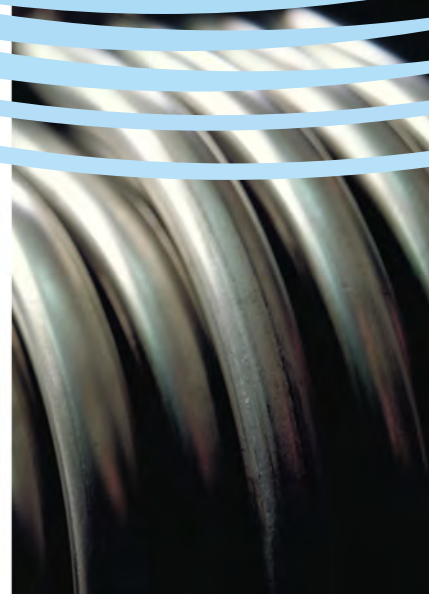


HEAT EXCHANGER SERVICES





EDMONTON EXCHANGER

COMPANY VALUES

Excellence: Consistently offer skillfulness, reliability, quality workmanship and on-time deliveries to our customers.

Integrity: Maintain a good reputation in our relations with others by being honest and authentic.

Communication: Be accessible, accountable, approachable and humble in our interaction with others.

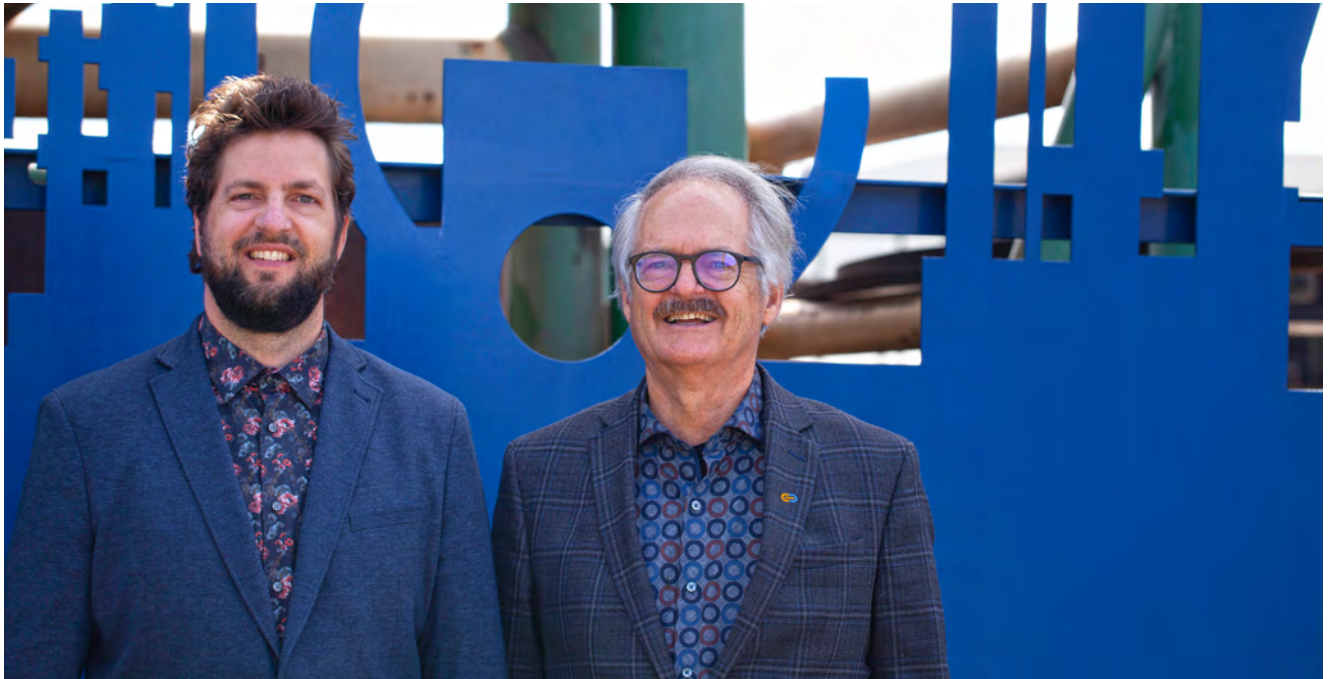
Teamwork: Work together safely to achieve a common goal.

