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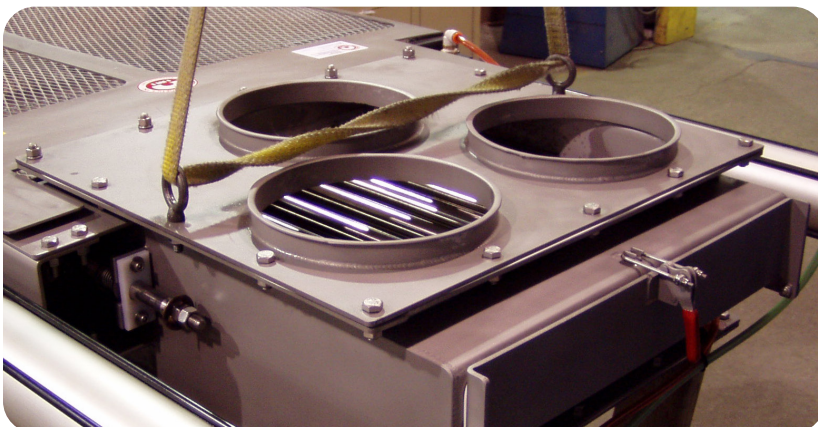
CUSTOM SOLUTIONS PROFILE!

Adapted Inlet/Outlet Design For Housings

One of the things that distinguishes IMI from our competitors is our ability to make Drawer-In-Housing Magnets fit the application requirements of our customers. Having built-in transitions eliminates an extra set of flanges and gaskets that bolt-on transitions require and the extra time required to install them. We want to design and manufacture the magnet to the application specifics such as:

- Flow Rate
- Angle of repose
- Moisture content
- Height limitations
- Mounting bolt pattern
- Compression Couplings
- Flex hose with a clamp
- Weld flanges
- Support structures
- EZ Cleaning
- Self-Cleaning

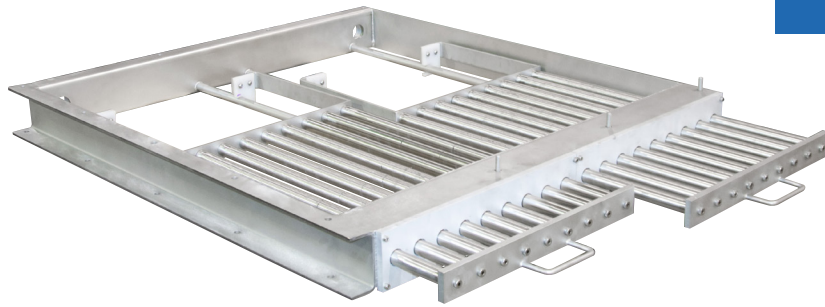
For More Information On Drawer-In-Housings See
Techsheets **TG-03B**, **TG-03C**, **TG-03D** and **TG-03E**.



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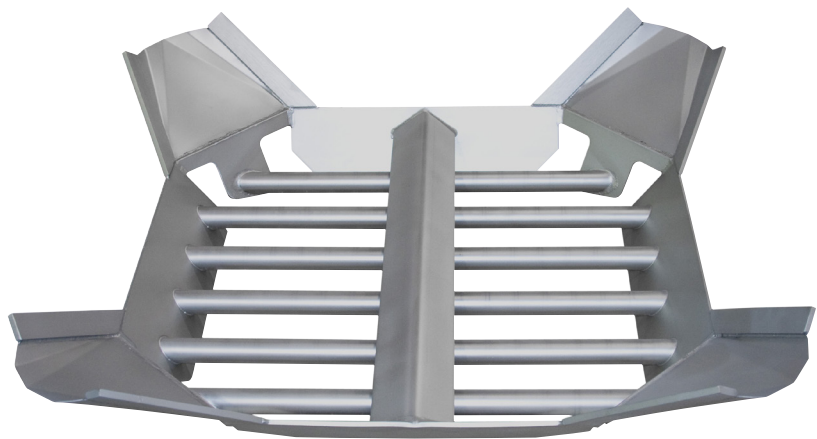
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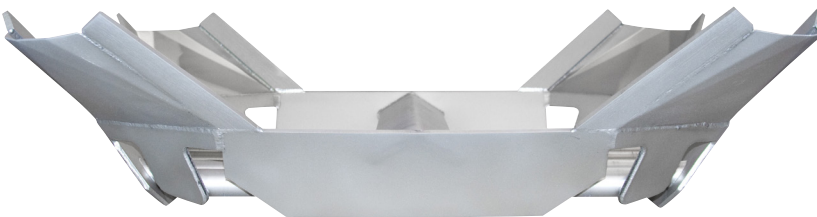
Grate Solutions For Specific Applications

