



SEPARATION & RECYCLING

Product and application catalog



Technology and
Proximity since 1954

Because the best solution is often
a combination of best technologies

SGM Magnetics ambition is to contribute to the circular economy by helping our customers recycle more efficiently and effectively while enhancing their profitability.

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WHO WE ARE

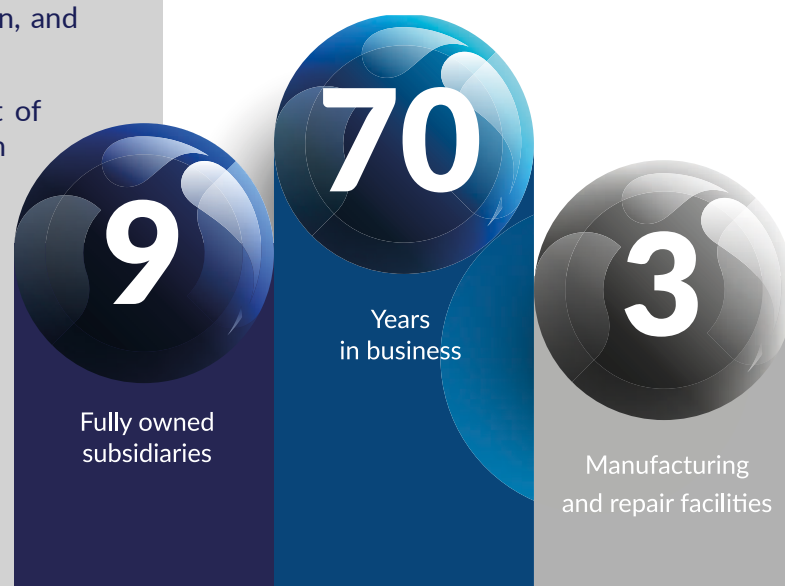
Our name and logo reflect our first two historical core businesses: lifting magnet systems for the steel industry and separators for the recycling industry.

Over the years, SGM has established itself as a pioneer and leader in industrial lifting magnets and has expanded its magnetic separation expertise to include other in-house separation technologies, such as inductive-based sensor separators, X-ray separators, color sorters, gravimetric separation, and complete process plants.

SGM has always invested in the development of in-house designed technologies, many of which are patented.

In our industry, we are the brand that offers the widest range of technologies, as we believe the best solutions often come from combining multiple technologies.

With several subsidiaries worldwide, we leverage our proximity to customers and cutting-edge technologies as our key strengths, giving them a solid reason to rely on SGM.



SGM WORLDWIDE

With a presence in nine locations worldwide, we are closer to our customers, allowing us to better understand their specific needs and respond to their requests with greater efficiency.

SGM Magnetics' fully owned subsidiaries are located in Italy, Germany, the UK, Belgium, the USA, China, Mexico, India, and Japan. Additionally, we collaborate with several long-standing agents who have extensive experience with SGM products and technologies.



**GLOBAL EXPERTISE
LOCAL PRESENCE**



See all worldwide locations

SEPARATION AND RECYCLING TECHNOLOGIES

The widest range of in-house designed separation technologies

In today's world, where recycling and resource recovery are more critical than ever, developing new technologies is essential to meeting growing environmental and regulatory demands.

SGM feels a strong responsibility to drive innovation, ensuring more efficient material separation, reducing waste, and contributing to a more sustainable circular economy.

Our goal is to maximize efficiency and profitability for our customers by providing cutting-edge solutions that improve industrial performance and sustainability.

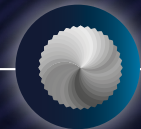
BALLISTIC



MAGNETISM



COLOR & SHAPE



LIBS



GRAVITY



INDUCTION SENSORS



X-RAY TRANSMISSION & FLUORESCENCE



BALLISTIC

Separation based on the different trajectories that materials follow when propelled, influenced by their mass, size, and shape. This technology efficiently sorts light and heavy fractions, making it ideal for applications such as incinerator bottom ash.

GRAVITY

Separation based on the different specific weights of materials within a stream, utilizing gravimetric technologies to distinguish and sort elements by density. This method is widely used in metal, mineral, and waste recycling, ensuring efficient separation of heavy and light materials for improved resource recovery.

MAGNETISM

Separation based on the magnetic attraction of ferrous metals and the eddy current repulsion of non-ferrous metals allows for efficient and high-precision material recovery. Magnetic separators capture and extract ferrous metals, while eddy current separators generate opposing magnetic fields to repel and separate non-ferrous metals like aluminum and copper.

INDUCTION SENSORS

Separation based on induction sensor technology, which detects and identifies metallic particles within a material stream, enabling precise sorting and efficient metal recovery.

COLOR & SHAPE

Separation based on the distinct colors and shapes of materials within a stream, utilizing optical sorting technologies to accurately identify and sort different materials.

X-RAY

X-Ray technology plays a crucial role in material separation and recycling, enabling the identification and sorting of materials based on their density and elemental composition.

X-Ray Transmission (XRT) penetrates materials to detect differences in atomic density, making it ideal for separating metals, minerals, and contaminants.

X-Ray Fluorescence (XRF) identifies specific elements by analyzing their unique emissions when exposed to X-rays, ensuring high-purity material recovery in recycling processes.

LIBS

(Laser-Induced Breakdown Spectroscopy)

LIBS (Laser-Induced Breakdown Spectroscopy) is a chemical analysis technique that uses a high-power laser to generate plasma on a sample. By analyzing the emitted optical spectrum, LIBS determines the chemical composition of materials both qualitatively and quantitatively, making it a powerful tool for precise material identification and sorting in recycling and industrial applications.



Discover our technologies



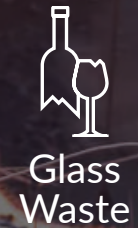
INDUSTRIES AND APPLICATIONS

Because the best solution is often a combination of best technologies

Whether the goal is to remove metallic contaminants from a material stream or to optimize metal recovery and purity, SGM offers the widest range of in-house designed technologies to meet your needs, from individual separators to complete systems.

Operators in the recycling industry face numerous challenges, from efficiently recovering valuable metals to ensuring high-purity separation of materials such as wood, glass, WEEE, and incinerator bottom ash (IBA). Contaminants, varying particle sizes, and evolving environmental regulations make it increasingly complex to achieve optimal separation.

RECYCLING INDUSTRY



ALUMINUM FOUNDRIES



STEEL MILLS



RECYCLING INDUSTRY

Recovering and separating metals from complex material streams—such as shredded steel, auto shredder residue, incinerated ash, municipal waste, glass, wood, and WEEE—presents significant challenges. Operators must deal with mixed and contaminated materials, maximize metal recovery efficiency, and meet strict environmental regulations. SGM addresses these challenges with the widest range of in-house designed separation technologies to ensure high-purity separation and maximum resource recovery across recycling industries.

- Car shredders
- IBA (Municipal Solid Waste Incinerator Ash)
- Municipal Solid Waste
- HMS Ferrous scrap (Steel mills)
- Glass waste
- WEEE waste
- Wood waste

ALUMINIUM

Secondary smelters face critical challenges in separating and refining aluminum, including removing contaminants such as copper, zinc, and stainless steel, achieving the required purity levels for high-grade alloys, and processing mixed or coated scrap efficiently. With increasing demand for recycled aluminum and stricter quality standards, optimizing sorting and refining processes is essential. SGM provides advanced separation technologies, including **X-ray Transmission, Fluorescence and LIBS** to help smelters maximize recovery and improve purity.

- Refining of aluminium scrap



STEEL

Steel mills face significant challenges in cleaning scrap, including non-ferrous contamination (copper, aluminum, stainless steel), inconsistent scrap quality, and increased slag formation, which raises lime consumption and accelerates furnace wear. Efficient scrap cleaning is essential to optimizing yield, reducing energy costs, and ensuring high-quality steel production.

The SGM proprietary HMS Scrap Cleaning Line for sheared HMS and low-grade ferrous scrap significantly reduces non-ferrous contaminants in the furnace feed. This results in higher furnace yield, lower lime consumption, and improved steel quality.

- HMS Scrap Cleaning Line



MINING

SGM provides advanced solutions for mineral concentration across various mining applications and ferrous removal in coal mining, ensuring higher efficiency and improved material purity.

- Coal
- Iron Ore
- Diamonds



EXAMPLES OF SEPARATION AND RECOVERY PROCESSES

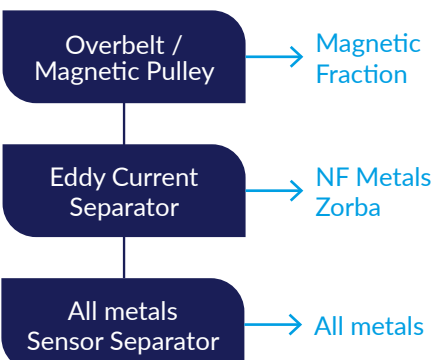
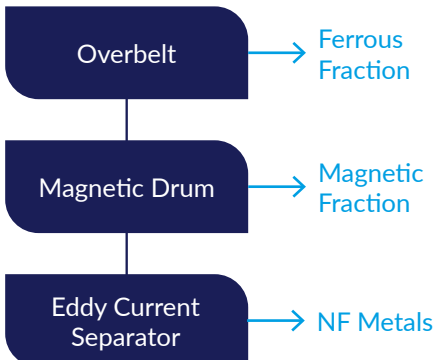
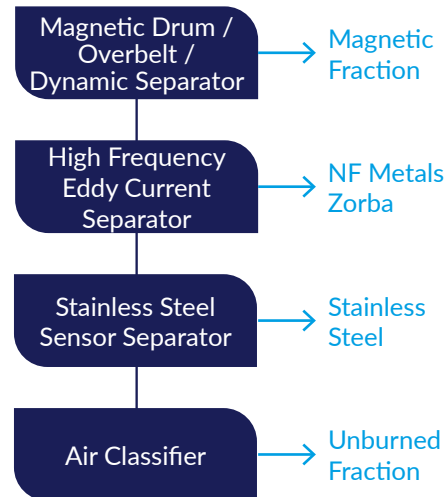
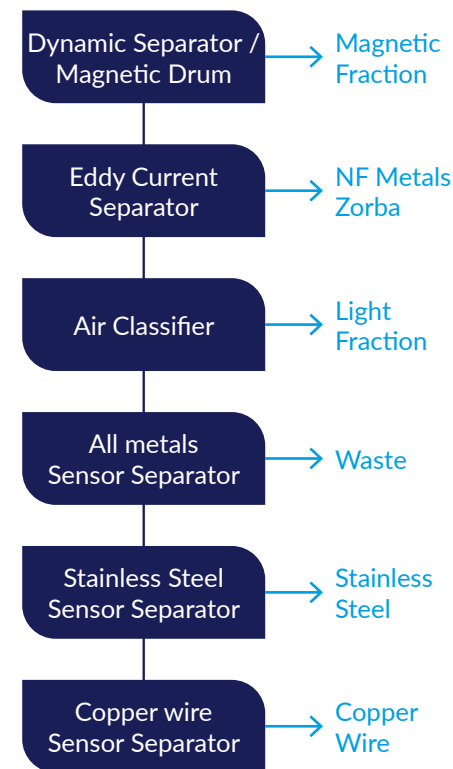
CAR SHREDDER RESIDUE (ASR)

INCENERATED BOTTOM ASH (IBA)

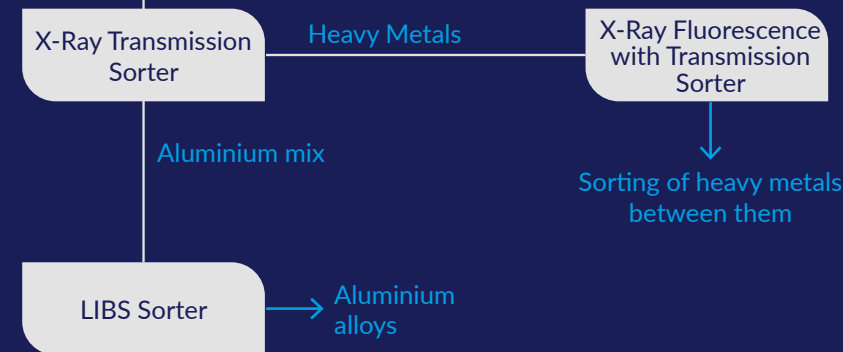
ALUMINIUM SCRAP CLEANING LINE

GLASS SCRAP

METALS RECOVERY



NON FERROUS METALS REFINING



SERVICE AND MAINTENANCE

Over 70 years of experience offering technology and proximity

SGM Magnetics is strongly committed to providing solutions with state-of-the-art, custom-designed technology, and ensuring worldwide customer support. Our specialized technicians are able to provide support in every step, from the commissioning of new systems to the preventive maintenance service.

