

Ohmstede – Over a American heat

» Aerial operational overview of Ohmstede Ltd (left) and Ohmstede Industrial Services (right).



Ohmstede has maintained its position as one of the most trusted names in American manufacturing for over a century. Since its foundation in 1905, Ohmstede has set the benchmark in the industry for all things shell and tube heat exchangers.

By Sarah Bradley

Founded in 1905 by August Ohmstede, a German immigrant to Beaumont, Texas, the company started as a small auto repair shop. Recognizing that Beaumont was to be at the epicenter of the East Texas oil boom, Ohmstede quickly adapted to offer metal fabrication services to the fledgling, but rapidly growing, oil industry. By the 1980s, Ohmstede was the market leader for manufacturing shell and tube heat exchangers in the United States and continued to grow and expand into five locations around the Texas and Louisiana Gulf Coast. In 2003, Ohmstede formed a new division "Ohmstede Industrial Services" (OIS) to provide bundle extraction/insertion field services for the refinery and petrochemical plants. OIS has grown to include many related field services.

In 2011, Ohmstede Ltd. established a technically advanced off-site exchanger cleaning operation in La Porte, TX with 3 primary objectives – Safety, Environmental Consciousness and Production. The cleaning facility offers hydroblasting, media blasting and a cleaning oven to meet the customer's various cleaning requirements. Ohmstede Ltd. added a second state of the art cleaning facility in St. Gabriel, LA in 2018 due to customer requests to replicate our proven Ohmstede Ltd. model throughout the entire Gulf Coast.

Today, Ohmstede serves customers through two corporate

operations. Ohmstede Ltd. provides shop services of new exchanger fabrication, repairs and testing along with the state of the art cleaning facilities. Ohmstede Industrial Services (OIS) provides field services including bolt torquing, bundle extraction/insertion, machining, pressure vessel repairs, tank maintenance and repair, pipe repair/fabrication and more. Together, Ohmstede is uniquely positioned to quickly respond to fabrication and repair needs for heat exchangers and other related equipment anywhere in North America and has manufactured shell and tube heat exchangers for companies around the globe.

Ohmstede's manufacturing shops, off-site cleaning facilities and field service offices are conveniently located near the country's largest concentrations of refining and chemical complexes along the Gulf Coast and are also convenient to large international ports and railroads that provide extensive shipping options worldwide. Ohmstede's achievements over the past 100-plus years reflect the skills, experience, dedication, safe work practices and pride the company continues to value in every aspect of their business. From high product quality to fast leads times, and from developing strong customer bonds to serving as a valuable educational resource and knowledge provider, Ohmstede recognizes the importance of delivering on their promises to help their customers get back up and running fast.

Ohmstede's corporate credos are simple. "Be the Best" and "Make it Easy" for our customers in designing and

century of exchanger expertise



building the top performing shell and tube heat exchangers and providing effective turnaround and specialty field maintenance services available anywhere. Whether working in the customers' plants or in Ohmstede's shops, Ohmstede employees remain committed to the same core values. Ohmstede has a long history and successful track record of listening to, understanding and responding to customer needs. They pride themselves on doing the job right, the first time. Ohmstede works to earn their customers' respect and loyalty with every job.

Ohmstede Ltd.

Heat exchanger design, manufacturing & repair

With the extensive engineering and manufacturing capacity to respond from five locations and nearly 500,000 ft² of manufacturing space, Ohmstede Ltd. can build multiple units with short lead times in a very efficient manner. The company is able to take on jobs of all sizes, often coordinating with several locations simultaneously to complete customer projects quickly.

The company fabricates units ranging from pipe-sized lube oil coolers to giant 182-inch diameter equipment weighing in excess of 600,000 lbs. Whether the material is carbon steel, low chrome, duplex stainless, high nickel alloy or reactive metals, Ohmstede Ltd. can fabricate to customers' exacting specifications.

Ohmstede Ltd's team of experienced mechanical and thermal engineers and designers works directly with

your professional staff to meet specific needs and design requirements. Ohmstede Ltd's personnel are well versed in ASME BPVC Section I & VIII-1, TEMA, API-660 and their customer specifications. Ohmstede Ltd. uses the latest versions of COMPRESS, PVElite/CodeCalc, Solidworks, RCS, AutoCad and HTRI software for sizing, mechanical design, and thermal/vibration analysis. We also use specially licensed technology to provide engineered solutions for heat exchanger vibration and pressure drop issues such as McDermott/Lummus Helical Baffle Technology (Helixchanger® Heat Exchanger) baffles and ExxonMobil anti-vibration tube supports.

