



SGM ALUMINUM SCRAP CLEANING SOLUTION FOR SECONDARY SMELTERS

Specifically for producers of 3000 and 6000
series aluminum billets and coils

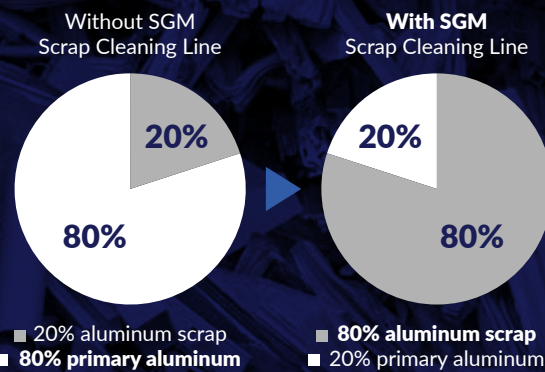


SGM ALUMINUM SCRAP CLEANING SOLUTION FOR SECONDARY SMELTERS

Specifically for producers of 3000 and 6000 series aluminum billets and coils.

CUSTOMERS' BENEFITS:

- Significant increase of the use of scrap versus primary aluminum as feed charge.
- Optimize yield furnace
- Reduce slag production



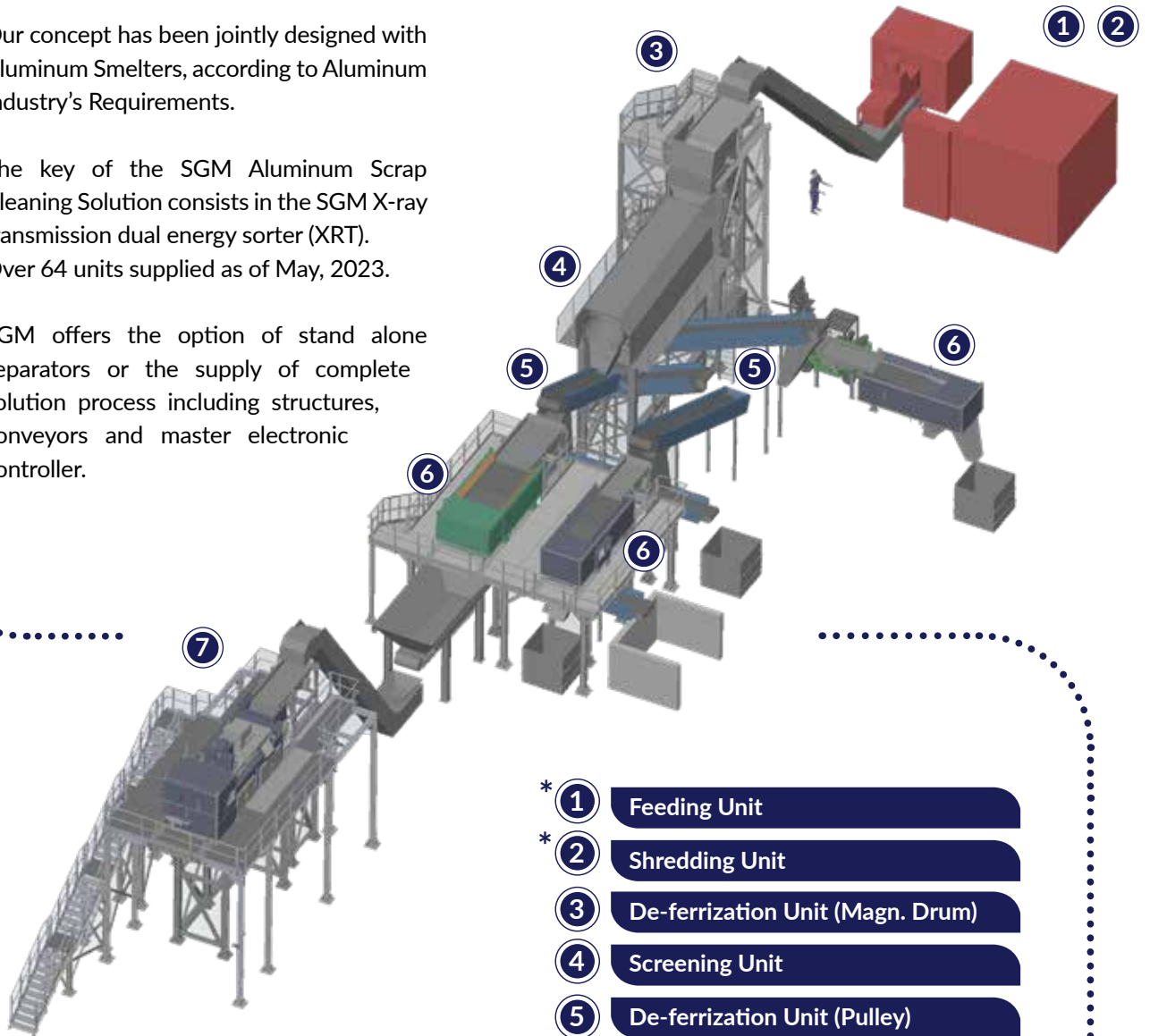
The SGM Solution

SGM has design specific solutions for the aluminum scrap cleaning process.

Our concept has been jointly designed with Aluminum Smelters, according to Aluminum Industry's Requirements.

The key of the SGM Aluminum Scrap Cleaning Solution consists in the SGM X-ray transmission dual energy sorter (XRT). Over 64 units supplied as of May, 2023.

SGM offers the option of stand alone separators or the supply of complete solution process including structures, conveyors and master electronic controller.



- * ① Feeding Unit
- * ② Shredding Unit
- ③ De-ferrization Unit (Magn. Drum)
- ④ Screening Unit
- ⑤ De-ferrization Unit (Pulley)
- ⑥ De-inertisation Unit (Eddy Current)
- ⑦ Heavy Metals Separation

* no SGM production

The complete solution includes hammer mill, screens, ferrous separators, ECS and XRT.

The goal is to reduce Fe content in the feed charge to the smelter to <0.2% and the Cu and Zn content respectively to 0.03% or less.



Aluminum Scrap

Aluminum Profile Scrap
from Construction, Demolition, etc

Hammer Mill Shredder

< 100 mm / 4"

SGM MAGNETIC HEAD PULLEY

Ferrous

Screener @12 mm / 1/2"

< 12 mm / 1/2"

Mainly Turnings

> 12 mm / 1/2"

SGM EDDY CURRENT SEPARATOR

Waste, Inert

Metals

