



ZATO'S COMBINATION UNLOCKS HIGH-PURITY ZORBA

An integrated three-stage equipment line developed and refined by the company offers a competitive advantage for small and midsized scrap processors.

In the North American nonferrous metals market, zorba has reached valuations that make it one of the most sought-after outputs in the entire recycling chain.

Yet, a significant share of this material continues to leave processing facilities hidden inside ferrous scrap and sold for prices similar to iron. This is not for lack of willingness but for a lack of the right tools.

Zato, an Italy-based equipment manufacturer with North American headquarters in Hebron, Kentucky, has decided to change that.

Why has zorba become so strategic?

Zorba is a mixture of nonferrous metals, mainly composed of aluminum, copper and zinc, obtained from scrap processing that currently is at the center of strong and growing global demand.

The energy transition, the electrification of transport and regulatory pressure on recycled content in manufactured goods

are fueling a race for secondary raw materials that doesn't appear to be slowing down.

In Zato's view, the issue is structural and runs in two directions. A significant portion of available zorba is locked inside light scrap and never recovered, then sold at iron prices. At the same time, nonferrous residues left mixed into ferrous fractions create a separate headache: Steel mills penalize every contaminated load with yield deductions, quietly cutting into the value of the iron you deliver.

The industry historically has relied almost exclusively on hammermills to solve both problems, and while they're powerful machines, they have barriers to entry that put them out of reach for many operators.

The limits of traditional solutions

The alternatives widely used today have limitations cutting into their effectiveness in zorba recovery.



For example, hammermills are the reference tool for end-of-life vehicle processing and large-scale zorba production. They require deep foundations, significant civil engineering, complex permitting and a minimum input volume to be economically viable; they also consume a great deal of energy. These factors combined can make hammermills out of reach for many small and midsized operators.

Additionally, inclined shears and shear/balers are effective for volume reduction but structurally are not suited for zorba recovery. The compression and cutting process tends to trap nonferrous metals inside the ferrous mass rather than freeing them. The result is that nonferrous content is sold bundled with ferrous scrap, pendulizing the overall value of the material.

Zato's answer

To solve this issue, Zato has developed and refined an integrated line that enables high-purity zorba recovery from light scrap without the need for a hammermill. Three machines combine to create a complete processing chain.

In sequence, the line includes:

- **Zato's Blue Devil shredder** – The twin-shaft model is designed to handle a wide range of materials, from mixed ferrous scrap to end-of-life vehicles and aluminum. Unlike a hammermill, it requires no special foundations or permits typically associated with grinding plants and can be installed on any existing paved surface.
- **Magnetic and gravimetric separation** – Shredded material feeds into Zato's scrap cleaning line, which combines magnetic separation to extract the ferrous fraction with gravimetric separation for density-based classification. The resulting output is a clean nonferrous stream, ready for the final stage, with the ferrous fraction already separated and independently valorized.

- **Eddy current separation** – Zato's eddy current separator, or ECS, closes the chain, isolating conductive nonferrous metals such as aluminum, copper and zinc from the residual stream. The result is high-purity zorba, directly tradeable on international markets without any further processing.

A competitive advantage

Zato says its three-stage solution is not just a technical matter but also a structural advantage over any alternative currently available.

For instance, the company's integrated line requires no civil engineering or special foundations as the system installs on the existing yard surface with no construction work required. The system also carries a minimal footprint, taking up less floor space than a hammermill plant of equivalent capacity.

The system allows for more simplified permitting, meaning shorter wait times and an earlier production start. It also leads to controlled operating costs through lower energy consumption per ton processed compared with a hammermill, as well as less wear, unplanned maintenance and downtime.

Zato's process lets operators start recovering zorba efficiently from day one, with no hammermill required. It is not an alternative to a hammermill, which remains the best way to fully liberate and recover zorba, but is a no-brainer starting kit, fully integrable with a hammermill whenever the operator is ready to invest in one.

The time is now

The scrap metal supply chain is comprised of many midsized and smaller operators who process materials that contain zorba but lack the tools to recover it. The result is that every day, tons of value leave their yards priced as ferrous scrap.

At current zorba valuations, recovering even a few percentage points of nonferrous content from your light scrap translates into real margin gains over the course of a year.

"The barrier to entry is far lower today than most operators realize," Zato says. "You do not need to be a large-scale plant to recover zorba like one."

The metal recovery market is moving fast. Pressure on raw material prices, decarbonization goals and new circular economy regulations are redrawing the competitive landscape. Operators who can extract value from streams that previously were processed in a suboptimal way hold a real, measurable and sustainable advantage.

The Blue Devil, scrap cleaning line and ECS combination is not a shortcut but rather a mature, field-tested industrial solution that delivers commercially viable zorba with an investment profile suited to operators who don't have a hammermill.