Fabrication shop capabilities & expertise

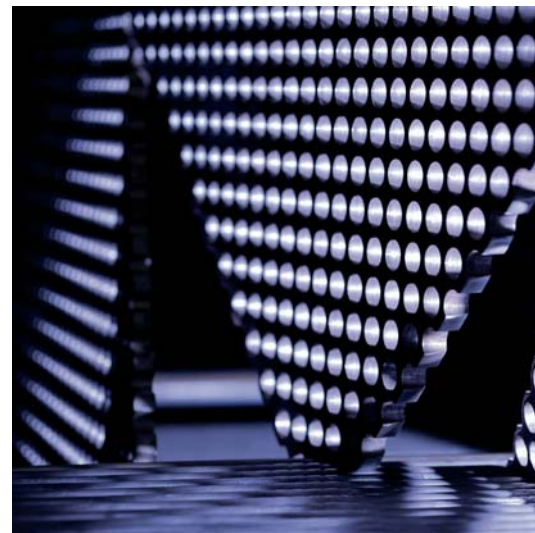
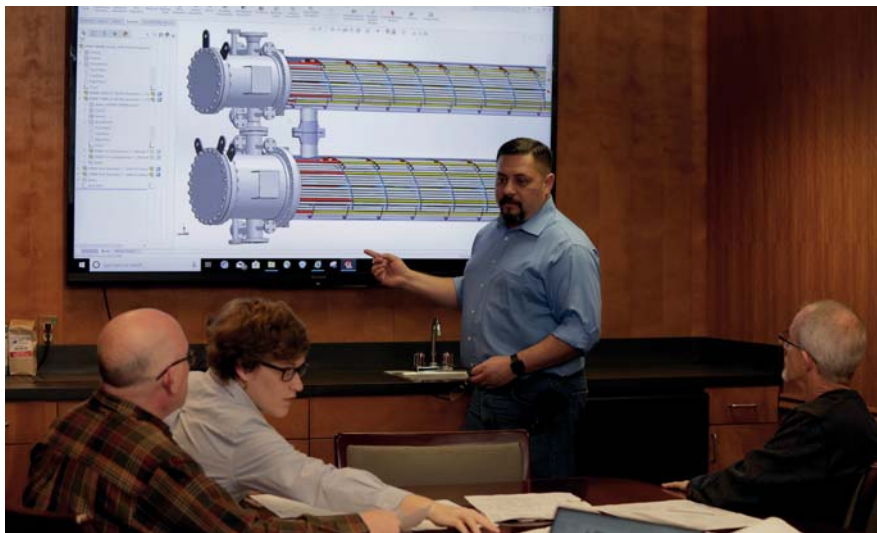
Manufacturing heat exchangers requires tight machining tolerances and welds that must conform exactly to approved weld procedures. Ohmstede Ltd's shop capabilities in Texas and Louisiana are vast and each facility is self-sufficient with all the equipment required to produce and repair existing heat exchangers. Multiple manufacturing locations, specialized equipment and proprietary processes, give Ohmstede Ltd. the capability to handle every job from one unit to multiple units, whether for a capital project, a quick turnaround or an emergency response.

Ohmstede Ltd's specialized machining and drilling is equipped with state-of-the-art machine tools with the capability to machine 12 tubesheets up to 13.5-inches thick simultaneously. All the components for replacement or new tube bundles can be produced within hours utilizing their excess capacities and project coordination.

In Ohmstede Ltd's Sulphur, Louisiana shop, semi-automated welding equipment is used for overlay and clad restoration. Specialized electroslag weld strip technology

☞ TEMA NEN (Special) Condenser.





» *Solidworks review of stacked exchangers.*

» » *Helical baffled bundle cage.*

enhances Ohmstede Ltd's ability to work effectively with higher alloys, specifically 1-1/4Cr and 2-1/4Cr, stainless and high-nickel alloys. Ohmstede Ltd. also utilizes multiple weld heads / wire feeds and narrow gap techniques to improve efficiency. Low chrome material in weld joints over 9" thick have been completed with these capabilities. Many of the heat exchangers destined for harsh service are built in the Sulphur facility, where custom-designed equipment is used for overlaying steel and welding high alloy heat exchanger components.

Ohmstede Ltd's specialized shop services include a clean room for welding reactive metals such as titanium, heat treating ovens for stress relieving, off-site exchanger cleaning facilities (hydroblasting, media blasting, a decoking oven), semi-automatic tube welding equipment to assure high quality tube-to-tubesheet welds every time and engineered tube rolling equipment. All shops comply with the requirements of the ASME Code and National Board certification. The company has more than 1,100 welding procedures and is certified for code stamps "R," "U" and "S".

Ohmstede Ltd. offers four methods for producing clad structures: Roll Bond Clad, Explosive Clad, Weld Overlay and Electroslag Strip Clad. Project managers and design

» *PMI testing of shell overlay.*



engineers work with customers to help determine the best option for various applications and often a combination of these processes are utilized to meet all of the different geometries on the exchanger.

