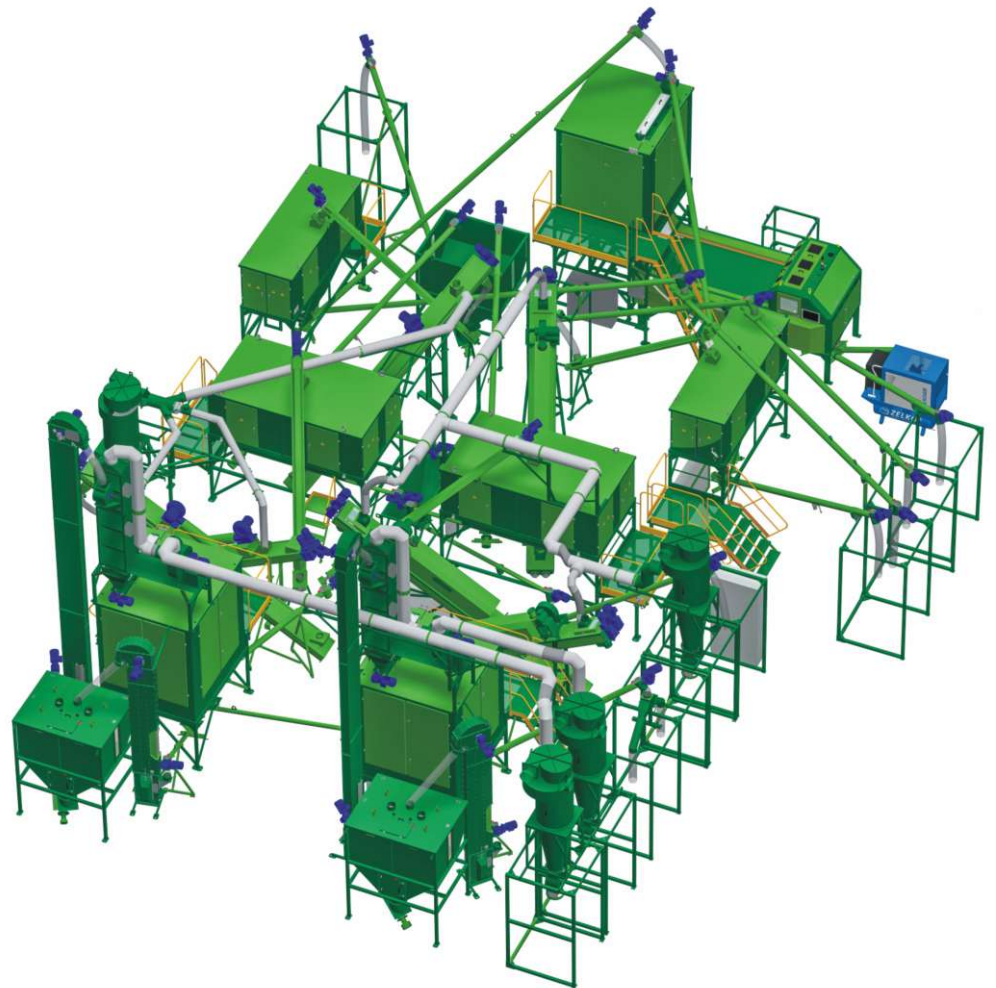


EQUIPMENT FOR RECYCLING

WWW.PRODECOLOG.COM



more than
30
YEARS of the experience
and
the innovations





Scientific and manufacturing firm "ProdecoLogia" was founded in July 1993. Starting from working on the market of the CIS and Eastern Europe countries, now the company is known all over the world. Starting from production of simple magnetic separators, now the company produces complex lines for very different industries and applications. We design and manufacture magnetic, electrostatic, eddy current, NIR, aero, drag friction separators, metal detectors, mud clarifiers and different additional equipment such as hoppers of different volumes, belt conveyors, bucket elevators, screw conveyors.

Technologies of the company are being used for many different applications.