Efficiency: Be focused, organized and productive in everything we do.

Family: Respect the strength of legacy, tradition, loyalty, community, individual faith and life balance to support future generations.

Sustainability: Be persistent, creative and adaptable to achieve financial security as a company in the future.

CORPORATE OVERVIEW



Tim Gusse, President (left), Larry Gusse, CEO (right).

OVERVIEW

Edmonton Exchanger is a multidivisional company featuring a wide range of products and services for applications in industries that include oil and gas, petrochemical and power generation.

Edmonton Exchanger's divisions are comprised of Manufacturing (Pressure Vessel Components), Field Services, Heat Exchanger Services, Custom Fabrication, Pipe Fabrication and Large-scale Machining. Our divisions fully support one another and work together to provide a full range of products and services to our customers.

We are over 1,000 employees strong, and endeavor to achieve the highest levels of quality and productivity by focusing on strong health and safety practices, each and every day.

OWNERSHIP

Edmonton Exchanger is a multi-generational family owned business that was founded by Henry Gusse in 1975. Henry led and grew the company for several decades. Larry Gusse became president in 2001, and led the company to further growth. June 1st, 2021 marked the formal transition of Tim Gusse as the next president of Edmonton Exchanger and Larry Gusse as the Chief Executive Officer.

Ownership of Edmonton Exchanger includes Larry and Adelle Gusse, Tim Gusse and Natalie Ruhl. As an ownership family, the Gusses embrace the future. They are committed to serve our customers and the pressure equipment industry by supporting and leading the Edmonton Exchanger family.

A close-up photograph of industrial heat exchanger components. The background is a dark metal plate with a grid of circular holes. In the foreground, several horizontal metal tubes are visible, some of which are partially obscured by the grid. The lighting is dramatic, highlighting the metallic textures and the circular patterns.

HEAT EXCHANGER SERVICES

HEAT EXCHANGER SERVICES

Specializing in heat exchanger fabrication and repair, Edmonton Exchanger's Heat Exchanger Services facility stocks a diverse inventory of materials and heat exchanger equipment that allows us to quickly adapt to your project's specialized requirements and specifications. This facility fully supports our field operations for all heat exchanger services required, and upon customer request, will schedule shop time in preparation for field projects in order to ensure an expedited turnaround time for field maintenance work.

Key Personnel

Name	Position	Years with Firm
Irvin Godina	Heat Exchanger Division General Manager	34
Peter Taschuk	Estimator/Project Coordinator/Purchaser – Heat Exchangers	27
Chris House	Dayshift Shop Foreman	25
Sarath Ou	Night Shift Shop Foreman	27
Michael Godina	OGTAW Welding Supervisor	17
Mijo Renic	CNC Operator Lead Hand	11
Paul Burrough	Heat Exchanger Division - Lead QC Inspector	18

MANUFACTURE, REPAIR, REFURBISH

Whatever shape or size your heat exchanger may be, we're the ones for the job. Edmonton Exchanger can supply heat exchanger components in addition to supporting clients with their bundle fabrication. We manufacture, repair and refurbish any size and type of heat exchangers including shell and tube bundles, straight-tubed heat exchangers and U-bundle heat exchangers.

Certificate of Compliance

All materials are supplied with a Certificate of Compliance showing material type, size, order numbers, heat numbers, minimum thicknesses, and Mill Certification Specifications.

Manpower

Permanent Shop Labour:
25-30 Employees (Allocated to Heat Exchanger Services Division)

Quality Control Inspection

Provide the highest level of Quality Control processes, methods and resources during construction that will ensure compliance with the applicable Code of Construction, as well as Jurisdictional requirements and Client specifications. Prior to shipment, all of our manufactured components undergo thorough Quality Control inspection to ensure conformance to ASME codes Sec. VIII Div. 1 & 2. All heat exchangers can be certified to CSA, ABSA or ASME stamped.

