



# PURIFY & PROTECT

## SEPARATION MAGNETS

TRAMP METAL OVERVIEW • 304H



**TRAMP METAL**  
**GROUP**

# GRAVITY FEED APPLICATIONS – MAGNETS INSIDE OF THE PRODUCT STREAM

## Drawer-In-Housings (Manual, EZ-Clean And Self-Cleaning)

Drawer-In-Housings contain one or more rows of magnetic tubes to capture ferrous metal particles. Magnetic tubes consist of Ceramic or Rare Earth circuits encased in Stainless Steel. Two-row housings have tubes on alternating centers from one row to another, to force a zig-zag or cascading material flow over as many tubes as possible to achieve the best metal separation. Standard Drawer-In-Housings are designed for dry, free flowing product streams. If your product has a tendency to bridge or clog, talk to an IMI sales rep for one of our many solutions to difficult flowing product.

- Designed for ferrous metal separation in dry processing systems
- Separation is achieved with magnetic tubes assembled in a drawer
- Tubes are aligned on alternating centers for multiple row drawer configurations forcing the product flow in a zig-zag pattern while contacting the magnetic tubes
- The cascade effect ensures maximum tramp metal separation by causing product to have repeated and intimate contact with the magnetic tubes
- Clean the tubes regularly to prevent build-up and wash-off of collected metal

### Finishes and Protective Coatings

IMI offers a variety of product coatings and finishes for tramp metal separation products, including Hydex wiper seals for removing sticky product residue and Nedox® coated tubes to protect against abrasive materials and to prevent build-up and galling. The standard finish for Drawer-In-Housings is Customary Grade. This finish features external seam welded construction with all welds free of slag, soot, spatter and burn marks. Customary Grade housings are bead blasted inside and out for a clean flat finish. Food Grade and Sanitary Grade treatments are also available.

### Multiple Drawer Units

Drawer-In-Housings can be constructed with multiple drawers of magnetic tubes to meet the specific needs of your application. Multiple drawers can be used to clean one bank of tubes at a time during production while still offering magnetic protection. EZ-Clean units are sometimes configured with multiple drawers to reduce the pulling force required to clean the tubes on larger models.

### Custom Transitions and Flanges

Custom transitions and flanges are the two most common modifications specified for IMI's housings. Transitions allow for direct fit and easy installation into existing chutes and pipelines. IMI can provide inlet and outlet transitions for round to square, rectangular to square, angled chutes and more. Flanges are custom fabricated for customer specified mounting and coupling requirements.

### Engineered Housings for Special Applications

At IMI, we specialize in providing customer-driven solutions. This has given IMI the opportunity to design and build a wide variety of custom housings and separators. Some of our unique solutions include angled wall Self-Cleaning Housings and custom fabricated hoppers with EZ-Clean Drawer-In-Housing assemblies built right into the base. No matter what your needs, we welcome the challenge of creating the solution that works best for you.

### Sealed Cleaning Zones for On-The-Fly Operation

Sealed cleaning zones can be provided to allow for drawer operation during production. These sealed cleaning zones are also used to isolate hazardous materials from entering the air during the cleaning cycle.

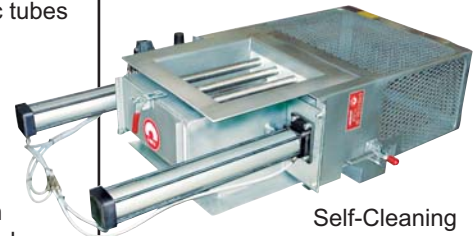
Find Drawer-In-Housings Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/housings.asp>

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EZ-Clean



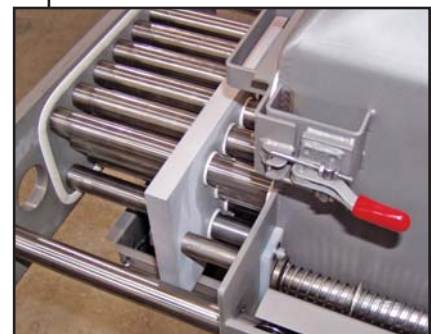
Self-Cleaning



Continuous Clean



Customized Housing Inlet



## Large Tube Housing™, The Ox® & RotoDrawer™

### Large Tube Housing™ (LTH)

The LTH drawer-in-housing works extremely well for applications that have a tendency to bridge or plug a standard drawer-in-housing. Large 3" diameter tubes allow enough room for high volume product flows while capturing ferrous metal. The LTH is ideal for flour, powdered sugar or moist products.

