Fisher Barton
METALLURGY MASTERED • SIX SIGMA QUALITY
American Made. Employee Owned.


04 Cover Story
Game Changers: It's What We Do



ISSUE 1 | FALL 2026


# EDGE




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# Welcome to
## Fisher Barton

### WE'RE AMERICAN-MADE, EMPLOYEE-OWNED, AND BUILT FOR WHAT'S NEXT…



**Welcome to Fisher Barton, and our first issue of EDGE.** If you don't know us, EDGE will give you a first glance at our company, our divisions and the dedicated team of men and women doing amazing work here in America's heartland. Or perhaps you've heard of Fisher Barton, know us by reputation, and even considered us as a partner. EDGE will give you a greater sense for the collective power of our divisions all working together; the 50+ years of metallurgical expertise that we bring to every project; and the scope of our vertically integrated manufacturing resources – all of which exist for the sole purpose of producing solutions for our customers superior to what came before. Most importantly, EDGE will introduce you to a proud, highly trained and motivated workforce, all of whom now have a stake in the future of this newly employee-owned company.

We're confident that once you get to know us, you'll be compelled to put your trust in Fisher Barton on a future project. And the timing couldn't be better. By choosing Fisher Barton, you're not only investing in quality and precision—you're supporting American manufacturing. We are proud to be **ISO 9001:2015** and **ITAR certified,** ensuring that every part we produce meets the highest standards of quality, traceability, and compliance. Our commitment to **onshoring** ensures shorter lead times, improved supply chain resilience, **tariff-free manufacturing,** and exceptional attention to detail and engineering precision.

Your **Fisher Barton EDGE** starts now. Let's win tomorrow together.

Sincerely,

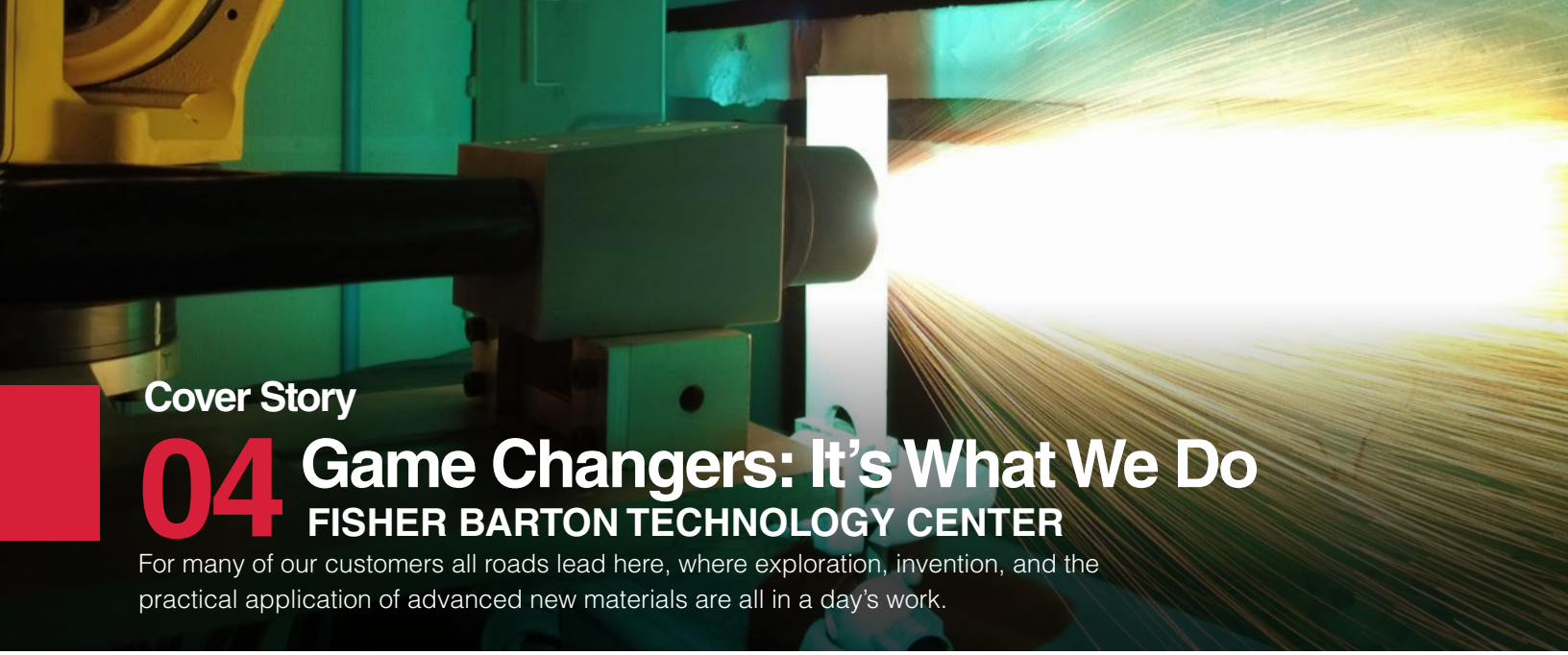
Scott Hoffman, CEO
Fisher Barton




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Cover Story


## 04 Game Changers: It's What We Do
### FISHER BARTON TECHNOLOGY CENTER
For many of our customers all roads lead here, where exploration, invention, and the practical application of advanced new materials are all in a day's work.

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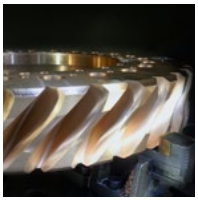
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Cover Story

# Game Changers: It's What We Do

## FISHER BARTON TECHNOLOGY CENTER

**For many of our customers all roads lead here: where exploration, invention, and the practical application of advanced new materials, surface treatments and machining methods combine for game-changing product performance.**



**Oil and Gas turns to Fisher Barton Technology Center when it needs to cost less…**replacing a super-expensive nickel based super alloy with economical 4140 steel and corrosion- and wear-resistant coatings saves thousands on the cost of critical valve plugs…

**Medical, when it needs to work safely…**increasingly common biopolar electrosurgical devices for minimally invasive surgeries feature advanced dialectric and thermally insulating coatings that safeguard patient and physician and deliver pinpoint precision…





**Agriculture, when it needs to last longer…**undercarriage bushings on tractor crawler tracks that bear up under thousands of pounds of pressure and take a pounding day and night, rain or pour, undergo a performance metamorphosis, with material hardening techniques and iron-based coatings processes adding long-sought life and reliability.

**Recreation, when it needs to look better…**salt water corrosion problems that take their toll on a sport fishing boat trolling motor are finally solved, with intensive salt fog testing and electric arc application of corrosion-proof aluminum and ductile coatings.



**…and thousands more.**

**Welcome to the Fisher Barton Technology Center. It's here, at the very epicenter of innovation at Fisher Barton, that R&D Director Dr. John Koppes and his team of engineers and technicians, equipped with a technology toolkit the likes of which exist nowhere else in the industry, are developing the next generation of Fisher Barton products.**



The Fisher Barton Technology Center has all the surface engineering capabilities used by our production facilities and a team of advanced degreed engineers and technicians dedicated to collaborative development of new products and processes with our customers.

"If there's a better way, we find it," says Dr. Koppes. "This isn't a theoretical exercise. We partner with customers from all our divisions, from a multitude of industries, and use our skills in both metallurgy and surface technology to customize solutions that can be put to work in the real world, right out of the box."



R&D Director, Dr. John Koppes

Dr. Koppes says that having an in-house laboratory and prototyping facility of this caliber enables Fisher Barton to more quickly deliver optimized products tailored to the customer's needs. The Technology Center offers the most comprehensive engineering, testing, and analyses under one roof, along with solutions ranging from wear resistance coatings to high-performance cutting technology to support diverse markets. It's all in a day's work, all at the fingertips of his teams, he says, as he ticks off the impressive array of resources and capabilities available for new product development, from prototyping to full production and these three groups all working together:

## 1. Applied Research and Development

The R&D group consists of experts in Materials and Surface Engineering that partner with customers to discover the best materials and processes for their products. Unsurpassed expertise in surface engineering allows R&D to enhance the performance and longevity of every product. "Here, we can replicate the coatings capabilities of our Thermal Spray Technologies (TST) division to find the advanced coating and treatment processes that deliver the desired performance characteristics, whether to improve wear resistance, corrosion protection, and overall product quality," says Dr. Koppes. "These include high-velocity oxygen fuel (HVOF), flame spray, atmospheric plasma spray (APS), wire arc, or plasma transferred arc (PTA) thermal spray equipment, as well as laser cladding and weld overlay cladding technologies."



Development of product solutions can be performed on our dedicated high-velocity oxygen fuel (HVOF), flame spray, atmospheric plasma spray (APS), wire arc, or plasma transferred arc (PTA) thermal spray equipment.