CNC DRILLED COMPONENTS

Edmonton Exchanger offers a diverse range of drilled components—including tube sheets, baffles, flanges, and other miscellaneous items. These components are fabricated for in-house use and supplied to our extensive network of industry clients. All CNC drills undergo annual calibration, and calibration certificates are available upon request.

CNC TUBE SHEET DRILLING

We have seven CNC machines of various sizes and capabilities available for tube sheet drilling applications.

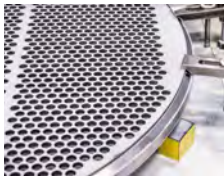
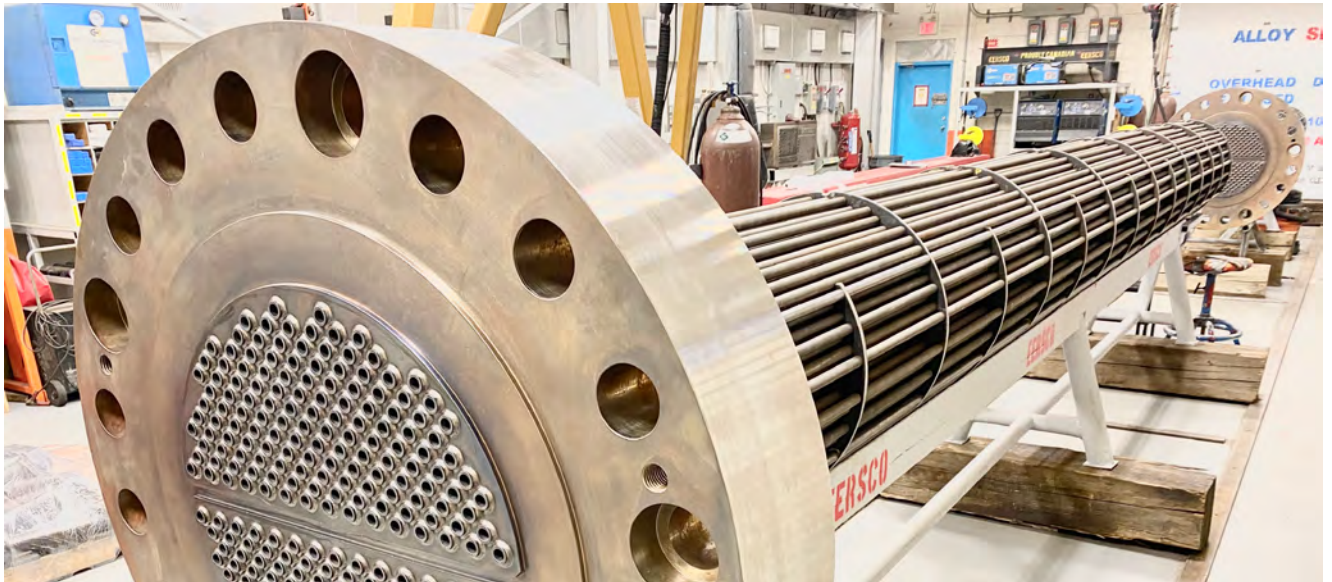


QUICKDRILL 200 CNC

Our QuickDrill 200 CNC features drilling, ring grooving, milling along with boring services, it will also circular interpolate off center. With a drilling footprint of 200" (5,080 mm) x 120" (3,048 mm) x 30" (762 mm), it accommodates material up to 29" (736.60 mm) in height.

The QuickDrill 200 CNC has recently been upgraded. The spindle has a 30" programmable stroke in the Z-Axis (one stroke). The low range spindle speed is 0-1150 RPM and the high speed range is 1151-6000 RPM. The maximum torque is 662 Nm and the minimum torque is 166 Nm.