TOP: A food production facility with a bag dump station was having problems with their magnetic grates utilized to purify incoming product of ferrous metal. Problems included safety issues with operators bending over to lift magnetic grates out of the bag dump, damage due to dropping grates or setting them too close to steel, operators frustrated with the time involved and tedious nature of manually cleaning Rare Earth Grates and Quality Control issues with inadequate magnet cleaning and documentation of metal contamination levels.

IMI's solution was a safe and innovative EZ-Clean drawer magnet that eliminates the time consuming and tedious process of manually removing collected metal. No more bending down and pulling out heavy magnetic grates. Cleaning is now easily accomplished by pulling the magnetic drawer of grate tubes through stationary outbound wiper seals. Collected metal falls into a catch pan located outside of the product stream for disposal. These magnetic grates can be finished to the customers requirements and retrofitted to existing bag dump stations.



BOTTOM: Customer required a Food Grade Class 1, Rare Earth Magnetic Grate to remove fines from blended Ingredients used in the food industry. The grate magnet is designed to sit inside of an existing hopper with the angles on the four corners supporting the grate as well as to allow the product to slide towards the magnetic tubes eliminating the chance that product gets past the magnet. The diverter in the center helps divert the product towards the tubes and adds strength to the structure.



For More Information On Tubes, Grates and Drawer-In-Housing Separators See Techsheets **TG-03A** and **TG-03B**.

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Custom Plate-In-Chute Separators (Hump Magnet and Extractor)

TOP: Self-Cleaning Hump Magnets are ideal for magnetic separation protection in high volume gravity flow processing lines. The dog-legged housing forces the product flow to come into direct contact with the magnetic field ensuring optimum separation potential. The self-cleaning feature speeds up and automates the cleaning procedure for removing collected metal from the magnets. This system can be fully guarded to protect workers from injury and to prevent the system from being tampered with.

BOTTOM: This Extractor Magnet features flip away Self-Cleaning stripper plates to remove collected metal from the product flow. Extractors are ideal for cleaning ferrous contaminants from poor flowing product streams that would choke or bridge if run through a tube style magnetic separator.

Heavy duty air cylinders are used to cycle this heavy duty extractor through the cleaning operation. Electric actuators and hydraulic cylinders can also be used for certain applications.

For More Information On Plate Magnets See Techsheets TG-01A, TG-01C and TG-01D.



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Plate-In-Chute Separators (Hump Magnets) Designed For Corrosive And/Or Destructive Product

TOP: Customer had a problem while unloading a product that is highly corrosive and abrasive and an unpredictable flow rate with a tendency to surge. Product often contains various types of metal (i.e. nuts, bolts, grinder teeth, etc.). The magnet section the customer previously used would clog under normal operating conditions.

The IMI solution consisted of a 500 series Half-Hump Plate-In-Chute magnet with a highly custom 6" reach-out, rugged & heavy duty parts and major wear areas that are removable & replaceable (i.e. inlet transition and magnet). The housing has quick & easy access doors on top & bottom for cleaning and is made with heavy duty 3/8" T316 stainless steel to protect against abuse & corrosion.

MIDDLE/BOTTOM: Customer required a unique magnet solution that would be used for barge unloading. The unit needed to be able to capture ferrous metal from highly unpredictable product material and flow rates with potential to be highly corrosive and/or destructive.