On this particular day, technicians are busy testing various coatings to solve what would seem to be an inconsequential problem for a manufacturer of premium marine engines for high-end sports fishing and pleasure craft: how to eliminate discoloration from fastening bolts when exposed over time to the corrosive effects of salt water. "You and I might not notice it, but for this

manufacturer and their customers, even bolt aesthetics are important," says Dr. Koppes. "Today, we're testing five or six different coatings on a small number of parts to help select the best candidates to defeat corrosion, impact and wear. Only after additional analysis and field testing will a solution be production-ready."

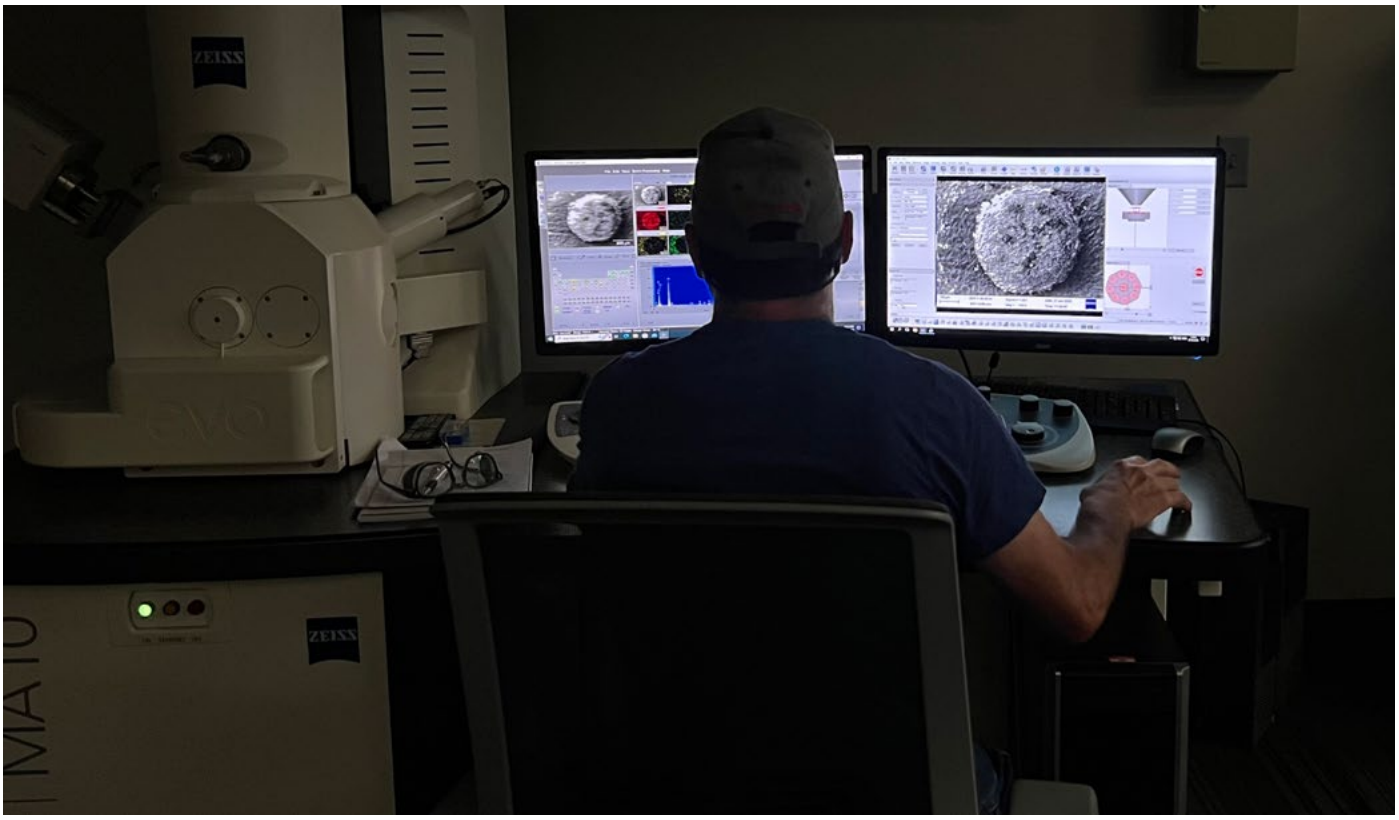


By leveraging small-scale surface engineering, heat treating, and machining, we can develop and test new processes and prototype without interrupting ongoing production.

## 2. Metallurgical Lab Services

Surface treatments alone aren't always the answer to improved product performance, explains Dr. Koppes. 'Metallurgy Mastered' is Fisher Barton's company-wide mantra, so it's no surprise that Metallurgical Lab Services is a core contributor to the Technology Center's search for what's next. It's here in the worldclass Met Lab that the 'metal' really hits the road. "In addition to our surface engineering capacity, our analytical equipment allows a deeper understanding of the microstructural, chemical, and physical properties of the materials we use," say Dr. Koppes. "Our materials engineers' and technicians' ability to relate the process, structure, and properties of materials gives us an edge in materials selection for enhancing product performance."

The Laboratory Services team has an amazing array of technologies at its disposal for analyzing microstructure, chemistry, wear characteristics, and mechanical properties. For example:




Utilizing advanced techniques such as Scanning Electron Microscopy (SEM) with Energy Dispersive X-ray Spectroscopy (EDS) and Glow Discharge Optical Emission Spectroscopy (GDOES), we provide detailed insights into material composition and properties.



Just one of hundreds of new product development efforts: trolling motor housing prototype undergoes thermal spray testing to find the perfect corrosion-proof coating.

**Materials Analysis:** Utilizing advanced techniques such as Scanning Electron Microscopy (SEM) with Energy Dispersive X-ray Spectroscopy (EDS) and Glow Discharge Optical Emission Spectroscopy (GDOES), to provide detailed insights into material composition and properties.

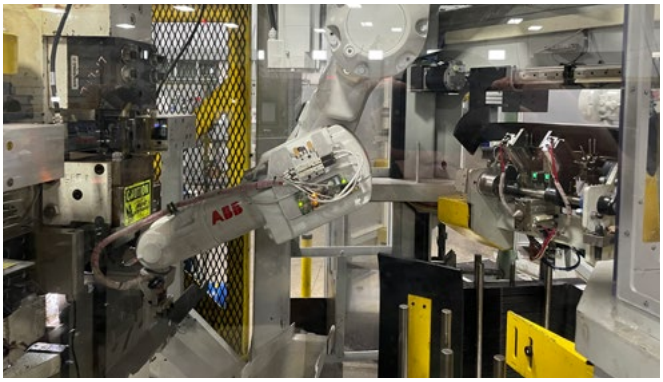


Mechanical and tribology testing is used for failure analysis, testing for fatigue, abrasion, and erosion, are critical to the optimization of new materials and processes.

**Mechanical Testing:** Comprehensive testing capabilities include drop weight, abrasion, fatigue, and erosion testing. These rigorous tests ensure that products meet the highest standards of durability and reliability.

## 3. Advanced Manufacturing and Automation

While its impact might not be as immediately obvious to the customer as a new product innovation, Fisher Barton Technology Center has a third group that also pays significant dividends to customers downstream.



Our Advanced Manufacturing and Automation Team helps all our Fisher Barton production facilities produce products more consistently, at lower costs, and increase the speed of bringing products to market.

"Our Advanced Manufacturing and Automation Team develops innovative automation solutions for all our Fisher Barton production facilities," Dr. Koppes says. "Internally, this group is helping meet today's demand for improved production throughput, faster delivery, and consistent quality.

**"With supply chains tenuous, and the quality bar set higher than ever, there's never been a better time for the Fisher Barton Technology Center."**

# News & Events

## Employee Ownership, Transformational Growth

It's been among the most momentous years in the 120-year legacy of Fisher Barton. With our transition this year to an employee-owned company, we're positioned for a new era of long-term, sustainable growth.

"Our transformation over the past six years has fundamentally strengthened our business, our people, and the value we deliver to customers," said Fisher Barton CEO Scott Hoffman. "We've built a culture rooted in continuous improvement, operational discipline, and innovation—supported by strategic investments in our facilities, technology, and workforce. Transitioning to employee ownership is a natural next step, ensuring that those who drive our success every day have a direct stake in our future."

Over this period, Fisher Barton has reshaped its business, strengthened its workforce, and deepened customer relationships. Guided by a clear strategic vision, the company has built a high-performance culture grounded in its core principles and driven by continuous improvement.

Alongside this milestone, the company introduced a refreshed brand identity and visual system, reflecting its evolution as a modern manufacturing partner. Together, these changes highlight Fisher Barton's focus on innovation, culture, and continued growth for generations to come.

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American Made. Employee Owned.