CNC TUBE SHEET DRILLING



QUICKDRILL 120 CNC

Edmonton Exchanger has (2) QuickDrill 120 CNC machines available that offer a wide range of drilling, ring grooving, milling and boring services, and will also circular interpolate off center. They boast a drilling footprint of 120" (3,048 mm) x 120" (3,048 mm) x 15" (381 mm), and can accommodate material up to 141" (3,581.40 mm) x 154" (3,911.60 mm) in size. They have a maximum drilling hole depth of 11.625" (295.28 mm) deep in one cycle.



QUICKDRILL 96 CNC

Our QuickDrill 96 CNC machine features drilling, ring grooving, milling and boring services and will also circular interpolate off center. It offers a drilling footprint of 96" (2,438.40 mm) x 96" (2,438.40 mm) x 14.5" (368.30 mm), and a maximum drilling hole depth of 11.625" (295.28 mm) deep in one cycle.

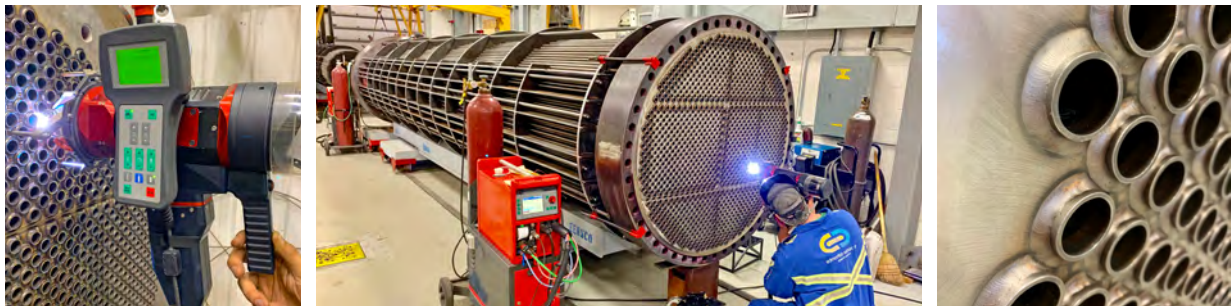


QUICKDRILL 60 CNC

We also have (3) QuickDrill 60 CNC machines that feature drilling and ring grooving capabilities. They offer a drilling footprint of 60" (1,524 mm) x 60" (1,524 mm) x 14.5" (368.30 mm), and a maximum drilling hole depth of 5" (127 mm) deep in one cycle.