Screener @30 mm / 1"

< 30 mm / 1"

Zorba

> 30 mm / 1" (typically >65% of inbound scrap)

SGM XRT | 1° pass

Heavy NF Metals Die Cast

Aluminum Scrap For 6060-6063

optional

SGM XRT | 2° pass

Aluminum Scrap For 6082

Zorba



Product highlights

- Self-learning software.
- Extremely robust to suit industrial use.
- Dedicated software according to customer specific application fully designed by SGM.

Optional features

- Air Compressor



X-RAY SORTER Model XRT

TECHNICAL SPECIFICATIONS

The SGM X-Ray Transmission sorter is based on the latest X-Ray through beam technology using dual energy scintillators (XRT sensors) for metal separation and single low energy sensors for plastic separation.

The dual energy sensors allow for the identification of the density of the different light metal pieces regardless of their thickness.

The material to be processed and analyzed is evenly distributed onto the sorter conveyor belt and transported between the X-Ray emitter (source) and the XRT sensors. The energy (radiations) emitted by the X-Ray source passes through the material pieces under inspection and the residual energy is sensed by the dual low and high energy sensors which compute it into density for every material piece regardless of its thickness. Absorption depends on the chemical density and thickness of each part, making XRT suitable for light metals and not heavy ones because, for them, the absorption is too high for the receptors to detect enough residual energy.

The information read by the XRT sensors is processed by a computer that decides whether or not to trigger a pneumatic sorting device. The software allows the operator to choose from a variety of sorting recipes and an interactive display interface allows for simple intuitive setups.