**Our Legacy: Driven By Innovation**

In 1906, Fisher Barton's Watertown, WI headquarters building was home to Washington Cutlery, the producer of the highly regarded 'Village Blacksmith' line of butcher knives, cleavers, chisels and screwdrivers. Over time, through acquisition and innovation, our company history evolved into Fisher Barton, a group of world-class manufacturing companies all driven by a common mission: to meet the most difficult customer challenges through innovation and a mastery of materials, and deliver premium, longer-lasting products to the world's most important industries.











## Fisher Barton Receives AriensCo's Inaugural Packer Award

Fisher Barton has been honored with AriensCo's inaugural Packer Award, recognizing the company's exceptional partnership, commitment to quality, and dedication to customer success. As the first recipient of this prestigious award, Fisher Barton is proud to be recognized for the innovation, responsiveness, and operational excellence that help support AriensCo and its customers. The award reflects the hard work of Fisher Barton's employee-owners and the strength of a long-standing partnership built on collaboration, continuous improvement, and a shared commitment to delivering industry-leading results.

## Metkraft Wins EcoVadis Bronze Medal

Fisher Barton's Metkraft Ltd. division has been awarded the EcoVadis Bronze Medal, marking another important milestone in our ongoing journey towards responsible, sustainable, and ethical manufacturing.

Our commitment extends across every part of our organization — from protecting the environment and maintaining a safe and healthy workplace, to upholding high standards of business ethics, respecting our employees, and promoting responsible practices throughout our supply chain.

The EcoVadis recognition also builds upon the strong foundation that Metkraft has established over many years, with ISO 9001, ISO 14001 Environmental Management and ISO 45001 Occupational Health and Safety certifications, as well as ISO 27001 Information Security.




Together, these achievements reflect Metkraft's commitment to continuous improvement and our determination to build a stronger, more responsible, and more sustainable organization.

**Congratulations to the entire Metkraft team!**

## Fisher Barton Celebrates Earth Day with Water Conservation Initiatives and 2025 John Deere Sustainability Award




In celebration of Earth Day 2026 and its ongoing commitment to environmental stewardship, Fisher Barton announced it had received the 2025 John Deere Sustainability Award in recognition of an innovative water reclamation initiative that saved 6,754,900 gallons of water saved annually at its Blades and Specialty Products manufacturing plants.



Prior to implementation of the project, Fisher Barton's heat treat operations required a continuous supply of fresh water to maintain rinse tanks at both facilities. To significantly reduce water consumption, Fisher Barton engineered a closed loop water recycling solution designed to reclaim and reuse process water rather than rely on continuous fresh water input.

"This project challenged us to rethink how water moves through a critical manufacturing process," said Len Anhold, Fisher Barton Director of Operations Excellence, Automation, EHS & Sustainability. "The result was a solution that dramatically reduced water usage while maintaining performance and reliability across our heat treat operations."

The water reclamation project delivered exceptional, measurable results:

- 98% reduction in rinse water consumption
- 6,754,900 gallons of water saved annually
- $79,480 in annual cost savings

These outcomes reflect Fisher Barton's ability to identify high impact sustainability opportunities and implement practical solutions that deliver long term value.

## Two Years Running: Fisher Barton Recognized with John Deere Partner Award

Fisher Barton is proud to have again been recognized with the John Deere Partner Award, marking the second consecutive year we've been honored as part of John Deere's Achieving Excellence Program.

The Partner Award represents John Deere's highest supplier classification and is awarded to suppliers that consistently demonstrate exceptional performance across key areas including quality, delivery, technical support, cost management, and continuous improvement.




"Earning the John Deere Partner Award for the second year in a row is a meaningful recognition of our team's dedication and hard work," said Fisher Barton CEO Scott Hoffman. "It reflects

our ongoing commitment to meeting John Deere's high expectations while continuously improving our processes, capabilities, and customer support."

Fisher Barton has been a trusted supplier to John Deere since 1982 and has a long history of collaboration across multiple John Deere business units.

"This recognition underscores the consistency and reliability our customers expect from Fisher Barton," said Len Anhold, Director of Operations Excellence, Automation, EHS & Sustainability, Fisher Barton. "Achieving Partner status again highlights the strength of our teams and our shared focus on operational excellence and continuous improvement."




## Fisher Barton Names Technology Center Conference Room in Honor of Founder Richard (Dick) L. Wilkey

Fisher Barton has named its Technology Center conference room in honor of company founder Richard (Dick) L. Wilkey, in tribute to his lasting impact on the company, the manufacturing industry, and the Watertown community.

"Dick Wilkey didn't just start a company — he built an industry leading business grounded in metallurgy expertise, relentless innovation, and a deep commitment to people," said Fisher Barton CEO Scott Hoffman. "From pioneering advances in lawn mower blade technology to giving back generously to the Watertown community, Dick's influence is woven into everything we do. The legacy he created lives on through our people, our products, and the future we are building."

Founded by Wilkey in Watertown, Fisher Barton has grown into the world's largest manufacturer of lawn mower blades, and a global manufacturing organization known for precision engineering, advanced materials, and large scale production capabilities.

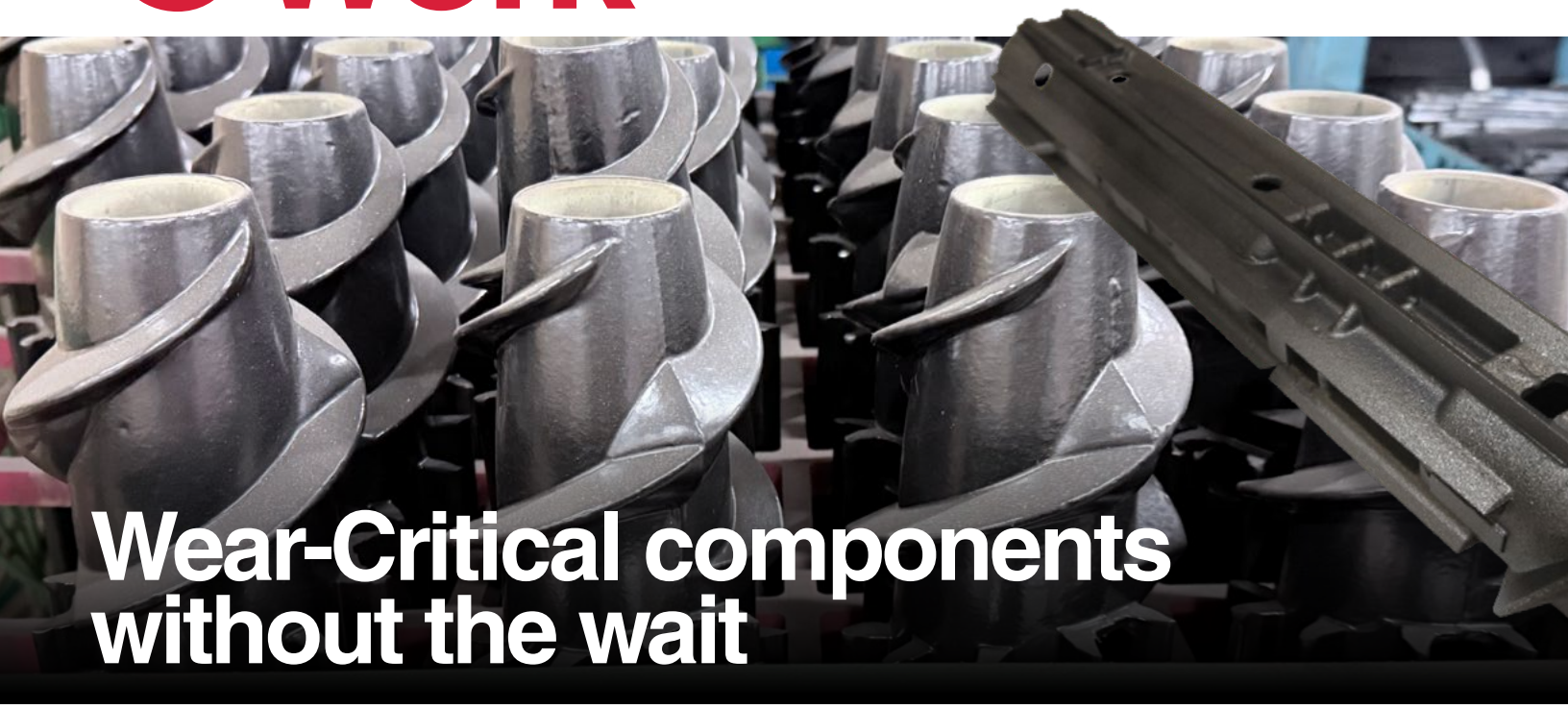
## New Packaging System: That's a Wrap!



At Fisher Barton, packaging is a strategic extension of our commitment to quality, safety, and customer satisfaction. We can deliver customized packaging solutions that support direct shipping to dealers and end users—reducing lead times and simplifying logistics. Case in point: our new Conflex FUSION Intermittent Motion Side Seal Wrapper. This fast, versatile shrink wrapper can apply 100 ft. of film per minute, packaging product of unlimited lengths individually and in multi-packs and bundles. It can apply all types of shrink films to meet requirements for high clarity, tear resistance, moisture barriers and more.

