

JONO[®]

6 KEY TECHNOLOGIES

MECHANICAL



SORTING





MECHANICAL SORTING

Ballistic Separator



Working Principle: The crankshaft is driven by a decelerating motor, which drives the shaft and eccentric shaft to rotate. The eccentric shaft connects the screening plate and rotates around the crankshaft in hula hoop mode. Material is bounced up on the screening plate. Because of the difference of friction (climbing force) between the screening plate and the material, 2D and 3D material are separated.

Application: MSW, Light package waste.



Disc Separator

Working Principle: The material is dispersed by rotating disc separator. With the movement of material on the disc, small fractions fall through the screen hole formed by the adjacent main shaft and the screen plate, and the materials larger than the screen holes come out of the outlet.

Application: JONO's patented disc screen, used over 100 projects for five years, has proved to be very suitable for the screening of Asian's chaotic domestic waste.

High Pressure Density Separator



Working Principle: According to the aerodynamic principle, the device uses air as the sorting medium to sort MSW as per density and particle dimensions by the airflow.

Application: MSW, Decoration waste, Landfill waste.

Flip Flop Separator



Working Principle: The centrifugal force generated by the flywheel vibrator makes screen body reciprocate forward to vibrate. The flexible screen plate is relaxed or tensed with inertial force.

Application: Construction waste, aggregates, sand, compost, sawdust.

■ Please refer to the product manual for more equipment.



DISC SCREEN

As one of the most important sorting machines, disc screen separates material into big-sized material and small-sized material. By changing the screening size, you can always separate out what you need. Typically, it is applied in treating MSW, in process of which organics or RDF can be well separated out.

WORKING PRINCIPLE



Driven by the electrical motor, main shafts running in one direction in the screening chamber. When material goes into the disc screen, the material is firstly scattered by the rotating disc plates. Then along with the movement of material on the disc plates, the small-sized material drops down through the screen-

ing hole formed by the neighbor main shafts and the neighbor screen plates. Material that is bigger than the screen hole will pass disc screen. With the knowledge that different material has different size range, the material can be separated by this size-controlled screening.

TECHNICAL DATA

Model	1FDS1590A	1FDS1560A
size(m)	9.5x2.6x1.8	6.5*2*1.8
Shaft quantity	18	12
Shaft diameter(mm)	450	450
Geared motor(KW)	6x11	4*11
Speed of main shafts	68 rpm	
Ambient temperature	0°C to + 45°C	
Voltage	3x380 v±5%/50 Hz	
Internet	TNC	
Control panel	9 inch Siemens touch screen HMI	
Shaft unit	0.45m cylinder + wear-resistant plum plate	
Screen hole	40-100mm	
Input size	<350mm	
Throughput capacity	70-150m³/h	
Screening availability	80%-95%	
Weight (t)	18	12

FEATURES

- Quincunx shaped screen plates are well arranged, which not only benefits the conveying of the material, but also avoid the jamming caused by the material.
- The side plate of the machine is made of high-quality wear-resistant steel plate, which greatly improves the service life of the equipment.
- Both ends of the screen shaft adopt wear-resistant lining plate disc structure, which completely solves the problems of leakage and jamming on both sides of the machine body and ensures the normal operation of the equipment.
- The surface of the screen plate is finely processed to prevent the material from sticking on it.
- The screen unit is placed at an up angle of 0 to 4 degrees, so that the material is stored for a longer period screened sufficiently.
- The disc screen is started in sequence, that is, the first screen shaft at the discharging chute starts first, and then other ones sequentially start, so that the screen can be started with load when there is material on the screen unit.
- The disc screen adopts electrical overload protection. When the equipment is overloaded, the current becomes larger. When the critical value exceeds the critical value, an alarm signal will be issued and the machine will be stopped, thereby protecting the equipment from damage.
- Easy to replace the wear and spare parts.



BALLISTIC SCREEN

Adopting the imported German crankshaft mechanism transmission, ballistic screen can sort the materials into three categories and bounce off the materials attached to the package to achieve an unparalleled sorting effect.

WORKING PRINCIPLE

By the active and passive crankshaft, the screen unit moves in a ovalcircle while the neighboring paddles moves asynchronously. When the material is dropped on the screen unit in the central area of the screen unit, the 3 dimensional material will bounce off the screen unit and the 2 dimensional material will climb over the screen unit and the small material screened out through the screen holes. By the way, the material is well separated into 3 types of material.