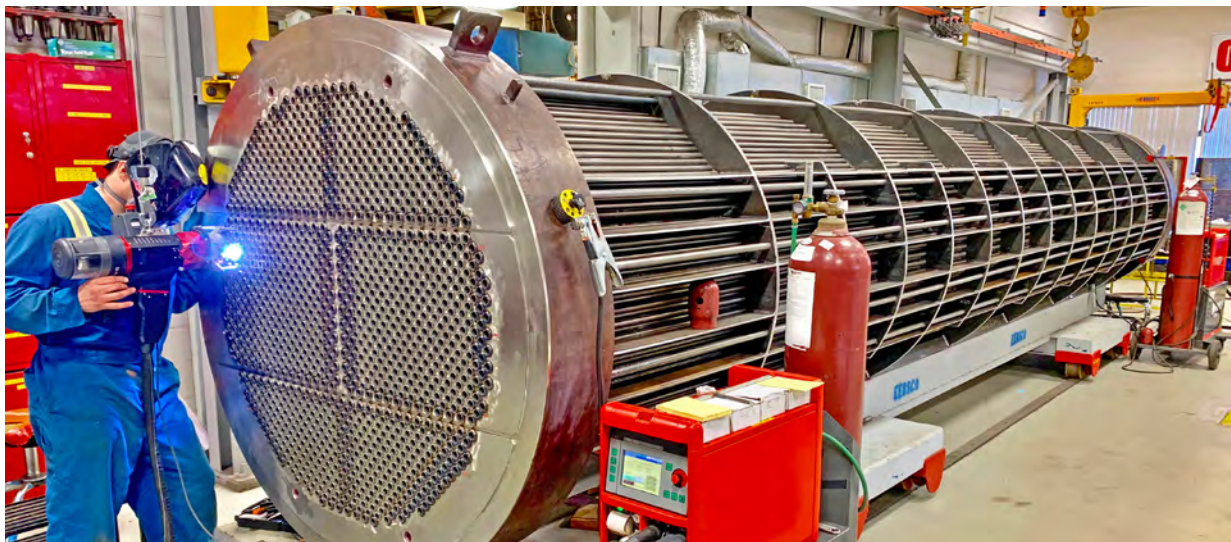
ORBITAL WELDING TECHNOLOGY

Edmonton Exchanger utilizes proprietary, industry leading, orbital welding technology in the fabrication of heat exchanger tube bundles. Per client requirements, tube to tube sheet joints can be strength or seal welded. All tube to tube sheet joint welding will be performed with multiple weld passes produced by automated, (orbital) gas tungsten arc welding (OGTAW), using filler material producing homogenous welds. Autogenous welds are not be produced or permitted. Start/stop locations for each weld pass are staggered. Orbital welding produces high quality extremely reproducible welds. **Tube ends are not consumed during this automated welding process.**



The details of a project completed for a Field Services clients are as follows:

- Orbital tube to tube sheet strength welding
- Material P1w/P10H backing to P10H
- SA-789, UNS# S31803 tubes, strength welded to SA-240 UNS S31803 clad tube sheets
- No consuming of tube ends and 100% homogeneous welds
- EDEX performed Visual Examination, MACRO Examination, Liquid Penetrant, Ferrite Fisher Feritscope and Corrosion Test to ASTM G48 Method A



HIGH PRESSURE HYDRAULIC TUBE EXPANSION

In addition to manual and computer controlled tube rolling and expanding capabilities, Edmonton Exchanger also offers High Pressure Hydraulic Tube Expansion.



In a project for a client, we utilized a maximum pressure of 5,000 bar (72,500 psig), and expanded 1.00" O.D. 14 BWG min wall SA-789, UNS# S31803 tubes, employing 10.5" long probes during tube expansion.



TUBE BUNDLE SAW TECHNOLOGY

On a high priority repair job for a Field Services client, Edmonton Exchanger saw-cut four tube sheets 11" thick from two tube bundles containing SA 789 S31803 / S32205, 1.00" OD x 14 BWG tubes.

Upon completion of this process, each tube sheet was easily removed from the baffle cage with precision. As there were no burrs or rough cuts created, this procedure saved a significant amount of time when compared to traditional, more labour-intensive methods of tube sheet removal.



Tube Bundle Saw Capacities:

- Maximum tube bundle diameter is 78"
- Maximum tube sheet thickness is 23"



HIGH NICKEL ALLOY CLAD, SHELL AND TUBE HEAT EXCHANGER FABRICATION

On the project illustrated below, Edmonton Exchanger completed the fabrication of a high nickel alloy clad, shell and tube heat exchanger that weighed in at 110,000-pounds.



All of the shell components were formed by Edmonton Exchanger from explosion bond clad material. The tube sheets and flanges for the heat exchanger were weld overlayed and then precision CNC drilled in-house.

