

NON-FERROUS SEPARATOR CONCENTRIC ROTOR

L 0428 e

***Recovery Of Valuable Raw Materials -
Protection Of Machines And Plants***



***Technology
Full Of
Attraction***



**wagner
magnete**

The experienced concentric full-rotor magnet system provides high depth-action and archives best separation grades. High-quality belt materials and effective sealing are the reason for high reliability.



Type 0428/1-25 with neodymium permanent magnetic drum

The material is being fed to the machine by means of a vibration chute. The neodymium permanent magnetic drum removes residual iron out of the material flow before it enters the eddy current separation. Therefore additional magnetic pulleys or drums are not needed anymore.



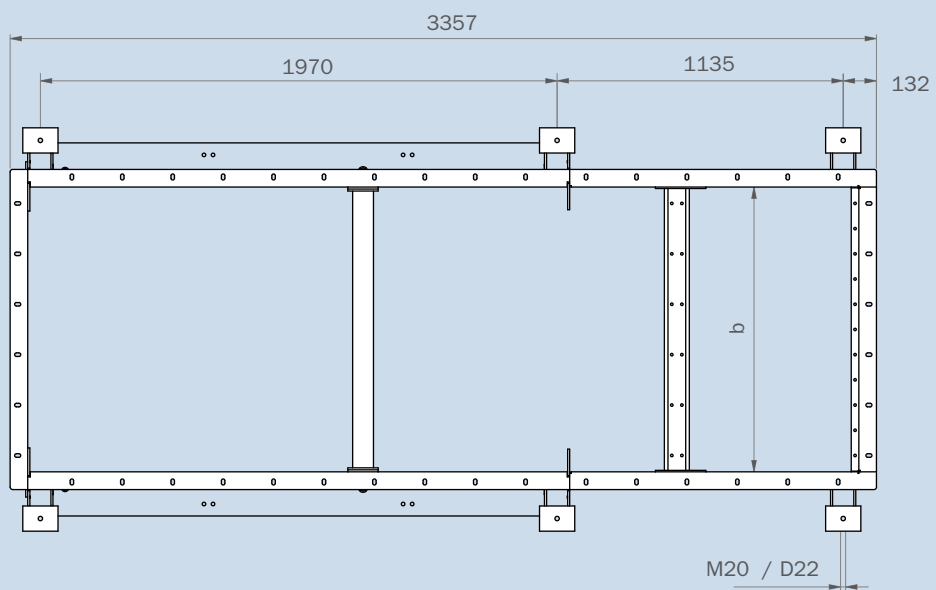
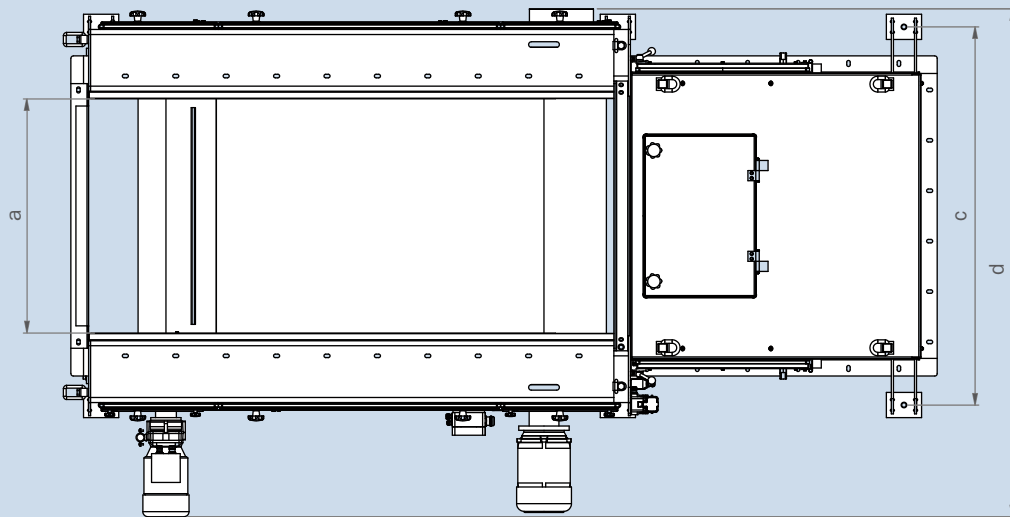
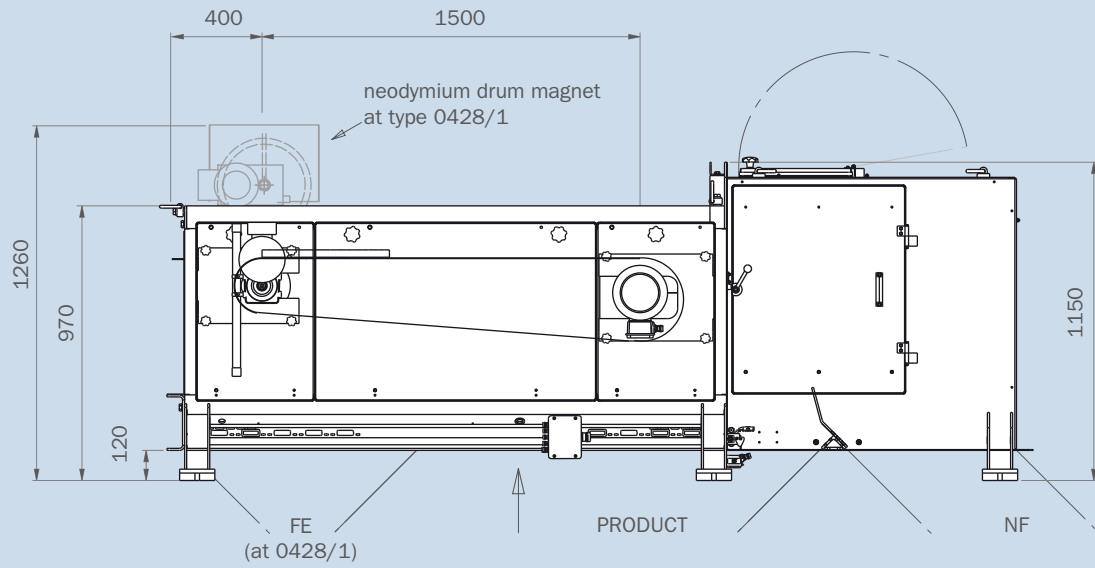
Depending on the application the eddy current separator type 0428 is available in dust proof variation. It is possible to build the machine with peak roller at the separation edge and automatic rotating brush for belt cleaning.