# Divisions @Work

Fisher Barton
SPECIALTY PRODUCTS
American Made. Employee Owned.



# Wear-Critical components without the wait

## By vertically integrating, and innovating, 'under one roof', Fisher Barton Specialty Products shortens the distance to harder working, American-made wear-critical components.



**Lee Hermann**
**General Manager**
Fisher Barton Specialty Products and Blades

Supply chain worries wearing you down? Feeling the pain of high tariffs? Ready to re-shore but having supplier concerns? Fisher Barton Specialty Products' GM Lee Hermann must have seen all this coming. Over the last six years Hermann and his team have ushered in a new era at the Fisher Barton Specialty Products division, producer of all types of wear-critical components found in dozens of ag, construction, mining and a myriad of other industrial applications. "In years past, we outsourced out of necessity like everyone, putting quality, delivery and cost at the mercy of an increasingly tenuous supply chain," explains Hermann.

"Today, we've literally turned the ship around, bringing all critical processes in-house and, by reducing supplier hand-offs, delivering greatly improved quality, production costs and customer response times."

The timely arrival of a dependable source for American-made wear products that out-perform in abrasive, high-impact environments comes as good news for OEMs hard pressed to deliver greater uptime and lower cost of ownership to their customers. And there's no more competitive landscape than agriculture, where the profitability of America's farms, and farmers, hinges

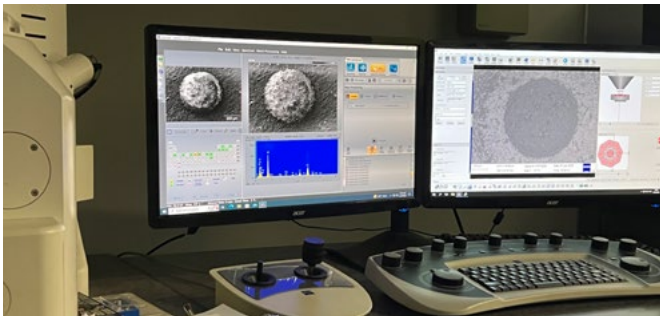
on squeezing every last mile out of their hard-working combine harvesters, tractors and balers. With daily wear and tear, high impact, soil abrasion and corrosion sure to take an expensive toll on everything from stock roll knives to combine header components, the search for improved wear-resistant performance is leading many OEMs to Fisher Barton.

"This sure isn't your father's tractor," agrees Lee Hermann. "Breaking and replacing a wear component today can be a very expensive proposition. It's why our 'toolkit' is so complete: we have the ability in-house to find and apply new, high-tolerance designs and advanced material and coatings solutions that add durability, reliability and longer service life, combined with the total manufacturing resources that make our delivery and value proposition all the more compelling."



Mr. Hermann cites the production of stalk rolls as a typical example of how Fisher Barton ingenuity and in-house resources can combine to improve on both product performance in the field and the customer's bottom line. As a combine harvester moves through a corn field the header at the front of the combine uses a system of stalk rolls and knives to gather and cut the stalks and direct a smooth flow of material, with minimal grain loss, into the body of the combine for further processing. Stalk rolls by design must be very durable. The more aggressively these wear components can gather and break down these tough corn stalks the better. Acre after acre, millions of corn stalks later, stalk rolls from Fisher Barton simply perform better and last longer because of the way they're designed and manufactured. At Fisher Barton, stalk rolls are treated as a high-tolerance engineered product rather than just an off the shelf commodity. Advanced manufacturing capabilities, wear coatings applied with laser cladding, and strong understanding of material properties and heat treatment processes all combine to enhance the durability and performance of these header components.

For the production of stalk rolls and, indeed, any of the dozens of different wear products that emerge from Fisher Barton Specialty Products on a typical day, an impressive and fast expanding array of resources are at the company's disposal, including:



The Fisher Barton Tech Center is at the heart of wear part innovation, where engineers and metallurgists work to solve complex wear and durability challenges to ensure maximum longevity.

**Design and manufacturability:** For that, there's the Fisher Barton Technology Center. This state-of-the-art facility is home to Fisher Barton's Research & Development, Met Lab Services, and Advanced Manufacturing and Automation Teams. It's the hub of cutting-edge research and development, offering customers a unique methodology for process development and prototyping of new and existing parts.

**Close-tolerance machining:** With the help of the Technology Center, we research material behavior to develop insights on friction coefficients, thermal barriers, and wear patterns. Our predictive maintenance insights and advanced CNC machining capabilities ensure that parts last longer and perform better under pressure.



**Wear coatings, laser cladding:** We are expert at applying surface engineering solutions that dramatically extend the lifespan of the customer's critical components. Thermal spray is an industrial coating process that provides additional protection against wear, corrosion, and high temperatures, increasing the component's longevity. A variety of thermal spray methods are at our disposal. Where particularly high wear resistance is needed (stalk rolls, for example), our advanced new laser cladding equipment ensures excellent coating adhesion to create a highly wear resistant surface.



Laser cladding is metallurgically bonded for excellent adhesion, and it is done with minimal heat input into the substrate. Iron, nickel, or cobalt based claddings with the addition of hard carbide phases creates highly wear resistant surfaces.

**Heat treat:** We've long recognized the importance of precise thermal processing and its critical role in increasing material ductility, strength, and wear resistance. Our investment in a complete range of heat treating services, on-site, separates us from the typical parts producer, and supports high-volume runs. These resources include austempering, induction and vacuum heat-treating, and carburizing and oil quench.



**Quality:** As an ITAR compliant, ISO 9001:2015 certified manufacturer, we maintain robust Quality Management Systems designed to deliver a high level of consistent performance in every part we produce. We have a culture of continuous improvement and operational excellence, the tools necessary for Lean Manufacturing and Six Sigma, and a dedicated Quality team that focuses on ensuring that the products being produced meet our customers' high quality requirements.

**Packaging:** As part of our robust quality assurance process, every product undergoes detailed packaging and label inspections to ensure brand integrity, shipment accuracy, and readiness for market. Our packaging capabilities not only protect the customer's products but also enhance their brand presence and streamline the supply chain.

**…and the people that make it all possible:** We're ONE Fisher Barton, where every employee is an owner and has a stake in the company's long-term, sustainable growth. Additionally, we're investing in the growth and success of every employee through the Fisher Barton University: a comprehensive learning platform featuring development programs, courses, Learning Labs, and Lean Six Sigma certification opportunities.

"Evidence of the ingenuity of our people to streamline processes, solve problems and improve quality can be found throughout our operations," concludes Lee Hermann. "In an environment where it's harder than ever to find skilled people, we're investing in 'home-grown' talent, and nurturing a dedicated, highly trained workforce in it for the long haul."





# Automation Takes Mower Blades a Cut Above

## The world's largest producer of lawn mower blades leans on automation to take the load off its workforce, ramp up production and speed American-made delivery.

There's a good chance that Fisher Barton Blades are taking great care of your turf. Every day more lawn mower blades emerge from the Fisher Barton's Watertown, WI facilities than from anywhere else on the planet, for everything from a lawn that's the pride of your neighborhood to the heavily manicured golf course where you spend Saturday mornings. That's almost 50,000 lawn mower blades a day,15,000,000 blades annually, and for as many as 900 unique SKUs. Remarkably, this heavy workload that required as many as 120 people just a few years ago to set up, load and unload stamping presses, straighteners, edge grinders and heat treat, tempering and quenching equipment – and inspect the product along the way – is now being done by just 46 people. Fisher Barton Blades GM Lee Hermann credits the company's investment in automation for freeing up his people for more valuable work, helping create a safer environment, and boosting TPP (Total Physical Product), a measure of the facility's productivity, to an amazing 91%. "Over the last six years we've gone 'all in' on automation; there isn't an area of our operation that hasn't been made more efficient," says Hermann. "While we couldn't have predicted the high cost of imports and materials when we went down this road, our automation initiatives certainly seem prophetic."

Take a shop tour with Lee Hermann and he proudly points out the press automation, material handling equipment, straightening technology, heat treat handling, palletizing and automated racking /unracking operations that have sprung up on the factory floor over the last six years. Along with the Technology Center's Advanced



In our pursuit of the highest-quality blades, we have developed several technologies to enhance their performance. These include MARBAIN®, the industry's hardest, strongest, and longest-lasting material, resulting from patented heat-treating process delivering higher hardness but without added brittleness.

Manufacturing and Automation Team, a strategic plan was implemented to take operations to worldclass productivity, delivering improved throughput, reduced process variation, enhanced quality and worldclass competitiveness, while at the same time removing ergonomic strain and safety risk from workers.



The use of robotics on blade straightening machines has increased throughput by 150% and redeployed operators to more productive tasks.