The SGM customer support team is able to provide real-time support on the job site or remotely for maintenance and repairs, fast and reliable spare parts service, operator training and inspections for components subject to normal wear and tear.



SGM TEST CENTER WHERE TECHNOLOGY MEETS PERFORMANCE

To guarantee the most accurate material evaluation before any investment, SGM Magnetics offers a test center open to all current and potential customers.

Located in an 800 sqm facility, the test center is fully equipped with the complete range of SGM separation and material recovery technologies. From eddy current separators to gravity separators, sensor-based sorters, advanced X-ray and LIBS sorting systems, customers can test and fine-tune their processes with real material under real conditions.

Our in-house experts conduct live demonstrations and guide you through the testing procedures to ensure the most effective setup for your specific needs.

Whether you're evaluating new technologies or optimizing existing lines, the SGM test center provides a unique opportunity to analyze your material with SGM recycling technologies and make confident decisions based on tangible results.

PREVENTIVE MAINTENANCE PLANS

Regular preventive maintenance is essential to maximize the performance and lifespan of SGM equipment while minimizing the risk of unexpected downtime.

Our highly qualified technicians conduct scheduled inspections of your SGM machines, allowing for the early detection of wear and ensuring continued operational efficiency.

SGM provides expert guidance in determining the optimal maintenance plan based on customer-specific requirements.

Example of a Preventive Maintenance Plan for SGM separators:

- Material flow and loading inspection to ensure optimal machine efficiency.
- Detailed inspection of all sensitive parts related to a specific SGM separator.
- Electronic control system assessment to verify proper functionality.
- Analysis of cleaning procedures to maintain peak performance.
- Comprehensive evaluation of SGM machine components for accurate operation.
- Operator training sessions for improved handling and maintenance knowledge.

Contact us to define the most suitable preventive maintenance plan for your equipment and ensure continuous high performance.



Contact us to discover the option that best suits your needs.

COMPLETE SOLUTIONS

Whether you need a single separator or a complete material recovery system, SGM's global presence ensures proximity, expertise, and full support from application analysis to commissioning.

Our engineering and project management capabilities rank among the best in the industry, backed by years of experience in metal separation and recycling.

SGM Complete Solutions Include:

- Needs assessment and project planning – Tailored analysis to define the best solution.
- Development and engineering – Cutting-edge technology for optimized separation.
- Project design and layout – Customized configurations to fit specific operational needs.
- Production – High-quality manufacturing with strict quality controls.
- Assembly and commissioning – Expert installation and system integration.
- Training – Comprehensive operator training for maximum efficiency.



COMPLETE SOLUTIONS





BALLISTIC SEPARATOR MODEL SBS

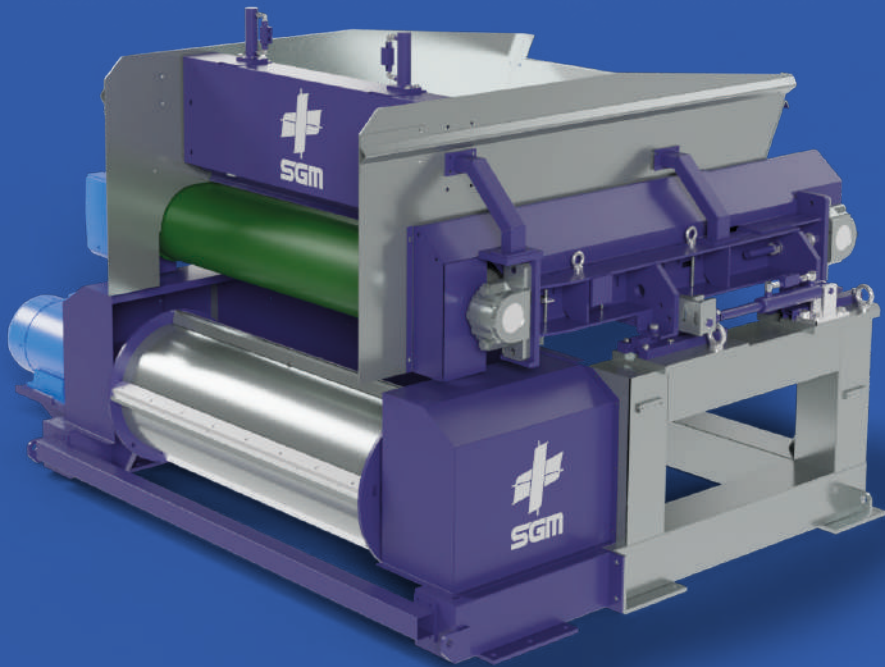
The SGM Smart Ballistic Separator (SBS) is an innovative high-speed separation system designed to **optimize metal recovery from moist incinerator ash** (typically containing around 20% moisture). By concentrating the metals into a fraction with 50% less mass and one-third the moisture content, the SBS significantly enhances subsequent ferrous and eddy current separation, improving overall efficiency.

HOW IT WORKS

The SBS utilizes a high-speed rotating drum equipped with strategically designed hitting plates that propel particles upon impact. This controlled ballistic trajectory enables precise separation based on mass, where:
Heavier particles (including metals) travel longer distances due to their increased momentum.
Lighter particles (such as fines and moisture-rich materials) follow shorter trajectories, concentrating unwanted fractions for disposal.
The result is a cleaner, drier metal fraction that is easier to process, while moisture and ultra-fine materials are efficiently separated.

Unlike conventional ballistic separators that rely on direct impact, the SGM SBS employs a centrifugal launch mechanism, ensuring:

- Gradual particle release: particles leave the hitting plates at different moments based on their impact position, reducing turbulence and optimizing separation.
- More precise mass-based separation: the optimized trajectory control minimizes variations in particle flow, ensuring greater accuracy in sorting.
- Improved downstream metal recovery: by narrowing the dispersion spectrum, the SBS delivers a more concentrated metal fraction, enhancing the performance of subsequent ferrous and eddy current separators.



TYPICAL APPLICATIONS

- Municipal solid waste incinerator ash (IBA)

MODEL mm - ft	DRUM WIDTH	CAPACITY*	LENGTH	WIDTH	HEIGHT	WEIGHT
SBS 150 60	1500 mm 60"	30 t/h	2660 mm 104"	3100 mm 76"	3100 mm 122"	4,000 Kg 8,818 lbs
SBS 200 80	2000 mm 80"	40 t/h	2660 mm 104"	3100 mm 76"	3580 mm 141"	4,700 Kg 10,360 lbs

(*) Depending on application, material specific weight and metal content in material

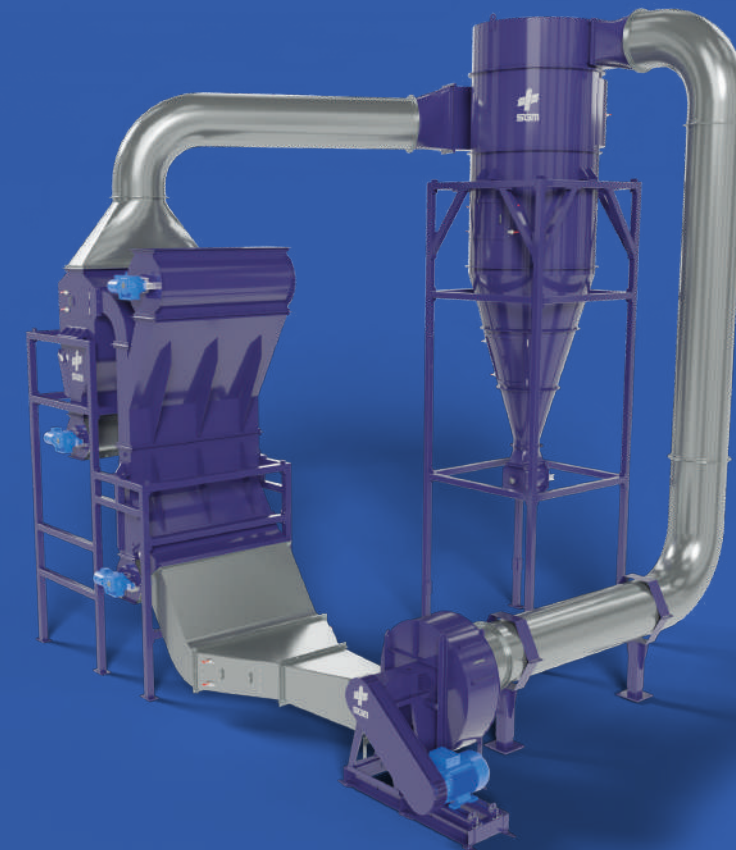
CLOSED LOOP AIR CLASSIFIER MODEL ACL

SGM Magnetics' Air Classifiers are high-performance gravity-based separation systems specifically designed to treat the waste output from Eddy Current Separators (ECS). These closed-loop systems effectively separate light and heavy fractions by removing soft, light contaminants such as foam, textiles, and dust, while concentrating heavier materials like rubber, wood, and dense plastics. The result is a cleaner, higher-purity stream of materials, which significantly improves the efficiency and accuracy of downstream sensor-based sorting and enhances the recovery of valuable metals such as Zurik and copper wire.

HOW IT WORKS

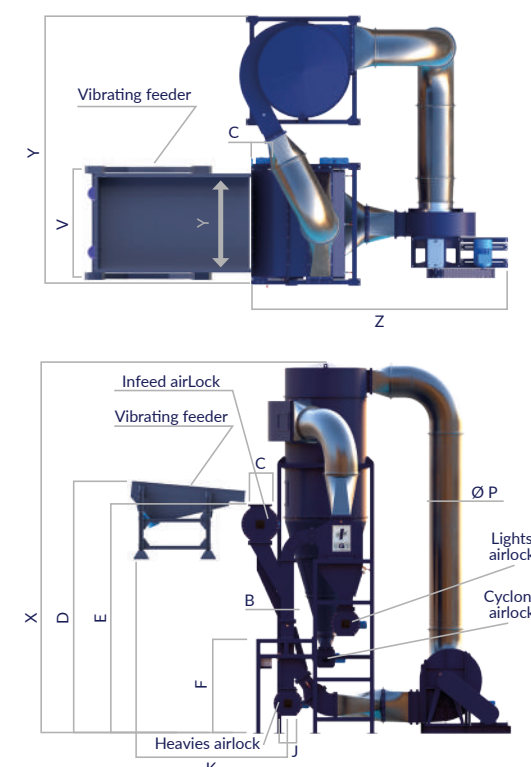
Positioned between the ECS and sensor-based separators, SGM Air Classifiers use controlled air flow and gravity-based separation to classify material based on density and aerodynamic properties. Light contaminants are drawn away and removed, while heavier materials remain in the flow for further processing. Thanks to a multi-stage separation design, the system ensures optimal classification of complex waste streams, concentrating valuable heavy

fractions that often make up over 60% of ECS waste weight, but less than 50% of its volume. This improves the quality and consistency of materials entering the next stage of processing.