TECHNICAL DATA

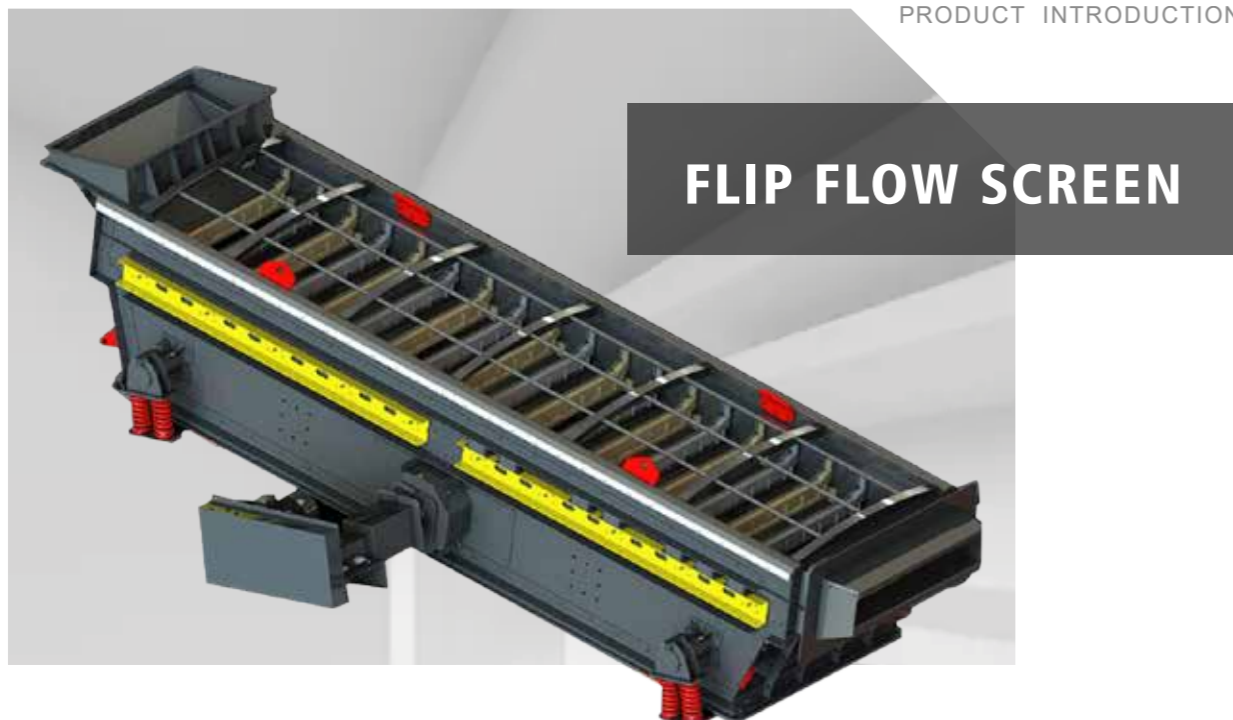
Model	WT35-338	WT45-338	WT60-338	WT90-338	WT120-338
Useful width(m)	2.1		2.7	4.2	5.4
Paddle length(m)	4.3	6.3			
Power drive(kw)	7.5		11	15	22
Throughput capacity(m ³ /h)	0-40	45-60	60-90	90-120	120-200
Screening area(m ²)	8.6	12.6	17.1	25.2	34.1
Paddle quantity	6		8	12	16
RPM	0-200 (Frequency controlled)				
Sieve mesh	20-100mm,rectangle/round				
Voltage	3x380 v±5%/50 Hz				
Internet	TNC				
Optional device	air fan support,motor hydraulic angle adjuster,top cover,central greasing system				

*Through capacity can vary depending on the material.All values are approximate.

FEATURES

- Integral crankshaft, imported from Germany, with a lifespan of no less than 20,000 hours.
- Swedish Hardox steel screen plates and side plates have high wear resistance and long service life.
- Quick and convenient screen angle adjusting hydraulic device to optimize different material screening.
- Wind-assisted sorting to improve material screening effect.
- Use frequency converter to control speed and optimize performance.
- Self-cleaning between screen plates to improve equipment efficiency.
- The screen plate is provided with an anti-wrap device to protect the crankshaft from being entangled.
- Centralized lubrication system make it easy to operate and maintain.
- The quick-opening maintenance door at the rear is convenient and safe to operate.

PRODUCT INTRODUCTION



FLIP FLOW SCREEN

The Flip-Flow action stretches and slackens the screen mats very quickly. This action prevents build-up of fines material in corners or pegging in the screen mat apertures. The JONO Flip-Flow can screen to very small particle sizes because of this unique action. It is used in dry screening construction waste, crushed stone, sand, compost, wood chips, recycled glass and carpet fibres, slag and recycled electronic parts to name only a few applications.

