

COMPANY PROFILE ///

AVION MANUFACTURING



**PROVIDING
QUALITY
PRODUCTS
AND SERVICES
ON TIME**

Providing stop-off coatings to heat treaters makes up a bulk of Avion's business. (Courtesy: Avion Manufacturing)

Avion Manufacturing has been a successful provider of multiple stop-off coatings and high-quality replacement parts for the heat-treat industry since 1976.

By **KENNETH CARTER**, Thermal Processing editor

Stop-off coatings are an essential step to ensure certain areas of a part are not carburized or nitrided, which can lead to brittleness or excessive hardness where post heat-treatment machining of that area of the part is necessary.

Avion Manufacturing has been supplying multiple stop-off coatings for the heat-treat industry, along with high quality replacement parts, for almost half a century.

“We want to be a one-stop shop,” said Mark Ratliff, president of Avion Manufacturing. “I mean I know not everybody uses stop-off coatings, and that’s fine, but if you do, we want to be that partner with you because we’ve got the full gamut of stop-off coatings. We believe ours are the best and most cost effective.”

STOP-OFF COATINGS

Providing stop-off coatings to heat treaters makes up a bulk of Avion’s business, according to Ratliff.

“We still offer main furnace repair parts, but our bread and butter is the stop-off coatings,” he said. “We’ve got coatings for carburizing, nitriding, and ion nitriding. We’ve got the full gamut of stop-off coatings for the heat-treating industry, and that’s still our No. 1 seller. It’s probably about 65 percent to 70 percent of our business.”

In addition to the coatings and furnace repair parts, Avion also offers transfer chains, fans, burner nozzles, and graphite installation.

With that large catalog of heat-treating needs, Ratliff said it’s important to build a relationship with his company’s customers.

“When I walk into a heat-treating company that I’ve never done business with before, my focus is: Let’s see what we can do,” he said. “Let’s see if we can build a partnership here. If you have the type of furnaces where we can help on the repairs, on the brick work, on the transfer chains, or on the burners, we’d like to be your partner. If you don’t do stop-offs, that’s OK, but we want to be one of your featured suppliers.”

MEETING CUSTOMER NEEDS

For decades now, Avion Manufacturing has diligently kept up with a constantly changing industry in order to meet the needs of its customers, according to Ratliff.

“Constantly, there are new processes, so you have to keep up with the game,” he said. “For years, we had the gas nitriding stop-off, and now the industry is moving more toward ion and plasma nitriding stop-off coatings. We had to develop that coating. That’s ready for sale now.”

Even still, it’s such a new development that the market demand hasn’t caught up with it, but Ratliff said he expects it to.

“We evolve as the industry evolves as much as we can, especially if there’s any kind of chemicals or solutions or cleaners,” he said. “We’ve looked at getting into degreasers for the industry. We have a recipe. We do our best to keep up with the industry, and our focus is to be environmentally safe. A lot of our stop-offs are VOC free. Our cleaners are VOC free. They can be used and then they’re safe to put down a drain.”

STARTING A CONVERSATION

In that vein, Avion is constantly looking out for its customers’ best interests, and that means making sure they are going to be satisfied from the very start of the conversation, according to Ratliff.

“Customers with a challenge are most likely going to involve coat-



In addition to the coatings and furnace repair parts, Avion also offers transfer chains, fans, burner nozzles, and graphite installation. (Courtesy: Avion Manufacturing)

ings, and it also most likely will involve how to apply it best,” he said. “If you’re dealing with a couple hundred parts, you might have an operator that might be just painting it on with a brush, which is fine. There are multiple ways of application. The biggest challenge for me is: How can I get my coating onto their parts? It’s most likely through automation, but sometimes you can do single operator.”

At times, a single operator will be the best option for a customer, according to Ratliff.

“There are things you can do with single operator that makes things go a lot faster,” he said “There are various dipping methods that we can use when you’re trying to paint an inner diameter. There are ways we can do that without using a paintbrush. The biggest challenge is how to get the coating on the part in the quickest and most uniform manner to the customer’s satisfaction, so they are not spending a whole lot of money on labor.”



Avion Manufacturing has a full gamut of stop-off coatings for the heat-treating industry. (Courtesy: Avion Manufacturing)

That efficient application can run the spectrum from a single-operator application all the way to a fully automated robotic delivery system, according to Ratliff.

“Stellantis Corp. uses our coating,” he said. “They have a full robotic line, and it works really well.”

PROUD MOMENTS

Stellantis was definitely a feather in Avion’s cap, according to Ratliff, but Avion also has provided coatings for John Deere, Caterpillar, and Stihl Incorporated.

“Our biggest achievement was when we got in directly with the automotive industry with Stellantis,” he said. “There may have been other heat treaters that were using our product that went into a car that we didn’t know about, and, as a matter of fact, I know there were a handful of them, but to be a Tier 2 supplier to Stellantis (formerly Fiat Chrysler), that was probably our proudest moment as a company.”

However, that proud moment is just a fraction of the company’s history that goes back almost 50 years to when Avion sprang from a commercial heat-treating company in 1976, according to Ratliff.

“There was a heat-treating company that my father owned, and it was called Shore Metal Treating and what was happening was he was buying stop-off coatings overseas from the Condursal folks in Germany and shipping them over here,” he said. “They were extremely expensive, so he decided to make his own stop-off coatings and hired a chemist.”

That was when Avion was born. The company shared the same building with Shore Metal Treating for 10 years, according to Ratliff.

“The company evolved from not only making stop-off coatings, but furnace replacement parts, too,” he said. “We had a line of Ipsen furnaces and the transfer chains kept breaking on us. Ipsen was not

interested in making a heavier duty chain or anything that would last longer. My father said, ‘I’m just going to start making my own chain.’ He reverse-engineered it and beefed it up a little bit. He took a chain that lasted approximately four to six months and made one that lasted about a year and a half.”

COMPANY PATENTS

Later, Ratliff’s father patented the cyclonic burner tip, which was a special burner nozzle where the flame swirls up the tube. He later received a second patent for his water-based nitriding stop-off coating.

“It’s just gone up from there,” he said. “We’ve added other parts, energy-saving devices, so forth, and so on.”

As the industry continues to merge into larger and fewer entities, Ratliff said he is concerned for some of the mom-and-pop shops that have disappeared for one reason or another, but his main challenge is to be a main supplier for any company that needs his products — large or small.

“You have to do your best to keep up,” he said. “That’s the bottom line.”

In order to do that, Ratliff said he stays vigilant to be up-to-date with any and all of the latest technologies that might affect Avion Manufacturing.

“If it involves any kind of coating where I can apply it to the part, I’m on top of it, but one thing I have to do to keep me honest is I have to keep visiting, keep knocking on doors, and I do all the shows; I do all the seminars; I do try and keep up with the new technology as best I can,” he said. ♣



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