The IMI solution was a large Self-Cleaning Spout Magnet in a chute. The entire inside exposed surface area was given a ceramic lining that is abrasion and corrosion resistant. Pneumatic cylinders open and close the cleaning section and limit switches were incorporated to verify that the magnet opened and closed correctly. Inlets & outlets designed to customer's installation requirements.

For More Information On Plate-In-Chute Magnets See Techsheets TG-01A, TG-01C and TG-01D.



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CUSTOM SOLUTIONS PROFILE!

Suspended Magnet Options Galore

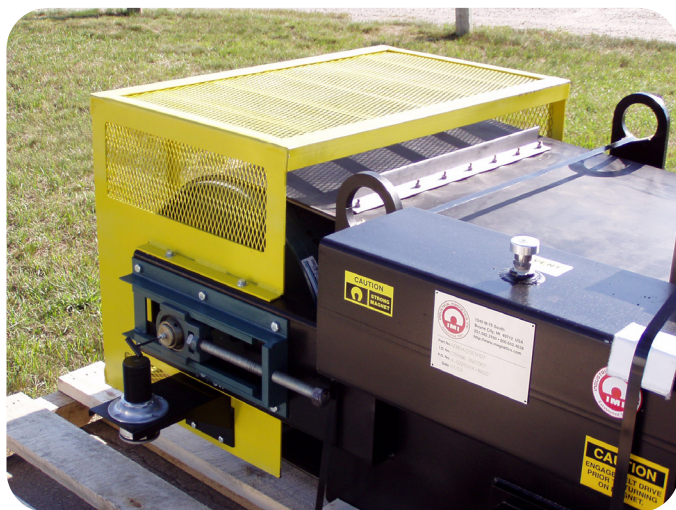
Our Suspended Overhead Magnetic Separators can be modified to fit our customers unique needs. We offer options such as customer specific lift lugs, stainless steel guards, motor packages, belting options and more. The top images show some of these options with probably the most noticeable being the unique belting options.

TOP: The top image has a red polyurethane belt that was specifically selected for use in a computer parts recycling center. The polyurethane belt reduces the likelihood that it will be cut and/or shredded by the crushed and broken parts reducing replacement costs and increasing uptime. Also, the polyurethane belt in many cases can be repaired if the cuts sustained are minor, further reducing costs.

The next image below shows a Suspended Overhead Magnet with a heavy duty stainless steel clad belt with stainless steel cleats. This belting option greatly reduces the chance the belt will wear from abrasion, tearing or punctures caused by large and/or sharp pieces of tramp metal giving it long life and minimal downtime for repairs.

BOTTOM: The bottom two images show examples of safety enclosures available for our Suspended Overhead Magnets. The top is a simple safety enclosure that covers the pulley sections and provides an expanded metal section for operational viewing. The very bottom image is a fully enclosed unit with the only exposed section on the bottom that will be located over the product. This provides the greatest equipment and employee safety while permitting optimal functionality.

For More Information On Suspended Magnetic Separators See Techsheet **TG-12A**.



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Reclaiming Re-bar From Concrete With Use Of A Self-Cleaning Suspended Overhead Magnet

A large regional concrete recycler required re-bar removal from crushed concrete. An additional requirement was that the re-bar be discharged far enough away from the concrete that the re-bar would not drop back into the cleaned concrete.

Application Specifications:

- Crushed concrete, 6" maximum lump size.
- Conveyor belt 54" wide traveling 260 – 300 FPM
- 12" product depth.
- 1/4" to 1/2" diameter re-bar up to 10' long.



The IMI Solution consisted of:

- Self-Cleaning suspended electromagnet, oil cooled.
- Electromagnet measured 72" square.
- Two Permanent plate magnet extensions to carry collected re-bar away from the cleaned concrete.
- Extra heavy duty vulcanized 3/4" thick self-cleaning belt
- Stainless Steel cleats to prevent re-bar from rolling back into the magnetic field.
- Special Stainless Steel belt guards to prevent metal retention on the side of the magnet.
- Overall length: 24' 2"



For More Information On Suspended Magnet Separators See Techsheets **TG-12A** & **TG-12B**.