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Electronic scrap (WEEE)



MODEL	FAN MOTOR	INFEED AIRLOCK	LIGHTS AIRLOCK	CYCLONE AIRLOCK	CAPACITY*
ACL 43"	30 HP	2 HP	2 HP	2 HP	4-5 t/h
ACL 86"	60 HP	3 HP	1.5 HP	3 HP	8-10 t/h

ACL AIR CLASSIFIER LARGE FOR ASR 20 mm - 3/4" TO 100mm - 4"		
	43X12	86X12
A	1100 mm - 43"	2150 mm - 85"
B	330 mm - 13"	330 mm - 13"
C	457 mm - 18"	457 mm - 18"
D	5600 mm - 220"	6000 mm - 236"
E	5280 mm - 207"	5280 mm - 207"
F	2000 mm - 78"	2000 mm - 78"
G	406 mm - 16"	414 mm - 16"
J	330 mm - 13"	330 mm - 13"
K	3020 mm - 119"	3925 mm - 154"
P	558 mm - 22"	762 mm - 30"
V	900 mm - 35"	2000 mm - 78"
X	8088 mm - 318"	8560 mm - 337"
Y	3758 mm - 148"	5595 mm - 220"
Z	6474 mm - 255"	6189 mm - 243"

(*) Depending on application, material specific weight and metal content in material

PULLEY MAGNET SEPARATOR MODEL PLP

The SGM PLP (Pulley Magnet Separator) is a powerful and versatile magnetic separator designed to **extract raw iron and fine ferrous particles from materials transported on a conveyor belt**.

Unlike overhead suspension magnets that attract ferrous material from a distance, the PLP head pulley operates in direct contact with the conveyor belt, ensuring consistent and efficient ferrous removal. This 360-degree magnetic coverage enables optimal separation, with non-magnetic material following its natural ballistic trajectory while ferrous particles are securely held and discharged into a dedicated collection area.

HOW IT WORKS

Positioned at the discharge end of the conveyor belt, the PLP magnetic pulley plays a key role in the separation of ferrous metals. Its powerful magnetic field attracts ferrous material, holding it on the surface of the pulley until it is discharged into a dedicated collection hopper. Non-ferrous materials, unaffected by the magnetic field, continue along their natural trajectory and are directed into a separate container.

The system is highly versatile, as the PLP pulley can be easily integrated into a wide range of machinery to improve the efficiency of ferrous separation processes. Thanks to its robust construction and high-intensity magnetic field, the PLP ensures reliable and consistent performance, even in the most demanding operating conditions.

SGM Magnetism offers three specialized magnetic circuits, each optimized for different depth loads:

High Gradient (HG)

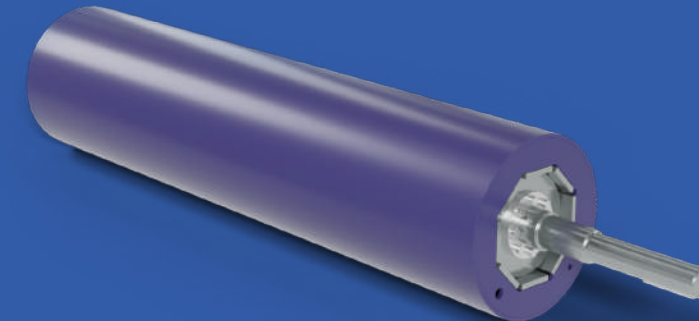
- Made with ferrite permanent magnet blocks.
- Ideal for materials with a load depth of up to 150 mm (6 inches).

Very High Gradient (VHG)

- Patented combination of neodymium and ferrite permanent magnets.
- Provides strong magnetic attraction.
- Suitable for load depths up to 80 mm (3 inches).

Ultra High Gradient (UHG)

- Constructed with pure neodymium permanent magnets.
- Supports load depths up to 40 mm (1.5 inches).
- Delivers exceptional separation strength for fine ferrous particles.



TYPICAL APPLICATIONS

- Coal
- Automotive Shredder Residue (ASR)
- Ash from MSW incinerator (IBA)
- Electronic scrap (WEEE)
- Scrap
- Municipal solid waste
- Scrap glass
- Upgrade of aluminum scrap

MODEL	DIAMETER	LENGTH	SHAFT Ø
PLP 32/55	320 mm - 12.6"	550 mm - 21.6"	Ø 50 mm - Ø 2"
PLP 32/65	320 mm - 12.6"	650 mm - 25.6"	Ø 50 mm - Ø 2"
PLP 32/75	320 mm - 12.6"	750 mm - 29.5"	Ø 50 mm - Ø 2"
PLP 32/85	320 mm - 12.6"	850 mm - 33.4"	Ø 50 mm - Ø 2"
PLP 32/95	320 mm - 12.6"	950 mm - 37.4"	Ø 55 mm - Ø 2.16"
PLP 32/105	320 mm - 12.6"	1050 mm - 41"	Ø 55 mm - Ø 2.16"
PLP 32/110	320 mm - 12.6"	1100 mm - 43"	Ø 60 mm - Ø 2.36"
PLP 32/115	320 mm - 12.6"	1150 mm - 45"	Ø 60 mm - Ø 2.36"
PLP 32/120	320 mm - 12.6"	1120 mm - 44"	Ø 60 mm - Ø 2.36"
PLP 32/125	320 mm - 12.6"	1125 mm - 44"	Ø 60 mm - Ø 2.36"
PLP 32/140	320 mm - 12.6"	1140 mm - 44.8"	Ø 60 mm - Ø 2.36"
PLP 32/155	320 mm - 12.6"	1155 mm - 45.4"	Ø 60 mm - Ø 2.36"
PLP 32/165	320 mm - 12.6"	1165 mm - 45.8"	Ø 60 mm - Ø 2.36"
PLP 40/55	406 mm - 16"	550 mm - 21.6"	Ø 45 mm - Ø 1.77"
PLP 40/65	406 mm - 16"	650 mm - 25.6"	Ø 45 mm - Ø 1.77"
PLP 40/75	406 mm - 16"	750 mm - 29.5"	Ø 65 mm - Ø 2.55"
PLP 40/85	406 mm - 16"	850 mm - 33.4"	Ø 65 mm - Ø 2.55"
PLP 40/95	406 mm - 16"	950 mm - 37.4"	Ø 65 mm - Ø 2.55"

MODEL	DIAMETER	LENGTH	SHAFT Ø
PLP 40/105	406 mm - 16"	1050 mm - 41.3"	Ø 70 mm - 2.75"
PLP 40/115	406 mm - 16"	1150 mm - 45.2"	Ø 70 mm - 2.75"
PLP 40/125	406 mm - 16"	1125 mm - 44.2"	Ø 70 mm - 2.75"
PLP 40/135	406 mm - 16"	1135 mm - 44.6"	Ø 70 mm - 2.75"
PLP 40/145	406 mm - 16"	1145 mm - 45"	Ø 70 mm - 2.75"
PLP 40/155	406 mm - 16"	1155 mm - 45.4"	Ø 70 mm - 2.75"
PLP 40/165	406 mm - 16"	1165 mm - 45.8"	Ø 70 mm - 2.75"
PLP 40/205	406 mm - 16"	2050 mm - 80.7"	Ø 70 mm - 2.75"
PLP 50/85	508 mm - 20"	850 mm - 33.4"	Ø 70 mm - 2.75"
PLP 50/105	508 mm - 20"	1050 mm - 45"	Ø 90 mm - 3.54"
PLP 50/115	508 mm - 20"	1250 mm - 49"	Ø 90 mm - 3.54"
PLP 50/120	508 mm - 20"	1120 mm - 44"	Ø 100 mm - 3.93"
PLP 60/97	610 mm - 24"	970 mm - 38"	Ø 100 mm - 3.93"
PLP 60/128	610 mm - 24"	1280 mm - 50"	Ø 100 mm - 3.93"
PLP 60/130	610 mm - 24"	1300 mm - 51"	Ø 100 mm - 3.93"
PLP 60/157	610 mm - 24"	1570 mm - 61.8"	Ø 100 mm - 3.93"

PULLEY MAGNET SEPARATOR MODEL SRP

The SGM SRP Separator is an advanced, ultra-high gradient permanent magnet head pulley, engineered to deliver exceptional metal recovery performance. Installed on its own independent frame and paired with a thin, high-efficiency belt, the SRP minimizes the distance between the conveyed material and the magnetic field, thereby maximizing separation effectiveness.

Stainless steel, unlike standard ferrous steel, contains elements such as chromium, nickel, and molybdenum, which reduce its magnetic responsiveness. To overcome this challenge, the SRP features a specially designed magnetic circuit tailored to **recover low-magnetic stainless steel scrap with high efficiency**. This makes it an ideal solution for operations requiring reliable performance in the separation of weakly magnetic metals, particularly in demanding recycling environments.

HOW IT WORKS

The SGM SRP Separator is equipped with an extended-diameter head pulley, available in 300 mm or 450 mm, incorporating powerful

neodymium permanent magnets arranged in an ultra-high gradient configuration to ensure maximum separation strength.

A key feature of the SRP is its high-performance conveyor belt, just 2.5 mm thick, significantly thinner than conventional belts, which are typically 7 to 9 mm. This reduced thickness allows the material to pass much closer to the magnetic field, increasing the adhesive magnetic force and greatly enhancing the separation efficiency, especially when processing low-magnetic stainless steel and similar materials.

To further optimize performance, the SRP Separator can be equipped with a series of optional systems designed to improve material handling and cleaning:

- Roller separator to enhance downstream sorting.
- Brush cleaning system to maintain optimal belt conditions.
- Air jet system to clean the splitter and conveyor belt.
- Vibrating feeder that ensures uniform material distribution across the belt.

This level of configurability makes the SRP a highly versatile and efficient solution for advanced metal recovery in demanding recycling environments.



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Electronic scrap (WEEE)
- Wood waste
- Upgrade of aluminum scrap

MODEL	MAGNETIC PULLEY	BELT SPEED EU	CAPACITY*	LENGTH	WIDTH	HEIGHT	WEIGHT
SRP 100	Ø300 mm Ø 12"	0.9-2.5 m/s 180-500 fpm	5-8 t/h	2700 mm 106"	1800 mm 70"	1400 mm 55"	1450 Kg 3,200 lbs
SRP 150	Ø300 mm Ø 12"	0.9-2.5 m/s 180-500 fpm	10-13 t/h	3250 mm 128"	2550 mm 100"	1400 mm 55"	1900 kg 4,200 lbs
VSRP 200	Ø450 mm Ø 18"	0.6-1.6 m/s 120-320 fpm	12-17 t/h	4650 mm 183"	2765 mm 110"	1330 mm 50"	3000 kg 6,615 lbs
VSRP 240	Ø450 mm Ø 18"	0.6-1.6 m/s 120-320 fpm	16-22 t/h	4650 mm 183"	3265 mm 130"	1330 mm 50"	3600 kg 7,950 lbs

(*) Depending on application, material specific weight and metal content in material

PULLEY MAGNET SEPARATOR MODEL DSRP

The SGM Dynamic Magnetic Pulley (Model DSRP) represents the next generation of ferrous separation, offering superior efficiency and precision compared to traditional magnetic pulleys.

Unlike conventional systems, the Dynamic SRP's magnetic pulley operates independently within an external rotating shell that moves at a slightly higher speed than the internal magnetic core. This innovative design enhances ferrous material recovery from scrap, leveraging the differential speed between the conveyor belt and the magnet rotation.