WORKING PRINCIPLE

The centrifugal force generated by the flywheel vibrator makes screen body to reciprocate forward to form vibration. The flexible screen plate is repeatedly relaxed and tensioned under the action of inertial force. Thereby the small-sized material can be well screened out.



TECHNICAL DATA

Model	ZCS1600A
Machine size	7810*3500*1800mm
Drive unit	15KW
RPM of main shaft	750rpm
Transmission model	Pulley drive
Vibration source	Flywheel vibrator
Input size	≤60mm
Screen size	14mm
Throughput capacity	8-12t/h

Note: The throughput varies with the size of the screen.

FEATURES

- ◆ The vibrator is modular in design and can be adjusted by increasing or decreasing the weight.
- ◆ Longer service life due to the Germany-imported flexible screen unit.
- ◆ The structure design is reasonable, and the screen body has good vibration resistance.
- ◆ Screen replacement is convenient.



YA series circular vibrating screen is specially designed for sorting construction waste and fine material. It can also be used for product classification in coal preparation, mineral preparation, building materials, electric power and chemical industry. The output and energy consumption of the vibrating screen are up to the national standard, ranking the advanced level at home and abroad, and being well received by customers in all industries. This model has long material flow line, many screening specifications, clear screening of all specifications, high screening efficiency, not easy to block.

WORKING PRINCIPLE

When it's working, the motor rotates the exciter eccentric block at high speed through the v-belt. The eccentric block in operation generates a large centrifugal force, which stimulates the circular movement of the screen unit with a certain amplitude. The material on the screen unit is subjected to the impulse passed

by the screen unit on the inclined screen surface and produces a continuous throwing movement. When the material meets the screen surface, the particles smaller than the screen hole are screened through, so as to realize separation.

TECHNICAL DATA

Model	3YA2160
Screen unit size	2100×6000 mm
Screen hole size	10 mm
Motor	Y200L-4
Power	15KW
RPM	730r/min
Throughput	81-720m ³ /h
Screen layers	3
Screen angle	20°

FEATURES

- ◆ The advanced rivet connection frame structure improves the service life of the equipment.
- ◆ The spring damper reduces the impact on the machine body.
- ◆ High screening efficiency, least blockage.
- ◆ Low noise, easy to maintain.

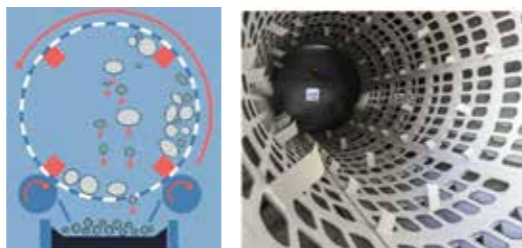
PRODUCT INTRODUCTION



TROMMEL SCREEN

Trommel screen is designed to effectively separate MSW, organic waste, recyclable waste, stale waste and kitchen waste by different drum screen sizes to optimize the material for the subsequent processing. JONO trommel screen can clean itself while working as it rotates, which maximizes the separating efficiency and lessens the maintenance work. The high efficiency and the high quality will highly profit you in a long run time.

WORKING PRINCIPLE



Trommel is installed in a small angle with the input end a little higher than the output end. After having entered into the drum, the material moves along with the drum's rotation. During the rotation and the moving forward, the small sized mate-

rial drops through the screen holes, the big sized material will be discharged at the discharging chute at the end. This rotation can make sure the material goes through enough holes to greatly optimize the separation effect.

TECHNICAL DATA

Drum diameter size	Φ0.8—φ3m (can be customized)
Drum length	3—12m
Drive unit	Gear motor 7.5-74kw
Drum speed	10—23r/min
Ambient temperature	0℃— +45℃
Voltage	3×380V±5%/50 Hz
Control cabinet	Detached (can be integrated)
Power control	Frequency converter
Screen unit	Φ5—φ350mm (can be customized)
Screening rate	80%—95%
Input size	≤1000mm
Throughput	10—150m ³ /h (depending on the material and screen size)