Hermann cites the robot added to their blade straightening operation as a 'microcosm' of what has taken place across the entire shop floor. "We check each and every part for a variety of features, such as tip height," Hermann says. "That used to be a time consuming process involving visual inspection and handling by an operator, including manual load/unload into a straightener machine – and these blades are sharp! Today, a robot recognizes and senses where a correction needs to be made, detecting even what couldn't be seen by an experienced operator. The robot then loads the part into one of two machines for precise staightening. We've reduced by half the number of operators and increased throughput by 150%."

As one might imagine, the turfcare landscape is a cutthroat business for blade manufacturers like Fisher Barton. Throughput won't cut it alone, and one size doesn't fit all, judging from the 900 or so different part numbers Fisher Barton produces in any given year. Customers come in all shapes and sizes: OEMs of residential mowers are focused on value, availability, and quality cut performance. Commercial OEMs place greater emphasis on durability, edge retention, uptime, productivity, and reduced maintenance costs because their equipment is much more expensive and must operate for many times longer over the course of a useful lifespan. For both, whether it's the lighter, thinner blades required for the latest electric mowers or the high-capacity reel mower blades for golf course grooming, Fisher Barton offers a competitive edge, with a host of unique designs, materials and R&D capabilities. For example:

**The MARBAIN® Advantage:**
Fisher Barton's proprietary MARBAIN® material is harder,



stronger, and lasts longer than abrasion-resistant steel and other manufacturing materials that simply aren't durable enough for tough conditions. It's the result of our patented heat-treating process that provides higher hardness but without the associated brittleness typical of high hardness materials.

**LaserEdge® EverSharp®:** Sharper mower blades deliver cleaner cuts and better looking lawns; blades that hold their edge longer improve on site efficiency while reducing maintenance costs. Our LaserEdge® EverSharp® are the only self sharpening lawn mower blade – minimizing downtime for blade sharpening, maximizing uptime, and driving higher productivity.

**TERMINATOR™:** This 3-in-1 blade shreds, bags, and discharges. It has exceptional hardness and produces better cutting results by straightening the grass before cutting. The unique blade design also enables turf managers to mow lawns faster and creates smaller clippings.

**ELIMINATOR®:** Our patented design mulches and shreds like no other blade. The blade has a reverse lift that pushes clippings back toward the teeth so they get cut multiple times before the finely cut pieces drop to the surface for discharge or bagging.

**Our Technology Center:** It's here that we advance blade design. This facility has all the surface engineering capabilities used by our production facilities. It also boasts a team of advanced engineers and technicians that collaborate to develop new products and processes. We perform applied research, create new products, and test metals to verify quality, functionality, and regulatory compliance.

"It's the best of both worlds: American steel meets American ingenuity," concludes Mr. Hermann. "By keeping production close to home, we maintain the highest quality standards and alignment with rigorous US safety standards. We also insulate our customers from supply chain volatility and disruptions that are becoming the rule rather than the exception."



We designed LaserEdge® with self-sharpening edges. It has an advanced cutting edge, which helps it maintain sharpness longer, reducing the need for blade replacements.



U.S. manufacturing using American steel for all our lawn mower blades keeps production close to home, secures supply chains and maintainx the highest quality standards through rigorous testing and alignment with U.S. safety standards.



We produce over 900 unique rotary blades for OEMs each year. We offer versatility in our designs to meet your application's needs, from high-lift bagging mowers to mulching blades.



# Thermal Spray Coatings: Strong Medicine for Bipolar Electrosurgical Devices

**With the use of bipolar electrosurgical devices now commonplace for increasingly complex, minimally invasive (and open) surgeries, thermal spray coatings have never been more critical.**

The earliest documented evidence of thermal cautery – the use of localized heat to cauterize an incision and limit blood loss – dates back to 3,000 BC and surgeries performed by the ancient Egyptians. With the arrival of electricity in the 19th century, and surgeons began experimenting with electric current to cauterize an incision with a heated wire. True electrosurgery, and the forerunner of today's monopolar and, most recently, bipolar electrosurgical systems, began with Dr. William Bovie, and his invention in 1926 of the first electrosurgical unit capable of delivering an alternating




**Bill Lenling**
**Senior Distinguished Engineer**
Fisher Barton TST Thermal Spray Technologies



**Andrea Loppnow**
**General Manager**
Fisher Barton TST Thermal Spray Technologies

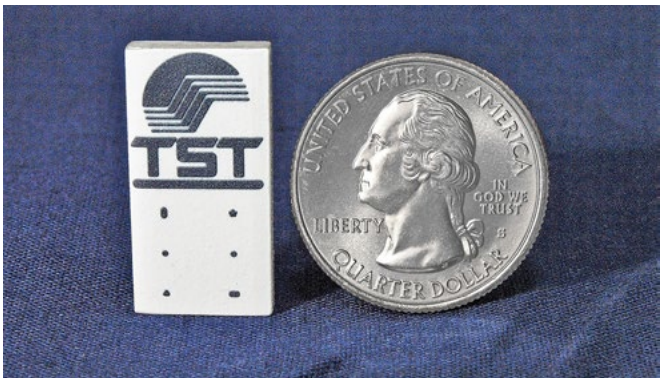
current at high frequency (RF) and various voltages to a surgical instrument for surgical cutting and/or to control bleeding by causing coagulation (hemostasis) at the incision.

Today, over 80% of all surgical procedures involve electrosurgery. Surgeons in every specialty, armed with an array of hand-held and robotically held electrosurgical devices now minimize blood loss, the duration of the procedure, the patient's time under anesthesia and recovery time. While much of the credit goes to skillful surgeons and electrosurgical devices, there is another important 'player' worth considering: the thermal spray coatings used to provide critically important surface properties for these devices.

**Bipolar Takes Charge.** Both monopolar and bipolar devices use the electrical current powered by a generator unit to apply a highly controlled electrical current and generate local heat that, when applied by a surgical instrument, cuts, coagulates, ablates or dissects tissue. They differ, however, in the path the current takes through the tissue. The monopolar device (the active electrode) directs current through the tissue, which then exits the patient through a grounding electrode plate/pad placed on the patient near the tissue being operated on. Contrast that with the bipolar device. These can be as simple as a forceps or scissors, with current flowing from the negatively charged electrode on the tip of one 'prong', through just the tissue held between the prongs, to the positively charged electrode on the other prong. Unlike the monopolar device, no current flows through the patient, and there is no need for a grounding pad. The current flow is much more localized, thus making bipolar devices ideal for an increasing number of surgeries performed on small areas requiring greater precision, such as a laparoscopy.

Application of bipolar electrosurgical devices has grown exponentially. These devices now come in a multitude of sizes and designs, with many featuring increasingly complex, extremely precise geometries for highly specialized, particularly delicate surgical application. Almost all are made of metal, primarily stainless steels, and designed to conduct an electrical current. As a result, the precise application of an electrically insulating (dielectric) coating to the metal substrate surface of the device has never been more critical. Without this insulation electrical arcing can occur, as the current jumps between the two uninsulated metal electrodes of the device, thus causing the device to short out and fail – or worse, injury to surgeon and patient. Additionally, many of these devices can require a second, thermal barrier coating, to protect surgeon and patient from an increase in the temperature of the device surfaces not intended for tissue sealing.

**'Ground Zero' for Dielectric Coatings.** TST Engineered Coatings, a Sun Prairie, WI division of Fisher Barton,



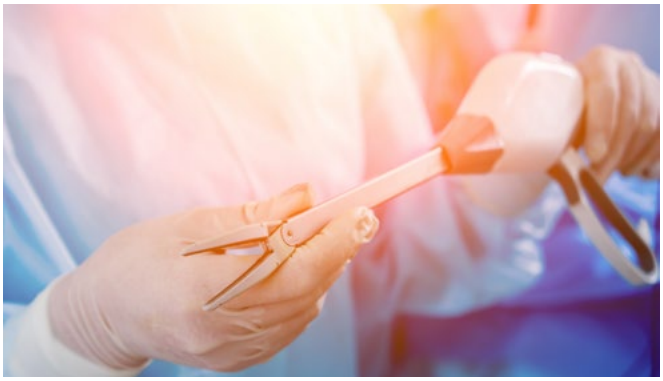

Dielectric coatings can be produced in fine and highly accurate detail. The above demonstration coupon shows coated areas as small as 0.012 in in diameter.