- Powerful 45 MgOe Rare Earth Circuit
- BUNA Wiper Seals - for removing collected metal
- Compression Spring Assisted Seal Plate
- Stainless Steel Construction
- Food Grade EPDM Gasket Material - for leak resistant operation

### The Ox® Drawer-In-Housing

Stainless Steel Construction similar to our other drawer-in-housings, the Ox® contains coated tubes, powerful compression springs and special wiper seals to virtually eliminate sticking, galling, static buildup and corrosion on the tubes.

- Powerful 50 MgOe Rare Earth Circuit - The strongest in the industry!
- Hydex Wiper Seals - Ideal for removing sticky product residue
- Nedox® coated tubes (Harder-than-steel, self-lubricating surface that resists corrosion, friction, sticking, galling, and static buildup)
- Compression Spring Assisted Seal Plate
- Food Grade EPDM Gasket Material - for leak resistant operation

### The RotoDrawer™ Drawer-In-Housing

Rotary Style Drawer-In-Housing Magnet to rid ferrous metal from powder & bulk processed products that have a tendency to bridge, choke and require a high degree of product purity. It features a motorized, cylindrical configuration of magnetic tubes that continually rotate through a gravity fed product stream. The rotational design of the magnet, along with our unique splitter bars, serve to break up any clumps of product and allow for easy flow through the magnetic housing while capturing any ferrous metal contamination and purifying the product.

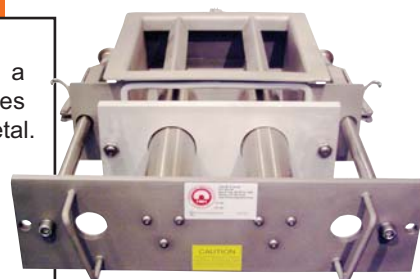
- Powerful 50 MgOe Rare Earth Circuit - The strongest in the industry!
- EZ-Clean or Self-Cleaning models available
- Standard sizes range from 8"x8" to 18"x18" with custom designs available

Find These Magnetic Housings Online And Download Technical Sheets At...

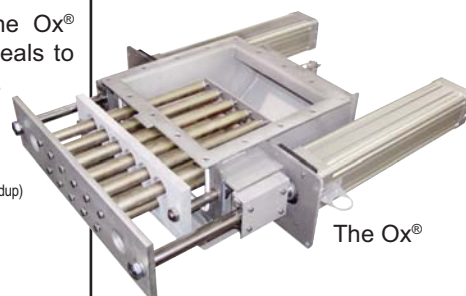
<http://www.magnetics.com/tg/midstream.asp>

Download Or Request Tech Sheet TG-03C, TG-03D & TG-03E

Nedox® is a Registered Trademark of General Magnaplate Corp.



Large Tube Housing™



The Ox®



RotoDrawer™

## Grate Tubes & Grate Tube Assemblies

### Magnetic Grate Tubes

Ideal for custom installations that require magnetic separation, but lack space for a housing or grate assembly. Tapped mounting holes in each end of the tube allow for easy bolt-in installation. Customers can arrange these tubes in a configuration that works best for their needs. Constructed from stainless steel and are standard in our Customary Grade finish. Food Grade & Sanitary Grade finishes also available.

### Magnet Materials for Grate Tubes and Grate Assemblies

**Ceramic:** For small to large ferrous particle separation (nails, bolts, washers, etc.)

**Rare Earth UHI-50™ (50 MgOe Circuit):** Extremely powerful magnet material is used for "fine particle" separation such as metal filings, shavings, metal wear residue, work hardened stainless steel, etc.

**Alnico (Custom Designs):** High heat applications up to 1100° F. Particle size and separation performance is the same as Ceramic.

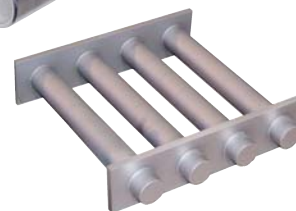
Find Magnetic Grates & Tubes Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/grates.asp>

Download Or Request Tech Sheet TG-03A



Grate Tubes



Rectangular & Round Grate Assemblies



# GRAVITY FEED APPLICATIONS – MAGNETS OUTSIDE OF THE PRODUCT STREAM

## Plate Magnets

**Flush Face (FF)** Plate Magnets are designed for above-the-flow applications. Flush Face models are available in Ceramic & Rare Earth designs to lift ferrous metal out of the product flow, protecting downstream processing equipment & product purity.