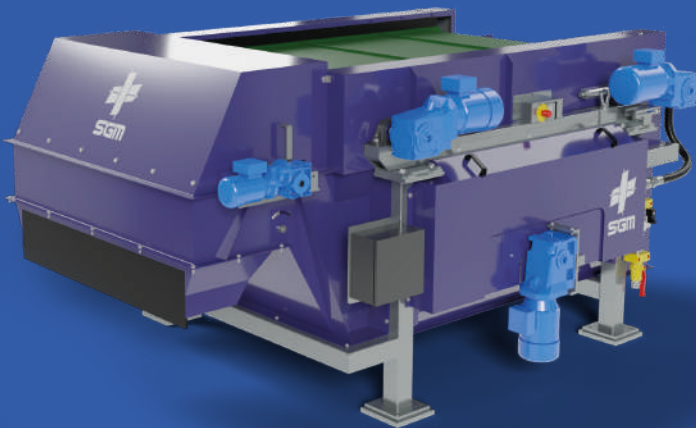
In Automotive Shredder Residue (ASR) below 40 mm, ferrous residues can account for 20-40% by weight, with 5-15% of valuable ferrous content typically lost. The SGM DSRP is engineered to maximize recovery of these high-value fractions, ensuring improved yield and profitability in recycling operations

HOW IT WORKS

Unlike traditional magnetic pulleys that drive the conveyor belt, the Dynamic SRP pulley rotates independently inside an insulating shell that matches the belt speed.

Non-ferrous material moves along with the conveyor belt and is discharged by gravity. Ferrous material experiences increased adhesion due to the higher speed of the magnetic pulley, ensuring effective separation. The variable speed adjustment (VFD – Variable Frequency Drive) allows fine-tuning of the separation intensity based on the material composition.

The SGM DSRP minimizes ferrous loss by utilizing an additional permanent magnet drum, which captures and directs the ferrous material into the dedicated collection hopper. The adjustable drum and splitter inclination further optimize separation efficiency, adapting to different material sizes and purity requirements.



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Ash from MSW incinerator (IBA)
- Electronic scrap (WEEE)
- Wood waste

MODEL mm - ft	MAGNETIC PULLEY	DRUM MAGNET	BELT SPEED	CAPACITY*	LENGTH	WIDTH	HEIGHT	WEIGHT
DSRP 100 40	Ø 300 mm Ø 11.8"	Ø 400 mm Ø 15.7"	0.9-3.0 m/sec 3-10 ft/sec	5-8t/h	3478 mm 130"	1714 mm 67"	1736 mm 72"	2,200 Kg 4,850 lbs
DSRP 150 60	Ø 300 mm Ø 11.8"	Ø 400 mm Ø 15.7"	0.9-3.0 m/sec 3-10 ft/sec	10-13 t/h	3478 mm 130"	1714 mm 67"	2237 mm 92"	2,650 Kg 5,842 lbs
DSRP 200 80	Ø 300 mm Ø 11.8"	Ø 400 mm Ø 15.7"	0.9-3.0 m/sec 3-10 ft/sec	12-16 t/h	4400 mm 58"	1714 mm 67"	3243 mm 112"	4,400 Kg 9,700 lbs

(*) Depending on application, material specific weight and metal content in material

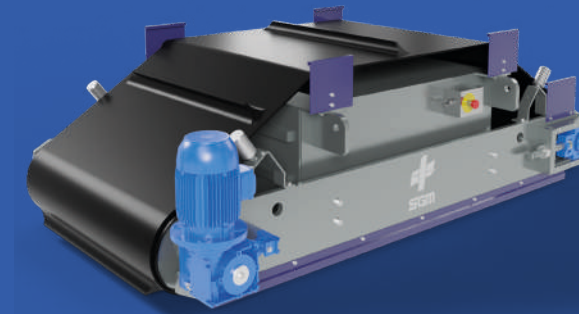
SUSPENDED MAGNET SEPARATORS MODELS DNE | DNP

The SGM Suspended Magnet Separators are used for many industrial applications **for the recovery or removal of tramp iron present in material traveling on a conveyor belt.** The SGM Suspended Magnets are offered in different versions that can be electro magnetic or permanent magnet with each version that can be stationary or provided with a self-cleaning belt.

The choice of the most appropriate suspended magnet will depend on the combination of a variety of elements that are:

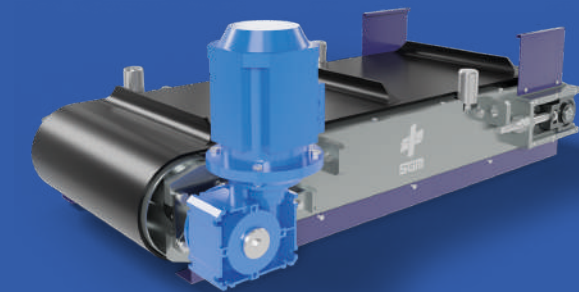
- Shape of Ferrous Particles
- Burden Depth
- Bulk Density
- Moisture Content
- Speed of the Conveyor Belt
- Width of the Conveyor Belt

The SGM Suspended Magnet Separators can either be placed above the conveyor belt of the material or above its head pulley depending on the application and the general assembly of the conveyor belt. The more demanding the application is, the more appropriate it is to position the suspended magnet separator above the head pulley, allowing the separator to take advantage of the natural opening of the material as it leaves the head pulley.



SELF-CLEANING BELT MODEL DNE

- Designed to maximize the active length of the magnet and its relevant deferrization performance
- Strong carbon steel frame including a bottom running surface in manganese steel to ease the discharging of ferrous metals
- External surfaces are coated with Chrome-Zinc and anti-corrosion paint



SELF-CLEANING BELT MODEL DNP

- Semi-closed magnetic circuit with permanent magnet blocks between the two polarities for maximum attraction towards the material.

TYPICAL APPLICATIONS

- Coal
- Automotive Shredder Residue (ASR)
- Ash from MSW incinerator (IBA)
- Municipal solid waste
- Glass waste
- Electronic scrap (WEEE)
- Wood waste
- Upgrade of aluminum scrap

MEGA DRUM MAGNET MODEL MDM

The SGM Mega Drum Magnet (MDM) is a high-performance electromagnetic drum separator specifically engineered for **high-capacity ferrous recovery in car shredder applications**. Featuring a larger ferrous core section and an optimized current density, the MDM delivers exceptional magnetic strength while ensuring reliable, continuous operation, even under the most demanding processing conditions.

HOW IT WORKS

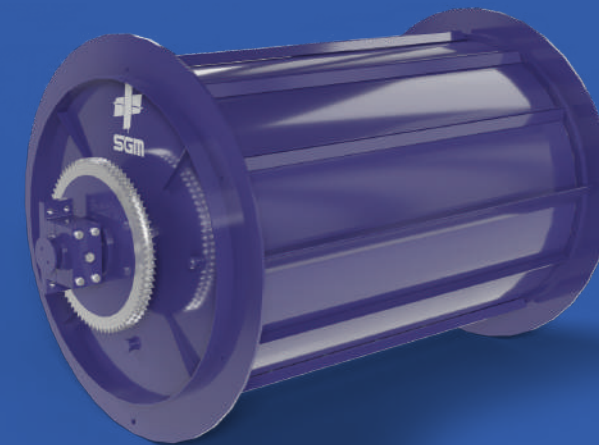
Installed above the feeder, the MDM is capable of attracting ferrous materials from distances exceeding 1270 mm (50 inches). This extended reach allows non-ferrous residues to fall naturally before coming into contact with the drum, enhancing the overall separation process and reducing contamination.

Thanks to its powerful magnetic circuit, the **MDM efficiently recovers large ferrous items from shredded material streams such as Auto Shredder Residue (ASR)**. Its counterweighted design ensures precise alignment of magnetic polarity for consistent performance, while the double manganese steel shell, 10 mm

inner and 8 mm outer, offers superior wear resistance and easy maintenance through straightforward shell replacement.

To meet a wide range of application needs, the MDM is available in nine different models, each offering a variety of configurations and drum sizes to match specific throughput and layout requirements. The system also features adjustable drum speed, allowing operators to fine-tune separation efficiency based on material characteristics and processing goals. Additionally, the optional drum sprocket and drive assembly provide further customization for unique installation scenarios.

Designed for precision, durability, and high recovery rates, the SGM MDM is an ideal solution for large-scale metal recycling operations seeking to maximize ferrous recovery while maintaining operational efficiency.



TYPICAL APPLICATIONS

■ Automotive Shredder Residue (ASR)

MODEL mm - ft	MAGNET WEIGHT	MAGNET POWER	WORKING DISTANCE	LENGTH	DIAMETER
MDM 130x150 51x59	7,900 Kg 17,420 lbs	11.5 kW	250-300 mm 10"-12"	1500 mm 59"	1300 mm 51"
MDM 130x180 51x71	9,000 Kg 19,800 lbs	13 kW	250-300 mm 10"-12"	1800 mm 70"	1300 mm 51"
MDM 130x210 51x83	10,500 Kg 23,150 lbs	14.5 kW	250-300 mm 10"-12"	2100 mm 82"	1300 mm 51"
MDM 150x180 60x71	12,000 Kg 26,500 lbs	11.5 kW	300-350 mm 12"-14"	1800 mm 70"	1500 mm 59"
MDM 150x210 60x83	15,000 Kg 33,000 lbs	16 kW	300-350 mm 12"-14"	2100 mm 83"	1500 mm 59"
MDM 150x250 60x98	17,000 Kg 37,500 lbs	16 kW	300-350 mm 12"-14"	2500 mm 98"	1500 mm 59"
MDM 180x210 71x83	16,200 Kg 35,700 lbs	16 kW	350-400 mm 14"-16"	2100 mm 83"	1800 mm 70"
MDM 180x250 71x98	19,850 Kg 43,800 lbs	19 kW	350-400 mm 14"-16"	2500 mm 98"	1800 mm 70"
MDM 180x280 71x110	20,300 Kg 44,800 lbs	20 kW	350-400 mm 14"-16"	2800 mm 110"	1800 mm 70"



POLISHING DRUM MAGNET MODEL PDM

The SGM Polishing Drum Magnet (PDM) is a high-performance electromagnetic drum separator, **specifically designed to reduce copper content in ferrous shred by efficiently extracting electrical rotors with copper windings, commonly referred to as "meatballs."** This patented technology allows scrap processors to significantly reduce the need for manual sorting, enhancing operational efficiency and improving the purity of recovered ferrous material.

An evolution of the Mega Drum Magnet, the SGM PDM features a custom anodized aluminum strip winding that enables precise direct current control. This advanced configuration allows for highly accurate separation of copper-laden rotors from the ferrous flow, making the PDM particularly effective in applications requiring stringent quality standards.

HOW IT WORKS

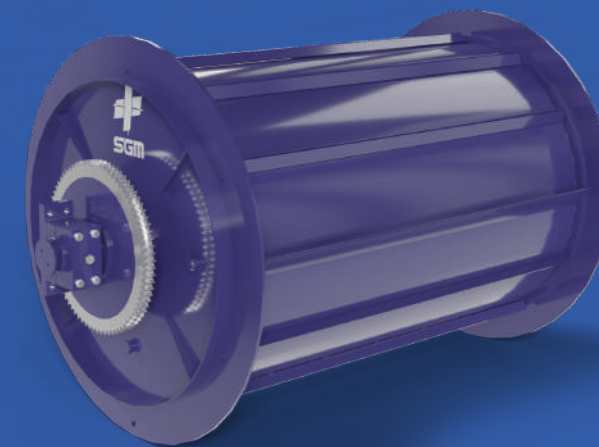
As the mixed ferrous scrap enters the system, the PDM separates the material into two distinct flows. The short drop flow concentrates meatballs and a small amount of ferrous, while

the positive flow retains the majority of the clean ferrous material with minimal copper contamination. This separation process typically reduces copper content in ferrous shred from around 0.3% to below 0.2%, significantly enhancing downstream processing and product value.

Engineered for durability and precision, the PDM incorporates layer windings that generate a stronger magneto-motive force, improving metal separation. The unit is constructed with a single machined billet shaft, eliminating welded joints, for maximum structural integrity. Additionally, it includes an outer replaceable shell for extended wear resistance and allows for precise alignment of magnetic polarities to ensure optimal performance in demanding environments.