FEATURES

- A variety of models are available.
- Shape of the Bag-opening Trommel Screen: circular sieve drum, which uses multiple groups of axial skeleton structure made of carbon steel to ensure structural strength and reduce self weight of the equipment.
- The sieve plate is made by bending Q345B (16Mn), which has good wear-resisting performance and guarantees the service life of the sieve plate. The sieve surface adopts the form of circular sieve hole and triangular arrangement, which can meet the requirements of the sieve plate strength and meanwhile ensure the maximum number of sieve holes to improve screening efficiency.
- The outer ring of roller is covered with wear-resistant rubber, which can ensure its durability, improve transmission efficiency, reduce roller track wear and running noise. The outer circle tolerance of the rubber should be within ±1mm to ensure the smoothness of the cylinder track.
- The reducer motor and drive wheel are connected by cross universal coupling, which is stable and reliable, and can play the role of overload protection.
- The sieve hole can be circular or square (special sieve hole can be designed according to the material situation).
- The cylinder is made of high-quality carbon steel. Holistic processing of rolling ring makes the coaxiality of the equipment within design range, stable operation and good tightness of the equipment, which can effectively reduce dust from further diffusion.
- An inspection port is set outside the sieve body for convenient maintenance and cleaning.
- The equipment feeding and discharging chute is designed according to the site and material conditions.
- Special bag opening knives with high efficiency can be designed according to the demand of the inside barrel.



MOBILE TROMMEL SCREEN

The mobile trommel screen is used for solid waste screening such as MSW, construction and decoration waste. The mobile drum screen greatly expands the concept of screening operations. Its design tenet is to stand on your side and take the obstacles of operations caused by screening sites and environments as the primary problem, and provide you with efficient and low-cost project operation hardware facilities, which truly provide simplicity, high efficiency and low cost of project operation facilities. Compared with the stationary production line, the mobile drum screen has a short cycle and quick follow-up, which reduces the investment risk of the investors, and avoids the demolition and construction work after the project is completed, which is more economical and environmentally friendly.

WORKING PRINCIPLE

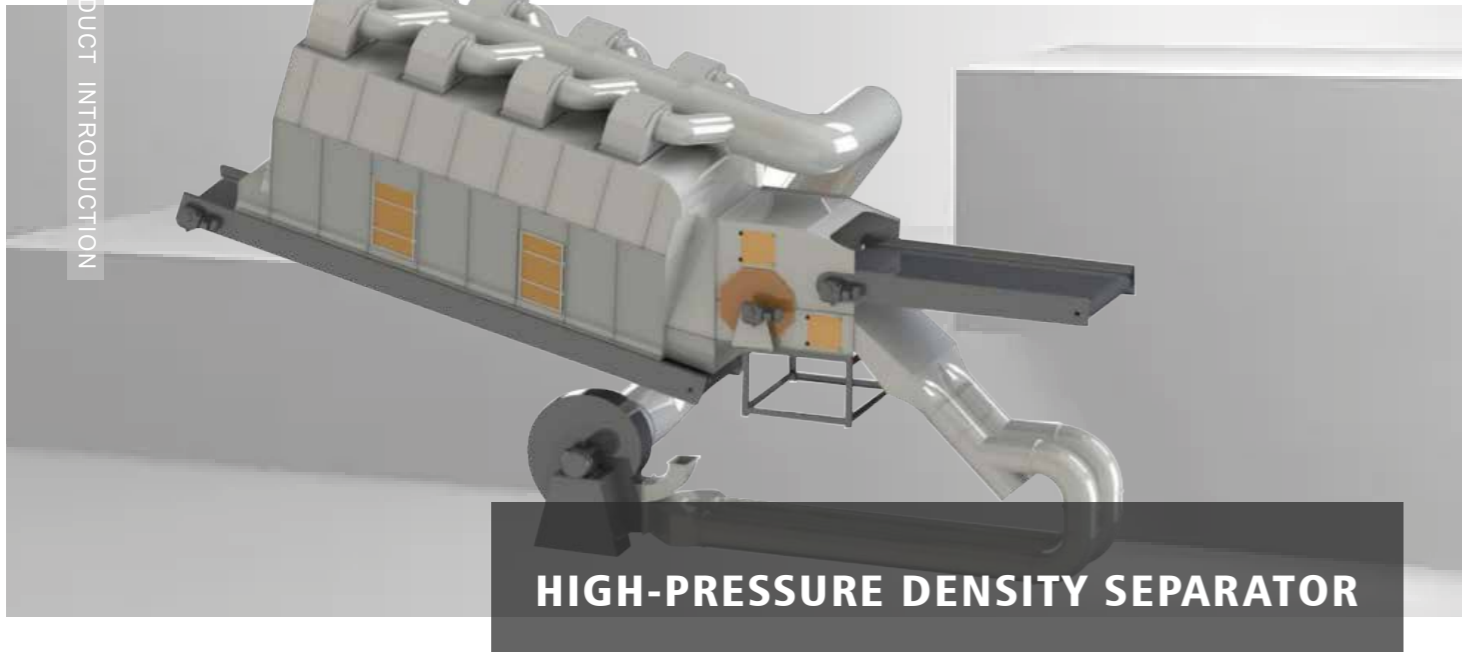
Trommel screen is installed in a small angle with the input end a little higher than the output end. After having entered into the drum, the material moves along with the drum's rotation. During the rotation and the moving forward, the small sized material drops through the screen holes, the big sized material will be discharged at the discharging chute at the end. This rotation can make sure the material go through enough holes to greatly optimize the separation effect.

