NON-FERROUS METAL SEPARATOR
TYPE SWP (EDDY CURRENT)

FEATURES

• Separation of non-ferrous metals from a size of 1 mm.
• High speed magnetic rotor made of high-power neodymium (NdFeB) magnets.
• Precise rotor balancing and special bearings to obtain high rotational speed.
• Magnetic field frequency of up to 1000 Hz.
• SIEMENS electronic control system.
• Stepless adjustment of operation parameters with frequency inverters.
• Modern safety systems including the electronic rotor stopping system.
• Support frame designed for fast belt replacement.
• Can be equipped with the drum separator and vibrating feeder.
EXAMPLE PROJECTS

- Recovery of aluminium cans from municipal waste.
- Recovery of non-ferrous metals from electronic waste.
- Recovery of non-ferrous metals from slag after the incineration of municipal waste.
- Separation of non-ferrous metals from plastics.

DESIGN

- High speed magnetic rotor with 12 / 20 / 26 magnetic poles made of high-power neodymium (NdFeB) permanent magnets.
- Rotor shell made of epoxy resin reinforced with glass fibre. Optionally provided with a ceramic coating.
- Direct magnetic rotor drive by NORD electric motor with claw coupling.
- Stepless adjustment of the magnetic rotor speed by frequency inverter.
- Accelerating belt conveyor with variable belt speed intended to maximally distribute the transported material in a single layer within the magnetic field influence zone.
- Conveyor belt made of high wear resistant polyurethane and provided with side walls and cleats to remove small ferrous metals.
- Belt drive by NORD helical-bevel geared motor. Other manufacturers on request.
- Stepless adjustment of the belt speed by the frequency inverter in the range of 0.5 ÷ 2.5 m/s.
- Stable and shock-absorbed frame made of rigid steel profiles enabling quick belt replacement without additional equipment.
The mode of operation of non-ferrous metal separator is based on the magnetic induction principle. A rapidly rotating magnetic rotor generates a high-frequency alternating magnetic field, which induces strong eddy currents in highly conductive non-ferrous metal parts. The current flow in non-ferrous metal parts creates secondary magnetic field that opposes the magnetic field of the rotor. The interaction of these fields leads to the creation of Lorentz’s repulsive force, which acts against gravity. The resulting force throws the non-ferrous metal parts out of the transported material flow.

Adjustable splitter is used for precise separation of non-ferrous metals from the transported material.

**STANDARD EQUIPMENT**

- Chute housing with adjustable splitter in two planes.
- Rotary brush to clean contaminants stuck to the separator belt.
- Rollers for better guidance of the belt.
- Mounting feet with anti-vibration pads.
- Control cabinet equipped with SIEMENS PLC
- NORD frequency inverters for the rotor and belt speed adjustment.
- TELEMECANIQUE limit switches signalling the belt sliding off.
- TELEMECANIQUE motion sensor signalling the belt drive failure.

**OPTIONS**

- Vibrating feeder to spread material uniformly over the entire working width of the separator.
- Splitter with the driven roller.
- Dustproof cover.
### TECHNICAL DATA

#### Dimensions (mm)

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>H1</th>
<th>H2</th>
<th>L1</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWP 60</td>
<td>600</td>
<td>1710</td>
<td>840</td>
<td>1168</td>
<td>2356</td>
<td>3135</td>
</tr>
<tr>
<td>SWP 80</td>
<td>800</td>
<td>1910</td>
<td>840</td>
<td>1168</td>
<td>2356</td>
<td>3135</td>
</tr>
<tr>
<td>SWP 100</td>
<td>1000</td>
<td>2155</td>
<td>840</td>
<td>1168</td>
<td>2356</td>
<td>3135</td>
</tr>
<tr>
<td>SWP 125</td>
<td>1250</td>
<td>2410</td>
<td>840</td>
<td>1168</td>
<td>2356</td>
<td>3135</td>
</tr>
<tr>
<td>SWP 150</td>
<td>1500</td>
<td>2750</td>
<td>840</td>
<td>1168</td>
<td>2356</td>
<td>3135</td>
</tr>
<tr>
<td>SWP 175</td>
<td>1750</td>
<td>3000</td>
<td>840</td>
<td>1168</td>
<td>2356</td>
<td>3135</td>
</tr>
<tr>
<td>SWP 200</td>
<td>2000</td>
<td>3260</td>
<td>840</td>
<td>1168</td>
<td>2356</td>
<td>3135</td>
</tr>
</tbody>
</table>

#### Drive power

<table>
<thead>
<tr>
<th>Type</th>
<th>Rotor (kW)</th>
<th>Belt (kW)</th>
<th>Brush (kW)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWP 60</td>
<td>3</td>
<td>0,75</td>
<td>0,55</td>
<td>1300</td>
</tr>
<tr>
<td>SWP 80</td>
<td>3</td>
<td>0,75</td>
<td>0,55</td>
<td>1450</td>
</tr>
<tr>
<td>SWP 100</td>
<td>4</td>
<td>1,1</td>
<td>0,75</td>
<td>1590</td>
</tr>
<tr>
<td>SWP 125</td>
<td>4</td>
<td>1,1</td>
<td>0,75</td>
<td>1780</td>
</tr>
<tr>
<td>SWP 150</td>
<td>5,5</td>
<td>1,5</td>
<td>0,75</td>
<td>1980</td>
</tr>
<tr>
<td>SWP 175</td>
<td>5,5</td>
<td>1,5</td>
<td>0,75</td>
<td>2200</td>
</tr>
<tr>
<td>SWP 200</td>
<td>7,5</td>
<td>2,2</td>
<td>1,1</td>
<td>2450</td>
</tr>
</tbody>
</table>