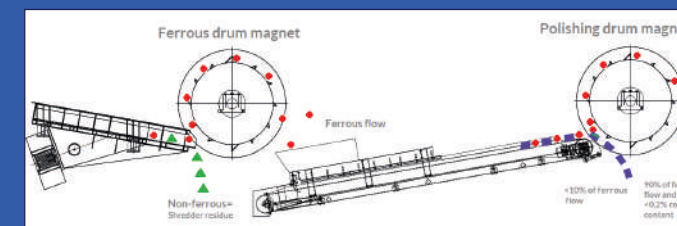
To adapt to specific plant layouts and processing needs, the PDM can be equipped with a conveyor belt feeding system, ensuring uniform material distribution, and an electronic control panel that allows fine-tuned management of current for consistent and efficient magnetic separation.

The SGM PDM represents a cutting-edge solution for scrap yards aiming to maximize metal purity and minimize copper contamination, while reducing reliance on manual sorting operations.



TYPICAL APPLICATIONS

■ Automotive Shredder Residue (ASR)



MODEL mm - ft	MAGNET WEIGHT	MAGNET POWER	WORKING DISTANCE	LENGTH	DIAMETER
PDM 120/120 47/47	5,300 Kg 11,684 lbs	4 kW	200-300 mm 8"-10"	1200 mm 47"	1200 mm 47"
PDM 130/150 51/59	7,900 Kg 17,416 lbs	11.5 kW	250-300 mm 10"-12"	1500 mm 59"	1300 mm 51"
PDM 130/180 51/70	9,000 Kg 19,841 lbs	13 kW	250-300 mm 10"-12"	1800 mm 70"	1300 mm 51"
PDM 130/210 51/82	10,500 Kg 23,148 lbs	14.5 kW	250-300 mm 10"-12"	2100 mm 82"	1300 mm 51"
PDM 150/180 59/70	12,000 Kg 26,455 lbs	11.5 kW	300-350 mm 12"-14"	1800 mm 70"	1500 mm 59"
PDM 150/210 59/82	15,000 Kg 33,069 lbs	16 kW	300-350 mm 12"-14"	2100 mm 82"	1500 mm 59"
PDM 150/250 59/98	17,000 Kg 37,478 lbs	16 kW	300-350 mm 12"-14"	2500 mm 98"	1500 mm 59"
PDM 180/210 70/82	16,200 Kg 35,714 lbs	16 kW	350-400 mm 14"-16"	2100 mm 82"	1800 mm 70"
PDM 180/250 70/98	19,850 Kg 43,761 lbs	19 kW	350-400 mm 14"-16"	2500 mm 98"	1800 mm 70"
PDM 180/280 1/82	20,300 Kg 44,753 lbs	20 kW	350-400 mm 14"-16"	2800 mm 110"	1800 mm 70"

SCRAP CLEANING LINE MODEL HMS

The SGM HMS Model represents a state-of-the-art Scrap Cleaning Line (SCL), **specifically developed to eliminate contaminants from Heavy Melting Scrap (HMS)**.

By significantly improving the cleanliness of incoming scrap, the system:

- Boosts steel production efficiency
- Reduces operating costs.
- Enhances material quality for downstream applications.

HMS scrap commonly contains 6–12% contaminants, which negatively affect multiple aspects of the steelmaking process, including:

- Furnace yield
- Energy consumption
- Slag generation.
- Lime usage.

The SGM Scrap Cleaning Line is designed to reduce these contaminants to less than 1%, leading to a dramatic improvement in furnace efficiency.

Using cleaner scrap boosts productivity, lowers energy and lime consumption, reduces slag, and minimizes emissions, resulting in

better efficiency and sustainability.

Built for continuous, heavy-duty use, the SGM HMS Cleaning System helps steel mills and scrap processors boost efficiency and maximize profits.

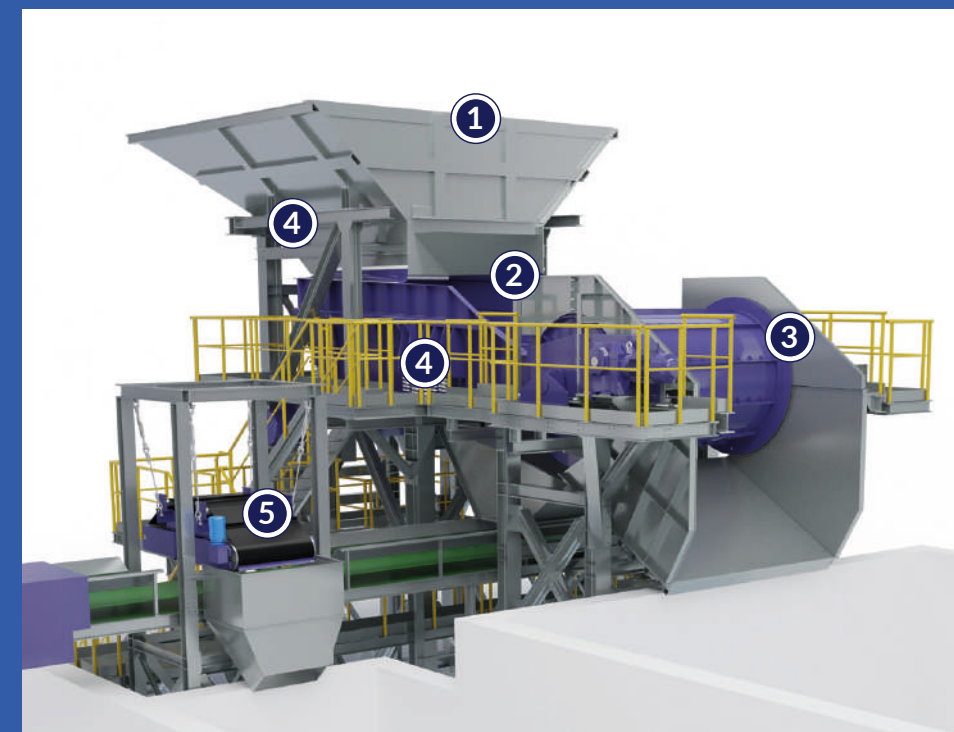
HOW IT WORKS

The cleaning process begins with a vibrating feeder combined with a de-dusting screen that removes fine contaminants and optimizes material flow.

The core of the system is the proprietary TME Electro-Drum Magnet, featuring a radial polarity design that maximizes contaminant removal and metal liberation.

A ferrous belt magnet completes the process by separating clean HMS from residual impurities.

The system is available in three capacities (50, 100, and 150 tons per hour) and can be configured as either a modular setup or a complete solution, depending on operational needs.



- ① Charging Hopper
- ② Vibrating Feeder + De-dusting Screen
- ③ Drum Magnet
- ④ Structure
- ⑤ Ferrous Belt Magnet

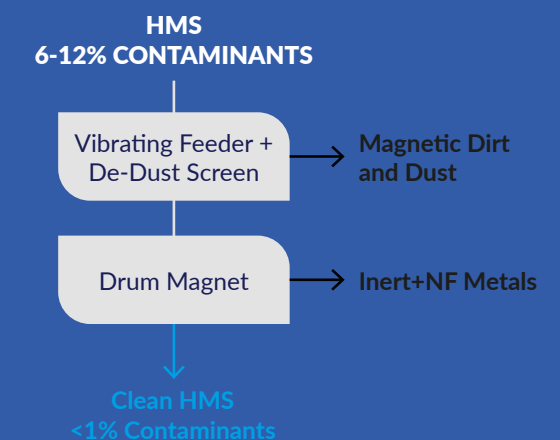
TYPICAL APPLICATIONS

- Heavy Melting Scrap (HMS)

MODEL	OVERALL LENGTH	OVERALL WIDTH	OVERALL HEIGHT
50 t/h	12456 mm - 40.8 ft	9000 mm - 29.5 ft	10500 mm - 34.4 ft
100 t/h	12994 mm - 42.6 ft	9000 mm - 29.5 ft	10500 mm - 34.4 ft
150 t/h	13294 mm - 43.6 ft	9000 mm - 29.5 ft	10500 mm - 34.4 ft

THIS SOLUTION IS IDEAL FOR A WIDE RANGE OF USERS:

- Steel mills and foundries benefit from cleaner scrap and more efficient operations;
- Scrap processors increase the value of HMS by delivering a premium-quality product;
- Heavy-duty recycling facilities optimize resource recovery and reduce waste.



EDDY CURRENT SEPARATOR MODEL EIS

The SGM EIS Model is a cost-effective, easy-to-operate, and highly reliable Eddy Current Separator (ECS), specifically designed for the **recovery of non-ferrous metals from municipal solid waste (MSW) and a wide range of recycling applications**. Engineered for durability and consistent performance, the EIS is equipped with a concentric rotor that maximizes the exposure of materials to the magnetic field, ensuring efficient separation and improving non-ferrous recovery rates.

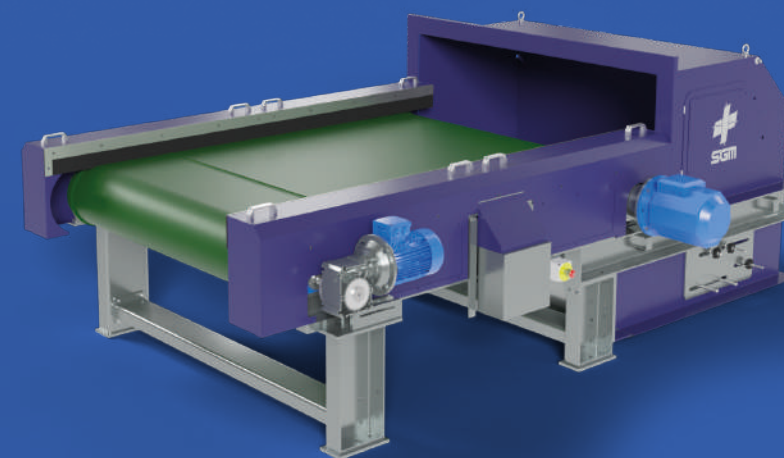
HOW IT WORKS

At the core of the system is a concentric rotor configuration, which ensures maximum exposure of the material stream to the magnetic field. This design improves separation efficiency by inducing strong eddy currents in non-ferrous metals such as aluminum, copper, and brass, which are then repelled and ejected into a separate collection zone. Non-metallic materials, such as plastic, wood, and glass, are unaffected by the magnetic field and follow their natural trajectory along the conveyor.

The EIS is equipped with latest-generation neodymium permanent magnets, delivering strong and consistent magnetic fields over time. Its adjustable belt speed (ranging from 0.6 to 2.1 m/s) allows operators to fine-tune the separation process based on material composition and throughput requirements. The compact and durable frame, combined with an easy-access design, ensures simplified maintenance and long-term reliability.

The SGM EIS Model offers various optional features to enhance separation efficiency and equipment durability:

- Latest-generation neodymium permanent magnets for enhanced performance.
- Concentric rotor design for optimized material exposure to the magnetic field.
- Easy-access design for simplified maintenance and servicing.
- Adjustable belt speed (0.6 – 2.1 m/sec) for customizable separation efficiency.



