SGM
TECHNOLOGY AND PROXIMITY

PRODUCT & APPLICATION CATALOG

SEPARATION & RECYCLING

Because the best solution is often a combination of different best technologies.

Over 69 years of experience!

SGM
TECHNOLOGY AND PROXIMITY

TECHNOLOGIES FOR METAL SEPARATION AND RECOVERY

Because the best solution is often
a combination of different best technologies.

TECHNOLOGIES

- Magnetic separation:
  Ferrous separators, Eddy current separators
- Gravity separators:
  Air and Sand
- Sensor based separators
- Ballistic separators
- Color sorters
- X-ray sorters:
  Transmission and Fluorescence

APPLICATIONS

Car shredder (shredder residue, fluff,...)
IBA (Incinerator Bottom Ash)
Wood waste recycling
Glass waste recycling
WEEE (Waste from Electrical and Electronic Equipment)
Aluminum Scrap (secondary smelter)
Ferrous scrap (steel mills)

Over 69 years of experience!

SGM

INDEX

WHO WE ARE

Years of prestigious and consolidated references all over the world have made SGM a world leader in both lifting magnets and separation technologies.

SGM Magnetics started in 1954 in Manerbio (Brescia), north of Italy, a region rich and famous for its competitive steel mills and metal industries. Our name and logo reflect our first two historical core businesses which have been lifting magnets to the steel industry and magnetic separation to the metal recycling industry.

Throughout the years, SGM has developed a position as a pioneer and leader in industrial lifting magnets, and has extended its magnetic separation expertise to other in-house separation technologies such as inductive based sensor separators, X-ray separators, color sorters, gravimetric, separation, and full process definition.

SGM disposes of two demo/test centers which are located in Italy and China.

69 Years in business

8 Fully owned subsidiaries

2 Manufacturing and repair facilities

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 and India, as well as a few long standing agents with extensive experience in the SGM products and technologies.

AREAS OF APPLICATION


AUTO SHREDDER RESIDUE (ASR)


ALUMINUM SCRAP


HEAVY MELT SCRAP (HMS)


ELECTRONIC WASTE (WEEE)


MUNICIPAL SOLID WASTE INCINERATOR ASH (IBA)


GLASS RECYCLING


DIAMONDS


MUNICIPAL SOLID WASTE (MSW)


COAL


PLASTIC RECYCLING


WOOD RECYCLING


IRON ORE

RECYCLING

CAR SHREDDER
SGM provides a complete range of technological solutions for both cleaning and recovering the ferrous coming off shredders as well as for recovering non-ferrous metals present in the non-ferrous fraction called Auto Shredder Residue (ASR).

INCINERATED MUNICIPAL WASTE
Because the incineration of Municipal Solid Waste (MSW) reduces the volume of the MSW by 80% and its weight by 90%, it constitutes an increasingly frequent alternative to landfills.

MUNICIPAL SOLID WASTE
SGM provides a complete range of ferrous separators (belt, drum and pulley magnets) and non-ferrous metals separators (eddy current separators up to 80”/ 2m wide) as well as color sorters for the processing of Municipal Solid Waste in order to recover and valorize metals and plastic.

GLASS
Glass is one of the few packaging that can be recycled infinitely. Making glass from glass cullet is convenient as it requires less raw material and energy.

ELECTRONIC WASTE
SGM provides a complete range of ferrous separators (belt, drum and pulley magnets) and non-ferrous metals separators (eddy current separators up to 80”/ 2m wide) as well as color sorters (for printed circuit boards), X-Ray sorter (for brominated plastics) and air gravity tables for processing WEEE during the different stages of the WEEE recycling process, from the coarse waste to the very fine particles, including precious metals down to 0,2mm.

WOOD
Urban wood waste is increasingly being recycled to be used for making wood-based panels, animal bedding or other applications for which the removal of metallic contaminants is important.

STEEL MILLS

SCRAP CLEANING LINE
Typically, the HMS ferrous scrap purchased by steel mills operating electric arc furnaces contains between 6 and 12% of non-ferrous contaminants made of soil, rocks, concrete, wood, rubber, non-ferrous metals. SGM provides a complete solution specifically designed for cleaning HMS ferrous scrap from non-ferrous contaminants.

ALUMINUM FOUNDRIES

UPGRADE OF ALUMINUM SCRAP
For aluminum smelters, the use of aluminum scrap is cheaper than the use of primary aluminum but the typical high content of Zinc, Copper, Ferrous and Magnesium in scrap aluminum results in the use of scrap aluminum generally limited to no more than 10%. SGM offers ferrous separators, eddy current separators, and X-Ray sorters to upgrade aluminum scrap.

MINERALS

COAL
SGM provides a complete range of magnetic ferrous separators, including drum and belt magnets, to remove tramp iron from coal conveyors.

IRON ORE
The SGM X-Ray Transmission Sorter is the ideal solution for pre-concentrating iron and manganese ores by means of a dry process.

DIAMONDS
The SGM X-Ray Transmission Sorter is used for concentrating diamonds from rocks by taking advantage of the atomic number of diamonds.

ESEMPLES OF SEPARATION AND RECOVER PROCESSES

CAR SHREDDER RESIDUE

- **MILL**
- **FERROUS REMOVAL**
  Mega Drum Magnet (MDM)
  Overbelt
  Air Classificator (ACS)
- **RECOVERY NON-FERROUS METALS**
  Pulley magnet
  Eddy Current separator
- **RECOVERY STAINLESS STEEL**
  Sensor based separator
- **RECOVERY ICW**
  Sensor based separator

Metal refining

- **HEAVY METALS AND CAST REMOVAL**
  X-Ray Transmission
- **SEPARATION OF HEAVY METALS FROM EACH OTHER**
  X-Ray Fluorescence

MUNICIPAL SOLID WASTE INCINERATOR ASH (IBA)

Metals recovery

- **SCREENER**
  Flip Flop Screener
  Ballistic separator
- **FERROUS REMOVAL**
  Polishing Drum Magnet (PDM)
  Overbelt
  Pulley magnet
- **RECOVERY NON-FERROUS METALS**
  Eddy Current separator
- **RECOVERY STAINLESS STEEL**
  Sensor based separator

Metal refining

- **HEAVY METALS AND CAST REMOVAL**
  X-Ray Transmission
- **SEPARATION OF HEAVY METALS FROM EACH OTHER**
  X-Ray Fluorescence

ELECTRONIC WASTE (WEEE)

- **MILL**
- **FERROUS REMOVAL**
  Mega Drum Magnet (MDM)
  Polishing Drum Magnet (PDM)
- **REMOVAL SCREENING**
- **FERROUS**
  Overbelt
  Pulley magnet
- **RECOVERY NON-FERROUS METALS**
  Eddy Current separator
- **CHLORINATED AND BROMINATED REMOVAL**
  X-Ray Transmission
- **CIRCUIT BOARDS RECOVERY**
  Color ans Shape Sorter

WOOD WASTE

- **MILL**
- **FERROUS REMOVAL**
  Mega Drum Magnet (MDM)
  Polishing Drum Magnet (PDM)
- **REMOVAL SCREENING**
- **FERROUS**
  Polishing Drum Magnet (PDM)
  Pulley magnet
- **RECOVERY NON-FERROUS METALS**
  Eddy Current separator
- **FURTHER PROCESSING**

ALUMINUM SCRAP FOR SMELTERS

- **MILL**
- **FERROUS REMOVAL**
  Polishing Drum Magnet (PDM)
- **RECOVERY NON-FERROUS METALS**
  Eddy Current separator
- **HEAVY METALS AND CAST REMOVAL**
  X-Ray Transmission

OUR TECHNOLOGIES

Magnetism

EDDY CURRENT SEPARATORS
When crossing a variable magnetic field, non-ferrous pieces of metals are exposed to repulsion forces that tend to make them jump away from the source of the variable magnetic field. Eddy Current Separators (ECS) are belt separators that take advantage of this physical principle.