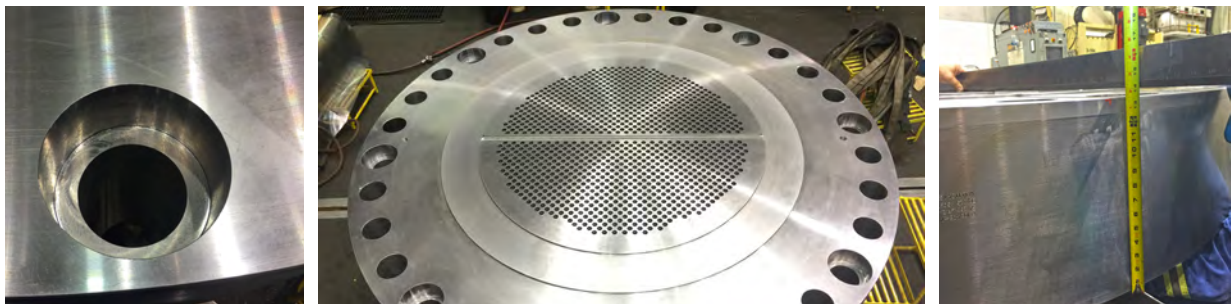


FLIP DRILLING FOR HEAVY TUBESHEET FABRICATION

When a project required a tube sheet to be fabricated out of super thick material, Edmonton Exchanger employed flip drilling technology to successfully and precisely complete the job.



The project entailed us to fabricate a tube sheet that was made out of 14" thick, SA-350-LF2 CL1 material, and required the drilling of (1,182) tube holes. The holes measured 0.759" (+0.001, -0.003), and the ring grooves measured 1/8" by 3/8" by 1/8" by 1/64" deep. The bolt holes were 3.875" O.D. and the counterbore was 5.5" thick.



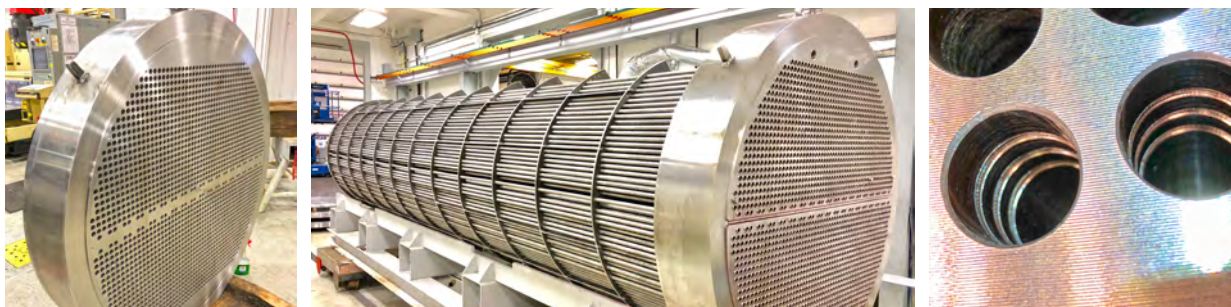
EDEX flip drilled this tube sheet and had a 100% success rate for every hole drilled. The tolerances were met to +0.001, -0.003".

HEAVY ALLOY U-BUNDLES WITH THICK TUBE SHEET AND WELD OVERLAY PROJECT

On this project, Edmonton Exchanger fabricated the U-bundles, drilled the tube sheet and baffles and performed the weld overlay. All of the work was completed in-house.