TYPICAL APPLICATIONS

- Municipal solid waste

MODEL mm - ft	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY*	MAGNETIC FREQUENCY	LENGTH	WIDTH	HEIGHT	WEIGHT
EIS 100/150 40/60	1500	24	0.6-2.1 m/sec 1.9-6.8 ft/sec	8 t/h	300 Hz	3160 mm 124"	1825 mm 72"	1390 mm 55"	1,500 Kg 3,307 lb
EIS 100/200 40/80	1500	24	0.6-2.1 m/sec 1.9-6.8 ft/sec	8 t/h	300 Hz	3660 mm 144"	1825 mm 72"	1390 mm 55"	1,650 Kg 3,637 lb
EIS 130/150 50/60	1500	24	0.6-2.1 m/sec 1.9-6.8 ft/sec	13 t/h	300 Hz	3160 mm 124"	2215 mm 87"	1100 mm 43"	1,600 Kg 3,527 lb
EIS 130/200 50/80	1500	24	0.6-2.1 m/sec 1.9-6.8 ft/sec	13 t/h	300 Hz	3660 mm 144"	2215 mm 87"	1100 mm 43"	1,750 Kg 3,858 lb
EIS 150/200 60/80	1500	24	0.6-2.1 m/sec 1.9-6.8 ft/sec	18 t/h	300 Hz	3190 mm 126"	2410 mm 95"	1390 mm 55"	2,050 Kg 4,519 lb
EIS 150/250 60/100	1500	24	0.6-2.1 m/sec 1.9-6.8 ft/sec	18 t/h	300 Hz	3683 mm 145"	2410 mm 95"	1390 mm 55"	2,100 Kg 4,629 lb

(*) Depending on application, material specific weight and metal content in material

EDDY CURRENT SEPARATOR MODEL GVIS

The SGM GVIS Model is a high-efficiency Eddy Current Separator (ECS) engineered specifically for glass waste recycling. Designed to ensure the effective **removal of non-ferrous metal contaminants from glass cullet**, the **GVIS enhances glass purity and reduces contamination levels**, significantly improving downstream processing and product quality.

HOW IT WORKS

At the heart of the GVIS is a concentric rotor system equipped with large neodymium permanent magnet blocks that generate a powerful, high-intensity magnetic field. Operating at 3,000 RPM, this configuration maximizes the exposure of material to the magnetic field, ensuring optimal separation efficiency, even with highly abrasive materials typical in glass processing applications.

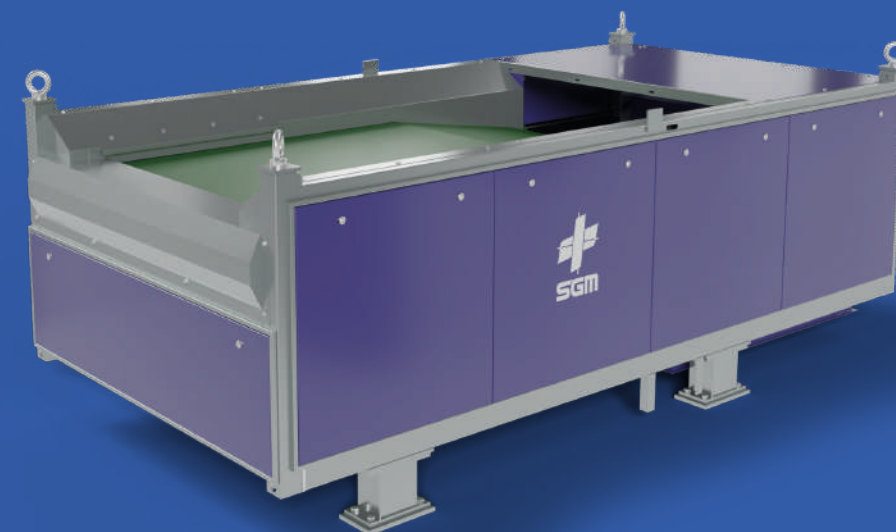
The separation process is based on the generation of eddy currents within conductive non-ferrous metals, such as aluminum, copper, and brass, which are repelled from the glass stream and ejected into a dedicated collection area. The clean glass cullet, unaffected by the magnetic field, follows its

natural trajectory and continues along the conveyor, achieving high levels of material purity.

To further improve performance, the GVIS can be combined with a suspended permanent magnet for the pre-removal of ferrous metals, thereby enhancing the efficiency of the ECS stage. All material-contact components are constructed from durable metallic materials, ensuring wear resistance and long-term reliability under abrasive operating conditions. The machine is also equipped with an electronic emergency fast-braking system for enhanced safety and features an easy-access design to simplify routine maintenance.

The SGM GVIS Model offers various optional features to enhance separation efficiency and equipment durability:

- Ferrous suspended permanent magnet for pre-removal of ferrous metals.
- Brush cleaning system for continuous belt maintenance.
- Automatic or manual splitter adjustment for precise separation control.
- Ceramic shell for fiberglass drum for increased wear resistance.
- Vibrating feeder for consistent material distribution.



TYPICAL APPLICATIONS

- Glass waste

MODEL mm - ft	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY*	MAGNETIC FREQUENCY	LENGTH	WIDTH	HEIGHT	WEIGHT
GVIS 100 40	3000	24	1-3 m/sec 3-10 ft/sec	8 t/h	600 Hz	4222 mm 166"	1900 mm 75"	1691 mm 66"	2,400 Kg 5,291 lbs
GVIS 130 50	3000	24	1-3 m/sec 3-10 ft/sec	11 t/h	600 Hz	4222 mm 166"	2200 mm 86"	1691 mm 66"	2,626 Kg 5,791 lbs
GVIS 150 60	3000	24	1-3 m/sec 3-10 ft/sec	13 t/h	600 Hz	4222 mm 166"	2500 mm 98"	1691 mm 66"	2,800 Kg 6,173 lbs
GVIS 175 70	3000	24	1-3 m/sec 3-10 ft/sec	15 t/h	600 Hz	4222 mm 166"	2750 mm 108"	1691 mm 66"	3,300 Kg 7,275 lbs

(*) Depending on application, material specific weight and metal content in material

EDDY CURRENT SEPARATOR MODEL SIS

The SGM SIS Model is a robust and high-performance Eddy Current Separator (ECS) specifically engineered for the recovery of non-ferrous metals from large-sized materials ranging from 20 to 130 mm. With its oversized concentric rotor, the SIS ensures maximum exposure of the material flow to the magnetic field, significantly improving separation accuracy and purity. Ideal for demanding industrial applications, this sorter offers exceptional throughput and efficiency in recovering valuable non-ferrous metals such as aluminum, copper, and brass.

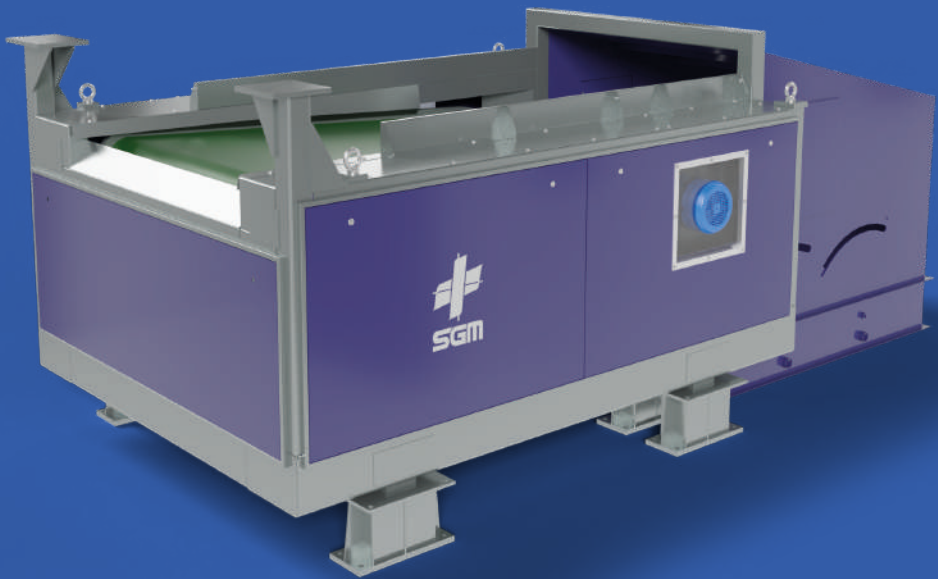
HOW IT WORKS

At the heart of the SIS Model is a high-speed rotating magnetic system, powered by advanced neodymium permanent magnets, capable of reaching speeds up to 3,000 RPM. As the material passes through the ECS, the rapidly changing magnetic field induces eddy currents in non-ferrous metals, causing them to be repelled from the main flow and diverted into a dedicated collection zone. Meanwhile, non-metallic materials such as glass, wood, or inert waste follow a natural trajectory,

allowing for clean and effective separation. To further improve performance, the SIS can be equipped with a ferrous drum magnet (TMP) upstream, which removes ferrous contaminants and protects the ECS rotor.

The SGM SIS Model offers a range of optional features to boost performance and tailor the system to specific operational needs:

- Ferrous drum magnet (TMP) for upstream removal of ferrous materials.
- Roller splitter for precise separation control.
- Brush cleaning system for continuous belt maintenance.
- Air knife for cleaning the splitter and belt.
- Automatic or manual splitter adjustment for flexible operation.
- Ceramic shell for fiberglass drum to enhance durability.
- Vibrating feeder for optimized and even material distribution.



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Ash from MSW incinerator (IBA)
- Wood waste
- Upgrade of aluminum scrap

MODEL mm - ft	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY*	MAGNETIC FREQUENCY	LENGTH	WIDTH	HEIGHT	WEIGHT
SIS 100 40	3000	24	1-3 m/s 3-10 ft/s	5-8 t/h	600 Hz	5190 mm 204"	2090 mm 82"	2825 mm 111"	4,500 Kg 9,920 lbs
SIS 150 60	3000	24	1-3 m/s 3-10 ft/s	8-12 t/h	600 Hz	5190 mm 204"	2591 mm 102"	2825 mm 111"	5,000 Kg 11,023 lbs
SIS 200 80	2400	24	1-3 m/s 3-10 ft/s	12-20 t/h	480 Hz	5190 mm 204"	3180 mm 125"	2825 mm 111"	6,000 Kg 13,227 lbs

(*) Depending on application, material specific weight and metal content in material

EDDY CURRENT SEPARATOR MODEL VIS

The SGM VIS Model is a high-frequency Eddy Current Separator (ECS) specifically developed for the recovery of non-ferrous metals from ultra-fine and fine material fractions. Featuring a concentric rotor, the VIS Model ensures maximum exposure of the material to the magnetic field, significantly enhancing separation performance and purity. Designed for fine particle sizes, it is the ideal solution for applications requiring precise metal recovery from materials smaller than 20 mm.

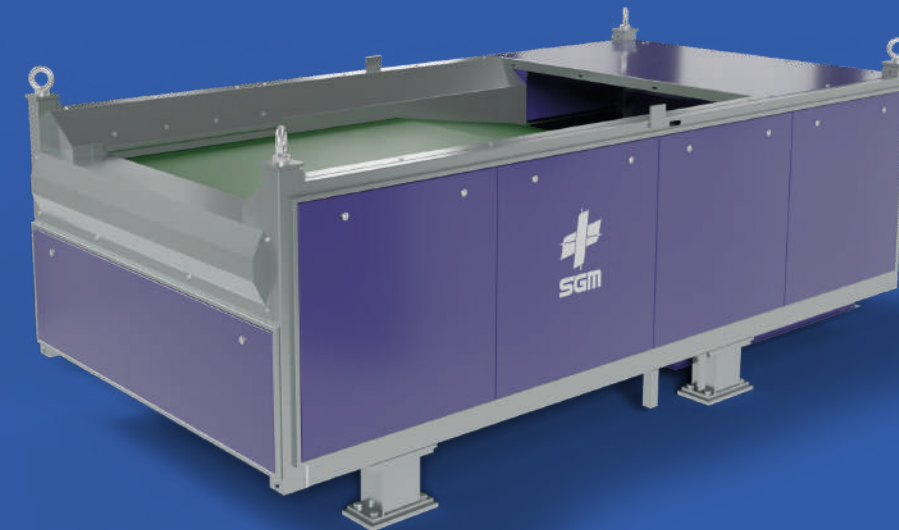
HOW IT WORKS

Operating at speeds ranging from 3,000 to 4,800 RPM, the VIS Model utilizes a concentric rotor to perform both instantaneous and progressive separation. This design is especially effective for recovering ultra-fine metals (smaller than 5 mm), which require longer interaction with the magnetic field to be properly repelled. Unlike eccentric rotors, the concentric configuration allows for extended exposure time, increasing recovery rates across fine and medium-size fractions. To ensure optimal efficiency and safeguard the rotor, it is recommended to pre-remove

ferrous contaminants with a dedicated ferrous separator before the ECS process.