The head drum assembly of an ECS consists in an outside shell that drives the separator belt and inside of which is placed a pulley on the surface of which are mounted multiple axial rows of permanent magnet blocks of alternated polarities. Both the outside drum shell and the inner pulley magnet have their own driving motor allowing for the inner pulley magnet to spin at a much higher speed than the outside shell. This makes the pieces of non-ferrous metals traveling on the belt of the ECS cross the variable magnetic field generated from the high-speed passage of the alternated polarities of the pulley magnet. From the ECS side, the higher the frequency of the variable magnetic field and the larger the size and energy of the permanent magnet blocks mounted on the head pulley magnet, the more performing the ECS separation. From the material side, some non-ferrous metals react quicker than others to ECS based on their electrical conductivity property, their size, shape and mass. Typically, large and flat pieces of aluminum react very well and quickly to ECS while small hair copper wires react less and slower. Different non-ferrous metal separation applications call for different design ECS.

ECS are used for either the recovery or the removal of non-ferrous metals in many different industrial applications

DRUM MAGNETS
Drum Magnet Separators are mainly made of two parts, one stationary and one mobile. The stationary part is the inner one and represents the magnet that can be made of two or more polarities (electro-magnet or permanent magnet blocks) positioned either axially or transversally. The moving part of a drum magnet is its outside shell made of non-magnetic material like manganese or stainless steel and is provided with axial slats, which quantity and size depends on the application. Unlike pulley magnet separators, drum magnet separators are characterized by the fact that they are only magnetically active on a section of the circumference of their outside shell (typically around 200°). Material feeding can either be made from the top of the drum, with material dropping on the drum, or from underneath with the drum magnet attracting from the distance the ferrous pieces part of the infeed material. In both cases, the attraction of the sole ferrous elements part of the infeed material divides the infeed material flow in two different flow trajectories for the ferrous and non-ferrous pieces. Different ferrous separation applications call for different sizes and designs of drum magnet separators.

PULLEY MAGNETS
Pulley Magnet Separators consist in a ferrous drum on the surface of which rows of permanent magnet blocks are mounted to create alternated polarities (in either axial or radial configuration) covering the entire circumference of the pulley. Pulley Magnet Separators are typically used as head pulley of a conveyor belt taking advantage of the belt to discharge the ferrous from the magnetic attraction of the pulley. Pulley magnets are used for either the recovery or removal of ferrous metals in many different industrial applications calling for different sizes and designs of pulleys as well as different types of permanent magnet blocks.

BELT SUSPENDED MAGNETS
Belt Suspended Magnet Separators are ferrous separators positioned either above a conveyor belt on which the material to process travels or above its head pulley depending on the application. The magnet separator is provided with a belt for the discharge of the attracted ferrous from the steady magnetic part of the separator. The magnetic part of the separator can either be made of electro magnet windings or permanent magnet blocks.

IRON ORE MEDIUM INTENSITY
Medium Intensity Magnet Separator (MIMS) are drum magnets on which axial rows of permanent magnet blocks are mounted generating a very high and homogenous magnetic gradient to attract and concentrate the weakly magnetic Ferrous ore. MIMS can either be operated concurrent with the flow or countercurrent and are supplied with their material feeding tank.

The SGM MIMS helps improve the productivity and performance of HWMS well beyond what LIMS can achieve.

Gravity

AIR CLASSIFIER
Air Classifier Separators are gravity separators made of a separation chamber which is a conduit where material to process drops in free fall and crosses a forced upward air flow, performing the separation between light and heavy particles. The heavy fraction is collected in the bottom of the chamber while the light fraction is conveyed upward into a cyclone at the bottom of which it is collected. All pertinent inlets and outlets are provided with airlocks making the Air Classifier closed loop. Air Classifier Separators are typically used to concentrate the heavy metals into a stream of material removed from the bulk of light material.

AIR TABLES
The core of Air Gravity Table Separators consists in an inclined vibrating screen deck on which material is fed evenly across its width. The vibrating motion of the deck forces material to climb up the deck while at the same time, material is also exposed to a constant and evenly distributed airflow. Separation takes place between light material that levitates under the action of the upward airflow and goes down the deck. Heavy material that does not levitate rises up the deck.

SAND MEDIA SEPARATOR
The SGM Sand Media Separator is used for separating pieces of light metals like aluminum and magnesium from heavier metals like copper, zinc and lead. The SGM Sand Media Separator is a horizontal linear gravity separator using sand as a media. The sand stands in a bed and is fluidized by multiple upward airflows to create a density slightly higher than the one of the aluminum particles making them float while the heavier particles sink. The heavy and light particles are conveyed on separate discharges and the sand keeps circulating in closed loop. The SGM sand media separator can complement some air gravity table separators as it can work on material of larger size.

Sensor Based Separator

Induction Sensor Separators (EMS) are belt separators provided with a bank of inductive sensors placed under the belt in the proximity of the head pulley that identify the presence of metals in the material crossing their induction field when traveling on the belt. The metal identification signal is sent to a control unit which computes it and triggers some pneumatic rejecter valves mounted on a bar positioned in front of the head pulley (top or bottom blowing configuration). Induction sensor separators are typically used in combination and after eddy current separators (ECS) for the recovery of the non-ferrous metals that do not offer an easy response to ECS like stainless steel or insulated copper wires.

X-Ray Transmission

X-Ray Transmission Separators (XRT) are belt separators where material traveling on the belt passes between an X-ray transmitter source placed above the belt and a bank of LDA dual energy receiver sensors placed under the belt sensors measures the level of absorption of wave lengths of every single piece constituting the material traveling on the belt that characterizes the atomic number of the material. The measurements are sent to a control unit which analyzes and computes them into separation decisions through the triggering of some pneumatic rejecter valves mounted on a bar positioned in front of the head pulley.

X-RAY Fluorescence

An X-ray source emits some high energy photons called ionizing radiations to the extent that they are able to move electrons of the atoms of the pieces they bomb from one energy orbit level to another higher one. In such a situation, the atoms are called excited but such situation only lasts for a very short time as nature makes that the atoms tend to turn back to their original lower energy configuration called stable. The photons emitted from the source are called the “primary X-ray beam”.

In the passage between the two energy levels, every atom emits a photon whose energy is equal to the difference in the energies of the two levels, excited and unexcited. The process of the emission of this photon is called fluorescence and the energy level given by the difference of the two energies is specific to each chemical element. Heavy metals are characterized by fluorescence photons with such energies that they can be sensed by specific XRF sensors (SDD) which identify their chemical nature and concentration.