TECHNICAL DATA

Transportation size	12000*3000*4000mm
Roller effective length	6m
Charging belt conveyor	B1000xL3000mm
Oversized material discharging belt conveyor	B1000xL5500mm
Downsized material collecting belt conveyor	B1400xL4650mm
Downsized material discharging belt conveyor	B1000xL5500mm
Drum diameter	Φ1.8m
Feeding height	3.4m
Oversized material discharging height	1-3.5m
Downsized material discharging discharge height	1-3.5m
Power	67kw
Drum speed	10—23r/min
Ambient temperature	0℃— + 45℃
Voltage	3×380V±5%/50 Hz
Power Control	Frequency converter
Screen unit	Φ5—φ350mm (can be customized)
Input size	≤1000mm
Throughput capacity	40m ³ —90m ³
Screen rate	80%—95%

FEATURES

- High speed, high performance screening.
- Modular drum design, customized screen holes.
- Specially equipped hydraulic legs for lifting, convenient and simple to reduce the workload.
- Fully high-quality thick steel frame structure, long service life.
- Adjustable hydraulics for quick and easy installation of conveyor belts.



HIGH-PRESSURE DENSITY SEPARATOR

High-pressure density separator separates material into higher density fraction and lower density fraction. When treating MSW, C&D waste and stale waste, it can always separate out the certain material by control of the air volume. High-pressure density separator is a necessary machine when producing RDF from MSW.

WORKING PRINCIPLE



The high-pressure density separator is composed of a centrifugal fan, a separating unit with a rotating drum, a belt conveyor, and a connected settling chamber. According to the aerodynamic principle, the device uses air as the sorting medium to sort the MSW according to the density and the particle under the

action of the airflow. The lighter materials (such as paper sheets, plastic bags, films, etc.) are carried up or horizontally to a farther place, while heavy materials are dropped by the updraft that cannot support them. In this way, material is separated by different density.

TECHNICAL DATA

Model	1FFX1600C
Size	13500*4765*8200mm
power	92.2Kw
Ambient temperature	-20℃ ~ 45℃
Voltage	380 v, 50 Hz
Power control	Frequency converter
Weight	10t
Input size	<300mm
Throughput capacity	About 25-30 t/hour

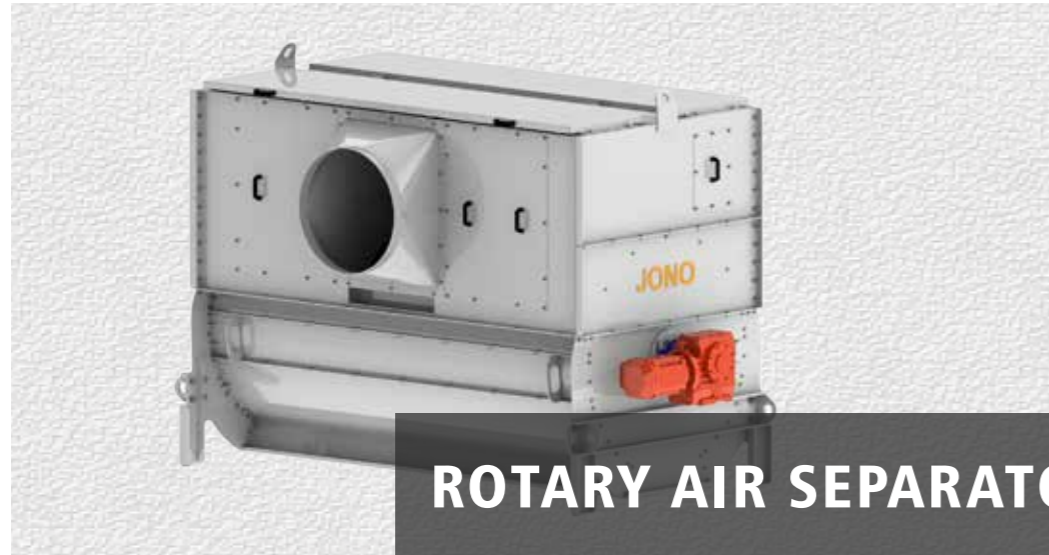
FEATURES

The charging conveyor is a high-speed belt conveyor to evenly distribute the materials on itself to enhance the separating effect.