To further boost its adaptability and performance, the SGM VIS Model can be equipped with a range of optional features:

- Roller splitter for precise separation control.
- Brush cleaning system for continuous belt maintenance.
- Air knife for cleaning the splitter and belt.
- Automatic or manual splitter adjustment for flexible operation.
- Ceramic shell for fiberglass drum to enhance durability.
- Vibrating feeder for optimized and even material distribution.



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Ash from MSW incinerator (IBA)
- Electronic scrap (WEEE)
- Wood waste
- Upgrade of aluminum scrap

MODEL mm - ft	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY*	MAGNETIC FREQUENCY	LENGTH	WIDTH	HEIGHT	WEIGHT
VIS 100 40 Extra Fine	4800	36	0.6-2.1 m/sec 2-7 ft/sec	3-5 t/h	1440 Hz	4215 mm 166"	1980 mm 78"	1550 mm 61"	2,400 Kg 5,291 lbs
VIS 100 40 Fine	4000	24	0.6-2.1 m/sec 2-7 ft/sec	6 t/h	800 Hz	4215 mm 166"	1980 mm 78"	1550 mm 61"	2,400 Kg 5,291 lbs
VIS 100 40 Medium	3000	24	0.6-2.1 m/sec 2-7 ft/sec	8 t/h	600 Hz	4215 mm 166"	1980 mm 78"	1550 mm 61"	2,400 Kg 5,291 lbs
VIS 150 60 Extra Fine	4400	36	1.0-3.0 m/sec 3-10 ft/sec	5-8 t/h	1320 Hz	4215 mm 166"	2490 mm 98"	1550 mm 61"	2,800 Kg 6,173 lbs
VIS 150 60 Fine	4000	28	1.0-3.0 m/sec 3-10 ft/sec	10 t/h	933 Hz	4215 mm 166"	2490 mm 98"	1550 mm 61"	2,800 Kg 6,173 lbs
VIS 150 60 Medium	3000	24	1.0-3.0 m/sec 3-10 ft/sec	13 t/h	600 Hz	4215 mm 166"	2490 mm 98"	1550 mm 61"	2,800 Kg 6,173 lbs
VIS 200 80 Fine	4000	28	1.0-3.0 m/sec 3-10 ft/sec	13 t/h	933 Hz	4215 mm 166"	3175 mm 125"	1626 mm 64"	4,000 Kg 8,820 lbs

(*) Depending on application, material specific weight and metal content in material



EDDY CURRENT SEPARATOR MODEL BVIS

The SGM BVIS Model is an ultra-high frequency Eddy Current Separator (ECS) **specifically designed for the efficient recovery of ultra-fine non-ferrous metals**. With its concentric rotor configuration, the BVIS Model maximizes material exposure to the magnetic field, significantly improving metal recovery rates and end-product purity. This advanced ECS is ideal for applications dealing with extremely small particle sizes where precision separation is critical.

HOW IT WORKS

The BVIS Model operates using high-speed rotors that range from 3,000 to 4,800 RPM, in combination with large neodymium permanent magnet blocks. This powerful setup generates intense magnetic energy, enabling both instantaneous and progressive separation. While eccentric rotor ECS designs allow only for immediate repulsion, the concentric design of the BVIS provides extended exposure to the magnetic field, essential for separating ultra-fine non-ferrous particles that require more time to react. For optimal performance and to protect the

ECS rotor, it is strongly recommended to pre-remove ferrous contaminants with a dedicated ferrous separator.

To tailor performance to specific operational needs, the SGM BVIS Model offers the following optional features:

- Brush cleaning system for continuous belt maintenance.
- Automatic or manual splitter adjustment for flexible operation.
- Ceramic shell for fiberglass drum to enhance durability.
- Vibrating feeder for optimized and even material distribution.



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Ash from MSW incinerator (IBA)
- Electronic scrap (WEEE)
- Wood waste

MODEL	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY*	MAGNETIC FREQUENCY	LENGTH	WIDTH	HEIGHT	WEIGHT
BVIS 55 Extra Fine Fine	4,800	36	0.8-1.8 m/sec 2.5-6 ft/sec	0.5 - 2 t/h	1440 Hz	2300 mm 90"	1170 mm 40"	1380 mm 54"	1,500 Kg 3,307 lbs
BVIS 100 Extra Fine Fine	4,800	36	0.8-1.8 m/sec 2.5-6 ft/sec	1.5 - 4 t/h	1440 Hz	2300 mm 90"	1560 mm 61"	1380 mm 54"	2,000 Kg 4,409 lbs
BVIS 100 Medium	3,000	24	0.8-1.8 m/sec 2.5-6 ft/sec	1.5 - 4 t/h	600 Hz	2300 mm 90"	1560 mm 61"	1380 mm 54"	2,000 Kg 4,409 lbs
BVIS 150 Extra Fine Fine	4,400	36	0.8-1.8 m/sec 2.5-6 ft/sec	2 - 6 t/h	1320 Hz	3490 mm 137"	2300 mm 90"	1700 mm - 67"	3,000 Kg 6,614 lbs
BVIS 150 Medium	3,000	24	0.8-1.8 m/sec 2.5-6 ft/sec	2 - 6 t/h	600 Hz	3490 mm 137"	2300 mm 90"	1700 mm - 67"	3,000 Kg 6,614 lbs

(*) Depending on application, material specific weight and metal content in material



INDUCTION SENSOR SEPARATOR MODELS EMSEF-R & EMSEF-C

The SGM Induction Sensor Separator is a high-precision belt sorting system specifically engineered to **recover non-ferrous metals that are not effectively detected by traditional Eddy Current Separators (ECS)**. These residual metals, typically representing 2% to 5% of ECS waste, fall into two key categories:

- Zurik – Primarily stainless steel.
- Copper Wires – Both insulated and bare.

By incorporating cutting-edge induction sensor technology, this system maximizes metal recovery, improves overall recycling efficiency, and significantly reduces valuable material loss.

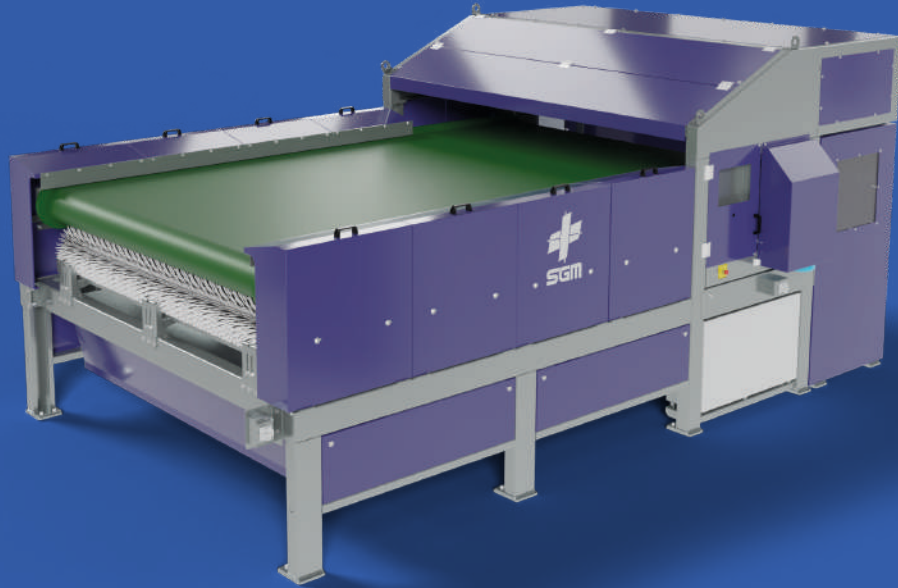
HOW IT WORKS

The Induction Sensor Separator utilizes high-resolution inductive sensors positioned beneath the conveyor belt to detect metallic particles as they pass through an electromagnetic field. Once metal is identified, the system transmits data to a central control unit that activates a series of precision pneumatic rejector valves at the belt's discharge point. A top (EMSEF-R) or bottom (EMSEF-C) blowing air jet system

then expels the metal particles with a targeted burst of air, ensuring accurate separation. This process is especially effective for insulated copper wires and irregularly shaped stainless steel fragments, which require a broader air spectrum and optimized rejection force to achieve clean ejection and superior sorting quality.

Key Features & Benefits:

- Recovers residual metals from ECS waste, increasing overall recovery rates.
- Selectable sorting modes: *All Metals, Stainless Steel, and Copper Wires.*
- Adjustable sensor sensitivity: High, Medium, or Low.
- Modular, scalable design: allows for cascade installation without altering conveyor levels.
- Real-time monitoring ensures optimal feeding and sorting performance.
- User-friendly 12" touchscreen interface for intuitive system management.



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Ash from MSW incinerator (IBA)
- Glass waste
- Electronic scrap (WEEE)
- Wood waste

MODEL	SENSORS	VALVES/ NOZZLES	ADJUSTABLE BELT SPEED	BELT WIDTH	LENGTH	WIDTH	HEIGHT	WEIGHT
EMSEF-R 48	60	120	2-2.8 m/sec 6.5-9 ft/sec	1200 mm 48"	5250 mm 207"	2200 mm 87"	2400 mm 95"	2,800 Kg 6,173 lbs
EMSEF-R 80	90	180	2-2.8 m/sec 6.5-9 ft/sec	1800 mm 70"	5250 mm 207"	2800 mm 87"	2400 mm 95"	3,400 Kg 7,496 lbs
EMSEF-R 96	116	232	2-2.8 m/sec 6.5-9 ft/sec	2300 mm 90"	5250 mm 207"	3300 mm 87"	2400 mm 95"	3,900 Kg 8,598 lbs

MODEL	SENSORS	VALVES/ NOZZLES	ADJUSTABLE BELT SPEED	BELT SPEED BELT WIDTH	LENGTH	WIDTH	HEIGHT	WEIGHT
EMSEF-C 48	60	120	2-2.8 m/sec 6.5-9 ft/sec	1200 mm 48"	6340 mm 250"	2200 mm 87"	2400 mm 95"	3,300 Kg 7,276 lbs
EMSEF-C 80	90	180	2-2.8 m/sec 6.5-9 ft/sec	1800 mm 70"	6340 mm 250"	2800 mm 110"	2400 mm 95"	3,800 Kg 8,380 lbs
EMSEF-C 96	116	232	2-2.8 m/sec 6.5-9 ft/sec	2300 mm 90"	6340 mm 250"	3300 mm 130"	2400 mm 95"	4,200 Kg 9,260 lbs



X-RAY SORTER MODEL XRT

The SGM XRT Model is a cutting-edge sorting system that utilizes advanced X-Ray Transmission (XRT) technology to separate materials based on their density and atomic composition. Equipped with dual-energy scanning capabilities, it offers **exceptional accuracy in distinguishing between heavy and light metals**, as well as between plastics with similar visual characteristics. With high-efficiency detection and intelligent automation, the XRT Model ensures maximum recovery of valuable resources, making it an ideal solution for complex and high-volume recycling operations.

HOW IT WORKS

The process begins with the even distribution of material onto a conveyor belt that passes through the X-ray scanning zone. As the material moves forward, a high-energy X-ray source penetrates it, while dual-energy sensors (LDA receivers) capture the residual radiation. The system analyzes the absorption data in real time to determine material density and composition, enabling precise classification. Once the materials are

identified, the system's software triggers a pneumatic ejection mechanism that accurately separates each item into designated output streams. The entire operation is fully automated, with belt speed and ejection synchronized to maintain high throughput and minimal material loss.