Magnetic separation technologies are used for protection, cleaning or enriching where it may be needed. For example, enrichment of ores and nonmetallic materials and separation of slags from metallurgical production, for food industry for prevention of metal contaminants entering foodstuffs during production process, for protection of technological equipment from breakdowns, enhancing porcelain whiteness, increasing quality of tires, chipboards, refractory materials, glass. Mud clarifiers help to purify technical water, metal detectors detect metals (for example, even for detection of Fe in the pressed Al cubes), corona electrostatic separators remove or extract non ferrous metals from different streams, NIR and tribo electric separators sort out polymers by type.

We combine our own experience as well as experience of our partners with the focus on the advanced technologies in mechanical and electronic engineering, we use components from the best world manufactures and being a scientific organisation on the highest government level on a par with a university we cooperate with research institutions all over the world.

Having in mind the past we are focusing on the future.

That's why one of the main industries our equipment is widely used in is recycling. Nowadays we design and produce tailor-made complex lines for recycling of various materials.

Do you have a separation need or recycling idea in mind?

We look forward to hearing about it!



We are ready and happy to test your material in the laboratory of our company to determine the possibility and ways of its efficient recycling.



On state of 01.01.2023 the company received 110 patents for inventions and utility models.

Equipment is CE certificated in accordance to needed EU Directives.

In 2007, a certificate of scientific discovery was received. In 2021, the company received the status of a scientific organization.

Latest developments - NIR separators for sorting multicomponent polymer mixtures and drag friction separator ST for removal of silicone and elastomers.

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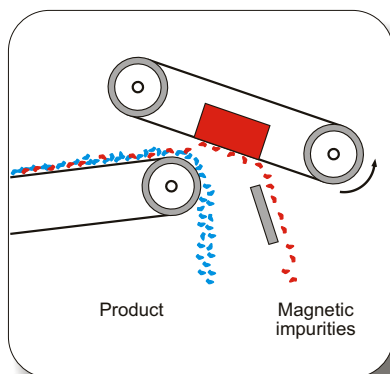
Plate magnetic separator PN-A



Intended use

Designed for automatic extraction of ferromagnetic impurities and iron-containing objects from various materials moved by a belt conveyor.

Scheme of the separator



Design features of the separator

- Mounted above the conveyor belt at a distance of 100-350 mm, depending on the height of the layer of material to be processed.
- Automatic cleaning of the separator from magnetic objects and impurities.
- Manufactured using both ferrite and high-energy neodymium magnets (Nd-Fe-B).
- Magnetic induction on the working surface of the separator from 150 mT.
- Does not require electricity to generate magnetic field.
- Stable magnetic properties and easy operation.
- Components of the world leading companies (Nord, SKF, FAG, Sew Eurodrive, Siemens).



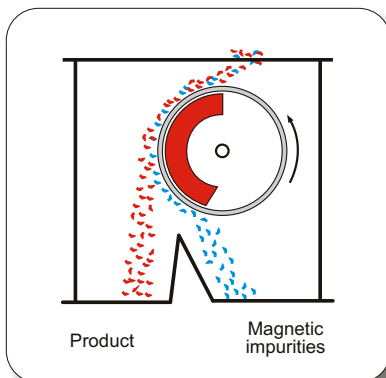
Drum magnetic separator BS



Intended use

Designed for cleaning various materials (products) from fine magnetic particles.

Scheme of the separator



Design features of the separator

- Drum diameters from 200 to 400 mm.
- Manufactured using both ferrite and high-energy neodymium magnets (Nd-Fe-B).
- Magnetic induction on the working surface of the separator from 120 to 750 mT.
- Automatic cleaning of the separator from magnetic objects and impurities.
- Has an upper system for feeding the product through the input hopper or using a vibrating feeder.
- Components of the world leading companies (Nord, SKF, FAG, Sew Eurodrive, Siemens).



