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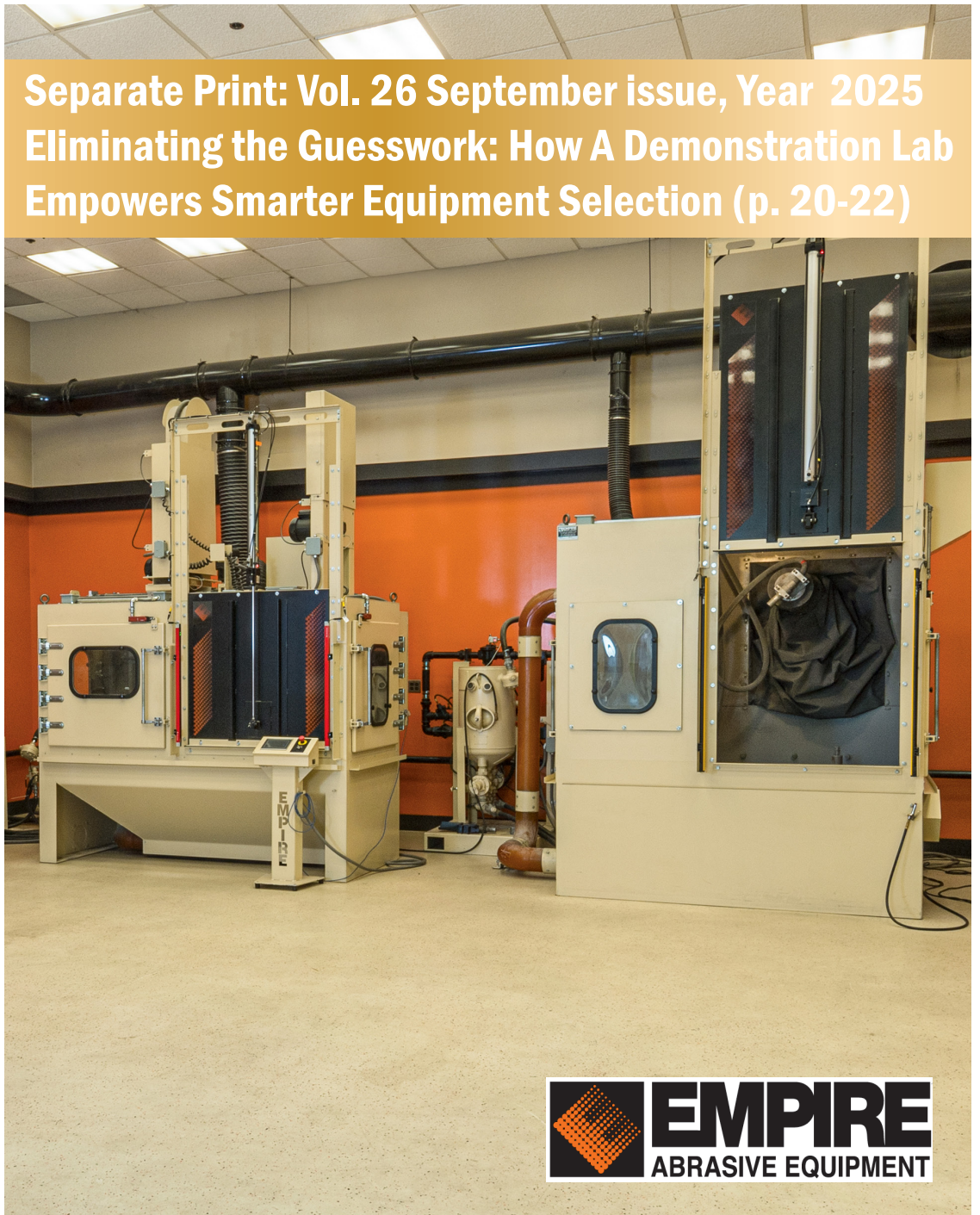


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ABRASIVE EQUIPMENT

## Eliminating the Guesswork: How a Demonstration Lab Empowers Smarter Equipment Selection

**No-cost sample testing provides manufacturers with the data necessary to make informed decisions—prior to making a capital investment.**

In surface preparation, the stakes are high. A poorly specified blast system can result in substandard finish quality, wasted media, inefficient cycle times, or even premature equipment obsolescence. Empire Abrasive Equipment addresses this challenge by validating the process prior to purchase, offering a proactive approach that few others in the industry can match. At the core of this strategy is Empire's Demonstration Lab—a dedicated, no-cost testing facility designed to help customers identify the optimal equipment, media, and process parameters for their specific application.

### Why Free Testing?

Empire's commitment to custom-engineered solutions, rather than relying on standard configurations, is the reason complimentary sample testing is offered. This service reflects the company's confidence in delivering solutions for virtually any part, process, or production challenge. Each test request is evaluated by the Empire team in conjunction with direct customer consultation prior to initiating testing. The lab is equipped to replicate real-

world scenarios using actual customer parts, whether for manual or automated air blast systems, or manual or automated wheel blast systems. This hands-on validation is essential for demonstrating performance and minimizing risk.

