

Electropolishing Reduces Scrap Costs of \$70,000 per Month for a Medical Device Manufacturer

A Case Study

When a pioneering manufacturer of medical devices began seeing an escalation of scrap in its production of a drug-infused urinary device, an onsite metallurgy expert traced the problem back to the stainless steel racks used to hold the devices in place during the infusion of medication.

The silicone devices were coming into contact with areas of corrosion on the racks, which had degraded in spots after more than a decade of use, leaving small black marks on the devices at the point of contact. The racks are used to secure the devices away from one another and facing outward to absorb a medicinal infusion.

The scrap rate had climbed to \$70,000 per month when the source of the problem was pinpointed. The racks would have to be replaced.

In the meantime, the metallurgist knew of a method that could keep the product in production, eliminating the surface defects on the racks and creating an ultraclean, ultrasmooth surface: electropolishing.

Electropolishing for a Defect-Free Metal Surface

“We have a metallurgy subject matter expert on site,” explained one of the company’s manufacturing engineers. “He said this level of erosion was pretty severe, so our best bet was to try electropolishing to buy us time.”

Electropolishing uses a chemical bath and a rectified electrical current to remove a microscopically precise layer of surface material.

The manufacturer sent out inquiries and met with representatives of several different electropolishing companies. The resulting meeting with Able Electropolishing as part of the investigation phase went



well and the Able team got the job. “It seemed like they knew what we were looking for,” the engineer said.

Able’s electropolishing of the impacted racks drove a dramatic reduction of the scrap rate. “It definitely had a significant impact,” the engineer said. “We were able to almost instantly remove the scrap that we were seeing.”

The electropolishing results were a success. But the Able team had an additional solution to offer.

Two-for-One Turnkey Solution for “Pristine” Medical Parts

More than six decades of experience as a pioneer of metal finishing solutions has left Able Electropolishing with a network of trusted suppliers that help clients find a range of additional solutions, facilitated by the Able team which manages the logistics to create [turnkey sourcing solutions](#).

In the case of the medical manufacturer, Able’s network included [Acme Wire Products](#), a manufacturer of precision metal wire products for the food and beverage, medical and other industries throughout the United States.

When the medical manufacturer learned that Able could facilitate the manufacture of replacement racks fabricated by Acme in parallel with the electropolishing of the older racks, the company sent Acme a sample of what it was looking for. The Acme racks, electropolished by Able for enhanced corrosion resistance and fatigue life improvements, were significantly improved, according to the engineer.

It was a two-for-one turnkey solution the manufacturer could rely on. "The quality of the product was great," the engineer said. "It had been hard to find a vendor that could do these in a quality state," he said. A previous vendor was unable to produce the high-quality welding needed for the baskets, he said.

"Since we were able to find Acme-Able, the product is pristine," he said. "We definitely would want to work with them any time we get our racks replaced."

Results: \$70k Per Month in Reduced Scrap

The manufacturer now has a robust system in place for rack management and plans to replace the racks every 5-10 years to avoid similar issues in the future.

Medical Rack Solution by the Numbers

- 7 different rack types
- \$70k a month in savings from preventing damage caused by the old racks
- 5-10 year set cycle for rack replacement

Benefits of Electropolishing

An ideal metal finishing solution for intricate parts, electropolishing provides a thorough finish, eliminating microscopic defects and leaving parts with improved fit, finish and function.

The process combines a chemical solution with an electric current, gently stripping surface imperfections from a *variety of alloys*, including stainless steel, *titanium*, *Nitinol*, and other metals commonly found in medical device and instrument manufacturing.

Electropolishing provides benefits that include:

- Ultrasmooth surface finish free of defects including burrs, microcracks, and contaminants
- Significantly enhanced corrosion resistance
- Enhanced durability
- Removal of discoloration left behind by heat treatment and welding
- Precise and consistent surface finish
- Enhanced cleanability
- High surface shine for aesthetic appeal
- Applicability across a wide array of alloys

A Trusted Partner in Metal Finishing

In Able Electropolishing, the medical manufacturing team found not just a service provider but a partner committed to understanding and solving their unique challenges. The enhanced rack quality, reduced scrap rates, and smooth communication made the partnership a success, laying a solid foundation for future collaboration and ensuring the integrity and quality of the product.



The Able Difference

As the world's largest electropolishing specialist, Able's processes have been honed over decades of collaboration with OEMs in industries with no room for error, like aerospace, [medical device manufacturing](#) and [semiconductor](#), among others.

With the ability to customize our processes for parts of varying size and intricacy and proven processes of [quality control](#), innovation and customer service, we are the electropolishing provider of choice for some of the world's biggest and best-known companies.

As an electropolishing pioneer and industry leader, however, we are committed to providing more than high-quality metal finishing services. We work to provide our customers with solutions they can use to get their products to market with less time and effort.

That's the goal of our [Turnkey Sourcing Service](#): Able clients share in a network of reliable vendors, leveraging Able project management and metal finishing expertise for fewer obstacles and more opportunities.

More at: <https://www.ableelectropolishing.com>



About Acme Wire Products

From design and prototyping to full scale production, the Acme Wire Products team creates a wide array of custom wire baskets, shelving and racks with in-house tooling, welding & wire forming for the highest quality results.

More: <https://www.acmewirepro.com>