Electrostatic separators EBS (corona)

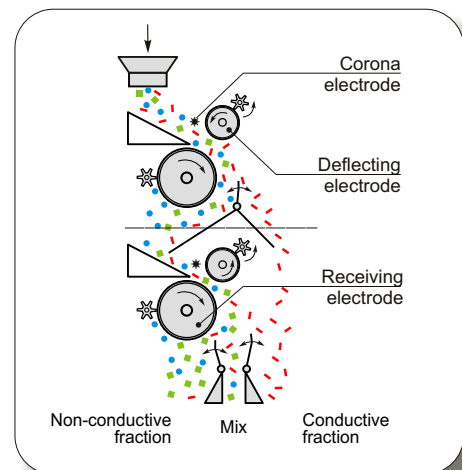


Scheme of the separator

Intended use

Intended for dry high-efficiency separation of materials, that differ in electric properties, for example:

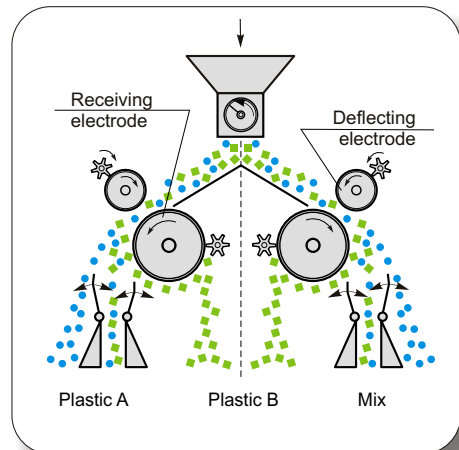
- mixtures of plastics and metals, including shredded cables, into metal (copper, aluminium) and non-conducting material (plastic);
- mixtures of different materials upon condition that one of the components has conducting characteristics (among them extraction of textile cord from rubber crumb in the processing of used tires);
- shredded WEEE (including PCB's) into metal (aluminium, copper, nickel, bronze, precious metals and other) and non-conducting material (plastic, textolite, fiber-glass and other).



Electrostatic separators EBS-T (triboelectric)



Scheme of the separator



Intended use

Intended for dry separation of mixture of polymers by the electrical properties, for example: PVChard + non-conductive rubber + PVCsoft + EPDM (ground window profile), PVC + PE (granulated cable insulation), PET + PVC (crushed PET bottles), PET + PE (food packaging, containers), ABS+PS (crushed WEEE), PP+PE (plastic bottles and caps) and other mixtures (PVC + glass, PS + PP, PS + PC, PS + SAN, ABS + SAN, ABS + PVC, PET + PP, PE + PS).



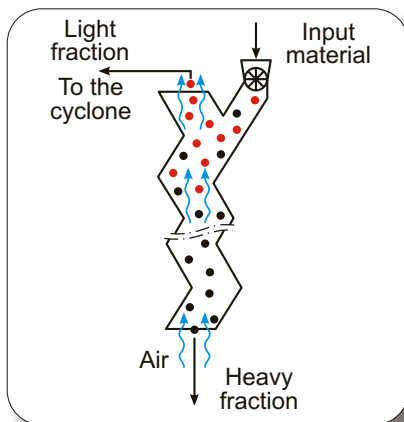
Separator of light fraction SLF



Intended use

Intended for removal of films and dedusting of bulk products by air flow.

Scheme of the separator

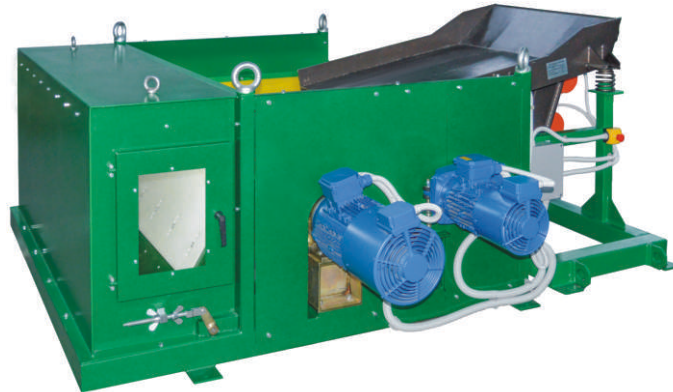


Design features of the separator

- The size of the material to be separated is $-50+0$ mm.
- Maximum air consumption - 1000-20000 m³/hour.
- Capacity for product with bulk mass:
 - up to 0.3 t/m³ - 150-6000 kg/h;
 - up to 0.6 t/m³ - 700-12000 kg/h;
- If needed, the separator can be equipped with additional options for automatic feeding of material for separation and unloading of separated materials into big-bags.