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Specialized Drum Separator Designs

TOP: A customer had a problem where 30 Tons of Foundry Sand per hour flowing through a 10” diameter chute was contaminated with weakly magnetic metal particles. Because of the heavy contamination and weak magnetic property, a combination of a Rare Earth Drum Separator and a Rare Earth Self-Cleaning Drawer-In-Housing was manufactured. This allows the sand to be continuously cleaned as it runs through the Drum/Housing combination.

MIDDLE: An example of the custom options available for our drum separator units. This unit has both custom inlets and outlets allowing it to fit perfectly in the customer’s existing equipment line where it was designed to separate ferrous metal from other materials destined to be recycled. The ferrous metal discharges through one outlet to be collected and recycled while the remaining product discharges through the second outlet and continues down the line to be further separated.

BOTTOM: This Dual Drum Separator unit is designed for a one-stop ferrous metal separation solution. The top drum unit contains a Ceramic Magnet Circuit ideal for capturing and separating large ferrous metal objects such as nuts and bolts. The bottom unit has a powerful Rare Earth Magnetic Circuit to capture any remaining ferrous metal fines that may have made it past the Ceramic Circuit giving this unit complete ferrous metal separation coverage. Each drum’s magnetic circuit can be adjusted independently and a single motor operates both drums. Transparent access doors/view ports allow for maintenance and quality control.

For More Information On Drawer-In-Housings and Drum Separators See Techsheets TG-03B & TG-10A.



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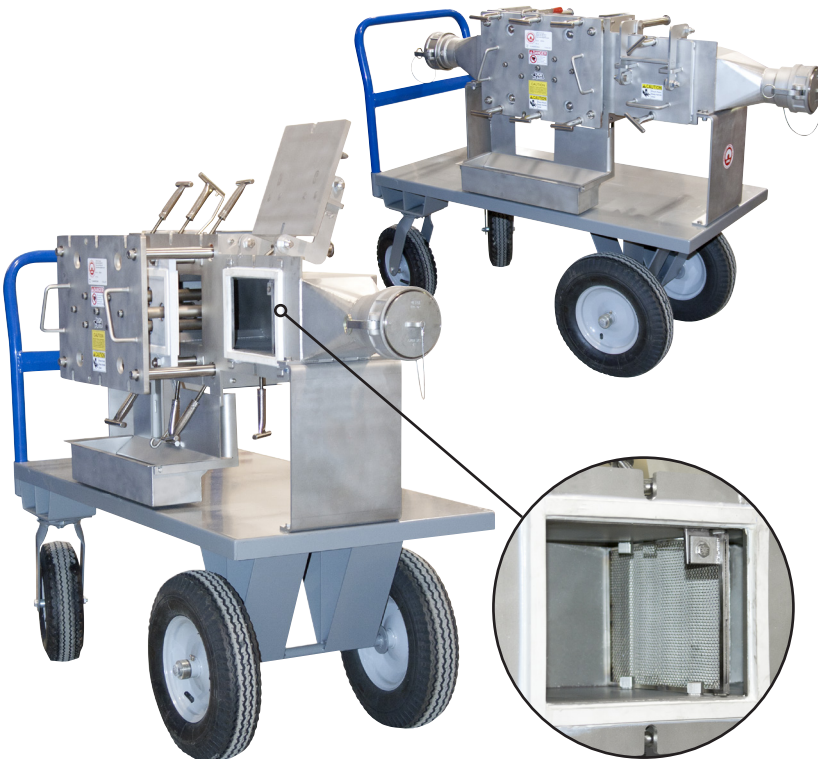
Pneumatic Line Solutions

TOP: A customer with a highly abrasive product required a separation magnet for a truck unload system. Previous magnetic units integrated in the unload systems failed in less than six weeks due to wearing by the abrasive product.

