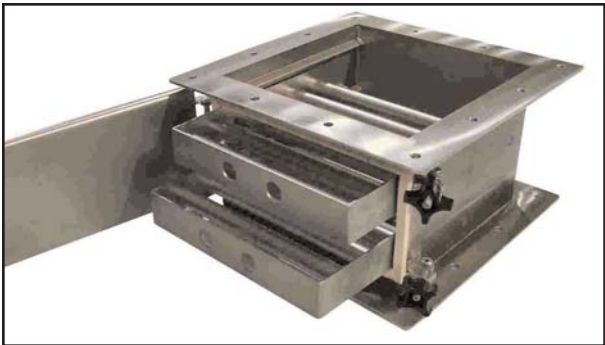




Drawer Magnet Selection Guide

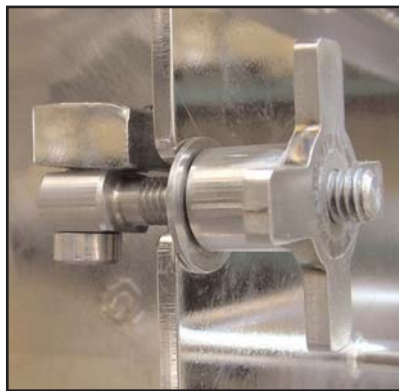
*MPI offers (5) standard **DRAWER MAGNET** styles to meet your specific application & budget requirements. Each of these styles are available in a wide range of pre-engineered standard sizes and are offered with many optional upgrade design features. To assist you in your selection of the **DRAWER MAGNET** that is right for you, following is a brief explanation of what each style offers.*



DRAWER MAGNET (DM Series)

This is our most basic and economical series and is offered standard in 1, 2, 3 or 4 tiers of magnetic tubes staggered on 2" centers. The housing is 100% 304 stainless steel and includes (4) *MPI exclusive design features that make our DM series a cut above all others.*

Product Flow Baffles- These are installed at the housing inlet and above each tier of magnet drawer frames to ensure all products pass through the powerful magnetic field. This design feature also provides an additional, critical benefit by preventing the product from flowing between the housing and magnetic drawer framing that will cause drawer "jamming" during regular magnet cleaning.



Sanitary Hinges- MPI fabricates all DM series hinges from heavy gauge stainless steel and pivots the housing door front from 3/8" diameter, seam-welded support pins. This provides a much more reliable seal as well as a food grade sanitary design that is easy to clean as compared to competitive models manufactured with commercial piano hinges.

Sanitary Latches- To ensure that MPI Drawer Magnet's provide its customers with a quick cleaning yet affordable magnetic protection system that also provides a reliable seal; all latches are manufactured following the same design principles of our sanitary hinge. Our swing-bolt latch design provides a proven sanitary and reliable seal solution as compared to commercial latches found on competitive models.

Magnet Drawer Frame Support Pins- It is imperative that when an operator conducts regular magnet inspection and cleaning, the magnetic drawer frames are easily removed from the housing without the need to bang on the housing or use tools such as pry bars to remove the magnets. MPI supports each tier of magnets on sanitary seam-welded, 3/8" diameter pins. This design feature coupled with the standard magnet tier product flow baffles, prevents product from jamming between the housing and magnet drawer frame, allowing simple, tool free magnet removal for cleaning.



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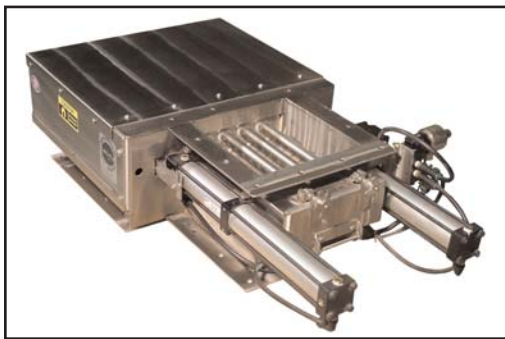
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DRAWER MAGNET-QUICK CLEAN (DM-QC Series)

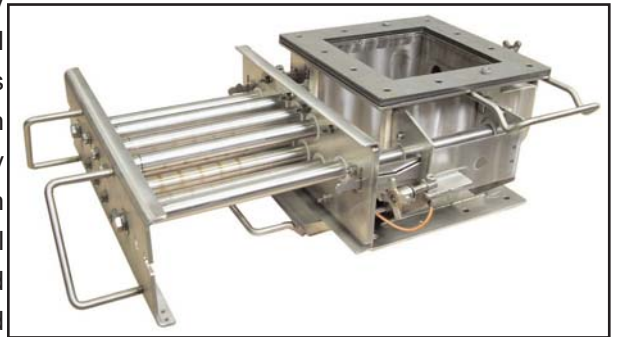
MPI developed the *first* "quick" and "self" cleaning Drawer Magnet over (20) years ago in 1982. This design uses a magnet "sleeve assembly" to telescope over fixed magnet tubes providing a non-magnetic sheath that can be physically moved over the fixed magnets to carry away and remove collected tramp metals. This product is ideal for use in applications where controlled metal removal is needed to separate highly magnetic tramp metal from weakly magnetic materials such as iron enriched flour.