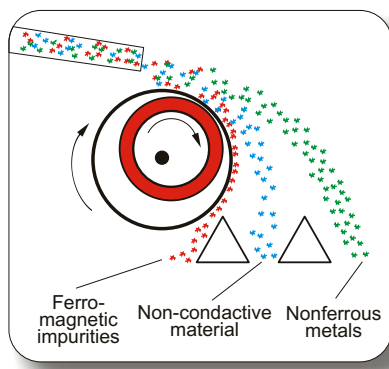
Eddy current magnetic separator VS



Intended use

Designed for extracting non-ferrous metals from non-electrically conductive material.

Scheme of the separator

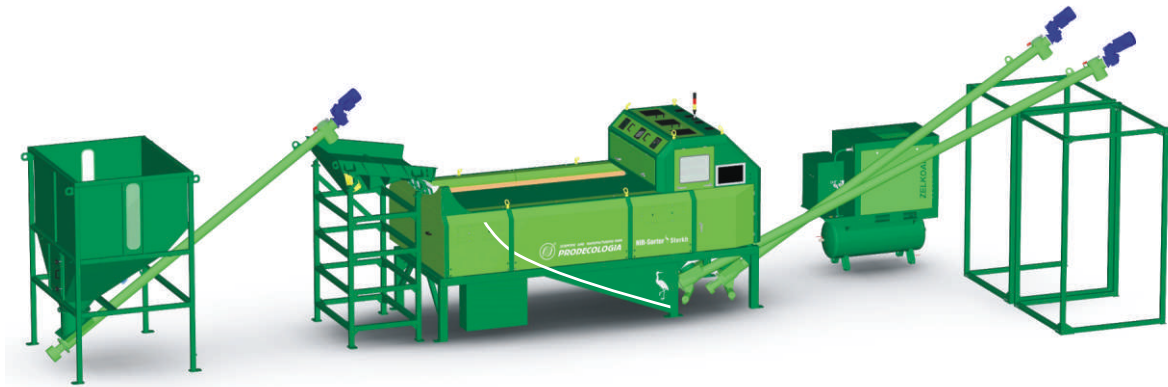


Design features of the separator

- The fiberglass drum shell is protected from the ingress of metal impurities, cullet and other contaminants using a special conveyor belt with plug-together side corrugations.
- Adjustable speed of the conveyor, from 1 m/s to 2.5 m/s.
- Adjustable rotation speed of the magnetic drum, from 1000 rpm to 3000 rpm.
- The original magnetic system ensures efficient extraction of metals fraction of 3 mm or more.
- Components of the world leading companies (Nord, SKF, FAG, Sew Eurodrive, Siemens).
- Capacity, per 1 m of working width, - 0.9 – 21.5 t/h.



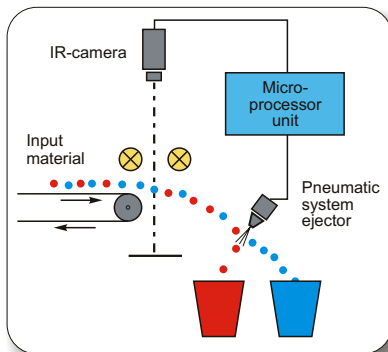
NIR separator Sterkh-N



Intended use

Designed for sorting multicomponent polymer mixtures by type of polymers using near-infrared radiation.

Scheme of the separator



Design features of the separator

- Width of working area - 300-1200 mm.
- Conveyor belt speed - 1-3 m/s.
- Fraction of material - 2-25 mm.
- Possibility of remote adjustment of the parameters of the separator via the internet.
- Capacity - from 0.2t/h.
- If needed, the separator can be equipped with additional options for automatic feeding of material for separation and unloading of separated materials.