Industrial Magnetics, Inc. designed and manufactured a custom Exposed Pole Tube Magnet (EP Tube) solution for the customer that provided extremely strong magnetic separation with a straight through flow design. The custom magnet contains two magnetic sections mounted opposite of each other outside of the product flow eliminating a wear point. The position of the magnetic sections ensures that metal will come in close proximity to a magnetic area that will have enough force to capture the unwanted metal. Both doors open to fully expose the magnets making it easier for the operator to clean and remove all of the captured metal. The straight through pipe design provides long unit life since any transitions in the pipe would create another wear point for the abrasive product.

BOTTOM: This custom cart mounted Pneumatic Line Housing's (PLH) portable design allows it to be utilized in multiple locations such as loading/unloading from railcar, truck or silo storage systems for dry/bulk pneumatic transfer applications. The unit's staggered magnetic tube configuration ensures that all product flowing through the housing makes repeated contact with the magnets. The resulting capture rate of ferrous and weakly magnetic stainless contaminants far exceeds any other magnetic separator available for this type of application. A removable screen has also been incorporated to catch any non-magnetic objects giving this unit exceptional all-around product purification and equipment protection.

For More Information Our Pneumatic Line Separation Magnets See Techsheet **TG-06A**.



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Sticky Situation

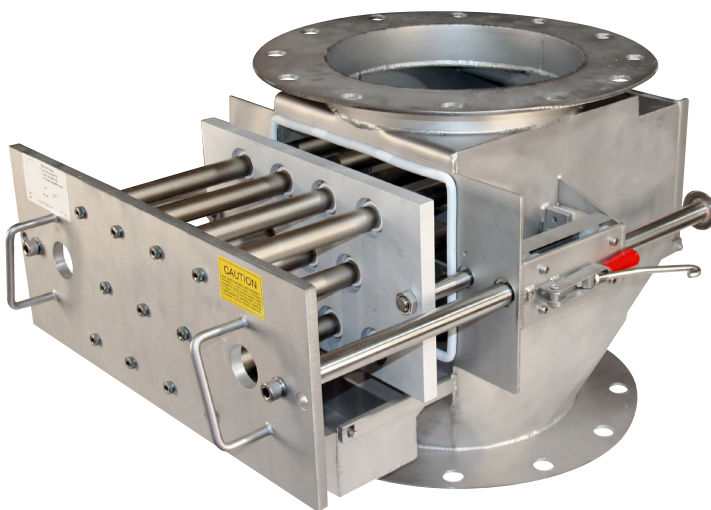
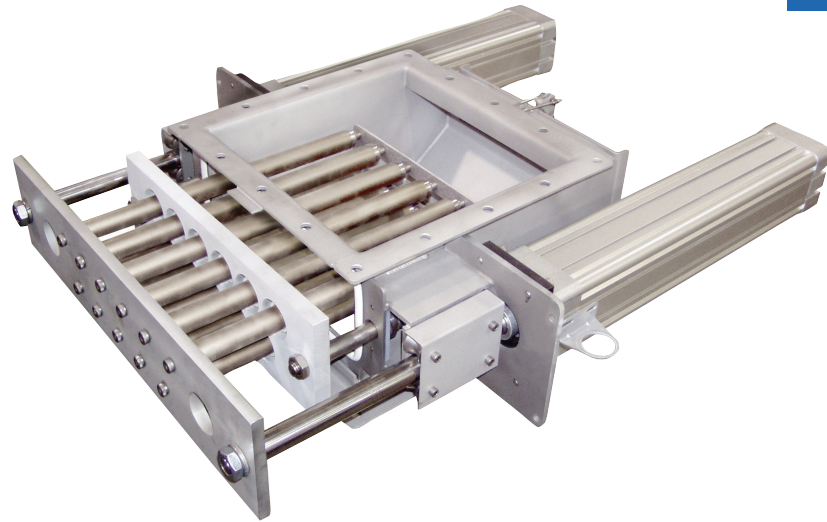
A Sugar Cane refinery was having problems due to high humidity and the adhesive nature of sugar. The customer's existing magnets, which were supposed to capture ferrous contaminants and protect processing equipment, were instead coated in sugar and, as a result, when cleaning occurred by actuating tubes through stripper seals, the seals were cracking and falling into the "pure" product stream. Additional contaminants were simply "washed off" the tubes because of the weakness created by the sugarcoating and air gap. IMI provided a solution with their Ox® Housing.