To enhance flexibility and performance, the SGM XRT Model can be tailored with a range of customizable features:

- Air compressor integration for efficient pneumatic sorting.
- Adjustable belt speed (2–2.8 m/s) to adapt to various material flows.
- Multiple X-ray energy settings for fine-tuned sorting accuracy.
- High-capacity models designed for different throughput requirements.



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Electronic scrap (WEEE)
- Upgrade of aluminum scrap

MODEL	VALVES	SOURCES	BELT WIDTH	BELT SPEED	CAPACITY*	LENGTH	WIDTH	HEIGHT	WEIGHT
XRT 24-R	64	1	610 mm 24"	2-2.8 m/s 5-8 ft/sec	2 t/h	6460 mm 254"	1690 mm 66"	2555 mm 100"	5.380 Kg 11,860 lbs
XRT 48-R	128	1	1320 mm 52"	2-2.8 m/s 5-8 ft/sec	5 t/h	6460 mm 254"	2305 mm 90"	2555 mm 100"	6.640 Kg 14,638 lbs
XRT 72-R	192	1	2000 mm 79"	2-2.8 m/s 5-8 ft/sec	8 t/h	6460 mm 254"	2920 mm 115"	2703 mm 106"	9.500 Kg 20,943 lbs
XRT 96-R	256	2	2286 mm 90"	2-2.8 m/s 5-8 ft/sec	10 t/h	6460 mm 254"	3540 mm 136"	2703 mm 106"	14.000 Kg 30,864 lbs

(*) Depending on application, material specific weight and metal content in material



X-RAY SORTER MODEL XRF-T

The SGM XRF-T is the most advanced and cost-effective solution **for sorting both light and heavy metals in a single system**. By combining X-Ray Fluorescence (XRF) and X-Ray Transmission (XRT) technologies, it eliminates the need for separate machines, significantly reducing investment and operational costs. This integrated approach allows operators to achieve outstanding recovery rates, over 90%, with purity levels exceeding 98%, making it the ideal solution for modern recycling plants focused on performance and profitability.

HOW IT WORKS

Unlike traditional sorting systems that rely solely on visual recognition or density, the SGM XRF-T adds a new layer of precision by analyzing the internal and external properties of each material.

The process begins with XRT analysis, which measures the density and thickness of incoming materials, effectively identifying metals regardless of shape or coating. Then, XRF technology steps in to analyze the chemical composition, distinguishing between different alloys and contaminants,

such as separating brass from bronze or stainless steel grades like 304 and 316.

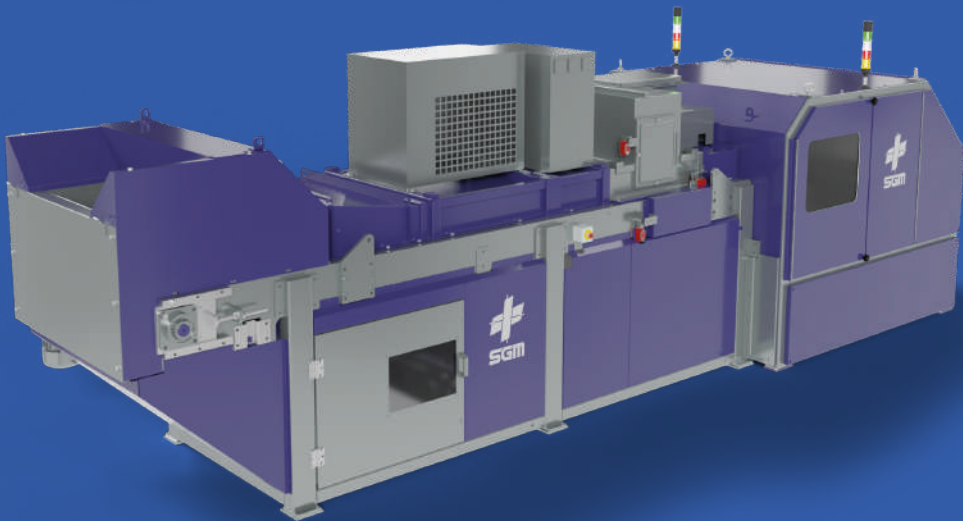
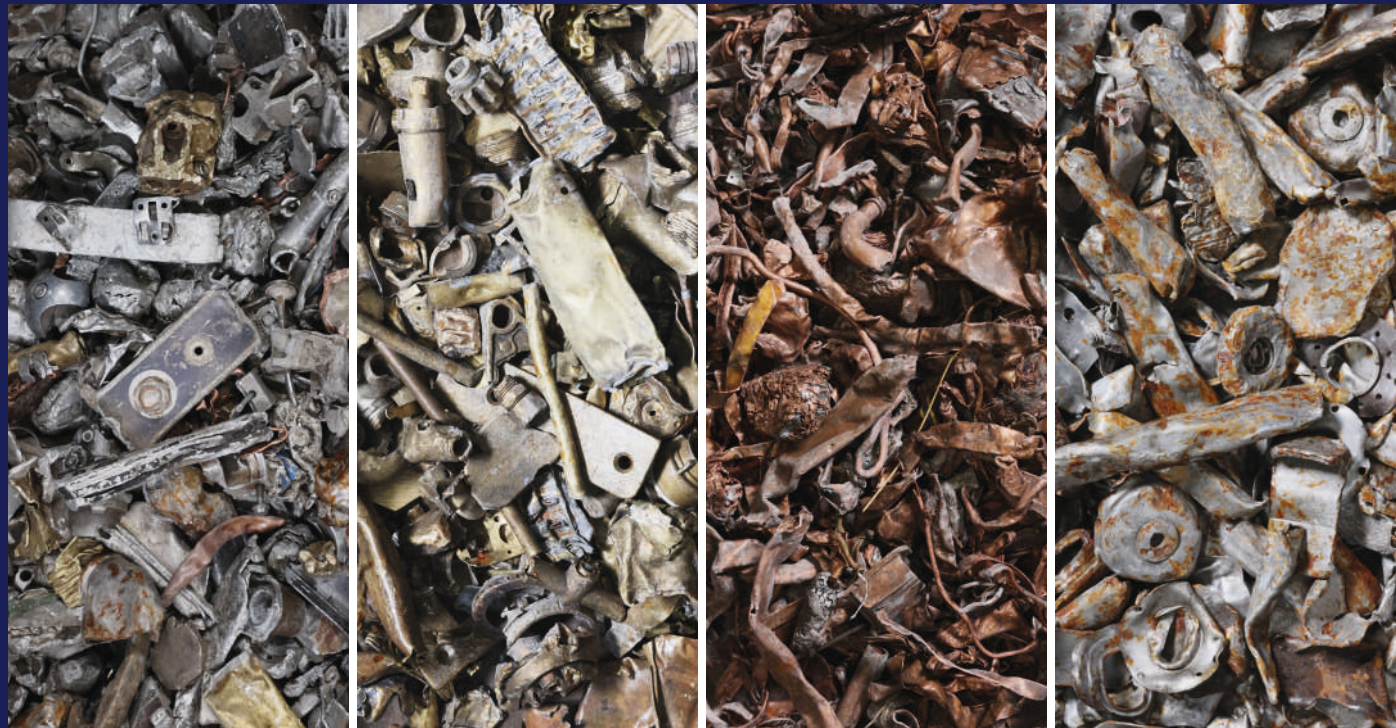
What makes the XRF-T truly unique is its single X-ray source, working with both XRT and XRF sensors in perfect synchronization. This dual-layer process enables the system to first remove light metals, like aluminum, using density-based XRT separation. It then applies precise XRF analysis to sort the heavy metals (such as copper, lead, zinc, and chrome) ensuring maximum sorting accuracy, even when materials are coated, dusty, or fragmented.

Operators benefit from exclusive features such as aluminum breakage detection, which prevents small aluminum fragments from being mistakenly rejected as non-metallic, and a high-power X-ray source that maintains precision even when dealing with painted or dirty surfaces.

By combining two powerful technologies in one compact solution, the SGM XRF-T helps operators maximize metal recovery while keeping costs under control.



Scan for more details



TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Upgrade of aluminum scrap

MODEL	VALVES	SOURCES	ACTIVE WIDTH	BELT SPEED	CAPACITY*
XRF-T 32	92	1	812 mm - 32"	2,5 m/s - 8 ft/sec	2-4 t/h
XRF-T 64	184	2	1625 mm - 64"	2,5 m/s - 8 ft/sec	4-8 t/h

(*) Depending on application, material specific weight and metal content in material

LIBS SORTER MODEL CLEANSORT-R

The SGM Cleansort LIBS sorter uses Laser-Induced Breakdown Spectroscopy (LIBS) to identify metals and alloys based on their chemical composition. A high-energy laser pulse creates a microplasma on the metal surface, and the emitted light is analyzed to determine the element breakdown in milliseconds. For accurate readings, surfaces must be clean, free of paint, oxidation, or dirt.

What sets the Cleansort LIBS apart is its proprietary **laser square surface ablation**, which cleans the entire surface of each piece before analysis. Unlike traditional multi-spot or repeated burns (which are often inaccurate due to residue or incomplete cleaning), this method delivers high-definition spectra essential for quantitative analysis.

HOW IT WORKS

The laser induces a plasma on the surface of the material. Doing the breakdown spectroscopy of the plasma, material is identified in its exact metal composition, distinguishing not only between metals like steel and copper but also between alluminum alloys, such as **5000 and 6000 series**, and even between similar alloys like **6010 and 6016**.

Quantitative analysis enables real-time monitoring of both accepted and rejected streams and supports dynamic sorting, a process where decisions are based on the average composition of several pieces, not just individual ones.

This leads to up to 1.5-2 times higher recovery compared to static sorting, which only checks if each piece meets set thresholds.

Designed for scalability, the Cleansort LIBS sorter features a modular frame that can host 3 to 6 reading and cleaning modules, covering belt widths from 720 mm to 1440 mm (28"-56") and capacities from 5.5 to 11 tons/hour for aluminum scrap in the 30-120 mm range.

Each LIBS module analyzes an average of 15 pieces per second, resulting in 60 pieces per second for a sorter provided with 4 modules and 90 pieces per second in the case of 6 modules.



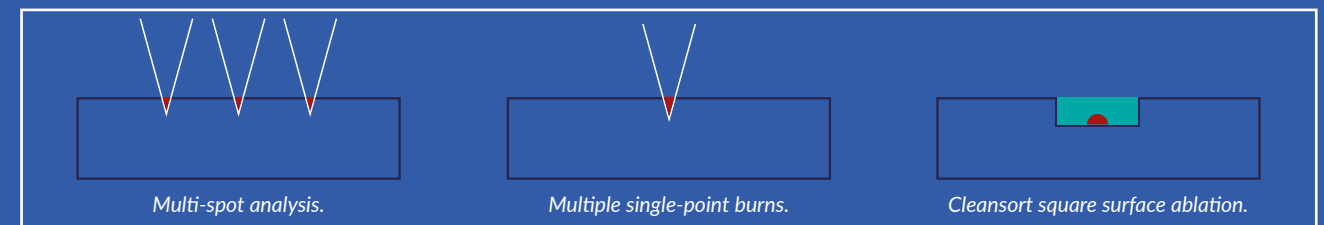
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TYPICAL APPLICATIONS

- Automotive Shredder Residue (ASR)
- Upgrade of aluminum scrap

SGM MODEL	No OF MODULES	BELT WIDTH	CAPACITY*
CLS-R 720	3	720 mm - 28"	5,5 t/h
CLS-R 960	4	960 mm - 38"	7,0 t/h
CLS-R 1200	5	1200 mm - 48"	9,0 t/h
CLS-R 1440	6	1440 mm - 56"	11,0 t/h



(*) Depending on application, material specific weight and metal content in material

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