**Exposed Pole (EP)** Plate Magnets are designed for above or below the flow applications. The two 400-series (magnetic stainless steel) exposed poles provide added protection from wash-off without impeding the product flow. Exposed Pole models are ideal for low volume chute installations with either Ceramic or Rare Earth magnetic circuits.

**Spout Style (SM)** Plate Magnets feature a diverter to provide maximum tramp metal separation and superior wash-off protection for high volume below-the-flow chute applications. The diverter protects collected metal from being washed back into the product flow. Several strengths are available in Ceramic and Rare Earth designs to meet the requirements of difficult applications.

**In-Line Chute Separators** IMI plate magnets can be provided with engineered chutes to fit directly into your processing lines. Customer specified inlet and outlet requirements can be accommodated using custom designed housings, transitions (round or rectangular), flanges and more. Housings and chutes are available for single or multiple plate magnets and for Manual, EZ or Self-Cleaning models.

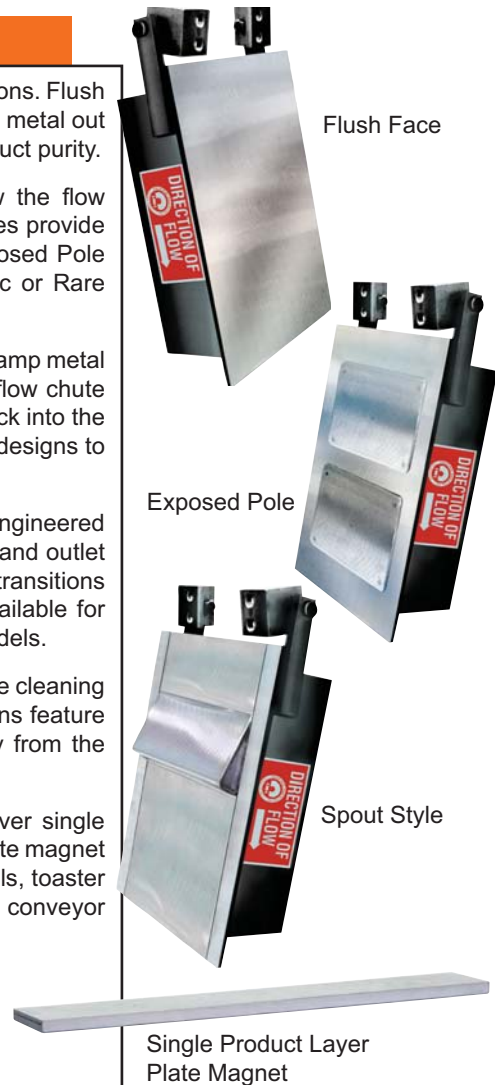
**EZ-Clean and Self Cleaning Spout Magnets** are designed to simplify the cleaning process and to increase processing line efficiency. These cleaning options feature spout-faced stripper pans that swing out of the product flow and away from the magnet to release collected metal.

**Single Product Layer Plate Magnets** are designed for suspension over single product layer conveyors. The long, low profile magnetic stainless steel plate magnet can be suspended over conveyors carrying cookies, potato chips, pretzels, toaster snacks, needle looms, etc. Used where suspension height is low and conveyor width coverage is important.

Find Plate Magnets Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/plates.asp>

Download Or Request Tech Sheet TG-01A



## Extractors & Split-Flows

### Extractor Magnets

Extractors' compact design makes for an effective ferrous metal separation in high volume dry processing applications. Extractors utilize two powerful parallel permanent magnets to reach in and capture ferrous metal in vertical applications. For 8" x 8" to 10" x 20" chute sizes.

### Split-Flow

Split-flows are constructed similar to the Extractor with the addition of an extra magnet in the center. The product flow is divided into two chambers, each chamber contains two powerful parallel magnets that reach in and capture ferrous metal. For 12" x 12" to 20" x 20" chute sizes.

