focus on pressure vessels, columns, reactors, and shell and tube heat

exchangers. We will still build a tank or two to meet our customer's needs but build them with the same quality processes and procedures as our other ASME Code work." said Ward. The team services a wide range of industries, including petrochemical, oil and gas, pharmaceutical, food and beverage, clean water filtration, and energy. The company places a strong emphasis on their engineering, quality and fabrication processes that focus on exceeding the minimum requirements of the ASME Code, Section VIII, Div. 1, and holds both a U & R stamp from ASME.

As Jon Ward would say, "There are plenty of heat exchanger shops in the U.S.A. that can put together a functioning piece of equipment. The reason our customers come back to us time and time again is because of how we do business. More than just the thermal and mechanical design capabilities, our robust engineering staff, and the state-of-the-art fabrication facility, we look at our relationship with the customer as a partnership. We are not here for the one-time projects, rather we look to partner with our customers – helping them achieve their goals, year after year," Ward relayed. "We have a much larger and robust engineering staff compared to fabricators our size. This means our overhead is a little higher, but once the design and plans get down to the shop floor, we can build things in a shorter amount of time than others due to our automation and process controls resulting in fewer direct labor manhours charged to a project. This means our overall cost structure is extremely competitive with high quality results. Based on that robust staff, we also have the strength in numbers to be able to focus on our relationship with the customer. We sell directly to end users, and we give our customers one point of contact who will keep them up to date on their project throughout each stage of the process."

Ward Vessel & Exchanger has a unique approach to fabrication engineering. "Most shops our size have an engineer pushing just the design and drawings down to the shop floor, which forces the direct labor work force



↗ The company offers large columns such as the one pictured as part of their product line.



➤ Ward Vessel & Exchanger employee with one of the company's heat exchangers.

to come up with how to actually preprocess and handle all of the various components needed to build the equipment. We spent over 20 years researching, developing, and improving on a way to reverse-engineer this process, and created a proprietary software program that we call 'Projex'. This program gives us the ability to streamline everything from the quote stage, design, and drawings, all the way through the fabrication process. Our software uses design data to autogenerate bill of materials, allows our engineers to assign functionality (burn, cut, form, machine) to each individual part, and gives everyone in the company a real-time view of the status of each one of these components during the pre-fabrication processing stages," explained Ward. Once the materials are all processed to the exact size and shape, the Quality Control Department can proactively approve everything before release to fabrication. The lead fabricators can then grab their quality control package, their major materials received and all the preprocessed components ready for fitting and welding. This process allows the company to deliver quick and accurate information which in return reduces overall costs, Ward Vessel & Exchanger is able to pass on those savings to their customers.

Almost a decade ago, the company also made the shift to Inventor (3D modelling) for heat exchanger projects, which has benefitted the company and their customers in a few different ways. "This helps our engineers during the design stage, as we can generate a drawing much faster using 3D modelling than the old 2D method. It has also helped our fitters on the shop floor – the 3D views help our team visualize the finished product more accurately, which ultimately reduces mistakes. The third benefit is for our customers – many of our customers utilize our model to drop into their plant design software, saving them time and ensuring our designs match," said Ward.

### A Field Service Team

In 2017, Ward Vessel & Exchanger started a field service group head quartered out of their Charlotte, NC location. "Over the last few decades, our customers have been twisting our arm to come and do fieldwork for them. We were such a shop-oriented group, but for our main customers we would go out and do some field work when necessary. Turns out, they really enjoyed the strengths that we brought to the table, so we finally decided to jump into that arena full time," explained Ward. This division specializes in on-site code repair and alterations, heat exchanger retubes, and in-place machining. "The field service group is backed by the same management and engineering team that handles new ASME Code equipment, which enables us to handle complex projects in the field," Ward said. "This division has doubled its revenue for the company year over year for the last three years. It is a great addition to our portfolio of offerings and is confidently led by Chris Grice."