Color, Shape and Brightness Sorter

Color Sorters are belt separators provided with a bank of special illumination lights and high-resolution cameras placed above the belt, which capture the image of every single piece constituting the material stream traveling on the belt. The images are sent to a computer for analysis based on color, brightness, and shape. Data is analyzed and a decision is made. Separation is done via the triggering of the pneumatic rejector valves.

Ballistic

The SGM Ballistic Separator (SBS) consists in a high speed rotating drum provided with specially designed hitting plates around its circumference, which hit the material when fed by a conveyor belt in free fall on the drum. Separation is performed based on the different lengths of the trajectories that take the different pieces constituting the material stream and which reflect their mass.

The SBS is typically used for the process of domestic waste incinerator ash to concentrate the metals into a reduced stream of material. Moisture content is significantly reduced which facilitates the further recovery of those metals.

OUR SERVICE

Over 69 years of experience offering technology and proximity.

SGM CUSTOMER SUPPORT & SERVICE

SGM has trained staff dedicated to provide training on your equipment anywhere in the world. Our service technicians are available to respond quickly to our customer's service and support needs and are focused on ensuring reliability, enhanced performance and efficiency while increasing your equipment's operational lifetime.

SGM Magnetics is continuously dedicated to offering customer support with the best solutions regarding the availability of spare parts, technical support and repairs. SGM has a complete inventory of spare parts available in various storage warehouses around the world.

SGM REMOTE ASSISTANCE

SGM Remote Visual Assistance helps our customers remotely to keep their operations running at optimum performance. This innovative Augmented Reality tool allows the expert to guide the field technicians through all the necessary operations step-by-step.

PREVENTIVE MAINTENANCE PLANS

SGM recommends regular preventive maintenance of equipment to ensure our customers the peak performance they have come to expect from our products. By offering our customers Preventive Maintenance Plans, this would allow customers the opportunity of having qualified and trained SGM service technicians perform preventive maintenance on their equipment at their site. The objective is to ensure that all of your SGM equipment is running at its full potential with routine inspections and proper maintenance. Early signs of fatigue or wear are addressed on time to provide maximum availability of the equipment avoiding production stops.

SGM provides consultation to determine the best maintenance plan for your equipment. The plan provides a trained service technician to cover the following points on-site including:

- Material flow and presentation to SGM machinery.
- Inspection of all sensitive parts related to a specific SGM sorter.
- Inspection of electrical control system to ensure proper functionality.
- Analysis of your cleaning procedures.
- Thorough inspection of the machines to make sure all components are working properly.
- Provide training to the operator(s).

FROM SINGLE SEPARATORS TO COMPLETE SOLUTIONS

For each project, all our know-how at your service.

Whether you're looking for a single stand-alone separator or a complete turn key process solution, SGM's worldwide organization guarantees you proximity and expertise starting from the analysis of your application and your needs to the commissioning and service of the best solution.
Years of experience in the various metal separation and recycling industries have made our engineering and project management expertise among the best in the world.

SGM's SOLUTIONS:

1. Needs Assessment & Project Management
2. Concept Development & Engineering
3. Detailed Design & Project Layout
4. Manufacturing
5. Assembling & Commissioning
6. Training & After Sales Service

EDDY CURRENT SEPARATOR Model SIS

TECHNICAL SPECIFICATIONS

Designed with a large concentric rotor for maximum exposure of material to magnetic field. Concentric rotor design allows for the use of large permanent magnet blocks and for disposing of maximum magnetic energy. This, combined with high speed rotor (up to 3,000 rpm), provides superior metal recovery and purity performance.

MODEL	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY (*)	MAGNETIC FREQUENCY
SIS 40	3000	24	1-3 m/s	5-8 t/h	600 Hz
SIS 60	3000	24	1-3 m/s	8-12 t/h	600 Hz
SIS 80	2400	24	1-3 m/s	12-20 t/h	480 Hz

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

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
SIS 40	5190 mm	2090 mm	2825 mm	4.500 kg
SIS 60	5190 mm	2591 mm	2825 mm	5.000 kg
SIS 80	5190 mm	3180 mm	2825 mm	6.000 kg

PRODUCT HIGHLIGHTS

- Latest generation of performing Neodymium permanent magnets.
- Stainless steel sleeve protection mounted on rotor for maximum safety protection against high speed centrifugal forces.
- Designed for easy access to the inside of the ECS for easy maintenance.
- Electronic emergency fast breaking system (no clamping).
- Extremely robust structure for longstanding heavy industrial use.

OPTIONAL FEATURES

- Ferrous drum magnet model TMP mounted in front of the ECS for ferrous recovery and rotor protection
- Roller splitter
- Brush cleaning system for belt
- Air knife for splitter and belt cleaning
- Automatic or manual splitter adjustment
- Ceramic shell for fiberglass drum
- Vibrating feeder

TYPICAL APPLICATIONS

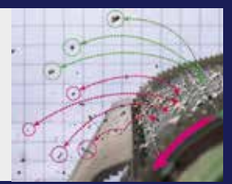
Auto Shredder Residue (ASR)
Municipal Solid Waste Incinerator Ash (IBA)
Electronic Waste (WEEE)
Wood Waste
Upgrade of Aluminum Scrap

HIGH FREQUENCY EDDY CURRENT SEPARATORS Model VIS

DESIGNED FOR

- Extra fine fraction <5 mm down to 1 mm
- Fine fraction <12 mm
- Medium fraction from <12 mm to 20 mm

NOT EVERY PIECE OF NON-FERROUS METALS JUMP INSTANTANEOUSLY ON AN ECS, SOME REQUIRE MORE TIME. CONCENTRIC ROTOR DESIGN ALLOWS FOR PROGRESSIVE SEPARATION VERSUS ECCENTRIC ROTOR DESIGN THAT ONLY ALLOWS INSTANTANEOUS SEPARATION.



TECHNICAL SPECIFICATIONS

Designed with a concentric rotor for maximum exposure of material to magnetic field. A concentric rotor design allows the use of large permanent magnet blocks and disposing of maximum magnetic energy. This, combined with high speed rotor (from 3,000 up to 4,800 rpm), provides superior metal recovery and purity performance. Ideal to perform both an instantaneous and progressive separation on ultra fines metals. The use of a ferrous separation before passing on the high frequency ECS is recommended in order to optimize non-ferrous metal recovery and protect the ECS against ferrous damage exposure.

PRODUCT HIGHLIGHTS

- Latest generation of performing Neodymium permanent magnets.
- Stainless steel sleeve protection mounted on rotor for maximum safety protection against high speed centrifugal forces.
- Electronic emergency fast breaking system (no clamping).
- Splitter design can be manual or automatic for easy and accurate setting.
- Robust structure for longstanding industrial use.