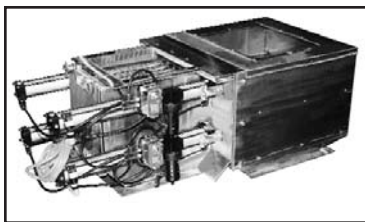
DRAWER MAGNET WITH MAGNET TUBE UHMW "STRIPPERS" (DMU Series)

MPI is proud to claim being the 1st magnet equipment company to offer this style of Drawer Magnet. To improve the magnet's "holding strength" typical of a DM series Drawer Magnet yet still offer a quick or self cleaning Drawer Magnet design, MPI was 1st to invent the DMU style Drawer Magnet in 1983. MPI continues to lead the industry in this product category with several exclusive design features that make its design the most *reliable* in function, *powerful* in magnetic strength and *durable* in design. The

magnet tubes are mounted to a housing "Seal Plate" that presses against the unit's "Stripper Plate". As the magnets are pulled at a right angle from the vertical gravity product flow, the magnet tubes travel with the "Stripper Plate" for a short distance where the "Stripper Plate's" travel is automatically and mechanically unlatched and stopped from the Seal Plate still traveling with the magnet tubes. From this point, the magnet tubes begin to pass through the Stripper Plate causing a wiping action on the magnet tubes allowing collected tramp metal to fall away by gravity into a collection tray or duct area depending on which option is selected. Once the magnet tubes have completed their full travel out of the product stream flow area, this cycle is reversed carrying them back into the closed and sealed position, cleaned and ready for further product processing.



DRAWER MAGNET-CONTINUOUS FLOW (CFDMU Series)



This style Drawer Magnet works on the very same principles of the DMU style Drawer Magnet. The housing has been slightly re-configured to minimize any product loss during the typical 7 to 9 second magnet cleaning cycle. Each tier of magnet tubes is cleaned independently to ensure a minimum level of magnetic protection at all times. This design is ideal where 24/7 product processing is necessary.



DRAWER MAGNET WITH SELF-ALIGNING TUBES (DMA Series) Patent # 6,250,475



Generally speaking, Drawer Magnets have been designed to handle "free flowing" products in vertical gravity process systems requiring high levels of magnetic separation. In some cases, products that require the powerful magnetic performance of a Drawer Magnet do not entirely meet the "free flowing" definition and this can lead to limited product adhesion on the magnetic tube outer surfaces. This condition can cause product flow choking and/or make magnet cleaning very difficult and in some cases impossible. To

address this more challenging product application, MPI has developed the **patented** DMA series Drawer Magnet. This unit works just like a DMU or CFDMU series Drawer Magnet but with a few additional key design features.

Floating Magnet Tubes- Each magnet tube is suspended at each end to create a "floating" condition that allows each tube to travel in an independent path during magnet cleaning. This patented design feature reduces resistance caused by friction from product build up on the magnet tubes making magnet cleaning much easier.

Rack & Pinion Tracking- To ensure smooth and jam free movement during magnet cleaning, all magnet tubes travel the exact same distance, at the same time, from left to right and top to bottom. This is accomplished using a rack & pinion tracking system in the DMA Drawer Magnet. Another patented design feature includes the use of a hand crank assembly with automatic mechanical seal latching. This feature is available on the manual operator quick-clean design and in pneumatic self-clean design.



DRAWER MAGNET OPTIONS

Inlet/Outlet matching companion flanges are available on all MPI Drawer Magnets. This ensures you will have no problems installing your new Drawer Magnet because we provide weld-on flanges that match exactly, both in size and hole layout pattern, to the standard bolt-on Inlet/Outlet flange provided.

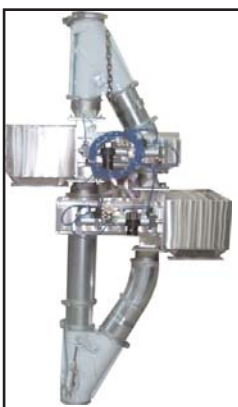
Inlet/Outlet Installation Transitions

To ensure a proper fit during installation and reduce installation time & costs, your MPI Drawer Magnet can be supplied with custom sized transitions that match up exactly to process equipment or spouting in your new or existing system.



