

MADE IN MILWAUKEE

Automation drives growth at American Friction Welding

SOME CONSIDER friction welding to be the “black magic” of the welding world – at least that’s how those unfamiliar with the process view it, said Casey Fischer, general manager of American Friction Welding.

“You’re just going to spin a part together, place it to another part and expect a full surface bond?” Fischer said. “It’s a funny concept if you think about it.”

American Friction Welding is a bi-metal friction welder of near-net-shape parts for original equipment manufacturers in a variety of industries including agriculture, automotive, construction, food, medical and more.

The Waukesha-based manufacturer recently moved into a new 63,000-square-foot facility and has experienced growth during the COVID-19 pandemic with plans to hire up to 13 more employees, said John Fischer, Casey Fischer’s father and AFW president.

While Casey Fischer’s layman’s explanation offers the gist of it, friction welding is a fairly complex process that comes with a learning curve, especially for people who haven’t experienced the benefits of a friction-welded component.

In the friction welding industry, growth doesn’t just come from being an expert in the trade; you have to be an expert educator too. John Fischer said there are many customers out there whose products would be better constructed with friction welding, if only they knew how it works.

“That’s the main barrier from us getting customers,” Casey

Fischer said. “A lot of people don’t know what friction welding is and that’s why we’re growing our online page to become an educational resource.”

Friction welding involves adjoining two metal objects through rotational motion and the forging pressure that is applied to each object. Friction works to generate a narrow zone of high temperature, transforming the point of contact, known as the “weld interface,” into a plasticized state. The weld interface is subjected to tremendous amounts of pressure, which help forge a metallic bond between the atoms of each object.

The key is that an object’s overall molecular integrity remains intact because that heat-affected zone is so narrow. Friction welding also creates a complete cross-sectional bond without using fluxes and filler metals associated with conventional welding.

The process also allows for dissimilar metals to be welded together with greater ease, John Fischer said, adding that the weldment will be as strong as the parent material.

AFW has also found growth in its ability to make both very small and large components; the company is one of the largest subcontract friction welders in the United States, John Fischer said.

AFW has 14 friction welding machines, two of which are automated. In fact, the company says the basis for its growth has been automation, which is why AFW plans to roll out a third automated cell in the coming months.



American Friction Welding general manager Casey Fischer loads a component into an automated cell.

AMERICAN FRICTION WELDING

505 Northview Road, Waukesha

INDUSTRY: Friction welding

EMPLOYEES: 28

Teamafw.com

The manufacturer also recently purchased an adjacent property, allowing AFW the capacity to double its footprint in the future.

With skyrocketing prices for certain metals during the pandemic, some manufacturers have sent product overseas to be machined down into smaller-sized components. However, AFW has seen customers return to the U.S. for friction-welded near-net-shape manufacturing, which is a process involving smaller parts being welded together to form a larger part.

That’s a big deal for a company’s cost structure because less material is being used to create the component, Casey Fischer said.

Although AFW has competitors in the United States with similar welding capabilities, the competition would prefer to develop a weld and sell the machine to customers, Casey Fischer said.

“We are here to develop the weld together and to come up with a way to streamline production efficiency,” Casey Fischer said. “We want to make sure we’re bringing down cost and becoming a long-term solution for customers.” ■



BRANDON ANDEREGG
Reporter

P / 414-336-7144

E / brandon.anderegg@biztimes.com

T / @bandereggmke