OPTIONAL FEATURES

- Roller splitter
- Brush cleaning system for belt
- Air knife for splitter and belt cleaning
- Automatic or manual splitter adjustment
- Ceramic shell for fiber glass drum
- Vibrating feeder

MODEL	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY (*)	MAGNETIC FREQUENCY
VIS 100 Extra Fine	4800	36	0.6-2.1 m/sec	3-5 t/h	1440 Hz
VIS 100 Medium	3000	24	0.6-2.1 m/sec	8 t/h	600 Hz
VIS 150 Extra Fine	4400	36	1.0-3.0 m/sec	5-8 t/h	1320 Hz
VIS 150 Medium	3000	24	1.0-3.0 m/sec	13 t/h	600 Hz
VIS 200 Extra Fine	4000	36	1.0-3.0 m/sec	8-12 t/h	1200 Hz
VIS 200 Medium	3000	28	1.0-3.0 m/sec	17 t/h	700 Hz

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

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
VIS 100	4215 mm	1980 mm	1550 mm	2.400 Kg
VIS 150	4215 mm	2490 mm	1550 mm	2.800 Kg
VIS 200	4813 mm	3175 mm	1626 mm	4.000 Kg

TYPICAL APPLICATIONS

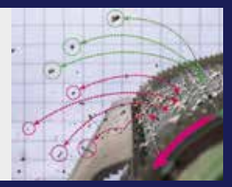
Auto Shredder Residue (ASR)
Municipal Solid Waste Incinerator Ash (IBA)
Electronic Waste (WEEE)
Wood Waste
Upgrade of Aluminum Scrap

ULTRA HIGH FREQUENCY EDDY CURRENT SEPARATOR Model BVIS

DESIGNED FOR

- Extra fi ne fraction <5 mm down to 1 mm
- Fine fraction <12 mm
- Medium fraction from <12 mm to 20 mm

NOT EVERY PIECE OF NON-FERROUS METALS JUMP INSTANTANEOUSLY ON AN ECS, SOME REQUIRE MORE TIME. CONCENTRIC ROTOR DESIGN ALLOWS FOR PROGRESSIVE SEPARATION VERSUS ECCENTRIC ROTOR DESIGN THAT ONLY ALLOWS INSTANTANEOUS SEPARATION.



TECHNICAL SPECIFICATIONS

Designed with a concentric rotor for maximum exposure of material to magnetic field. Concentric rotor design allows for the use of large permanent magnet blocks and for disposing of maximum magnetic energy. This, combined with high speed rotor (from 3,000 up to 4,800 rpm), provides superior metal recovery and purity performance. Ideal for performing both an instantaneous and progressive separation on ultra fines metals. The use of a ferrous separation, before passing on the high frequency ECS, is recommended in order to optimize non-ferrous metal recovery and protect the ECS against ferrous damage exposure.

PRODUCT HIGHLIGHTS

- Latest generation of performing Neodymium permanent magnets
- Enclosed design and suction accommodation for dusty material
- Electronic emergency fast breaking system (no clamping)
- Designed for easy access to the inside of the ECS and for easy maintenance

OPTIONAL FEATURES

- Brush cleaning system for belt
- Automatic or manual splitter adjustment
- Ceramic shell for fiber glass drum
- Vibrating feeder

MODEL	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY (*)	MAGNETIC FREQUENCY
BVIS 55 Extra Fine Fine	4,800	36	0-8-1.8 m/sec	0,5-2 t/h	1440 Hz
BVIS 100 Extra Fine Fine	4,800	36	0-8-1.8 m/sec	1.5-4 t/h	1440 Hz
BVIS 100 Medium	3,000	24	0-8-1.8 m/sec	1.5-4 t/h	600 Hz
BVIS 150 Extra Fine Fine	4,400	36	0-8-1.8 m/sec	2-6 t/h	1320 Hz
BVIS 150 Medium	3,000	24	0-8-1.8 m/sec	2-6 t/h	600 Hz
BVIS 200 Extra Fine Fine	4,000	36	0-8-1.8 m/sec	3-8 t/h	1200 Hz
BVIS 200 Medium	4,000	28	0-8-1.8 m/sec	3-8 t/h	700 Hz

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

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
BVIS 55	2300 mm	1170 mm	1380 mm	1.500 kg
BVIS 100	2300 mm	1560 mm	1380 mm	2.000 kg
BVIS 150	3490 mm	2300 mm	1700 mm	3.000 kg
BVIS 200	3530 mm	3000 mm	1700 mm	4.000 kg

TYPICAL APPLICATIONS

Auto Shredder Residue (ASR)
Municipal Solid Waste Incinerator Ash (IBA)
Electronic Waste (WEEE)
Wood Waste

EDDY CURRENT SEPARATOR
Model GVIS

TECHNICAL SPECIFICATIONS

Designed with a concentric rotor for maximum exposure of material to magnetic field. Concentric rotor design allows for the use of large permanent magnet blocks and for disposing of maximum magnetic energy. This, combined with high speed rotor (3,000 rpm), provides superior metal contaminant removal performance.

MODEL	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY (*)	MAGNETIC FREQUENCY
GVIS 100	3000	24	1-3 m/sec	8 t/h	600 Hz
GVIS 130	3000	24	1-3 m/sec	11 t/h	600 Hz
GVIS 150	3000	24	1-3 m/sec	13 t/h	600 Hz
GVIS 175	3000	24	1-3 m/sec	15 t/h	600 Hz

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

PRODUCT HIGHLIGHTS

- Designed with metallic parts exposed to contact with material to accommodate the highly abrasive characteristics of glass culets.
- Electronic emergency fast breaking system (no clamping).
- Designed for easy access to the inside of the ECS and for easy maintenance.

OPTIONAL FEATURES

- Permanent Crossbelt Magnet
- Brush cleaning system for belt
- Automatic or manual splitter adjustment
- Ceramic shell for fiber glass drum
- Vibrating feeder

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
GVIS 100	4222 mm	1900 mm	1691 mm	2.400 kg
GVIS 130	4222 mm	2200 mm	1691 mm	2.626 kg
GVIS 150	4222 mm	2500 mm	1691 mm	2.800 kg
GVIS 175	4222 mm	2750 mm	1691 mm	3.300 kg

TYPICAL APPLICATIONS

Glass Waste Recycling

EDDY CURRENT SEPARATOR Model EIS

TECHNICAL SPECIFICATIONS

Designed with a concentric rotor for maximum exposure of material to magnetic field.

PRODUCT HIGHLIGHTS

- Latest generation of performing Neodymium permanent magnets.
- Designed for easy access to the inside of the ECS and for easy maintenance.