Over the years, we have developed technologies to apply the coating only where it is needed on the part. We can coat an area as small as a few thousandths of an inch with great consistency and accuracy.

has been at the forefront of developing and applying advanced dielectric coatings, as well as thermally

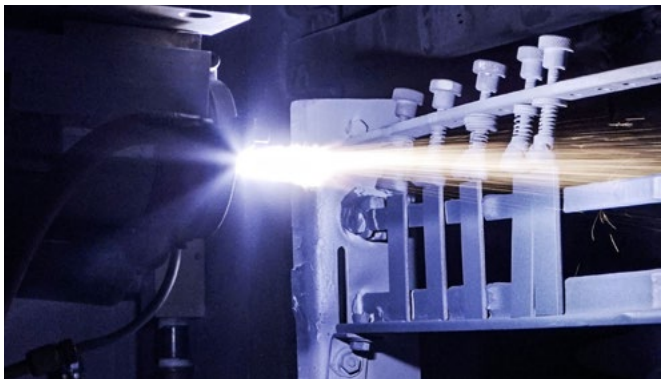
insulating coatings, coatings for extreme wear resistance, and even coatings with anti-microbial properties, for medical applications. Bipolar electrosurgical devices in particular have benefited from our family of specialized coatings and the surface properties they deliver. Devices of this type operating with a TST engineered coating now number in the millions.



Bi-polar surgical instrument with electrical insulating coatings to provide a precise gap between oppositely electrically charged jaws..

As noted previously, the tremendous variations in instrument size, shape, geometries, materials and end application prohibit a one-size-fits-all approach when developing a coatings solution. At TST, the process starts with our dedicated R & D team, including materials engineers who work closely with the customer to fully understand the instrument and the desired surface properties, along with the environment the instrument will function in. A variety of coating properties are considered along the way, including dielectric strength, porosity content, adhesion, oxidation, hardness and microstructure – all of which are metallurgically examined and tested during the development process to help ensure the optimum engineered coating design. Ultimately, a coatings material is selected and then paired with the correct thermal spray process for optimum performance. At TST, we can apply coatings through a variety of processes that are all characterized as 'thermal spray'. Each uses a combustion of gases or electrical energy to melt feedstock material in wire, powder, or rod form. The melted material is atomized and propelled to a prepared surface where the material immediately freezes and builds up to create a coating. These thermal spray coatings processes are extremely versatile and able to create coatings out of an almost endless number of materials.

Since our first thermal spray coatings application for bipolar electrosurgical device application some 20 years ago, we've developed a family of oxide ceramics coatings that have proven to be the optimum solution to deliver dielectric properties across the widest spectrum of applications, whether for high or low voltages, DC or RF. Ceramics are more durable, and wear and corrosion resistant than other coatings such as polymers, and can be formulated from common materials that include oxides of different metals, as well as other materials, alloys and compounds. With these oxide ceramics coatings at our disposal, we are able to meet or exceed the performance criteria specified for the vast majority of devices.



TST's coatings can be applied to a variety of materials including most metals, many polymers, and ceramics. The coatings can also be selectively applied to very specific surfaces with different geometries and sizes. Both large and very small surfaces can be selectively coated. The coating technology has coated millions of devices, providing critical surface properties for the devices function.

Most importantly, we have perfected the thermal spray technologies, and techniques, for applying these coatings with pinpoint accuracies, right down to an area as small as 0.012 in. (0.3 mm) in diameter – the tip width of a pen. Special TST fixturing, tooling and cell design, and process controls all are engineered to meet the unique needs of each application, thus enabling us to hold the tightest of tolerances for volumes of as few as one part, to high volumes of many thousands.






To meet unprecedented demand for electrosurgical devices featuring our advanced new thermal spray coatings, designs and materials, TST has made a significant investment in our ultra-modern 'Medical Cell'. The cell helps speed production, control quality, and ensure reliable, efficient delivery of product in high volumes.

**More resources, faster development.** While no one could have predicted the sudden onset of the supply chain challenges now afflicting seemingly every industry, the timing couldn't be better for TST. We're already 'on-shore', centrally located in the Midwest and close to worldclass medical centers of excellence like Madison, WI, Rochester, MN and Chicago. We have an R&D team dedicated to just the development of new solutions. Depending on the tooling/fixturing requirements of a particular product, TST can routinely have the first prototypes available to the customer for testing and validation in just a few weeks.

"By expanding our advanced technology capabilities, we're strengthening our ability to serve highly demanding industries such as automotive, defense, medical, chemical processing, and oil & gas," concludes TST General Manager Andrea Loppnow. "These markets require innovative materials, engineering, precision manufacturing, and proven reliability, and our new technologies position us to deliver even greater value through enhanced performance, longer component life, and application-specific solutions."

## In Summary.

**What will they come up with next? We've long ago ceased being surprised when a manufacturer of medical devices comes through our doors with a 'better medical mousetrap'. Our mission never changes: to find and apply the thermal spray coatings that will make it safer, last longer, work better. For many, the medical 'miracle' they're in search of starts here, at TST Engineered Coatings.**





# The New Age of Bronze

## Supply chain constraints and fast-rising commodity prices are taking their toll. Here's how Accurate Specialties shortens the distance from bronze blank to finished gear.

Somewhere mid-Pacific, a container ship is leisurely making its way toward Long Beach, CA. There's a container on-board with your name on it, loaded with thousands of the bronze gear blanks you've been waiting months for. To add injury to insult, you probably paid 3-4 times what this container and its contents would have cost you pre-pandemic.

**What if there was a better way?** What if you could place an order now and get those bronze gear blanks on your shop floor, ready for hobbing, while that other shipment is still in transit? Better yet, what if your supplier could offer you a worm gear blank designed to reduce material costs by 10-30%? And finally, what if your supplier then offered an attractive buy back program for those hundreds of pounds of precious bronze chips that you're practically giving away to your scrap recycler?

Fisher Barton's Accurate Specialties division, a Waukesha, WI based leader in bronze worm gear blank manufacturing, is making the case to those many gear manufacturers who have seen their bronze worm gear business grow significantly in recent years. Gear engineers have long prized bronze for its unique mechanical and chemical properties. Since it's made from a non-ferrous material, a bronze worm gear won't 'scavenge' molecules from its steel mating pinion or drive worm, thus greatly reducing galling and abnormal or premature gear wear as compared to a steel-on-steel solution. No wonder you'll find bronze worm gears

wherever maintenance-free, corrosion-resistant, reliable operation is required: for the tracking systems used to position solar panels; on boat lifts and cable and winch systems in highly corrosive marine environments; on shop floors in the indexing and rotary tables of machine tools where an unscheduled maintenance event can cost thousands of dollars.



Accurate Specialties division of Fisher Barton is advancing the science and improving the production process for bronze gear blanks of all types and sizes.

**Cutting Material Costs.** Today, this increased demand, combined with soaring copper and aluminum prices, are putting pressure on bronze alloy cost and delivery. For many manufacturers using bronze worm gears for their application, Accurate Specialties' centrifugal cast composite bronze worm gear blanks have never made more economic sense. As a pioneer and industry leader in this process, we've learned that, for many gear blank applications, with OD diameters from as small as 3" to as large as 24", up to 75% of the bronze alloy can actually be replaced through a composite solution. In most worm gear applications, the bronze rim portion is all that's needed to achieve the desired wear results; the hub portion that mounts to the mating shaft can generally be made from a much less costly, but highly functional alternative material such as ductile or grey iron. Since the per-pound cost of bronze alloy today is five to seven times more than that of iron, cost savings can be truly significant, particularly as volumes go up.

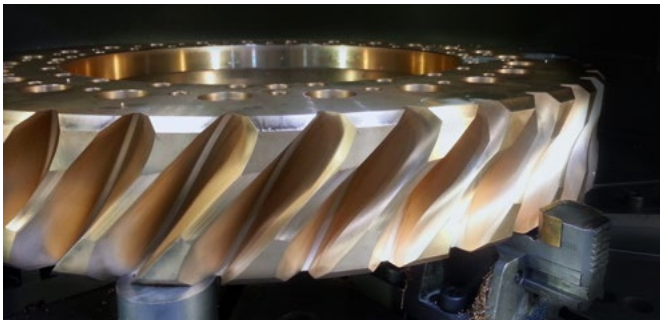
In addition to greatly reducing material costs, this composite solution offers significant benefits versus worm gear assemblies, where a steel hub is turned from bar stock and assembled with screws to a bronze rim. This approach adds many more components to the supply chain, inventory, and time-consuming and costly machining and assembly process steps. Instead, our composite solution uses a cast iron hub with a bronze alloy rim poured around the hub, right here in our Waukesha, WI bronze gear blank foundry and machine shop. The process eliminates multiple turning, sweating and assembly process steps. This, combined with the reduction in material costs, can lead to a per piece reduction of anywhere from 10 to 30% on average. The savings, particularly as volumes increase, easily offsets the casting die and pattern investment. This cost is further minimized with our ability to produce these dies to the most precise dimensions and tolerances in-house.

Most importantly, the composite gear blank is considerably more robust and reliable than its assembled equivalent. This results from the cooling bronze after casting. As it solidifies, the bronze alloy rim shrinks slightly, forming a compressive mechanical bond around the iron hub. The hub also has lugs configured into the area over which the bronze rim is poured, assuring a much stronger bond than possible with screws under torque – and eliminating the possibility of assembly screws becoming loose and resulting in gear maintenance, repair, or failure downstream. Furthermore, where a keyway is required, the cast iron hub is an inherently stronger solution than the bronze alloy equivalent.