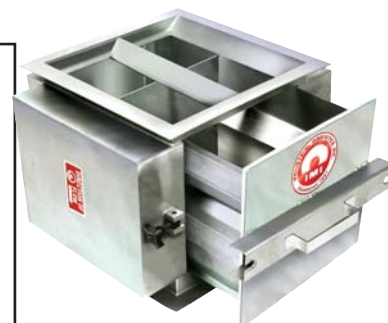
### Extractor & Split-Flow

- Air Actuated Self-Cleaning
- Stainless steel construction
- Positive locking clamps for drawer on all EZ-Clean Extractors
- Gasketed door for dust control

Find Extractors & Split-Flows Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/extractor.asp>

Download Or Request Tech Sheet TG-01C & TG-01D



Extractor Magnets



Split-Flow Magnets

## Hump Magnets (Plate-In-Chute Separators)

Hump Magnets, sometimes referred to as "Dog Leg" magnets, are ideal for high volume gravity flow applications. Hump Magnets take product flows from vertical to 45° angles where two extremely powerful spout style magnets reach in and capture ferrous metal before returning the product flow back to vertical.

IMI Hump Magnets can be engineered with chutes to fit directly into your processing lines. Customer specified inlet and outlet requirements can be accommodated using custom designed housings, transitions (round or rectangular), flanges and more.

- All stainless steel construction
- Ceramic or Rare Earth Magnets
- Features Leak resistant seals & DE-STA-CO clamps for a positive sealing
- EZ-Clean, Self-Cleaning (Air or Electric Actuated)
- Custom mounting flanges, inlets and outlets are available
- Abrasive resistant product contact surfaces

Find Hump Magnets Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/hump.asp>

Download Or Request Tech Sheet TG-01A



## Drum Separators & Separation Pulleys

**Drum Separators** provide continuous ferrous metal removal from dry, free-flowing processing systems and self-cleans in the process. Utilizing a stainless steel rotating drum around a stationary permanent magnet, ferrous metal sticks to the stainless drum due to the magnetic field and is rotated out of the clean product flow. Once the collected metal is out of the product stream, it is passed out of the magnetic field where it is discharged and collected.

- Powerful Ceramic or Rare Earth Permanent Magnet Material
- Large selection of standard sizes with custom designs available
- Over 180° of Magnetic Arc Protection with Manually adjustable position
- Custom Inlet and Discharge Mounting Flanges available
- Fixed diverter to separate cleaned product and collected tramp metal.
- Flex Seal to Prevent Product from Flowing Around the Backside of the Drum
- Access Doors for Inspection and Drum Removal
- Sealed Bearings for Drum Support and Drive

Find Drum Separators Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/drum.asp>

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### Separation Pulleys

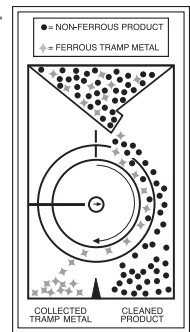
IMI's line of powerful permanent Magnetic Separation Pulleys are typically installed as head pulleys in conveyor system applications. They provide effective, automatic and continuous removal of tramp metal from material flow.

- Stainless Steel Shell and a Removable Steel Shaft standard
- Powerful Permanent Magnetic Circuit standard
- Straight hub with keyway standard with QD Hubs Optional
- Axial magnetic circuit design standard and Radial circuits optional
- Crowned and/or Lagged Face optional
- Large selection of standard sizes with custom designs available

Find Separation Pulleys Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/pulleys.asp>

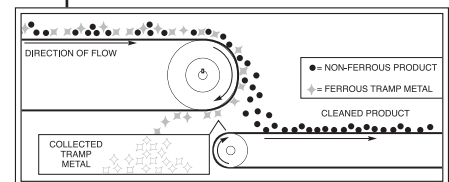
Download Or Request Tech Sheet TG-11A



Drum Separator



Magnetic Separation Pulley



# CONVEYOR LINE APPLICATIONS – MAGNETS OVER & UNDER THE BELT

## Permanent & Electromagnet Suspended Overhead Separators

Suspended Magnets are designed for separation of ferrous metal from a variety of over-the-belt conveyor applications. Proven in industries such as Mining, Aggregate, Recycling, Tire Shredding, Foundry, Wood Chip, Pulp & Paper, Power Generation, Construction and Demolition.

- Protect vital processing equipment from ferrous metal damage
- Improve product purity and quality for high volume belt conveyed products
- Deep reaching magnetic circuits supply superior separation capabilities
- Use prior to a metal detector to achieve maximum separation
- Reclaims valuable ferrous metal
- Reduce product liability

**Self-Cleaning Permanent Magnets (SMS)** The SMS magnets offer optimum operating efficiency with a continuous cleaning belt to keep the magnet face free of collected metal. The powerful, deep reaching magnetic circuit pulls metal to the face of the magnet where the cleaned belt can remove the metal off the end of the magnet and out of the product flow. The compact design of the SMS makes it ideal for use on portable size reduction equipment.