OPTIONAL FEATURES

- Electronic emergency fast breaking system (no clamping)
- Brush cleaning system for belt
- Vibrating feeder

MODEL	RPM	NUMBER OF POLES	ADJUSTABLE BELT SPEED	CAPACITY (*)
EIS 100/150	1500	24	0,6-2,1 m/sec	8 t/h
EIS 100/200	1500	24	0,6-2,1 m/sec	8 t/h
EIS 130/150	1500	24	0,6-2,1 m/sec	13 t/h
EIS 130/200	1500	24	0,6-2,1 m/sec	13 t/h
EIS 150/200	1500	24	0,6-2,1 m/sec	18 t/h
EIS 150/250	1500	24	0,6-2,1 m/sec	18 t/h

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

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
EIS 100/150	3160 mm	1825 mm	1390 mm	1.500 kg
EIS 100/200	3660 mm	1825 mm	1390 mm	1.650 kg
EIS 130/150	3160 mm	2215 mm	1100 mm	1.600 kg
EIS 130/200	3660 mm	2215 mm	1100 mm	1.750 kg
EIS 150/200	3190 mm	2410 mm	1390 mm	2.050 kg
EIS 150/250	3683 mm	2413 mm	1397 mm	2.100 kg

TYPICAL APPLICATIONS

Municipal Solid Waste (MSW)

ELECTRO DRUM MAGNETS Models MDM & PDM

TECHNICAL SPECIFICATIONS

The SGM Mega Drum Magnet (MDM) is a special version of the SGM Electro - Drum Magnet (TMR) designed with a larger ferrous core section and lower current density to further optimize ferrous attraction and meet the most demanding car shredder application situations, in terms of tons of scrap to process per hour and requirement for a continuous use.

MDMs are typically positioned above the feeder (either belt or shaker pan) attracting ferrous from the distance. The exceptional attraction performance of the MDM allows to optimize the distance from the feeder to the drum shell, which offers maximum opportunity for the non-ferrous material (shredder residue) to drop. Typically, the largest pieces of ferrous start taking-off towards the drum magnet from over 1,270 mm distance.

As a standard, the MDM is provided with a double manganese steel shell (10 mm for inner shell + 8 mm for outer shell) for easy replacement of outer shell in case of wear and an inside counterweight to facilitate the positioning process of magnet polarities.

OPTIONAL FEATURES

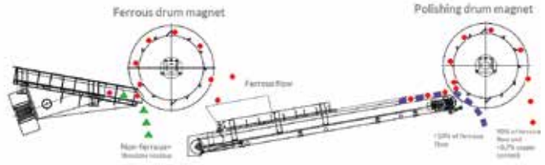
- Drum sprocket and drive assembly

MODEL	LENGTH	DIAMETER	EXTER. DISC DIAM.
MDM 130/150	1500 mm	1300 mm	1300 mm
MDM 130/180	1800 mm	1300 mm	1700 mm
MDM 130/210	2100 mm	1300 mm	1700 mm
MDM 150/180	1800 mm	1500 mm	2000 mm
MDM 150/210	2100 mm	1500 mm	2000 mm
MDM 150/250	2500 mm	1500 mm	2000 mm
MDM 180/210	2100 mm	1800 mm	2250 mm
MDM 180/250	2500 mm	1800 mm	2250 mm
MDM 180/280	2800 mm	1800 mm	2250 mm

MODEL	MAGNET WEIGHT	MAGNET POWER	WORKING DISTANCE	MOTOR CAPACITY REQUIRED	SPEED RPM	NO. KNOCK OFF BARS H = 64 mm	NO OF PADDLES H = 115 mm
MDM 130/150	7.900 kg	11.5 kW	250 - 300 mm	10 HP	22	10	2
MDM 130/180	9.000 kg	13 kW	250 - 300 mm	10 HP	22	10	2
MDM 130/210	10.500 kg	14.5 kW	250 - 300 mm	15 HP	22	10	2
MDM 150/180	12.000 kg	11.5 kW	300 - 350 mm	15 HP	18	10	2
MDM 150/210	15.000 kg	16 kW	300 - 350 mm	20 HP	18	10	2
MDM 150/250	17.000 kg	16 kW	300 - 350 mm	20 HP	18	10	2
MDM 180/210	16.200 kg	16 kW	350 - 400 mm	25 HP	16	10	2
MDM 180/250	19.850 kg	19 kW	350 - 400 mm	25 HP	16	10	2
MDM 180/280	20.300 kg	20 kW	350 - 400 mm	30 HP	16	10	2

TYPICAL APPLICATIONS

Auto Shredder Residue (ASR)



STAINLESS STEEL RECOVERY PULLEY Model SRP-W

TECHNICAL SPECIFICATIONS

The SGM SRP-W is an ultra-high gradient magnetic head pulley mounted on its own frame, supplied with its own belt, typically much thinner than traditional conveyor belts (2 mm versus the typical 7 mm to 9 mm for traditional conveyor belts). Provided with optional take away conveyor belt and adjustable splitter. Control panel provided with drive to adjust belt speed.

- For ferrous removal: from 0,9 m/sec to 2,5 m/sec.
- For mix of ICW before chopping process: 0,3 m/sec to 0,6 m/sec.
- Available in 1000 mm, 1500 mm, 2000 mm widths in order to allow options for optimum material distribution.

MODEL	MAGNET PULLEY	BELT SPEED (*)	CAPACITY (**)
SRP-W 40	Ø 300 mm	0.3-2.5 m/s	5-8 t/h
SRP-W 60	Ø 300 mm	0.3-2.5 m/s	10-13 t/h
SRP-W 80	Ø 300 mm	0.3-2.5 m/s	15-18 t/h

(*) For mix of ICW before chopping process is recommended an average speed between 0.3 m/s and 0.6 m/s.
(**) Depending on application, material specific weight and metal content in material.

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
SRP-W 40	2500 mm	1750 mm	1400 mm	1.450 kg
SRP-W 60	3050 mm	2250 mm	1400 mm	1.900 kg
SRP-W 80	3550 mm	2750 mm	1400 mm	2.500 kg

PRODUCT HIGHLIGHTS

The combination of a large diameter head pulley, together with the use of the most performing generation of Neodymium magnet blocks, as well as a thin belt and a special magnetic circuit design, optimize the gradient and ferrous attraction of the SRP separators.

OPTIONAL FEATURES

- Roller splitter
- Brush cleaning system for belt
- Air knife for belt cleaning
- Vibrating feeder
- Take away conveyor belt

TYPICAL APPLICATIONS

For removal of ferrous and light magnetic material.
Especially suited for Shredder Residue Insulated Copper Wire chopping process to remove light magnetic pieces of stainless steel to protect blade granulators.

DYNAMIC FERROUS SEPARATOR Model DSRP

TECHNICAL SPECIFICATIONS

Magnetic waste in Auto Shredder Residue (ASR) below 40 mm, typically represents approximately 20 to 40% in weight with 5 to 15% good ferrous content that ends up lost in this fraction. The SGM DSRP is designed to recover those valuables pieces of ferrous. Maximum material size 40 mm.

Unlike a traditional head pulley magnet, the magnetic head pulley of the Dynamic SRP does not drive directly the belt of the separator but rather rotates inside a shell that rotates at a slightly higher speed than the magnetic pulley.

Variable Frequency Drives (VDFs) allow to control the speed difference between the magnetic head pulley and belt. Non-magnetic material travels at the speed of the belt, while magnetic material is subjected to a breaking action resulting from the slower speed of the floating magnetic pulley.

The result is a liberation action of the magnetic material from the non-magnetic one in a much wider and open flow with respect to a traditional head pulley magnet with the lightly magnetic material (waste) dropping first and the good ferrous dropping last. In order to further clean the valuable fraction of ferrous that drops last, this fraction is passed on a permanent drum magnet that will recover from the distance the valuable ferrous. Both the inclination of the slide to the permanent magnet drum and the position of the drum are adjustable in order to accommodate for material size and purity required for the ferrous recovery.