Centrifugal cast composite gear blanks offer optimized design and lower cost, with gear bronze bonded to a cast iron or steel hub.

Of course, composite gear blanks are not a 'one size fits all' solution. The iron (or, in some cases, steel) hub and bronze alloy must be carefully designed so that



Centrifugal casting and secondary machining of bronze gear blanks as large as this one, with 49" OD diameter, in volumes from one to many thousands, is possible at Accurate Specialties' Waukesha, WI foundry and machine shop.

the compressive load created by the shrinking bronze doesn't crack the iron hub. This will vary depending on the bronze alloy used. Tin bronze, for example, works particularly well, while aluminum and manganese bronze alloys are more challenging. Our deep understanding of metallurgical properties and proprietary pre-melting and pour management techniques are critical to optimizing performance. We can also machine the gear blanks in-house so they arrive ready-to-hob.

We also offer a variety of other bronze gear blank solutions to accommodate a wide range of application requirements.

## These include:

- **Centrifugal casting,** ensures uniform purity, weight, density, and quality throughout the gear blank. These bronze gear blanks put the strongest material at the outer edge for gear teeth that can withstand exceptionally high levels of strain, shear-stress, and overload without fracturing.
- **Chilled casting,** produces a bronze gear blank with fine grain structure and outstanding uniformity throughout. We can produce chill cast bronze gear blanks at near-net-shape, perform secondary machining operations, and deliver completely machined, ready-to-hob gear blanks.
- **Continuous cast bar blanks,** allows for part-specific casting, where simple features can be continuous cast into the raw material, thus providing a "near net" shape. Our high-speed in-house production flow is equipped to cut bars into pucks, then lathe-turn them into gear blanks or shafts at the speeds needed to meet higher volume requirements and Just in Time turn-around.
- **Shaft manufacturing,** from any standard ferrous and non-ferrous material, for gear shafts, propeller shafts, drive shafts and countless other applications. Cut lengths and complete machining all done in-house. We partner with Fisher Barton's TST Engineered Coatings, to apply thermal spray coatings that add considerable value by extending shaft life, reducing corrosion and minimizing material costs.

**More resources, faster deliveries.** While no one could have predicted the sudden onset of today's supply chain challenges, our recent multi-million dollar investment in Accurate Specialties' manufacturing resources is perfect timing. In-house, we've added six new 36" centrifugal casting machines, eight advanced Doosan CNC machining lathes, a versatile new Haas vertical milling center – and a new clean room for machining. Then consider the investment we've just made in the Fisher Barton Turning Center of Excellence, giving us an ultra-modern, ITAR registered manufacturing facility for complete production of high precision parts on a massive scale **(see the Spotlight Article).**

## In Summary.

**The benefits of 're-shoring' are real. While you're waiting for that next container to finally arrive, maybe it's time to 'shore' up your source for bronze gear blanks.**



# Cutting Plastic Waste Down to Size

## In the global war on plastic waste, Zenith Cutter's hard-working, long-lasting knives for granulators, shredders and pelletizers are the unsung heroes doing much of the dirty work.

**"Plastics."** The one word of advice given to Dustin Hoffman in the 1967 movie 'The Graduate' has certainly proven prophetic. The world is awash in plastic, everything from PET bottles to bags, films to fiber, toys to textiles.

But what 'The Graduate' didn't tell us was how significant the impact would be of plastic on the planet. Landfills are bursting at the seams. Today the world is producing twice as much plastic waste as two decades ago, with the bulk of it ending up in landfill, incinerated or dumped into the environment. Only 9% is successfully recycled.

### The tide is beginning to turn.

While most plastics in use today are virgin (primary) plastics, made from crude oil or gas, global production of plastics from recycled (secondary) plastics has more than quadrupled in the last 20 years. With crude oil prices skyrocketing, US legislation is calling for all plastic packaging to be composed of at least 30% recycled content by 2030. Corporations too are climbing on board. Coca-Cola, for example, has committed to a 50% recycled PET bottle by 2030. Increasingly, manufacturers of consumer goods are designing their plastic products to ensure their recyclability, so they can be more easily converted back to usable secondary raw material. This movement is producing challenges – and opportunities – for the plastics recyclers who shred, granulate, and pelletize these waste materials for re-use. For those recyclers with deep pockets, a new generation of machines are available, delivering more speed and efficiency than ever. They range from two-story tall shredders for the diverse plastic waste produced by a municipality, right down to granulators the size of a

washing machine. For almost everyone seeking to enter the market and/or ramp up capacity to meet the need, a compelling case can be made for buying, refurbishing and repurposing used machines. Whether new or used, high volume or bench-top – none of these machines can operate at peak efficiencies, or profitably, over the long run without knives optimized for the machine and its particular application.



Through careful analysis of the customer's application, and drawing on some 30,000 knife designs in its database, Zenith Cutter can optimize its knife solutions for all types and sizes of granulators, shredders, and pelletizers.

## Knives: From A to Zenith.

Fisher Barton division Zenith Cutter, based in Loves Park, IL, has been on the front lines of the war on plastic waste since 1985, when we first began to apply our industrial knives expertise to the particular challenges of breaking down material for the plastics industry. Since then, we've become the leading manufacturer of a complete system of granulator knives, shredder blocks, pelletizer knives and screens for the industry's leading recycling machine OEMs as well as a leading MRO source for knives replacement, repairs and service for the fast growing marketplace of recycling companies.

In the world of plastics recycling, one size does not fit all, and materials range from the most common (plastic resin ID code classifications #1-2) and easily recyclable (PET) used in beverage bottles and HDPE to tougher materials such as PVC, LDPE, ABS (classified as #3-7) and others. Our products cover the complete range of size, capacities and material type: for shredders producing tons of ground plastic per hour, to the precision knives and screens needed for fine granulation. We have over 30,000 different knives in our database, matching the specifications required by the vast majority of new machine makes and models, as well as those of many legacy machines dating back some 30 years.

## A Cut Above.

Today, we're finding that an increasing number of applications can't be adequately addressed with a simple, off-the shelf standard solution. Customization, and innovation, are requirements for a plastics recycling landscape that's more challenging than ever. Through careful analysis of the customer's application, machine type and capabilities, Zenith Cutter can optimize a knife solution based on the ideal knife material, whether high chromium tool steel, HSS, stainless, PM, carbide tipped or coated, its cutting edge geometry, and the application of advanced heat treat and finish grinding resources. The end result is a knife that performs as well, or better, than what was found on the original equipment and delivers longer tool life, greater throughput and less downtime for resharpening or replacement.

Zenith is particularly expert at reverse engineering knives for older machines. Our knowledge base, and the significant resources we have in-house and those of our parent company Fisher Barton, gives us an important



edge for those many recycling companies now ramping up with used machines to meet, and benefit from, the new plastic recycling mandates and ever-growing volumes of plastics material. Matching knife to machine is critically important, but usually very difficult. Often the OEM of an older machine doesn't have the records or provide the support, and in almost every case the used machine is repurposed for a completely new set of plastics recycling challenges. Users who try to apply an off-the shelf knife product might think it's 'good enough', only to quickly learn that the machine they'd pinned their hopes on is now under-performing. And the knives they thought would work on that very abrasive material? They've lasted just half as long as expected.

## In Search of the Totally New.

Finding and applying knives that improve both used, and even new, machine performance is a process that Zenith excels at. In addition to the extensive engineering, R&D, and manufacturing resources on-site at Zenith Cutter, we draw heavily on the resources that our parent company, Fisher Barton, offers to improve on the design and functionality of our knives. The Fisher Barton Technology Center, for example, is fundamental in our ability to understand and apply the materials and coatings needed to improve our knives. Is a blade experiencing premature wear or failure? We can use a Zeiss scanning electron microscope to perform a very sophisticated analysis of fracture surfaces and microstructures, or a Keyence laser scanning microscope to analyze the material in 3D right down to 1nm resolution. We can perform abrasion and erosion testing, fatigue testing – all with the ultimate goal of finding and applying the ideal alloys, coatings and processes.

The collaboration of Zenith Cutter know-how and Fisher Barton's 'mastery of metallurgy' was instrumental in the recent development of the patented Shredzilla®, an innovative carbide-capped shredder block for use in most 40 mm shredders. As compared to solid carbide cutters, the Shredzilla offers similar tool life – but at a 30% cost reduction. It lasts 2-5 times longer than solid steel knives, and requires 50-60% less downtime for blade changes.