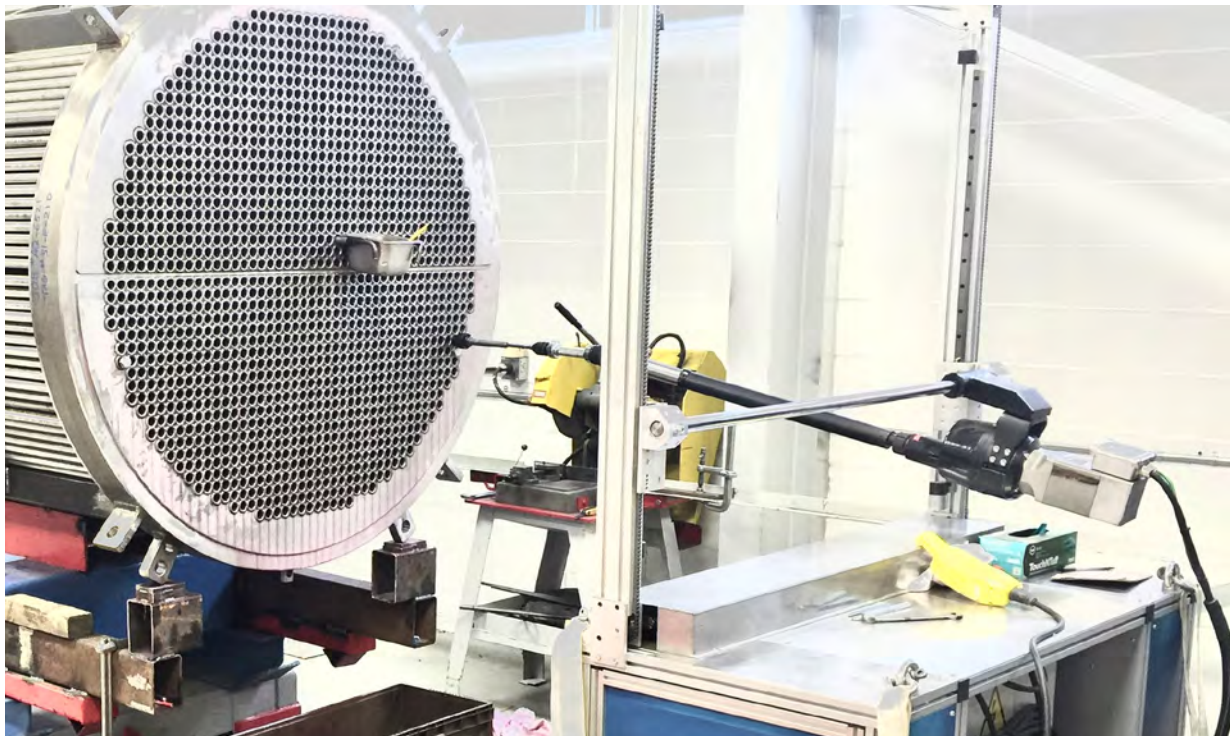


The tube sheet measured 10.6875" thick, and was made of SA-266 Gr. 2N material with a 0.625" thick weld overlay (N06686). The U-tube material used was SB-622 (UNS N10276). All of the CNC drilling of the tube sheet and baffles was completed with 100% accuracy.



MATEX ROLLING TECHNOLOGY

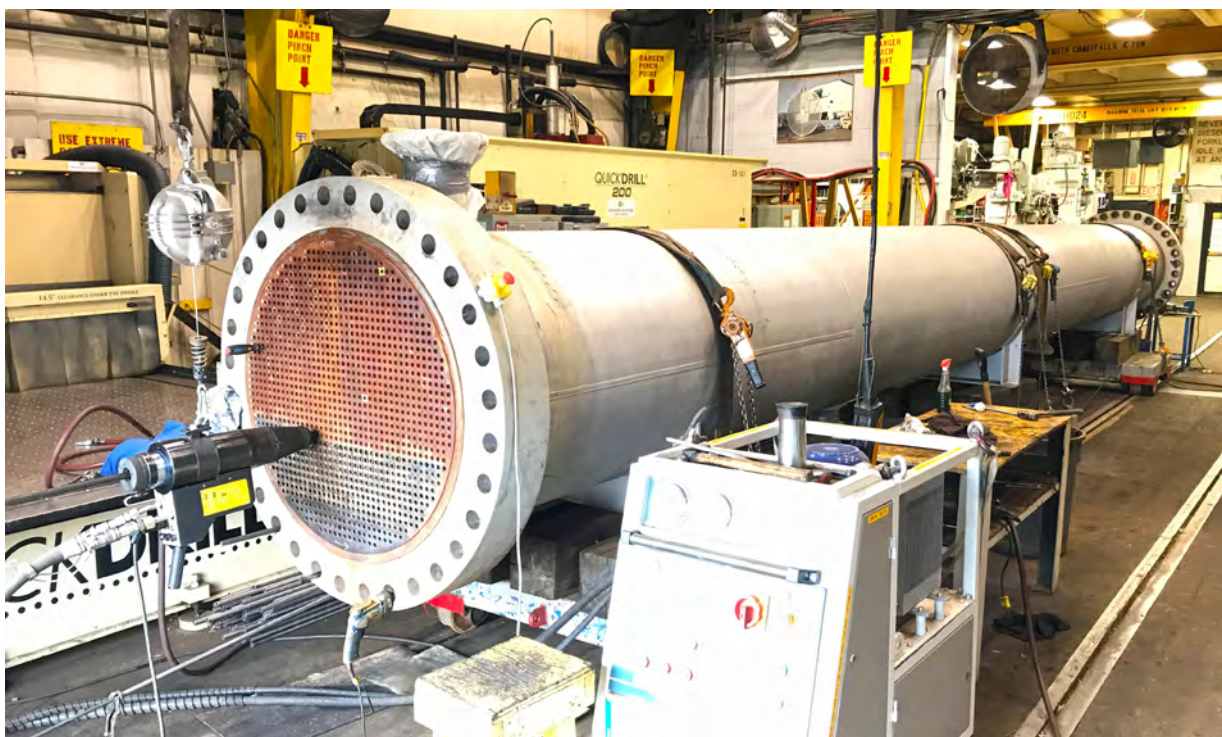
Edmonton Exchanger utilizes a computer-controlled, variable-speed Matex tube rolling system with a Siemens drive. This technology ensures minimal tube thinning, thereby reducing ligament fatigue during expansion and avoiding convex distortion of the tube sheet faces. This process provides superior quality and greater longevity than the methods used by our competitors.