The use of the SGM Dynamic SRP has some limitations in case of wet material.

PRODUCT HIGHLIGHTS

- Variable frequency drive for both belt and floating pulley.
- Possible bypass of ferrous process in case material is too wet.
- Shaker on slide drum.

OPTIONAL FEATURES

- Air knife for splitter and belt cleaning
- Brush cleaning system for belt

MODEL	FLOATING PULLEY MAGNET	DRUM MAGNET	BELT SPEED	CAPACITY (*)
DSRP 100	Ø 300	Ø 400	0.9-3.0 m/sec	8 t/h
DSRP 150	Ø 300	Ø 400	0.9-3.0 m/sec	13 t/h
DSRP 200	Ø 300	Ø 400	0.9-3.0 m/sec	16 t/h

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

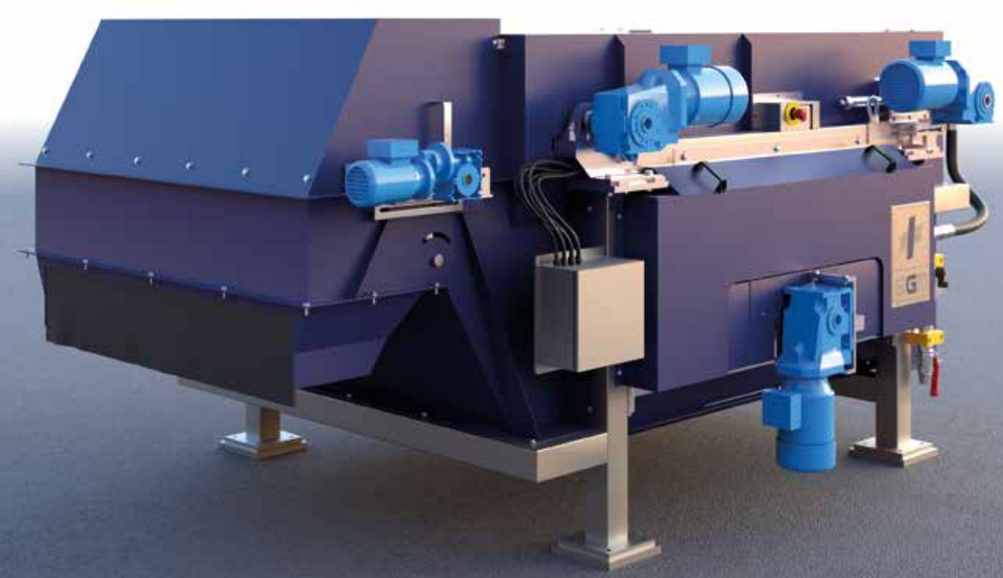
MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
DSRP 100	3478 mm	1714 mm	1736 mm	2.200 kg
DSRP 150	3478 mm	1714 mm	2237 mm	2.650 kg
DSRP 200	4400 mm	2315 mm	3243 mm	4.400 kg

TYPICAL APPLICATIONS

Magnetic Waste
in Auto Shredder Residue (ASR)

MATERIAL SIZE

Maximum 40 mm



SUSPENDED MAGNET SEPARATORS
Models DNE & DNP

TECHNICAL SPECIFICATIONS

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. Stationary suspended magnet separators are intended for applications where ferrous is rare.

SGM offers multiple sizes for each version of its Suspended Magnet Separators.

TYPICAL APPLICATIONS

Auto Shredder Residue (ASR)
Demolition Rubbles
Slag
Foundry Sand
Municipal Solid Waste Incinerator Ash (IBA)
Municipal Solid Waste (MSW)
Wood Scrap
Glass Scrap
Electronic Scrap (WEEE)
Minerals
Any application where material travels on a conveyor belt with a need for ferrous removal.

GRAVITY TECHNOLOGY

CLOSED LOOP AIR CLASSIFIER Models ACS & ACL

TECHNICAL SPECIFICATIONS

Designed to process Eddy Current ASR Waste and to optimize separation between light particles (foam, textile, light plastic), heavy particles (metals, rubber, heavy plastic, wood), and dust. Using an SGM Air Classifier after your ECS and before your sensor based separators, results in a better material presentation to your sensor separators and a greater purity of your Zurik and Copper Wire. The metals, including copper wire, end up concentrated in the heavy fractions coming off the SGM Air Classifier that typically represent over 60% in weight of the ECS waste, but less than 40% in volume.

PRODUCT HIGHLIGHTS

- Closed loop design.
- Includes eight inspection hatches for easy inspection and maintenance.
- Bolted assembly cyclone for easy replacement of worn parts.
- Parts exposed to wear in Hardox 400.

MODEL	FAN MOTOR	INFEED AIRLOCK	LIGHTS AIRLOCK	CYCLONE AIRLOCK	CAPACITY (*)
ACS 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

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

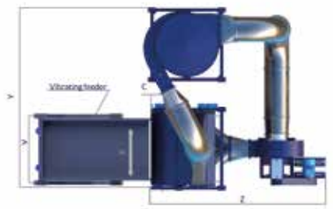
ACS AIR CLASSIFIER SMALL FOR ASR 20 TO 40 MM			ACL AIR CLASSIFIER LARGE FOR ASR 40 TO 100 MM		
	43X10	86X10		43X12	86X12
A	1100	2170	A	1100	2150
B	245	245	B	330	330
C	245	245	C	457	457
D	5600	6000	D	5600	6000
E	5280	5280	E	5280	5280
F	2000	2000	F	2000	2000
G	760	760	G	406	414
J	245	245	J	330	330
K	2768	3645	K	3020	3925
P	406	762	P	558	762
V	900	2000	V	900	2000
X	8088	8560	X	8088	8560
Y	3758	5595	Y	3758	5595
Z	5790	5150	Z	6474	6189

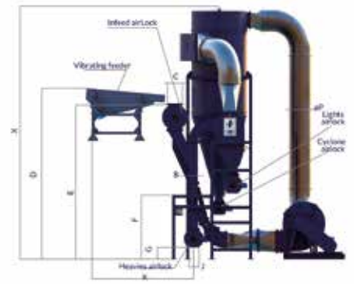
TYPICAL APPLICATIONS

Auto Shredder Residue (ASR)
Any application that requires separation of light material from heavy material.

Heavy fraction

Light fraction





METAL SENSOR SEPARATOR Models EMSEF-R

TECHNICAL SPECIFICATIONS

Some metals remain present in the waste of your Eddy Current Separators working on shredder residue, either because they react very little to ECS or because they simply enter within their margin of error. These metals can represent between 2 to 5% of your ECS waste and are typically divided into two main categories: Zurik (mainly stainless steel) and Copper Wire (insulated and bare).

The SGM Sensor Separator is the natural complement to recover those metals. Provided with the latest technology, high resolution induction sensors designed by SGM. Designed with top blowing pneumatic rejector head with metal pieces that are blown down. This results in increased metal recovery performance on insulated copper wire and difficult shaped pieces of stainless steel such as poker and spherical pieces, as they are blown off from a greater distance with a wider air spectrum that has a better chance to hit their center of gravity and provide them with a defined rejected trajectory.