Shell & tube exchanger repair

Heat exchangers are mission-critical components – when they fail, they can create multimillion dollar losses due to reduced or lost production associated with unplanned down time. Exchangers and tube bundles are subject to fouling in even moderate operation. They can be maintenance intensive due to erosion, corrosion and other issues. Ohmstede Ltd. is responsive to customer needs and provides value-driven shop services including engineering, cleaning, emergency repair, hydrotesting, and more. All Ohmstede Ltd. locations are on call 24-hours a day, seven days a week in order to handle unplanned repair needs and can mobilize quickly to help get operations back up and running.

- *Retubing:* Ohmstede Ltd. has unmatched retube capabilities. Through partnerships with suppliers that stock of thousands of feet of the most popular tube sizes and material types, the company can respond immediately to help customers out of a bind.

- *Re-rating:* Ohmstede Ltd. can mechanically and/or thermally re-rate existing exchangers based on current operating conditions to the current version of the ASME codes and HTRI.

- *Component Replacement and Repair:* With world-class engineering, design, machining and welding technology, Ohmstede Ltd. can repair or replace any heat exchanger component.

- *Technology Solutions:* Ohmstede Ltd. collaborates with some of the world's leading refiners, engineers and technology license providers to build heat exchanger components to meet specific process challenges with innovative, proprietary designs.

- *Cleaning & Inspection:* Ohmstede Ltd's two state of the art cleaning facilities are located at Ohmstede Ltd's La Porte, TX and St. Gabriel, LA shops. The cleaning facilities offer an experienced, responsible and dependable cleaning service. The cleaning facilities coordinate with the shops to expedite any discovery repairs that are identified after the equipment has been cleaned and inspected.



« Aerial hydraulic exchanger bundle extractor.

Ohmstede Industrial Services

Turnaround & specialty maintenance

Ohmstede Industrial Services is a proven industry leader in turnaround and specialty maintenance services, management, and execution. Their culture and mindset are to complete each project safely, per specification, within budget and schedule. Ohmstede Industrial Services is capable, qualified, equipped, and ready to support your next turnaround, outage, maintenance, or small capital project. Customers have peace of mind knowing the Ohmstede Industrial Services team is with them from the time the first nut is loosened through performing final inspections and conducting post-project reviews. Whether it is a full unit turnaround, replacing a complete heat exchanger or tube bundle, or repairing a component, customers can be assured that the work is done to specifications and is on time and on budget.

From pre-project planning and ongoing management, general contracting, budgeting, and field and shop integration, Ohmstede Industrial Services knows the key factors to maintaining strict budgets and timelines in a turnaround. Due to emergencies or planned outages, Ohmstede Industrial Services completes on average more than 4,000 projects on heat exchangers and related equipment annually, including repair and retubing services, bundle extractions, bolting services, specialty welding, stud tensioning, nut splitting, stud extraction, ultrasonic monitoring, field machining, drilling & tapping, milling and more.

- *Repair and Retubing Services:* Ohmstede Industrial Services offers on-site repair and retubing services for shell and tube heat exchangers, evaporators, refrigeration units, air coolers, oil coolers, quench coolers, boilers and surface condensers.

- *Bundle Extraction:* Ohmstede Industrial Services owns and operates the latest generation and widest variety of bundle extraction equipment available today. The company can safely extract and install tube bundles for shell and tube heat exchangers in virtually any location, whether it's a tight spot under piping or more than 100-feet in the air with their fleet of arial, truck mounted and self-propelled bundle extractors.

Embedded specialty maintenance

Ohmstede Industrial Services works with every major refining and petrochemical company in the U.S. Ohmstede

Industrial Services is at the forefront of an emerging industry trend – partnering to provide long-term, embedded specialty field maintenance services. Under multi-year contracts, Ohmstede Industrial Services crews and equipment are located on-site at customers' plants, performing specialty maintenance services for heat transfer equipment on a daily basis. This innovative approach to providing maintenance service has proven itself by significantly reducing operating costs, improving heat transfer efficiency and extending equipment life.

"The Embedded Specialty Maintenance program is a sequence of carefully coordinated activities driven by a detailed schedule. These are ongoing, progressive maintenance programs essential to reducing the need for long downtimes and the disruptions they cause. The types of maintenance Ohmstede Industrial Services performs can be optimized to help the customer reach its units' goals – for example, reduce energy costs, decrease downtime, increase unit efficiency or even extend the life of the equipment. «

» *Semi-robotic self-propelled crawler.*



Ohmstede

One source for turnaround, specialty maintenance & heat exchanger fabrication needs

As the only company that offers turnaround and specialty maintenance services with state-of-the-art repair, fabrication and cleaning facilities, Ohmstede offers a single point of accountability to oversee a project. Coupled with their turnaround and specialty maintenance capabilities, Ohmstede is the largest U.S. manufacturer of shell and tube heat exchangers, including replacement tube bun-

dles, channels and shells. Ohmstede must be doing something right – with 100-plus years in business, the company continues to thrive. By fostering a safe work environment based on performance, individual accountability and team pride, they have built a reputation in our industry for customer responsiveness and exceptional quality products and services.