Non-Standard Magnet Tube Spacing

Depending on the product(s) handled, in some cases it is desirable to increase magnet tube spacing to enhance product flow or decrease tube spacing to improve magnetic performance. This can be done very easily for a minimal extra charge.



Non-Standard Number of Magnet Tube Rows/Tiers

Multiple rows of magnets can improve magnetic filtration performance. Although MPI offers standard units in (1) through (4) rows, non-standard row units are available to meet your specific performance and budget requirements.

Non-Standard Housing Configurations

MPI Drawer Magnets are supplied standard with pre-drilled inlet/outlet mounting flanges in pre-sized housing heights. In some cases, unit installation can be simplified and costs can be reduced if the magnet is supplied with non-standard housing configurations to match system flange layout patterns of adjoining equipment and over all elevation requirements.

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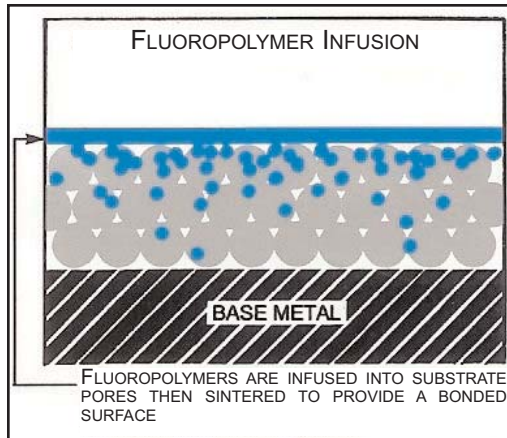


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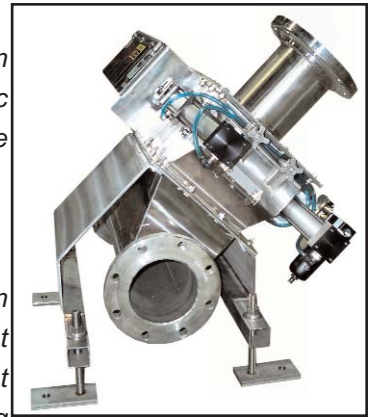
Non-Standard Pneumatic and/or Electronics

Standard pneumatic components on all automatic self cleaning style Drawer magnets can be upgraded for extreme environment applications. Additionally, electronic or hydraulic operated self cleaning designs are available upon request for applications where compressed air is not available



Synergistic Coating

To avoid product flow bridging & choking in process lines, Drawer Magnets are not typically recommended for applications that include products that have difficult flowing material characteristics. Some products may begin to flow well through a Drawer Magnet but after a short period can begin to adhere to the magnetic tubes. This condition will slow product flow and lead to product bridging & choking. To mitigate this condition, MPI has developed a surface treatment process known as Synergistic Coating. This process can be applied to the stainless steel outer surface of the magnetic tubes by impregnating sub-micron sized particles of high temperature, low friction fluoropolymers into the stainless steel surface. This reduces surface coefficient of friction and increases surface hardness giving the product contact areas of the magnetic tubes a hardened Teflon like surface.



"P" Gasket Seal

Drawer magnet gaskets are offered standard with closed cell, food grade material and installed with food grade, high temperature adhesive. Although this type of gasket mounting is typically acceptable, it is possible for the gasket to become unattached over long periods of use. This condition is more common when the operating environment includes high moisture and heat or when protecting sticky products such as sugar. When these conditions exist a preferred method is to mechanically attach the gasket to the housing. MPI offers a food grade, "P" style gasket in this instance to ensure a good gasket seal is maintained.

High Temperature Rare Earth Magnet Materials

Most permanent magnets are located in ambient temperatures consequently, magnet performance is not compromised. In some instances the operating environment of a proposed magnet system may exceed the limits (250F) of typical rare earth magnet materials. Although not as powerful as other rare earth magnets, Samarium Cobalt rare earth magnet material may be a viable option to provide if rare earth performance is required.



Housing Vibrators

All MPI Drawer magnets can be designed to include a housing mounted vibrator for applications that handle difficult flowing products in gravity chutes. A constant or intermittent vibratory movement translated into the magnetic tubes will improve product flowability. Vibrators are offered in either pneumatic or electronic styles.

Rack & Pinion Tracking System Upgrade

This feature is offered standard on MPI, DMA series patented Drawer magnets and is available as an option on DMU series Self Cleaning Drawer magnets. This feature provides improved magnet cleaning and sealing functions and less wear on unit components when handling sticky products such as sugar.

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