MECHANICAL FEATURES

- Possibility of connecting multiple EMS separators while maintaining the same working level.
- Laser cut frame for maximum stability and accurate assembly.

ELECTRONIC FEATURES

- Sensor board modules each with 12 sensors allowing for easy access.
- 12” touch screen control panel for easy intuitive interface.
- Option to select different metal separation programs (All metals, stainless steel, wire) with different pre-set levels of intensity: High, medium, low.
- Alarm communication and diagnostic survey related to proper feeding and distribution of infeed material to EMS separator.

OPTIONAL FEATURES

- Cleaning brush system for belt
- Vibrating feeder

Size fraction: 1/4” to 5”.

MODEL	SENSORS	VALVES/ NOZZLES	AIR COMPRESSOR	RESERVOIR	BELT SPEED BELT WIDTH
EMSEF-R 48	60	120	37 kW - 8 bar	1,000 lt	2-2.8 m/sec 1200 mm
EMSEF-R 80	90	180	45 kW - 8 bar	1,500 lt	2-2.8 m/sec 1800 mm
EMSEF-R 96	116	232	55 kW - 8 bar	2,000 lt	2-2.8 m/sec 2300 mm

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
EMSEF-R 48	5250 mm	2200 mm	2400 mm	2.800 kg
EMSEF-R 80	5250 mm	2800 mm	2400 mm	3.400 kg
EMSEF-R 96	5250 mm	3300 mm	2400 mm	3.900 kg

TYPICAL APPLICATIONS

Auto Shredder Residue (ASR)
Municipal Solid Waste Incinerator Ash (IBA)
Wood Waste
Copper Wires (insulated and bare)
Zurik (mainly stainless steel)

MATERIAL SIZE

From 6 to 120 mm

X-RAY TRANSMISSION

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.

PRODUCT HIGHLIGHTS

- Self-learning software.
- Extremely robust design to suit industrial use
- SGM tailor designed software based on customer specific application.

It is recommended to customer to set up an internet connection to the SGM XRT to allow SGM technicians to perform software updates, new set ups and service intervention from remote.

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

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

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
XRT 24-R	6460 mm	1690 mm	2555 mm	5.380 Kg
XRT 48-R	6460 mm	2305 mm	2555 mm	6.640 Kg
XRT 72-R	6460 mm	2920 mm	2703 mm	9.500 Kg
XRT 96-R	6460 mm	3540 mm	2703 mm	14.000 Kg

TYPICAL APPLICATIONS

ASR Zorba: sorting of Aluminum from heavy metals, aluminum breakages and non-metallic contaminants, sorting of wrought Aluminum from heavy cast Aluminum with Cu and Zn over 3-4%, sorting of light Magnesium (Aluminum Magnesium alloys) from Aluminum wrought and cast.
Aluminum secondary smelters for 3000 and 6000 series billets and sheets: remove heavy metals and Cast Aluminum alloys with Cu and Zn over 3-4%.
ASR Fluff: sorting of Chlorinated and Brominated plastic to achieve over 50-70% of total fluff with less than 1% of PVC.
WEEE: sorting of heavy PVC plastic from lighter plastics (PP, PE, PS, HIPS, ABS).

X-RAY FLUORESCENCE COMBINED WITH TRANSMISSION

X-RAY SORTER Model XRF-T

TECHNICAL SPECIFICATIONS

The SGM XRF-T combines the X-ray Fluorescence surface analysis with the X-ray Transmission pass-through analysis. The XRF technology allows for the sorting of heavy metal pieces between them (Cu, Zn, Cr, Pb,...) including metal alloys like brass, bronze and 316 series stainless from 306 series. The SGM proprietary use of XRT in combination with the XRF technology allows to provide not only an image and shape of every single piece analyzed but also information on the metal composition of their inner content which allows for the identification of possible aluminum breakages and sort them out along with the heavy metals.

ALUMINUM WITH PIECES OF HEAVY METALS IN THEM OR STILL ATTACHED TO THEM

The SGM XRF-T combines the two technologies in one sorter using one sole X-ray source and both XRF and XRT sensors, therefore taking advantage of the complementary information of the two different technologies.

The X-ray fluorescence process consists in an X-ray source that emits some high energy photons called ionizing radiations to the extent that they are able to move electrons of the atoms of the pieces they bomb from one energy orbit level to another higher one. In such a situation, the atoms are called excited but such situation only lasts for a very short time as nature makes that the atoms tend to turn back to their original lower energy configuration called stable. The photons emitted from the source are called the "primary X-ray beam". In the passage between the two energy levels, every atom emits a photon whose energy is equal to the difference in the energies of the two levels, excited and unexcited. The process of the emission of this photon is called fluorescence and the energy level given by the difference of the two energies is specific to each chemical element. Heavy metals are characterized by fluorescence photons with such energies that they can be sensed by specific XRF sensors (SDD, Silicon Drift Detectors) which identify their chemical nature and concentration.

With the X-ray Transmission process, the radiations emitted by the X-ray source are either totally, partially or scarcely absorbed by the material pieces they bomb. The level of absorption depends on the density and thickness of the chemical element each material piece is made of. By measuring the residual radiations that pass through every material piece with a dual bank of XRT sensors (scintillators) of different energies, it is possible to identify their density regardless of their thickness.

The combined information collected by the XRF and 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. Possibility for the SGM XRF-T to run first just the XRT process for the separation of the light metals followed by the XRF process combined with XRT for the separation of the heavy metals between them. Indeed, using XRF for light metals is not optimum as XRF does not see light metals and considers as light metals all what is different from heavy metals which is not accurate as inbound material can hold aluminum breakages and residual non-metallic contaminant. Using XRT for light metals is also more productive because of the higher resolution that XRT technology features versus XRF.

PRODUCT HIGHLIGHTS

- Self-learning software.
- Extremely robust design to suit industrial use
- SGM tailor designed software based on customer specific application.

It is recommended to customer to set up an internet connection to the SGM XRF-T to allow SGM technicians to perform software updates, new set ups and service intervention from remote.

MODEL	ACTIVE WIDTH	VALVES	SOURCES	BELT SPEED	CAPACITY (*)
XRF-T 32	812 mm	92	1	2.5 m/s	2-4 t/h
XRF-T 64	1625 mm	184	2	2.5 m/s	4-8 t/h

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

TYPICAL APPLICATIONS

ASR Zorba: Sorting of Aluminum wrought.
ASR Zebra: Sorting of heavy metals between them.
ASR Zurik: Sorting of stainless steel series 316 for the 304.

The SGM XRF-T is specifically suited for operators with small and middle quantities of material to process as with one SGM XRF-T they can save on the more expensive investment of two separate sorters XRT + XRF. Metals can be sorted with a recovery of over 90% and purity over 98%.

- 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.

COLOR AND SHAPE SORTER Model CSS

The SGM CSS is the perfect complement to the magnetic eddy current separator, induction sensor, infra-red, near infra-red, X-Ray and gravimetric separation. The use of multiple high resolution cameras and the use of micro-processors with tailor made algorithms, allow for fast and accurate decisions. Separation decision is made based on color, brightness and shape of the particles and offers much greater sensitivity and repeatability than the human eye and hands.