### Data-Driven Confidence

Every sample test is meticulously structured and documented through a consistent, repeatable process. This consistency is essential, ensuring that despite varying customer demands—from startups to major manufacturers, and across diverse applications such as medical devices or automotive castings—the testing and analysis methods remain reliable and standardized.

Customers receive a detailed formal report that compiles the entire process, including before-and-after photos. This report outlines:

- Customer's target specifications
- Media selection and usage details
- Step-by-step process documentation
- Before-and-after photos and video
- Notes on process adjustments
- Final recommendations

The American company has the capability to measure surface profile using



Ra (roughness average), or any other standard depending on the region—JIS, ANSI, or whichever specification the customer requires. For peening applications, intensity or coverage is measured and reported; for cleaning jobs, the report includes verification of surface cleanliness and estimates of production rates. Ultimately, each report is tailored to the customer's specific objectives.

In cases where physical testing is not feasible—such as with oversized parts or unavailable equipment—Empire utilizes advanced simulations with 7-axis robotics. A robot in the lab is used to simulate processes for which exact equipment is not available, with the ability to replicate various speeds, motions, and automation levels. This approach enables alternative sampling strategies without compromising insight.



**Before and After results per customer's finish specifications**



## Empowering Smarter Decisions

The true value of the Demonstration Lab lies not only in the data but in its application. Each test result serves to either validate a quote or recommendation with evidence-based results, or to revise the quote or recommendation to ensure the customer receives the optimal solution. The final decision, however, rests with the customer. The goal of the lab is to provide customers with sufficient data and physical proof to make an informed decision. This approach ensures that proposals are grounded in real testing and performance, fostering trust and peace of mind—particularly for complex, custom-engineered systems.

## A Partnership Beyond Testing

Consultation is a cornerstone of Empire's process and accompanies every test report. Customers are encouraged to visit Empire's facility to observe the equipment, review the results firsthand, and discuss next steps. This collaborative experience ensures alignment among the customer, the sales team, and engineering.

The lab also plays a critical role in troubleshooting and refining existing processes. Whether the objective is to improve surface finish uniformity, increase throughput, or reduce operating costs, Empire leverages the lab to provide application-specific evidence. In some cases, a customer may wish to bring an outsourced process in-house due to high reject rates. Empire replicates the manual process to establish a baseline, then transitions to automation—tuning the system for greater consistency and throughput. In doing so, a manual, often undefined and inconsistent process is transformed into a repeatable and efficient system.

The reports are highly customized to reflect diverse customer needs. Every customer is different, and therefore every report is unique. Whether a junior engineer focuses on production rate or a Ph.D. concentrates on finish detail, the report provides the necessary information.

## The Evolution of the Lab: Reshoring as a Catalyst

Over the past 15 years, the role of the Demonstration Lab has evolved significantly. In earlier years, sample testing was more straightforward—customers would send Empire a part with a simple request: "Process this. If it looks good, maybe we'll buy a machine." The interaction was largely transactional.

However, the growing trend of reshoring manufacturing to the U.S.—a movement that began before the COVID-19 pandemic and has since accelerated—has driven a major shift. Companies are now bringing production in-house to achieve tighter process control and improved consistency. These customers are no longer just seeking a machine; they are seeking a technology partner. This is where Empire offers a distinct advantage.

The historical pursuit of lower labor costs overseas often came at the expense of quality and efficiency. With reshoring, companies are rethinking their approach—choosing single automated systems that offer data, consistency, and control, rather than relying on multiple manual operations.

For customers bringing production back in-house, a clear understanding of the finishing process is essential. Many previously depended on job shops—often located overseas—without full visibility into proprietary methods. Now, they turn to Empire to help replicate or reshore processes they do not fully understand. On the other hand, some customers arrive with detailed specifications, requiring Empire to ensure seamless integration of custom-engineered solutions. Regardless of their starting point, Empire's consistent and thorough testing provides the foundational data for success.

Today, customers are not only interested in part results but also in understanding how to control, replicate, and scale the process. They want to monitor process health, track data in real time, and integrate equipment into their digital networks. Empire's Demonstration Lab has evolved into a critical technological partner, addressing complex surface finishing challenges.



**RS6060 Rotary Head System can be configured in multiple ways to meet your parts testing applications**



**Parts Testing capabilities utilizing 7-Axis Robotic Blasting Systems**



Empire Abrasive Equipment Demonstration Lab – Langhorne, PA

### The Real ROI: Confidence Before Commitment

In today's manufacturing landscape, capital investments require certainty.

Empire Abrasive Equipment's Demonstration Lab provides this assurance by eliminating guesswork and validating recommendations through real-world testing. One of Empire's core objec-

tives is to conduct fair tests and deliver honest results. If a sample meets the requested standards, it confirms the recommendation. If it does not, that outcome is equally valuable, as it provides clarity and opens the door to alternative solutions.

For anyone considering an air or wheel blast system—particularly a custom-engineered solution—the message is clear: send in your parts and let Empire prove the process.

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