A high-tech hyperspectral camera with the following characteristics is used in the separator:

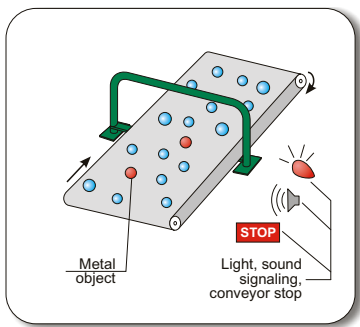
- spectral range: 900-1700 nm;
- spectral resolution: 8 nm;
- number of pixels: 640 pcs.;
- efficient pixel size: 18.7 μm ;
- camera operating frequency: 670 Hz.



Tunnel metal detector DMT2C



Scheme of the metal detector



Design features of the detector

- The detector consists of a metal sensor and an electronic control unit.
- The design of the metal sensor is individually matched to the customer's production conditions.
- Resistant to interference arising from electric welding work near the metal detector.
- High sensitivity and automatic adjustment.
- Can work on conveyor belts with metal elements joints.
- The ability to record the history of the metal detector.
- Can be equipped with technological conveyors with automatic rejection (optional).

Intended use

Designed to detect foreign metal inclusions (both ferrous and non-ferrous metals, manganese steel) in the streams of non-metallic products transported by belt conveyors in order to protect technological equipment from damage.

Drag friction separator ST



Intended use

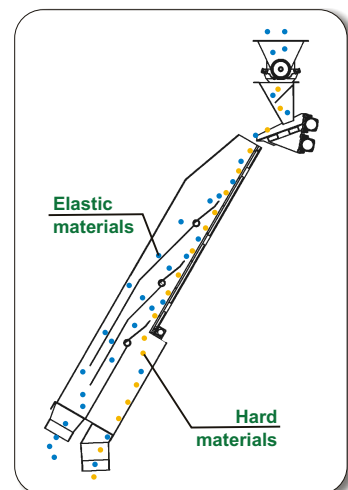
Drag friction separator ST is designed to remove elastic particles of rubber, silicone, polyurethane from plastic regrinds.

Principle of operation

The separation process occurs when particles of a mixture of crushed plastics move along an inclined smooth surface.

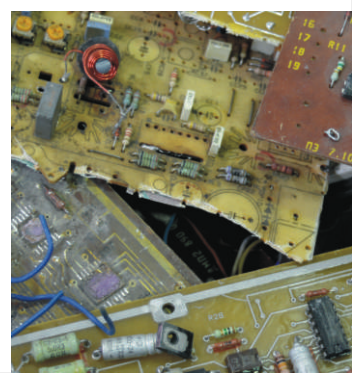
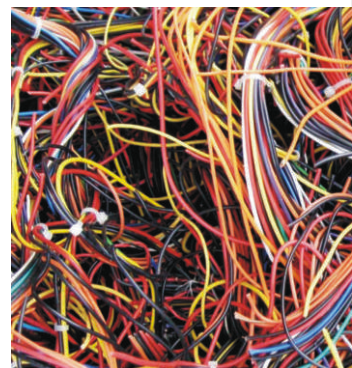
Due to higher coefficient of friction, elastic particles (rubber, silicone, polyurethane) have better contact with the working surface than hard plastic particles. As a result, they stop, start bouncing and are removed by dividers located above the working surface.

Scheme of the separator



COMPLEX LINES FOR RECYCLING:

- WEEE;
- PVC rigid;
- PET flakes;
- PP/PE;
- PCB's;
- Cable scrap;
- Rigid plastics.



ADVANTAGES:

- quick return on investments;
- dry separation process;
- high efficiency of metal extraction and high purity of the resulting products;
- low labor intensity, ease of maintenance and operation;
- electrostatic separators of low energy consumption;
- permanent magnet separators do not require electricity to generate magnetic field;
- no harmful effect on the environment.

WE OFFER:

- research of material separation processes;
- designing of lines;
- designing, manufacturing and supplying of equipment;
- installation supervision, commissioning;
- warranty and post-warranty service;
- training of personnel to work with equipment.

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