

# US Fabricator Cut Costs & Boosted Quality With The 24 Series Expander



## QUICK SUMMARY

### The Challenge

- Provide a quality product to customers on time while controlling costs.
- Producing custom sized rolls to fit their application lead to inconsistencies in product.
- Halting production due to frequent tool breakage.

### The Solution

- Tool life trial to compare Elliott's 24 Series to their current expander.

### The Results

- The 24 Series increased performance enough to yield a 10% savings in labor time and costs.
- Significant increase in tool life and ease of use, reducing rework and hassles.

## The Challenge

A major US fabricator provides a full range of heat transfer products and services. A large part of its business is providing manufacturing and servicing of heat transfer vessels such as heat exchangers, condensers, and feedwater heaters. Producing a quality product in a timely manner for customers is one of the company's primary objectives.

In order to save time and money while still ensuring satisfying results, operators need the right tool for the job and that tool must be able to last. Jim Damon, as a Lean Manufacturing Engineer, understands this statement, as he can personally relate to the challenges involved with using a tool that is not right for a particular job.

Jim and his team's current condenser

expanders had rolls, which need to be customized by grinding them down in order to obtain the effective roll length required for their application. Jim was using a 5 roll expander without a thin wall collar. However, the rolls are not precisely machined, as the amount removed varies, giving different effective roll lengths even on the same expander, and the lack of a thin wall collar allows for the tube to become jammed in the tube expander's flush thrust collar. Jim and his team also report expansion inconsistencies using these expanders. Due to the poor quality customizations, the roll would constantly fall into the cage ID and get stuck. The operator constantly had to fix this.

In addition to using expanders whose quality could not match their needs,

Jim and his team continually wanted an expander that could last longer and reduce their need for frequent replacement expanders or spare rolls and mandrels. The constant hassles, extra work, and rework were costing Jim and his team extra time and extra money. They were not satisfied with the current tools and were ready to make a change.

## The Solution

Jim Damon and his team tested Elliott's new 24 Series Condenser Expanders on a nuclear power plant heat exchanger with titanium grade 2 welded tubes.

Elliott supplied a 24 Series condenser expander with nylon pilot, 5 rolls, and a thin wall collar. Jim and his team



performed a side-by-side test of Elliott's 24 Series Expander versus the current expander brand they were using. During the 2-day visit, the operators expanded approximately 1,300 tube ends. Three expanders were used, and interchanged every ~30 tubes to keep them cool, clean, and lubricated.

Their initial impression of the expander and its design was extremely positive. They liked the design with the nylon pilot as well as the thin wall collar because of added protection from tube scoring and jammed cages. Jim noticed the quality rolled joint from the 24 Series, and the target ID was hit accurately and consistently. The consistent numbers and impressive ease of use were Jim's favorite aspects of the Elliott brand expanders.

Jim and his team were very pleased to discover that the 24 Series Expanders resulted in a highly superior expansion and increased tool life. Just a few of the great benefits Jim experienced were:

- Quality rolled joints.
- Decreased labor time, thus lower costs.
- Minimal hassles using thin wall collars.
- Less downtime with much faster, more efficient cleaning.

After using Elliott's 24 Series, Jim found which tool he preferred. With the inconsistencies in the expansions and the constant hassle of fixing the stuck rolls gone, a winner was decided.

## The Results

With Elliott's 24 Series, this fabricator experienced a significant increase in tool life and ease of use, which reduced rework, hassles, and improved productivity. Also, the nylon pilots greatly helped eliminate tube scratches. These benefits mean significant cost savings for them by switching to the 24 Series from their current expanders.

In terms of specific results for Jim and his team, the 24 Series increased performance enough to yield a 10% savings in labor time. Equally, this translates to an impressive 10% savings in labor costs as well. This was directly caused by the eliminated time spent with replacing broken tools, or reworking expansions. Essentially, the operators were able to work through continuously without having to stop and deal with hassles and problems.

Based on early results, increased tool life should cut tooling costs by about 35%.

In addition to using less tools to complete the job, there is also increased productivity due to less time being spent on replacing tooling or removing broken tooling from the tube.

Jim Damon and his team were highly satisfied with the tool life and consistency of Elliott's 24 Series Condenser Expanders. Overall, he is now certain that the 24 Series is the superior tool, and he prefers Elliott's expanders to any others. To learn if you can expect similar results from the 24 Series Expanders, contact your local support or Elliott Tool Technologies.

**“ Elliott's 24 Series Tube Expanders have excellent tool life. They held consistent rolled ID numbers and are easy to adjust. I'm purchasing more immediately. ”**  
- Jim Damon, Lean Manufacturing Engineer