MECHANICAL FEATURES

- Laser cut frame design for maximum stability and accurate assembly.
- Top blow design (selected material pieces are blown from top downwards).
- Cooling unit for camera case.

Positive:
Grey from Zorba Metals

Negative:
Red from Zorba Metals
Red + Yellow

ELECTRICAL FEATURES

- Color line scan cameras based on the dual line scan model.
- Photographic camera lenses.
- Up to 6829 frames per second.
- LED lighting technology.
- Dedicated software fully designed by SGM.
- 17” Touch screen control panel for easy and intuitive interface.
- Intel Core i7 processors, UPS devices and redundant SSD hard disk drives.

TEST ON SAMPLE OF ZORBA 1/4” - 3/4”		% OF TOTAL SAMPLE	% OF POSITIVE/ NEGATIVE	% TOTAL GREY/R + Y
POSITIVE 33%	Grey	32.85%	99.40%	94.56%
	Red + Yellow	0.19%	0.60%	0.29%
NEGATIVE 67%	Grey	1.89%	2.82%	5.44%
	Red + Yellow	65.07%	97.18%	99.71%

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
CSS 24	5384 mm	1584 mm	2794 mm	2.400 kg
CSS 48	5384 mm	2184 mm	2794 mm	3.200 kg
CSS 80	5384 mm	2794 mm	2794 mm	4.000 kg

TYPICAL APPLICATIONS

Car Shredder: Copper and / or brass from heavy metals in zorba, airbags, printed circuit boards from zorba.
Electronic Waste: Printed circuit boards, precious metals, upgrading, transparency sorting glass.
Aluminum Scrap: Upgrade of aluminum scrap by reducing Zn, Cu, and Fe achieving premium scrap price.

SMART BALLISTIC SEPARATOR Model SBS

TECHNICAL SPECIFICATIONS

The purpose of the SGM Smart Ballistic Separator (SBS) is to facilitate the recovery of solid pieces of metals from moist ash (typically around 20%) by concentrating the metals into a fraction that is about 50% less in mass, and a third in moisture content making the subsequent ferrous and eddy current metal separation much easier and better performing. The SBS consists in a high-speed rotating drum provided with hitting plates around its circumference that catapult the particles as they are encountered during their free fall to the drum.

The larger the mass of a particle, the longer the trajectory it takes when thrown by the SBS. The SBS separates the infeed Incinerator Ash into a short throw fines fraction (minus approximately 2mm) where moisture is concentrated and a large long throw fraction mainly made of solid pieces including the metals.

The launch performed by the ballistic separator is not an immediate impact launch, but a centrifugal launch, with particles leaving the hitting plates from their tips. A centrifugal launch means that particles encounter the hitting plates on their upper part, leave the hitting plates earlier than particles encountering the hitting plates on their lower part.

This delay results in different particles leaving the hitting plates in different moments with the hitting plates in different positions which has an impact on the ballistic trajectory of the particles.

The special design of the hitting plates of the SGM Smart Ballistic Separator reduces the spectrum of the flow of particles leaving the separator, making a more accurate separation based on the different masses of the particles.

PRODUCT HIGHLIGHTS

The Smart Ballistic Separator has adjustments that influence the trajectory of the material which can assist in optimizing the separation. These adjustments are:

- Position between the conveyor belt and rotating drum
- Height of the layer that falls on the rotating drum
- Speed of the drum

DIFFERENCE BETWEEN THE STANDARD AND SGM PLATES

Standard hitting plates

SGM hitting plates

Trajectory with traditional plates

Trajectory with SGM plates

MODEL	DRUM WIDTH	CAPACITY
SBS 150	1500 mm	30 t/h
SBS 200	200 mm	40 t/h

MODEL	LENGTH	WIDTH	HEIGHT	WEIGHT
SBS 150	2660 mm	3100 mm	1950 mm	4.000 kg
SBS 200	2660 mm	3600 mm	1950 mm	4.700 kg

TYPICAL APPLICATIONS

Incinerated Municipal Solid Waste Ash (Bottom and Fly Ash)

MATERIAL SIZE

Infeed Material: Ash minus 16 mm, moisture content 20% maximum

CLEANING LINE FOR HMS

Typically, HMS contains between 6-12% of contaminants which negatively impacts on:

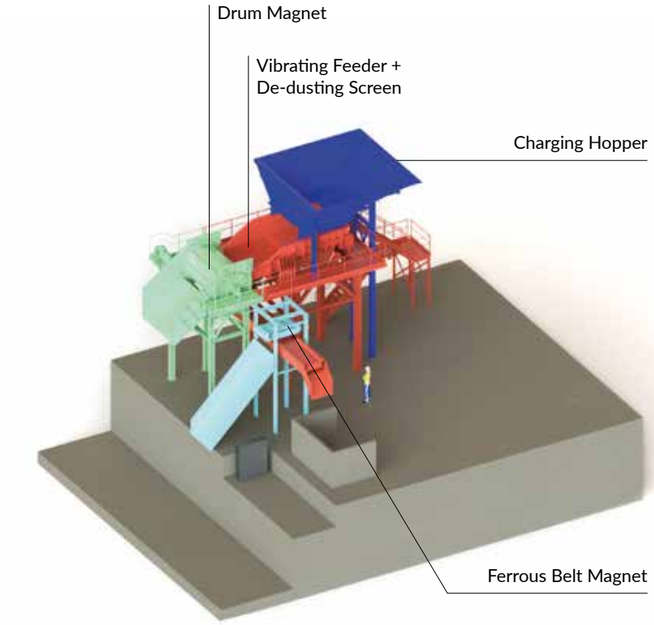
- Furnace yield and electricity cost per ton of ferrous produced.
- Production of slag.
- Consumption of lime.

The SGM Scrap Cleaning Line for HMS allows to significantly reduce the contaminants in HMS. The savings on electricity and higher furnace yield alone can result in a pay-back of less than 18 months based on a minimum of 300,000 tons of HMS processed per year. The 6 to 12% of non-ferrous removed from the HMS can be sold to metal recyclers for their typical valuable non-ferrous metal content.

TECHNICAL SPECIFICATIONS

- Designed for maximum robustness and heavy duty.
- Charging hopper.
- Vibrating feeder complete with de-dusting screen.
- Extremely strong proprietary electro-drum magnet with special radial polarities allowing a larger distance between the feeder end and drum surface, consequently maximizing the liberation of contaminants.
- Available in three sizes: 50, 100 and 150 tons per hour of HMS.
- Can be supplied as a complete solution or in modular parts.

MODEL	OVERALL LENGTH	OVERALL WIDTH	OVERALL HEIGHT
SCL 50 t/h	12456 mm	9000 mm	10500 mm
SCL 100 t/h	12994 mm	9000 mm	10500 mm
SCL 150 t/h	13294 mm	9000 mm	10500 mm



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Technologies for metal separation and recovery, from single separator to complete systems.





SGM Magnetics S.p.A.
via Leno, 2/D
25025 Manerbio (Brescia)
Tel. +39 030 9938400
www.sgmmagnetics.com

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