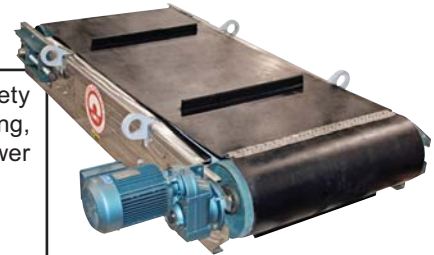
**Suspended Electromagnets (SEMO)** These powerful electromagnets are designed to deliver peak ferrous metal separation performance. The deep reaching magnetic field is ideal for applications that require increased suspension heights for the magnet or that have a deep product burden.

**Manual Clean Permanent Magnets (SPMC)** These magnets are a good economical solution for applications that require a magnet for equipment protection, but don't encounter enough ferrous metal in their product flow to justify a self-cleaning magnet. Cleaning Options: Swiper Bar, Side Pull Slider in either Manual Pull or Crank.

Find Suspended Overheads Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/conveyor.asp>

Download Or Request Tech Sheet TG-12A



Self-Cleaning Permanent



Manual Clean Electromagnets



Self-Cleaning  
Electromagnets



SPMC Shown with  
Side Pull Slider

## Eddy Current Separators

Eddy Current Separators are designed from the ground up to provide high recovery rates (97%+) and low operating costs. All of our units do a remarkable job on UBC (Beverage Can) recovery while the 12 and 16 pole units excel in any application where recovery of smaller particles is required such as glass clean up. Eddy Current Separators are ideal for a range of applications, including Material Recovery Facilities, C&D, Incineration, Auto shredding, Electronics Recycling and more.

- High grade Rare Earth magnets in the Flux Pump Rotor Design™
- Stainless steel sleeve on all rotors
- Variable speed motor for rotor and belt
- Carbon fiber shell minimizes ferrous burnout
- Internal motorized drive drum for more compact (low profile) design
- Urethane belt with corrugated sidewalls
- Take up screw adjustment for easy belt tensioning and tracking
- Removable side plates for easy access and maintenance
- Cantilever design for one piece belt change
- Heavy-duty fold channel construction with lift eyes for easy installation
- +/- 1% of out throws in your clean aluminum

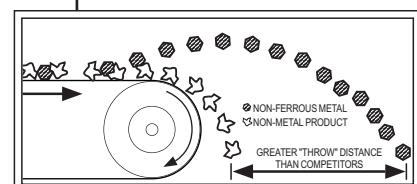
Find Separation Pulleys Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/conveyor.asp>

Download Or Request Tech Sheet TG-13A



Eddy Current Separator





## Pneumatic Line Magnets

**Pneumatic Line Housing** incorporates a series of UHI-50™ MgOe Rare Earth tubes on staggered centers. This ensures all product flowing through will make 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. Suitable for processing dry, powder, and granular materials.

- EZ or Self-Clean Models available with Food Grade Finish Standard
- Ideal for dilute-phase pneumatic systems operating up to 15 psi
- Nedox® coated tubes (Harder-than-steel, self-lubricating surface that resists corrosion, friction, sticking, galling, and static buildup).
- Use ahead of processing equipment and bulk load outs to assure product purity and protect machinery from tramp metal damage

**Bullet® Magnets** have a nose cone diverter and magnet assembly that is designed to maintain a balanced flow through the housing, maintaining uniform velocity in line flow. Ideal for dilute phase systems, typical applications include: processing of powders, flour, chemical, resin, food stuff, pharmaceutical and mineral materials.

- Can be installed in pneumatic line systems operating up to 15 psi
- Use ahead of processing equipment and bulk load outs to assure product purity and protect machinery from tramp metal damage
- Helps extend the life of filters and screens
- Cart mounted models available for truck and rail car bulk unloading (see back cover)

**Exposed Pole Tubes** have the magnetic portion built into the body of the housing. Ceramic EP tubes are ideal for capturing large tramp metal such as nails, bolts or screws. Typical installations include processing of plastics, foods, feed & grain or conveying of products that have a high moisture content that tend to plug or congeal.