The settling chamber is made of 3mm galvanized steel plate, which has the effect of anti-corrosion and anti-pressure.

The air volume, wind speed and wind pressure at the fan outlet can be adjusted by the frequency converter.

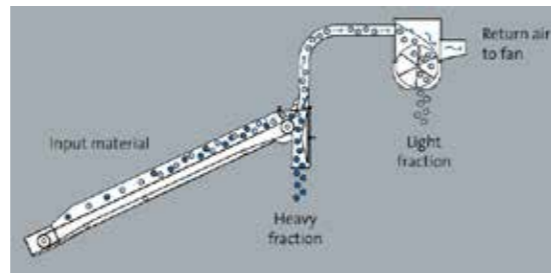
The exhaust duct is equipped with an interface that can be connected to the deodorizing system.



ROTARY AIR SEPARATOR

Rotary air separator is one of sorting products that are developed by JONO's independent research. By this separator, material is separated into heavy fraction and light fraction. With the reasonable structure, high separation efficiency, low noise, small vibration, free-block. It is widely applied in various waste treatment, especially in packaging waste treatment.

WORKING PRINCIPLE



Rotary air separator system consists of circulating fan, rotary separator, air blower and connecting pipe. The separating system separates the materials with different densities and sizes in the air flow by air blower and rotary separator.

The processing is as followings.

First of all, the material goes into the rotary air separator through the internal belt conveyor. Second, the circulating fan





creates a controlled flow of air that sucks relatively light materials (plastic film, foam, paper or light plastic, etc.) up and into the pipe. Heavy material (stones, metal, glass, etc) falls on the heavy material discharging belt conveyor. The light material is then transferred to the rotary separator. By the rotary separator, the light material is moved to the light material discharging belt conveyor.

PRODUCT INTRODUCTION

TECHNICAL DATA

Model	1FMF1600A
Machine size	2682x1916x1814mm
Input material size	40-300mm
Blast capacity	< 36,000m ³ /h
Air pressure	< 5,200Pa
Nominal voltage	380 V
Nominal frequency	50 Hz
IP Grade	IP 55

FEATURES

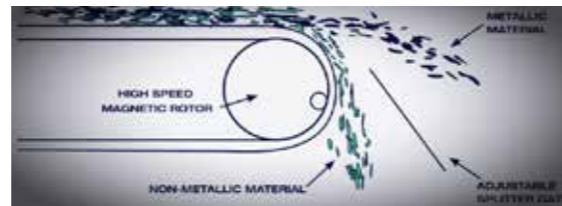
-  Negative pressure (suction) separation, so that the light material from the heavy material is easily separated, to achieve high precision.
-  Well sealed, no dust leakage.
-  The air volume can be adjusted to control the wind speed, and the angle of the air flow and speed of the feeding belt conveyor to achieve the best
-  Built-in return air filter device effectively prevents floating objects from entering the pipeline to damage the fan.



EDDY CURRENT SEPARATOR

The Eddy Current Separator (ECS) is an advanced metal sorting unit that is capable of separating non-ferrous metals such as aluminium, copper, brass, alloy from dry recyclables. JONO eddy current separator can produce higher purity and increased yield of better separation of aluminum cans from PET plastic beverage containers. Nowadays it became the most economical beverage bottle sorting and recycling equipment.

WORKING PRINCIPLE



The principle of eddy current separator is to separate conductor from non-conductor by using the transformed magnetic field of conductor to produce force.

The magnetic idler is equipped with high-speed belt discharging end which rotates at high speed when the equipment is running. And the waste is distributed on the surface of the belt after entering the high-speed belt. When the metal enters the magnetic field area of the

magnetic roll, the force is generated by cutting the magnetic induction line. When the material is discharged from the high-speed belt, the force causes the metal to be thrown out and fall into the non-ferrous metal area. Non-ferrous metals fall freely into non-ferrous metal areas. Eccentric magnetic pole technology can effectively ensure the separation rate and processing capacity.