SHREDZILLA™

## In Summary.

**'Reduce, reuse, recycle' are now key drivers in our plastics producing industries. Knives play an important role in making these recycling efforts more efficient. When it's 'make or break', the case for sourcing your next knives order from world leader Zenith Cutter has never been more compelling.**



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# Spotlight



# Turning Out Excellence

## Accurate Specialties' ultra-modern, ITAR registered Turning Center of Excellence is shoring up the supply chain for precision parts that are hard to make and in short supply.

The seven counties that surround Milwaukee and constitute Southeastern Wisconsin are better known for their pastoral dairy farms and scenic Lake Michigan coastline than as centers for manufacturing. That perception is changing, and leading the way is Fisher Barton's Accurate Specialties division, a Waukesha, WI based leader renowned for its production of bronze gear blanks used for power transmission, agricultural




Fisher Barton's ultra-modern Turning Center of Excellence facility, strategically located in Waukesha, WI, is said to be one of the region's most advanced factories of its kind for the complete production of high precision, hard to make parts of all sizes.





Production of critically important bearing seal components for the next generation of US Navy submarines starts with the rough casting (left). Parts are then machined complete (right) on a single machine from a particularly challenging exotic material meant to last for 50 years in the harshest undersea environments.

applications, shipbuilding, and military applications. Now, Accurate Specialties is raising the 'bar' yet again – this time with an ultra-modern facility: the Turning Center of Excellence, said to be one of the region's most advanced factory of its kind for the complete production of high precision, low volume, or high volume components that are hard to find, difficult to make, and in high demand, says Accurate Specialties' General Manager Lee Herman. "Cylindrical parts made from tough-to-machine exotic metals and alloys come in all shapes and sizes – from screw-size to 6-foot casting, for everything from seals for submarines to shafts for snowblowers, lawnmowers, to elevators, in industries as varied as food processing equipment, military applications, commercial, oil discovery, and agricultural," Mr. Herman explains. "The common denominator is their requirement for ultra-precision CNC machining centers. With supply chains stretched thin, and manufacturers trying to keep pace with older, slower processes and equipment, it's no wonder Fisher Barton ear-marked a significant part of its multi-year, 20 million capital investment programs for this new ITAR-registered facility."



**Precision Parts, Productive Partnerships.** Manufacturers, particularly in the hot aerospace and defense market sectors, are increasingly seeking to outsource to more reliable partners with ultra-modern manufacturing resources, experience, and know-how. But Fisher Barton isn't waiting for the phone call. Their teams of project engineers are out in the field, "chasing the hardest projects" and partnering with these OEMs to offer a better solution than can be produced either in-house or outsourced to their traditional suppliers. Where the need exists, Fisher Barton will even produce parts on spec. to help improve designs and validate manufacturability. Case in point: four-day turnaround on a large (14 in. diameter), critically important bearing seal component for the next generation of US Navy submarines; machined complete from exotic material meant to last for 50 years in the harshest undersea environments. The facility's ITAR certification, investment in late-model, large-capacity turning centers, and CMM inspection on-site to meet the military's exceptionally high qualification requirements all contributed to this first test part "passing with flying colors," and the order for large-scale production, says Lee Herman.

"Our Turning Center of Excellence is purpose-built to meet this critical need for single-source, start to finish production, all under one roof, of the types of parts – large and small – that are in high demand but hard to make – like this one," Herman says. "We can



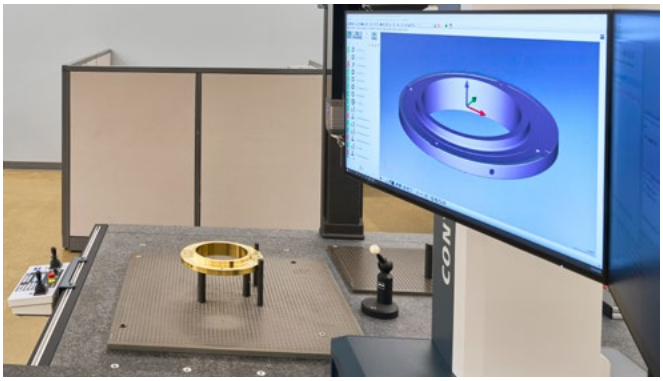

The ITAR certified, 56,000 sq. ft. facility is purpose-built for single-source, start to finish production of parts as large as 100", with investment in late-model machining centers, large-capacity turning centers, Swiss type machining of smaller parts in high volumes, and CMM inspection, all under one roof.

machine complete, inspect and even package high precision components made from all types of even the most exotic metals and alloys – whether small-diameter, high volume orders or a one-off shaft with a 2-meter diameter or 20 ft. length –all in a fraction of the time these customers have come to expect from their traditional sources."

Tour the 56,000 sq. ft., climate-controlled facility and you'll find a 'who's who' of the world-leading machine brands and latest models for large-capacity turning and machining: Tsune CNC saw with automatic bar feeding to cut any size bar stock down to size; G&L VTC 2500 Vertical Turning Center for parts with diameters as large as 100"; Okuma and Doosan Turning Centers including a and a Multus multi axis machining center offering a wide range of close-tolerance machining operations, speeds and capacity options; 'swiss' type machines for the complete machining of smaller parts in high volumes; and temperature-controlled quality room. The quality room features Zeiss Coordinate Measuring Machines capable of sub-micron measurement of finished parts and their features, as well as a new 3D imaging system that speeds inspection of smaller parts. "Raw material comes in on one truck and a week or two later departs as a completely inspected and finished component ready for installation into truck or tractor, marine vessel or military vehicle," explains Herman. "Contrast that with a traditional job shop, most likely still using slow, laborious manual lathes for turning, still having to send parts out for secondary machining operations and inspection, and all the while the customer waits and hopes for the best. Here, we've designed this facility for maximum throughput, minimum manpower, and processes always under tight control. Almost every machine has on-board probing and inspection, so we can dial in tolerances and confirm that we're within the tightest specs at every step of the process. No wasted effort, no costly scrap, all delivered to part print and, most importantly, on time."




**The Added Value of Fisher Barton.** With its affiliation with the Fisher Barton global organization, the new facility takes 'added value' to an entirely different level. At its core, Fisher Barton is a metallurgical innova¬tion partner. Their engineers understand the behavior of material and the application of their proprietary heat treating and surface engineering solutions that reimagine a component's lifespan. These capabili¬ties offer more than just a foundry or typical machine shop. For example, through partnership with Fisher Barton's TST division, thermal spray coatings can be applied to add considerable value by extending shaft life, reducing corrosion, minimizing material costs and solving problems like leaking due to shaft wear from seals with imbedded abrasive particles. Advanced wear resistant materials, including hard metals, carbides, and metal oxide ceramics are engineered into highly resistant coatings for critical shaft sealing locations. These advanced coatings can also be used to greatly reduce material costs. In one recent application, Accurate Specialties devised a solution that enabled the customer to replace the very expensive carbide material used for its shaft components with a much less expensive steel alloy but coated to deliver the wear resistance and durability of its carbide predecessor.



The quality room features a large-capacity Zeiss Coordinate Measuring Machine capable of sub-micron measurement of finished parts and their features, as well as a new 3D imaging system that speeds inspection of smaller parts.

Most importantly, the Turning Center of Excellence can access all the many R&D resources made available through the nearby Fisher Barton Technology Center. The Technology Center is ground zero for Fisher Barton's unique ability to address design and material deficiencies and explore ways to improve both manufacturability and performance in the field.

## In Summary.

**"There's a lot more to southeastern Wisconsin than meets the eye," concludes Lee Herman. "The case for sourcing your next precision part order right here in America's heartland has never been more compelling."**




Fisher Barton
METALLURGY MASTERED • SIX SIGMA QUALITY
American Made. Employee Owned.

## Fisher Barton Headquarters & Technology Center

700 S. Water Street,
Watertown, WI 53094

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**fisherbarton.com**

# Our Divisions

### Fisher Barton
ACCURATE SPECIALTIES
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570 Bluemound Rd,
Waukesha, WI 53188

**Turning Center of Excellence**
560 Bluemound Rd,
Waukesha, WI 53188

**262-444-5992**

### Fisher Barton
SPECIALTY PRODUCTS
American Made. Employee Owned.

1040 S 12th St,
Watertown, WI 53094

**Fisher Barton Distribution Center**
1007 S 12th St,
Watertown, WI 53094

**920-945-6476**

### Fisher Barton
BLADES
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300 Air Park Dr,
Watertown, WI 53094

**Fisher Barton Distribution Center**
1007 S 12th St,
Watertown, WI 53094

**920-945-6476**

### Fisher Barton
TST THERMAL SPRAY TECHNOLOGIES
American Made. Employee Owned.

210 Business Park Dr,
Sun Prairie, WI 53590

515 Progress Way
Sun Prairie, WI 53590

**608-597-0310**
**tstcoatings.com**

### Fisher Barton
ZENITH CUTTER INDUSTRIAL KNIVES
Employee Owned.

5200 Zenith Pkwy,
Loves Park, IL 61111

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