- Operating conditions: Indoor or Outdoor if roof covered and temperatures from 5°C to 35°C / 41°F to 95°F.

- X-ray radiation level: <1 µGy/h at 5cm/2".

- Capacity (*): Based on application, percentage of material pieces to sort out, their average size and weight.

Air compressor: Specifications based on quantity and characteristics of material to sort out.

| MODEL | VALVES | SOURCES | BELT WIDTH | BELT SPEED | CAPACITY (*) |
|----------|--------|---------|---------------|------------------------|--------------|
| XRT 24-R | 64 | 1 | 610 mm - 24" | 2-2.8 m/s - 5-8 ft/sec | 2 t/h |
| XRT 48-R | 128 | 1 | 1320 mm - 52" | 2-2.8 m/s - 5-8 ft/sec | 5 t/h |
| XRT 72-R | 192 | 1 | 2000 mm - 79" | 2-2.8 m/s - 5-8 ft/sec | 8 t/h |
| XRT 96-R | 256 | 2 | 2286 mm - 90" | 2-2.8 m/s - 5-8 ft/sec | 10 t/h |

* Depending on application, material specific weight and metal content material.

| MODEL | LENGTH | WIDTH | HEIGHT | WEIGHT |
|----------|----------------|----------------|----------------|------------------------|
| XRT 24-R | 6460 mm - 254" | 1690 mm - 66" | 2555 mm - 100" | 5.380 Kg - 11.860 lbs |
| XRT 48-R | 6460 mm - 254" | 2305 mm - 90" | 2555 mm - 100" | 6.640 Kg - 14.638 lbs |
| XRT 72-R | 6460 mm - 254" | 2920 mm - 115" | 2703 mm - 106" | 9.500 Kg - 20.943 lbs |
| XRT 96-R | 6460 mm - 254" | 3540 mm - 136" | 2703 mm - 106" | 14.000 Kg - 30.864 lbs |

TYPICAL APPLICATIONS

Aluminum Scrap: Upgrade of aluminum scrap by reducing Zn, Cu, and Fe achieving premium scrap price.

Car Shredder Zorba: Separation of heavy metals (copper, brass, zinc, lead) from aluminum and magnesium.

Car Shredder Fluff: Removal of chlorinated and brominated plastics to achieve over 70% of total fluff residue with less than 1% of PVC.

WEEE: Separation of PVS from lighter plastics (PP, PE, PS, HIPS, ABS).



TYPICAL IMPURITIES

- Ironies
- Inert Material
- Aluminum breakages
- Copper Wires
- Stainless Steel
- Al Impurities in Al (Castings)



-  **69** Years in business
-  **9** Fully owned subsidiaries
-  **2** Manufacturing and repair facilities

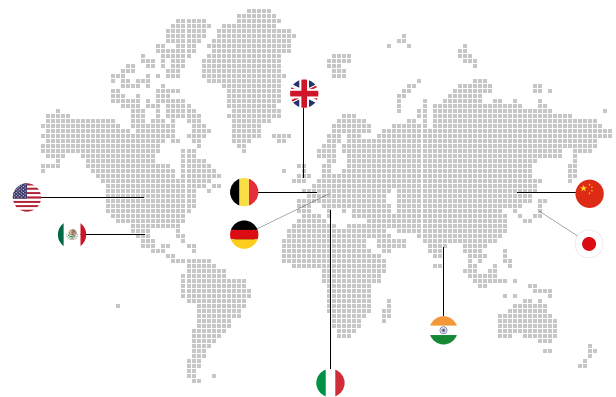
SGM REFERENCES FOR ALUMINUM SECONDARY SMELTERS AND ALUMINUM SCRAP RECYCLERS



SGM WORLDWIDE

Always available, near you, in your language.

The SGM business model is based on providing technological expertise, staying close to its customers through a network of SGM Magnetics corporations located in Italy, Germany, UK, Belgium, USA, China, Mexico, India and Japan, as well as a few long standing agents with extensive experience in the SGM products and technologies.



The **BEST SOLUTION** is often a combination of **BEST TECHNOLOGIES!**



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