TECHNICAL DATA

Model	1FAX2003A
Eddy current magnetic roll motor	7.5KW, ABB
Belt gear motor	4KW, SEW
Belt maximum velocity	3 m/s
Capacity	20 m³/h
Belt width	B=2000mm
Machine Size	8735*3115*3109mm
Weight	5250kg
Including	2 sets of Mitsubishi frequency converter, 1 set of Siemens PLC, etc

*Through capacity can vary depending on the material.

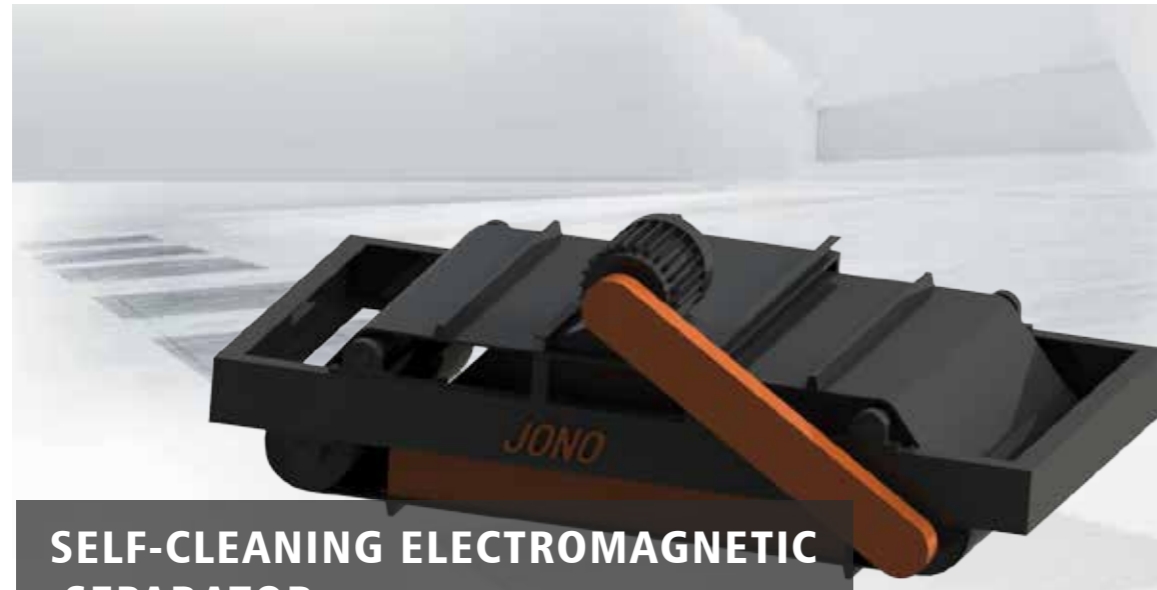
FEATURES

High separation performance. It can separate as small material as the size of 2-5mm, which could reach the separation rate of 95%.

Due to consistent optimization, the model work with lowest downtime.

The compact machine structure make it need only small space.

Use-friendly. It's very easy to operate and maintain.

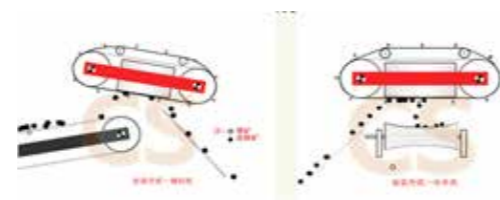


SELF-CLEANING ELECTROMAGNETIC SEPARATOR

RCDD series of dry-type magnetic separator is a kind of electromagnetic equipment to clean up ferrous metal from bulk non-magnetic materials and is used to automatically remove 0.1-25kg of magnetic material from non-magnetic materials.

WORKING PRINCIPLE

Generally installed in the head or middle of the belt conveyor. After the excitation coil energizes, the electromagnetic will absorb the iron that mixed in the material and throws out through the unloading belt, so as to achieve the purpose of automatically selecting the ferromagnetic material.