### Quality Control

Ward Vessel & Exchanger has an industry-leading quality control program with a Level III and Level II inspectors on staff. "We have a Corporate QC (Quality Control) Manager who oversees both of our shops and our field service crew, and then each QC Manager at each division reports to the Corporate QC Manager. Our experienced QC staff allow us to perform most NDE (nondestructive examination) in-house, and our capabilities include PMI (positive material identification), helium leak detection, radiography, liquid dye penetrant, mag particle testing, and examination, etching and polishing of weld joints/mockups," explained Ward. The company's new 4,500 SF machine shop holds three CNC drilling and machining centers that allow Ward Vessel & Exchanger to handle all of their tubesheet and baffle machining in-house to their quality expectations, up to 12-foot in diameter. Having the ability to do so much in house, from manufacturing to testing, is extremely important to the company, as it means they can perform their tasks quickly and with a high quality.

### Staying on Top of Industry Trends

Ward Vessel & Exchanger is a member of several industry associations, including MTI (Materials Technology



➤ A selection of Ward Vessel & Exchanger tubesheets in the company's new machine shop.



➤ Innovation- burning holes with prepped weld bevels in heads.

Institute); TEMA (Tubular Exchanger Manufacturers Association), where they are also involved from a technical committee standpoint; STI (Steel Tank Institute), SPFA (Steel Plate Fabricators Association), LCA (Louisiana Chemical Association) and TCC (Texas Chemical Council) in an effort to serve the industry to the best of their ability. "These associations are great places where we can hear, firsthand, the problems that our customers and competitors are having, and we can take that information back to our team to come up with solutions. We also allocate funds each year to have our staff attend conferences, webinars, and training sessions to make sure we stay current on all fronts. Our sales team maintains relationships with a diverse group of people in the industry to ensure we are keeping up with the market," relayed Ward. "One of our newer company mantras is 'If we are not growing, we are dying'. We know we need to be able to take things to a new level for our customers, and that is why we are dedicated to these associations, and to our own research and development (R&D) as well."

The company invests a lot of time into their R&D; along with their proprietary program 'Projex', they are committed to bringing in unique equipment to their facilities that will set them apart from other fabricators. "We were one of the first fabricators in North America to utilize five-axis burn table technology to burn holes in dished heads with prepped weld bevels. We also tout one of the few automated welding machines for half-pipe reactors in the nation, which gives us an innovative edge in offering competitive solutions that others cannot offer," explained Ward. "We have a unique process for welding half-pipe to a vessel shell that utilizes an automated welding process, which eliminates butt joints, has consistent heat input, and creates flawless welds. All of these lead to longer-than-average life cycles for the equipment."

Currently, as discussed earlier about their proprietary program 'Projex', the company is in the final development stages of a core program overhaul that takes a

design from PV Elite, Compress or AspenTech, and autogenerates an accurate quotation and/or project bill of materials from the data. Ward explained, "We found that we were reduplicating information between the design, quote generation, and bill of material generation processes, and this program enables our engineering team to minimize the time spent duplicating information and allows us to generate more accurate information at a quicker pace."

### Looking Ahead

In the coming years, Ward Vessel & Exchanger plans to continue their investment in their Field Service Division. "We are focusing on what we can offer our end users today that foreign competition cannot offer, and that is where our Field Service Division comes into play. We can be there tomorrow, or even tonight if our customers needed us. We see this division as a great compliment to our shop offerings, as it allows us to make a positive and immediate impact for our customers. The growth within this division is exciting and we can expand in so many impactful ways; an inspection group, a field radiography group, a cleaning group, and much more," said Ward. "We are also committed to growing our Houston facility, which is located in the heart of the petrochemical industry, while making sure our main facility here in Charlotte is the complete showpiece for all that we have to offer." Ward Vessel & Exchanger believes the market is set for a steady increase over the next few years, based on the current market trends. "Of course, the pandemic has sidetracked things a bit, but we are hearing positive feedback from our customers with regards to the amount of spend they have allocated for the next few years," Ward relayed. "Our commitment to providing second-to-none service and exceptional value while enhancing the success of our employees, customers and suppliers will continue to guide everything we do at Ward. By keeping this focus, we can ensure the growth of the company will be sustainable and beneficial to all."