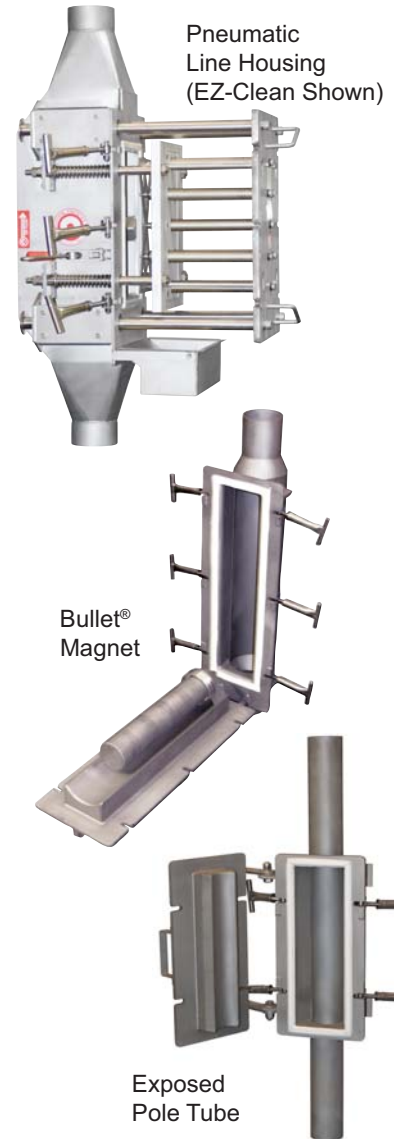
- Open flow design is ideal for use where product degradation is a concern
- Ideal for use in dense phase systems operating up to 15 psi
- Use ahead of processing equipment and bulk load outs to assure product purity and protect machinery from tramp metal damage
- Cart mounted models available for truck and rail car bulk unloading

Find Pneumatic Line Magnets Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/pneumatic.asp>

Download Or Request Tech Sheet TG-06A

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## Liquid Line T-Traps

IMI's T-Traps remove unwanted ferrous and work-hardened stainless contaminants from processing lines. They capture fine ferrous particles that are created by wear of upstream processing equipment. T-Traps are typically placed in front of pumps, screens and mills to protect vital plant equipment from costly metal damage and system downtime. IMI's T-Traps are designed for line pressures up to 170 psi (13.8 bar) and can operate at temperatures up to 200°F (94°C).

- USDA Approved, 316 stainless steel sanitary construction
- Powerful 40 MgOe Rare Earth Circuit
- Inlet/Outlet has ferrules for clamping to existing lines
- Quick clamp system on magnetic filter cap
- BUNA-N Standard Gasket Material
- Available in 1" to 18" inlet/outlet
- Optional Water Jacket and 150 lb. ANSI Flanges available
- Optional EZ-Clean Tube Styles available

Find T-Traps Online And Download Technical Sheets At...

<http://www.magnetics.com/tg/liquid.asp>

Download Or Request Tech Sheet TG-09A



# Mag-Mate™ & Automation Groups!

## HOLDING MAGNETS, SHOP TOOLS, RAW MATERIAL & MORE!

- Ceramic & Rare Earth Magnet Material
- Flexible Magnetic Strips & Sheets
- Cylindrical & Rectangular Fixture Magnets
- Welding Squares & Grounds
- Magnetic Tool Holders



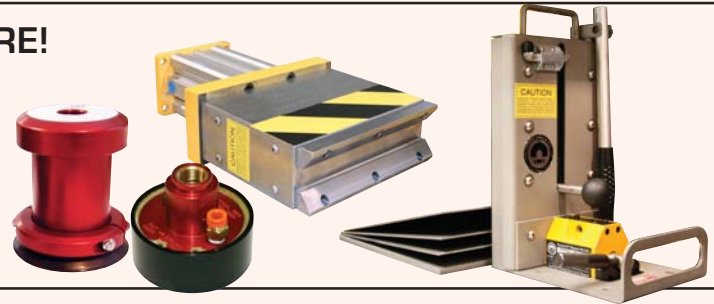
## MAGNETS FOR LIFTING

- Parts Retrievers
- Magnetic Trigger Lifts
- Steel Sheet Handlers
- Large Steel Plate Lifter



## DESTACKING, TRANSFERRING & MORE!

- Sheet Fanners / Separators
- Vacuum Lift Systems
- Air Actuated Low Profile Transporter® Magnets
- Pipe & Tube Lifters
- Magnetic Conveying Rail



For more information on our Automation & Mag-Mate™ products, please contact us today at 1-800-662-4638 or go online to [www.magnetics.com](http://www.magnetics.com) and request our Automation / Mag-Mate Magnet Overview and specific product tech sheets.



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