TECHNICAL DATA

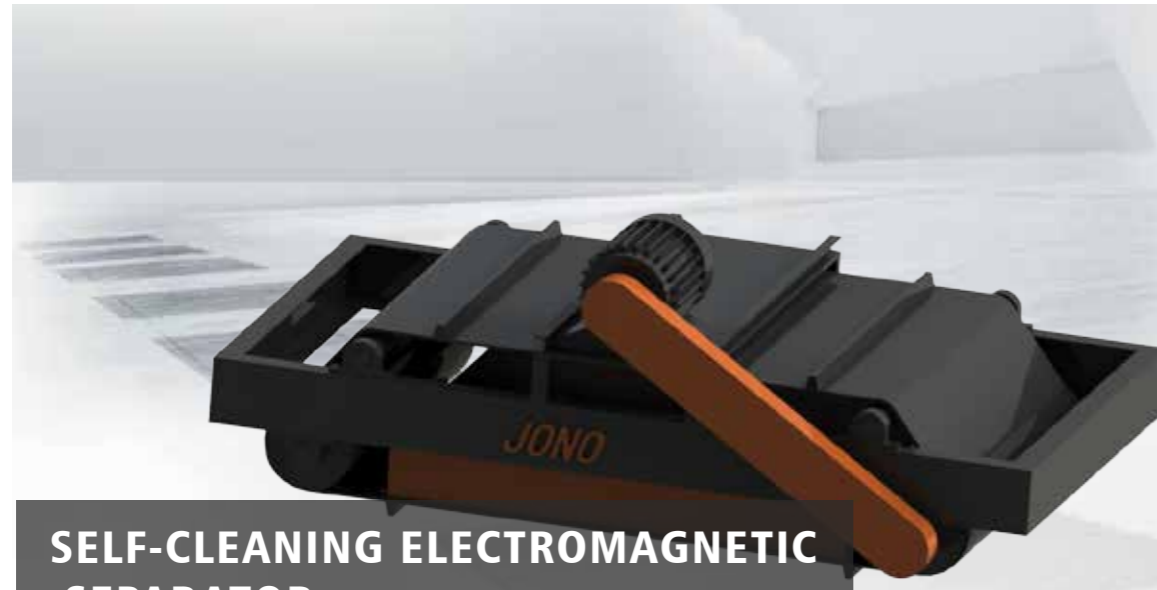
Model	Fitting Belt width mm	Suspension height mm	Magnetic field intensity \geq mT	Material depth \leq mm	Driving power \leq kw	Power kw	Belt speed \leq m/s	Weight kg	Appearance size mm				
									A	B	C	D	E
RCDD-5	500	150	60	100	1.0	1.5	4.5	950	2020	1040	775	853	1000
RCDD-6	600	175	60	120	1.8	1.5		1380	2140	1100	800	910	1100
RCDD-6.5	650	200	70	150	2.0	2.2		1490	2275	1190	820	988	1250
RCDD-8	800	250	70	200	3.6	2.2		1770	2540	1480	865	1287	1350
RCDD-10	1000	300	70	250	5.0	3.0		2380	2750	1635	940	1420	1400
RCDD-12	1200	350	70	300	6.8	4.0		3170	3000	1800	1010	1580	1700
RCDD-14	1400	400	70	350	9.0	4.0		4800	3500	2050	1050	1800	2000
RCDD-16	1600	450	70	400	13	5.5		6300	3900	2450	1180	2200	2350
RCDD-18	1800	500	70	450	18	7.5		7800	4400	2850	1290	2600	2800

FEATURES

Self-cleaning, easy maintenance, belt automatic correction.

Strong magnetic intensity due to special magnetic circuit design.

Whole sealed structure, dust-proof, water-proof, corrosion-resistant.

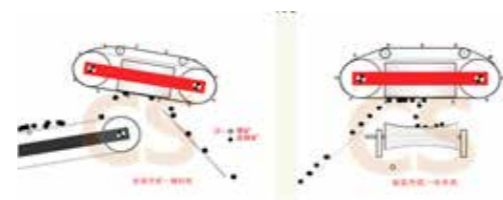


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TECHNICAL DATA

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RCDD-6	600	175	60	120	1.8	1.5		1380	2140	1100	800	910	1100
RCDD-6.5	650	200	70	150	2.0	2.2		1490	2275	1190	820	988	1250
RCDD-8	800	250	70	200	3.6	2.2		1770	2540	1480	865	1287	1350
RCDD-10	1000	300	70	250	5.0	3.0		2380	2750	1635	940	1420	1400
RCDD-12	1200	350	70	300	6.8	4.0		3170	3000	1800	1010	1580	1700
RCDD-14	1400	400	70	350	9.0	4.0		4800	3500	2050	1050	1800	2000
RCDD-16	1600	450	70	400	13	5.5		6300	3900	2450	1180	2200	2350
RCDD-18	1800	500	70	450	18	7.5		7800	4400	2850	1290	2600	2800

FEATURES

Self-cleaning, easy maintenance, belt automatic correction.

Strong magnetic intensity due to special magnetic circuit design.

Whole sealed structure, dust-proof, water-proof, corrosion-resistant.

JONO[®]

GREEN TECHNOLOGY FOR EVERY FAMILY

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