

MTB Case Study

MAV Shrink Disc Helps First-in-U.S. Metal Recycling Pre-Shredder



Shrink discs made by MAV S.p.A., a product line of Fenner Drives, are right at the heart of a 70-ton-per-hour pre-shredder that is the first electrically driven MTB metal recycling pre-shredder to be sold in the U.S.

Wendt Corporation of Buffalo, NY, MTB's American distributor, sold the EZR machine to Rochester Iron and Metal, a scrap recycling operation in Rochester, IN. Based in France, MTB is the industry leader in metal recycling pre-shredding, shredding, and sorting equipment

Not only is the pre-shredder MTB's first electric pre-shredder in the US, but it is also the most energy efficient. The 92% high energy efficiency of the drive, achieved through synchronous high-torque electric motors, is one of the key reasons machine designers turn to electric power rather than hydraulics that have been used in the past. This innovation is critical and necessary to reducing energy consumption and at the same time developing a more circular economy. Combining this with the innovative mechanical design, which allows the adjustment of output density and throughput of the machine after installation, MTB can tailor the EZR's operation to meet specific customer needs at a lower energy cost.



The MAV 3208 shrink discs, which are mounted on the extraction and feeding rotors, were important in achieving the electrification of the unit. The shrink discs connected the gearbox's hub to the rotor's shaft, allowing MTB to use gearboxes with hollow, low-speed shafts and a compact design, saving weight and space in the EZR. MAV is known worldwide for customizing large shrink discs and other keyless locking devices

The MAV shrink discs have a clearance fit mounting and require no keyway making them easier to install and remove. In addition, the high contact pressure between the parts creates a stronger connection and a longer useful lifetime, especially in applications, like shredders, with shock or reversing loads. It also eliminates fretting corrosion.

Previous generations of pre-shredders relied on hydraulics because of the large amount of power required. In addition, the electric units will have a smaller footprint and be less complex than a hydraulics model.

"The pre-shredder offers our customers a simple way to grow their business by maximizing the use of existing assets," says Ethan Willard, Wendt's Business Development Manager. "I believe pre-shredders will revolutionize existing grinding operations with their ability to increase production and reduce operating costs and downtime."

The addition of the pre-shredder will make the facility a safer, more efficient operation. In effect, the pre-shredder prepares the waste stream for Rochester's large Wendt M6090 shredding machine. The pre-shredder uses low-speed, high-torque technology to allow Rochester to increase the throughput and cut the wear on its primary shredder. It also removes unshreddables, greatly reducing the chance of catastrophic failure at the mill.

"We are basically going to become an 80-inch mill without the installation costs," said, Dan Zeiger, controller for Rochester Iron and Metal. "From a financial perspective, the payback estimations are in months, not years."

Learn more about MAV shrink discs and other products available to meet your toughest challenges!



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