The machine can be controlled and adjusted via touch panel.

NF-SEPARATOR TYPE 0428/0 and 0428/1 (with magnet drum for additional iron separation)

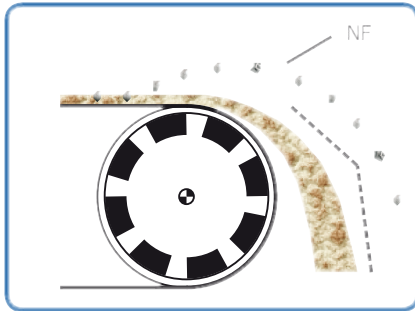
DIMENSIONS

| Type | throughput cbm/h | a mm | b mm | c mm | d mm | weight approx. kg |
|-------------------|---------------------|---------|---------|---------|---------|----------------------|
| 0428/... - 25/60 | 25-45 | 600 | 830 | 1200 | 1645 | 1500 |
| 0428/... - 25/90 | 40-65 | 900 | 1130 | 1500 | 1945 | 1700 |
| 0428/... - 25/120 | 60-85 | 1200 | 1430 | 1800 | 2245 | 1900 |
| 0428/... - 25/150 | 75-110 | 1500 | 1730 | 2100 | 2545 | 2100 |
| 0428/... - 25/200 | 100-150 | 2000 | 2230 | 2600 | 3045 | 2300 |



Changes of dimensions and design are subject to alterations. Please ask for latest drawings.

Non-ferrous separation using the eddy current technique



Ability to separate non-ferrous metals

Separable metals

Good material feed = effective sorting

Operation of the non-ferrous separator is based on the induction principle. At a high frequency, a fast rotating magnet pole system induces eddy currents in the conductive non-ferrous metal parts. This creates magnetic fields on them with the same polarity as the magnet rotor, which causes a buildup of the repelling “Lorentz force”. This force works against gravity. Together with the force of inertia, this causes the items to be thrown out of the material flow. The distance they are thrown is mostly determined by the size and form of the item in addition to the specific material properties. Large items are thrown further than small ones. Flat items are subject to higher induction per volume unit than thick items. Wire formed items only create very small eddy currents.

The strength of the induced currents and therefore their repelling forces depends on the specific electrical conductivity of the metal. The gravitational force depends on the specific weight. Therefore the quotient of these two values (=material parameter) is a measurement of the ability to be separated.

Aluminium, magnesium, copper, aluminium alloys and silver can be separated easily. The relationship of the values is not so good for zinc, brass and tin. Stainless steel, many steel alloys and lead cannot be separated.

All materials lying over non-ferrous metals that can be separated make it difficult to eject items or prevent ejection from the material flow. For this reason, the basic requirement for optimal sorting and minimal obstruction of material goods is having a single layer. We recommend that the material on the conveyor is well distributed over the entire working width and fed to the eddy current separator with a vibratory feeder.