

CASE STUDY: LAI Manufacturing Solutions

York Refrigeration, a Johnson Controls Company

Program Overview

York Refrigeration's screw compressors were failing prematurely in the field, and the costly replacement of housings initiated an engineering team to find a solution. The development was urgent, due to the failures of large, expensive compressors. LAI expedited the R&D and tooling and the process was proven and running production within eight weeks. LAI has laser heat-treated more than 1,500 casings since production began. The casing serves as the compression chamber for screws and slide valves.

Special Manufacturing Challenges

- Accelerated time frame
- Tooling to hold parts weighing hundreds of pounds
- Universal, easy change-over tooling required
- Demands of delivering product in two- to five-day turn times
- Requirements of high-tolerance precision and no distortion from laser process

Solutions Provided

- Manufacturing strategy that is customer centered and requiring fast start-up, quick response and JIT delivery
- Real-time part status
- Close relationship with customer's engineers to develop prototype and production-friendly process
- Developed an integrated and shaped laser beam for maximum coverage and desired case depth and hardness
- Applied 5-S, workplace ergonomics and other considerations, including installation of hoist for ease of prepping and loading

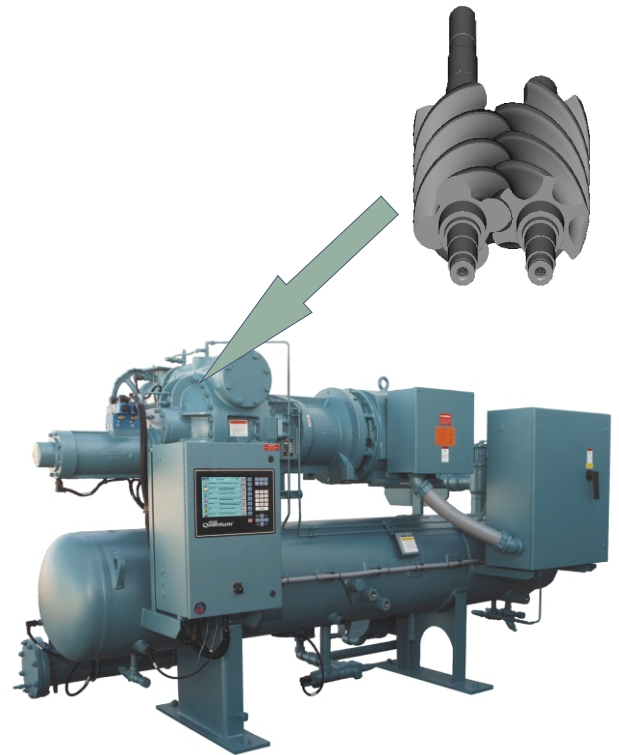
Testimonials

"LAI's laser heat treating process was a crucial part of the solution for prolonged life of our screw compressor casings."

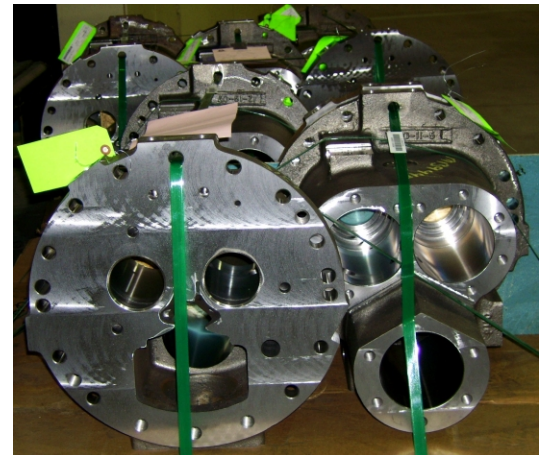
– Tony Tebbutt, Compressor Design Engineer, Johnson Controls, Inc.

"LAI has been an exemplary supplier."

– Denise Osborne, Planner/Buyer, Johnson Controls, Inc.



LAI laser heat-treats the valve slide guides in the casing. The valve slides against the rotors. This is a permanent solution to eliminate premature compressor failure.



Casings processed, inspected and ready for shipment to the customer.