



CNC Grinding & Precision Finishing: HFW's One-Source Approach to Industrial Equipment

When your equipment demands peak performance, [precision grinding and finishing](#) aren't just add-ons—they're essential. In today's high-spec industries, including [turbomachinery](#), [power generation](#), [oil & gas](#), and [chemical manufacturing](#), you're only as good as your surface finish. Geometry and roughness directly impact wear resistance, vibration control, and coating performance.

At HFW Industries, we've spent more than 70 years mastering the art of precision finishing to support these mission-critical applications. While many know us as "[the coating people](#)," you'll find that **grinding isn't a side operation at HFW—it's a core part of what we do.**

We bring deep expertise in [internal diameter \(ID\)](#) and **cylindrical grinding**, especially on challenging materials like **duplex stainless steel, ceramics, and high-performance alloys**. Our facility houses over 15 precision grinding machines, including our recent CNC investment, and we routinely hold **tolerances within 0.0002"**.

Whether you need **ID grinding, cylindrical work, or superfinishing**, HFW has the **equipment, expertise, and urgency** to deliver fast results. [Start a discussion with our team of engineers today](#) to discuss potential custom solutions for your most pressing precision industrial equipment needs.

Grinding Capabilities Snapshot

HFW's skilled tradespeople and variety of precision finishing equipment ensure we can provide our customers with comprehensive repair and manufacturing services for their precision industrial equipment.

Cylindrical Grinding:

- Conventional: Up to 30" diameter swing x 288" long
- CNC: Up to 12" diameter swing x 80" long

Internal Grinding:

- Up to 36" ID x 24" stroke



Surface Grinding:

- 12" x 24" table

Superfinishing and Honing:

- Superfinishing down to 2 Ra
- Honing up to 36" ID

Tight tolerances + high material complexity = the kind of work we do every day.

Grinding Applications for Your Industry

We serve some of the most demanding sectors in the world. Here's how our **CNC and conventional grinding** services support high-reliability components:

Chemical Industry

We work with everyone from plant sub-suppliers to Fortune 500s, reconditioning or manufacturing:

- Mixer Components
- Pump Shafts & Housings
- Extruders, Seals, Plungers
- Centrifuges, Hydraulic Rams
- Various Styles of Processing Rolls

Power Generation

From utilities to OEMs, we keep power equipment operating under harsh conditions:

- Turbine & Turbocompressor Shafts
- Inlet Pipes, Valve Components
- Seal & Bearing Housings
- Pistons, Rods, Rotor Assemblies

Oil & Gas

Our work in refining and upstream/downstream operations includes:

- Compressor Rods, Pistons
- Shaft Sleeves & Spacers
- Journal & Thrust Housings
- Seal Housings & Balance Pistons

Turbomachinery

From routine maintenance to emergency repairs, our grinding precision supports high-speed rotational performance where it matters most.

Internal Diameter Grinding: A Specialty Niche

HFW has full ID grinding capabilities, making it one of our specialties. Our ID grinding department is focused on work where tight tolerances are essential, especially for items such as housings and areas including inner seals and bearing diameters. The internal grinding allows for **precision fits between parts**.

At HFW, our seasoned experts routinely hit .0002" tolerance on parts from 1" to 36" ID and a 24" stroke. ID grinding may be preferable to machining when precise surface finishes are required. [Connect with our team today](#) to learn more about how ID grinding may address your repair and manufacturing needs.

Case Study: How Grinding Factors Into Vacuum Pump Assembly

At HFW, our precision finishing services can be seamlessly intertwined with our other services to deliver high-quality results for our customers. For example, after pump disassembly and cleaning, our steps for a vacuum pump assembly included:

- **Shaft and Rotor Assembly:** Machine drive, seal and packing sleeve diameters. Machine to prepare cone fits of rotor for coating. Thermal spray with nickel-based alloy and finish.
- **Cones:** Thermal spray with nickel-based alloy and **finish grind** to assure proper fit with rotor.
- **Heads:** Pressure test, machine inboard face and pilot diameter for coating and thermal spray with nickel-based alloy and **finish**.
- **Assembly:** Assemble complete including bearings, seals, gaskets and packing along with dynamic balancing and painting as required.

We don't just grind. **We finish, coat, assemble, and deliver.**



Fast Response. One Source. No Excuses.

We know how expensive downtime is. Our true capability is helping our customers shine. When you have an emergency and your back is against the wall, HFW is here to help. That's why we built a one-source model: grinding, coating, machining, and assembly all under one roof.

In one case, we received an emergency quote for a large shaft assembly. We quoted the job in 25 minutes. That's the kind of responsiveness we're proud of. While we can't always turn quotes around that fast, our average turnaround is 1–3 business days.

In another case, we received an order for a customer who is a power generation OEM. The agreed-upon delivery date for the project was 9/21/23. In mid-August, the customer called, **explaining that the urgency of the job had increased substantially**. He asked if there was any possibility of moving that date up to 9/8/23. He needed his equipment as soon as he could get it, and he was running out of options. His customer was getting desperate.

This man, a great customer, was shocked when we agreed to the new date. **Just imagine his surprise when we not only hit that date but shipped his equipment a week earlier than the already expedited schedule.**

Our customer was able to save the day and be the hero for his customer—one of the largest oil refining companies. Not a bad outcome for what had looked like a dire situation.

When you need reliability, capability, and the highest level of service, **HFW is the solutions provider you can rely on.**

Why Choose HFW for Your Precision Grinding Needs?

- **Precision:** Tolerances down to 0.0002"
- **Capability:** Over 15 machines, CNC + manual
- **Speed:** Emergency and short lead times available
- **Expertise:** 70+ years in critical manufacturing
- **One Source:** Grinding, coating, machining, assembly
- **Trust:** Long-term relationships with Fortune 500 companies and OEMs

Let's Talk About Your Grinding Project

Whether you're sourcing a **high-volume batch** or a **complex, one-off job**, we're here to help.

Have a part that needs repair or want to discuss your specific needs? [Contact us today](#) to learn which coating or reconditioning system is right for your application.



Call us at (716) 875-3380



Email: RFQ@hfwindustries.com

Want to explore more? **Start with these resources from our Knowledge Base:**

- [How HFW Extends Equipment Life](#) — Real-world example of innovation in action
- [What is the One-Source Difference?](#) — A look at how HFW can help its customers meet tight deadlines
- [Introducing Our CNC Grinder](#) — Learn more about our Palmary CNC Cylindrical Grinder
- [What is Internal Diameter \(ID\) Grinding?](#) — Explore one of HFW's specialty services that's part of our one-source approach
- [How Does HFW Serve the Turbomachinery Industry?](#) — Learn about HFW's one-source repair and manufacturing strategy for turbines, rotors, and other turbomachinery equipment
- [What is Thermal Spraying?](#) — A beginner-friendly overview of the process and materials used
- [Overview of Thermal Spray Coatings: HVOF & Tungsten Carbide](#) — Why these materials are key to high-performance surface protection
- [What is Electrical Mechanical Runout \(EMRO\)?](#) — Learn how EMRO shaft inspection can help ensure operations run smoothly
- [What are HFW's Hardfacing Capabilities?](#) — Explore how HFW's hardfacing expertise restores industrial equipment with proven weld procedures and precision inspection