MAUS RUN-PULL TECHNOLOGY

We employ Maus run-pull equipment for most shell and tube retubing projects. This equipment eliminates the need for manual tubing removal and minimizes tube breakage or tube sheet damage during retubing.

As each tube is automatically pulled from the bundle, the tube holes and ring grooves are reconditioned in situ, and a new replacement tube is installed.



ADDITIONAL SERVICES FROM EDEX

Comprehensive Solutions for All Your Requirements

EDEX operates through six specialized divisions. Each division is dedicated to delivering industry-leading solutions tailored to its clients' unique requirements. This multifaceted structure allows us to provide comprehensive services under one roof, a one-stop shop.



PRESSURE VESSEL COMPONENTS

Feature the most extensive one-stop head forming and shell rolling capabilities in North America.



FIELD SERVICES

On-site plant maintenance services for the petrochemical industry, refineries and fertilizer plants.



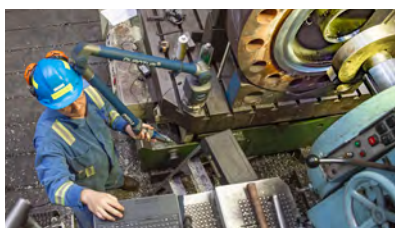
HEAT EXCHANGER SERVICES

Heat exchanger manufacturing and repair services. Fully supported by a vast inventory of heat exchanger specific materials and equipment.



CUSTOM FABRICATION

Custom fabrication and repair of pressure related components.



LARGE-SCALE MACHINING

Specializing in large-diameter components as well as CNC tube sheet drilling applications.



PIPE SPOOL FABRICATION

Constructs mechanical piping systems to ASME and client specifications, and holds over 1,000 weld procedures.

EDEX: YOUR TRUSTED SOURCE FOR MANUFACTURING AND MAINTENANCE PROJECTS

Here are just some of the reasons we're the project partners you can count on:

- ✓ Size and experience: founded in 1975 and over 1,000 employees-strong
- ✓ A commitment to quality and safety excellence since day-one
- ✓ Specialists in the manufacturing of large-scale pressure vessel components
- ✓ Steel forming capacities are some of the largest of their kind
- ✓ One of the largest inventories of pressure vessel quality steel plate in the world
- ✓ The most extensive one-stop pressure vessel head forming and shell rolling capabilities in North America
- ✓ Wide range of machining services, and specialists in large-scale milling and tube sheet drilling for heat exchanger applications
- ✓ On-site plant maintenance services for the petrochemical industry, refineries and fertilizer plants
- ✓ Services range from specialized field machining and controlled bolting, to complete turn-key petrochemical plant and refinery shutdown projects, to emergency maintenance



**EDMONTON
EXCHANGER**

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