



Recycling Industry



Eriez® Ultra High-Frequency Eddy Current Separator Recovers Smaller Fines and Creates New Revenue for Lakeside Auto

Until recently, most recyclers considered it either impossible or not cost-effective to recover smaller metal fines from automobile-shredded residue (ASR). Most of these pieces are quite small, termed micro fines, and can include bare copper wire.

Eriez®, based in Erie, Pennsylvania, has developed new equipment to retrieve and sort metallic components from this material. The equipment provides a significant return on investment through quantity and quality of metal recovery. A growing number of shredder operators in North America are investing in this equipment to take advantage of the added revenue stream which would previously go to waste. Such is the case at Lakeside Auto Recyclers, operating for more than four decades from its 10-acre facility in Carter Lake, Iowa. The third-generation family-owned business serves western Iowa and parts of Nebraska by accepting #1 and #2 copper, aluminum, brass, stainless steel, tin and iron, a majority of which comes from automobiles and white goods.

Lakeside Auto has upgraded its recycling operation over the past three years with the installation of an American Pulverizer shredder and two downstream eddy current separators to recover nonferrous metals. The company subsequently enhanced its recycling efforts by installing an Eriez Model ST-22 Eddy Current Separator to handle the small ASR fraction.

Lakeside Auto later approached Eriez to purchase an Ultra High-Frequency (UHF) Eddy Current Separator to clean up mixed fine metals from the shredder line. The UHF recovers extra-small cast aluminum and bare copper wire fractions at the end of the fines recovery which were missed by the previous eddy current separators.

The process to upgrade Lakeside Auto's recycling operation was extensive, according to the company's president, Mike Levell. "I was travelling around doing a bunch of research to find the best system for our operation," he recalls. "After installing the Pulverizer, we met with Eriez on several occasions and added the first fines eddy, then purchased the UHF eddy during an ISRI show."

The Eriez Ultra High-Frequency Eddy Current Separator generates new revenue for scrap metal processors by recovering valuable aluminum, copper and other nonferrous fines as small as 2 to 3 mm from ASR, without the requirement for expensive sensor-based or optical sorting equipment.

Product off the UHF Eddy Current Separator is a high-grade zorba package with considerably higher-than-normal copper content. This fine zorba product is typically comprised of more than 20% red metal content that can be sold at a premium price, according to Mike Shattuck, Eriez Metals Recycling Market Manager.

“Customers are reporting a quick return on investment with increased profits after installing this equipment,” observes Shattuck. “For Lakeside Auto, Eriez developed the UHF Eddy to recover aluminum and bare copper from the waste off the fines eddy. The fines eddy removes bigger zorba but has little effect on the micro-fines or bare copper wire. Material missed by the fines eddy is recovered on the UHF Eddy.”

Lakeside Auto can now recover about 50,000 pounds a month of fine nonferrous material which was previously missed by their standard eddy current separator units. “Adding the fines eddy and the UHF Eddy is allowing us to produce a significant load of fines zorba every month,” says Levell. “In that one extra load a month, you’re actually getting paid for one additional load that doesn’t go to a landfill.”

“The system setup is pretty straightforward in one continuous operation,” Levell explains. “We have the shredder and the two original eddys in the downstream that are housed in the main building, along with the Eriez fines eddy. The UHF material—which comes off the fines eddy—was installed outside on the

other side of the building. We built a roof over the UHF, so everything is connected, and all units are under cover.”

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~ Mike Levell
President, Lakeside Auto

“Recycling operations that don’t have this type of equipment and the setup leave valuable material that is going into the trash,” Levell says. “In our business, it’s not always about running more volume through the plant. It’s also about recovery and not leaving material in the trash, because the small stuff eventually adds up.”

Making the investment worthwhile depends on the shredder yard’s setup and the types of material it accepts and processes, according to Jeanne Anderson of Industrial Motion Technologies, a longtime Eriez manufacturers’ representative based in West Des Moines, Iowa. Anderson was heavily involved with the Lakeside Auto operation.

“You might have a shredder yard that takes in cars as well as industrial scrap with random items people bring off the street,” Anderson says. “In Lakeside Auto’s case, they have the right kind of shred containing nonferrous metals, making investing in the UHF

more viable. It allows them to get down to a finer separation of the small nonferrous metals.”

“The UHF can now recover that extra-small cast aluminum and bare copper wire fractions that their other eddy current separators already passed over,” Anderson observes. “After doing some off-site testing and verifying the results, buying and installing the UHF made the most sense for them.”

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Recyclers are looking for ways to create additional margin and derive some advantage over their competitors, according to Levell. He explains, “When we’re looking for the potential to retrieve a lot of additional metal, it is typically in the fines. It’s worth the effort to recover metal fines from ASR.”

Levell concludes, “We realized the UHF was the best option for us. We have had a really good experience with Eriez and Industrial Motion Technologies. Recovering metal fines from ASR is a process that we’ve developed and refined over a period of years with the help of Eriez.”



Eriez is recognized as the world authority in separation technologies. The company’s magnetic separation, metal detection, material handling, fluid recycling and advanced flotation technologies have application in the mining, processing, packaging, food, recycling, aggregate, plastics and metalworking industries. Eriez designs, manufactures and markets these products through 13 international subsidiaries located on six continents.

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