The Ox® was designed specifically for use in this environment, to combat external elements in processing facilities, including ambient temperature and humidity as well as material contents causing application challenges such as bridging, abrasion, corrosion and galling. The IMI Ox® unit pull-tested stronger than the customer's existing magnets- with nearly 40% more holding power. The customer's results of using the Ox® Housing included higher metal contamination capture and reduced downtime for inspection and maintenance purposes. The Ox® is offered as a Self-Clean or EZ-Clean unit.

UNIT FEATURES:

- Powerful UHI-50® Rare Earth 50 MgOe circuit for fine particle separation – most powerful in the industry
- Hydex® wiper seals – ideal for sticky situations
- Nedox® coating to eliminate galling, coating of tubes and corrosion
- Rear access door for cleaning/maintenance
- De-Sta-Co clamps for easy opening/closing
- Welded stainless steel construction & More!

For More Information On the OX® Drawer-In-Housing Separator See Techsheet **TG03C**



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CUSTOM SOLUTIONS PROFILE!

Custom Lock Box for Truck Unload

Product: Granular Sugar
Application: Sugar for Confectionery Products
Unload rate of 40,000 lbs per hour

IMI put together a combination panel for the following functions:

1. A lockable panel for truck unload
2. Magnet protection
3. Provide stubs or a way to introduce dry, desiccated air for purging the silo

A previously built panel had evolved into a situation where a custom option was necessary. The customer was looking at mounting the PLH Magnet above the truck unload panel.

By placing the magnet above the panel, a service platform and stairs would need to be added to be able to service the magnet. The customer had accepted this solution, despite its setbacks, which included cost and weather factors in the winter months creating safety and access concerns.

IMI quoted a truck unload panel with the magnet, truck unload and the purge air fittings in a lockable box. Sales worked with engineering and created a basic concept. This solution was well received and did away with the need for a service platform and stairs.

The customer is 100% happy with the combination and everything is working per customer expectations.

For More Information On Pneumatic Line Housings,
See Techsheet **TG06A**



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Liquid Line Magnet and Screener Combination Unit

A small Cherry Processor required a magnet and a screener to protect their product from any potential contamination and meet or exceed their food processing guidelines and regulations.

REQUIREMENTS:

1. Must pass FDA and HACCP audits
2. Magnet must be able to be relocated and used in several locations
3. Filter screen must be removable and adhere to HACCP an FSMA guidelines

SOLUTION: IMI supplied a simple and economical Large Tube T-Trap magnet with removable stainless steel screen solution that satisfied our customers requirements while also providing a superior metal capture rate and operation reliability over traditional t-traps. The 3 inch single large tube design does not suffer from the catastrophic failure issues of traditional multi-tube t-traps where the tubes eventually pull together into a clump of tubes as a result of magnetic forces, line pressure and wear over time which leads to the welds on the lid to break, potentially sending pieces of magnet and/or steel into the customer's product.

Features:

1. 52MgOe magnet material with 22 lbs. of pull
2. Heavy Duty, T316 SS Construction
3. HACCP & FSMA Compliant Insert Screen
4. 180°F Maximum Operating Temperature
5. 200 PSI Maximum Pressure

Benefits:

1. Easier to clean than a series of 1" tubes
2. Increased, direct in-the-flow, surface area for intimate magnet to product and metal contact
3. Minimizes chance of a catastrophic failure of the magnet.

For More Information On Liquid Line Magnets,
See Techsheet **TG09**



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