

Installation, Operation and Maintenance Instructions



DEEP REACH MAGNETIC SEPARATOR

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WORLD AUTHORITY IN ADVANCED TECHNOLOGY FOR MAGNETIC, VIBRATORY and INSPECTION APPLICATIONS

Introduction

This manual details the proper steps for installing the Deep Reach Separator.

Careful attention to these Installation Requirements will assure the most efficient and dependable performance of this equipment.

If there are any questions or comments about the manual, please call the factory at 814/835-6000 for Deep Reach Separator assistance.



CAUTION - STRONG MAGNET

This equipment includes one or more extremely powerful magnetic circuits. The magnetic field may be much stronger than the Earth's background field at a distance several times the largest dimension of the equipment.

- **If you use a heart pacemaker or similar device you must never approach the equipment because your device may malfunction in the magnetic field with consequences up to and including death.**
- **To avoid serious pinch-type injuries caused by objects attracted to the magnet, keep all steel and iron objects well away from the equipment. Do not allow hands, fingers, and other body parts to be caught between the equipment and nearby steel or iron objects.**
- **Keep credit cards, computer disks, and other magnetic storage devices away from the equipment because magnetically stored information may be corrupted by the magnetic field.**
- **Keep electronic devices, such as computers or monitors, away from the equipment because exposure to the magnetic field may result in malfunction or permanent damage to such devices.**

Contact Eriez if you have a question regarding these precautions.



CAUTION

Safety labels must be affixed to this product. Should the safety label(s) be damaged, dislodged or removed, contact Eriez for replacement.

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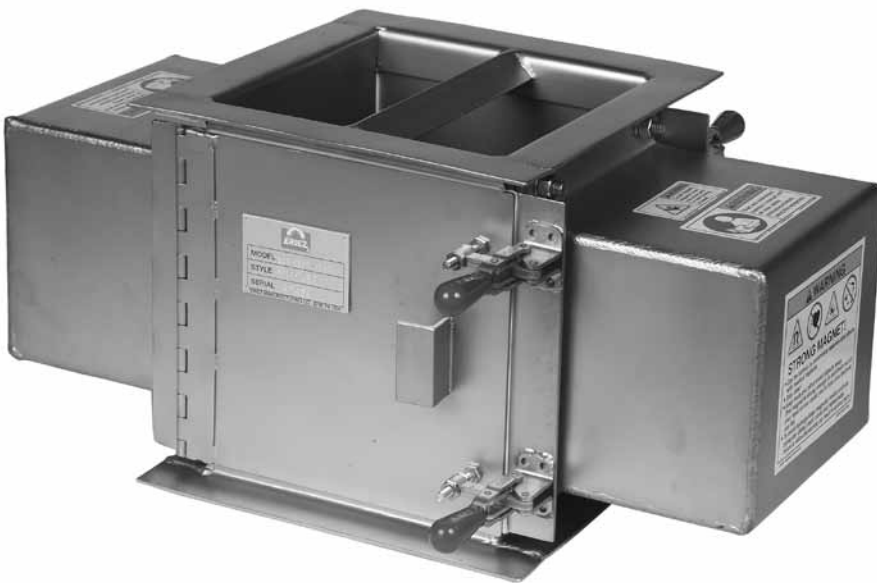


Description

Eriez Deep Reach Magnetic Separators are designed to remove tramp iron from heavy flows of material which normally bridge or choke when processed through magnetic grate separators. The unit consists of two large permanent magnets bolted to opposite sides of a housing. A 1-1/2" (38 mm) flange on both inlet and outlet are provided for installation. Center and side deflectors are located on the inlet of the housing to optimize tramp iron removal.

Installation

The Deep Reach unit is installed by bolting the flanged inlet and outlet to existing line or chute. The Deep Reach unit inlet is identified with beveled sides and a center deflector. Install a gasket between the two mating flanges to insure a tight seal.



Operation and Maintenance

There are no moving parts in an Eriez Deep Reach Magnetic Separator. The magnet is the only “working” component. As material flows over the magnet, the powerful magnetic field reaches out to attract and hold ferrous contaminants.

The only maintenance required is periodic cleaning of the magnet face. **This cleaning is absolutely essential.** Overloading the magnet with entrapped ferrous material will impair efficiency. Frequency of cleaning is determined by the amount of ferrous contamination removed from the material by the magnet.

The two permanent magnets are rigidly bolted to the housing. **These magnets are not to be removed.** To clean, open access doors on front and back of housing. Simply wipe the accumulated tramp iron from the magnet face inside housing with a rag. Further fine iron removal can be achieved by blotting the magnet surface with the sticky side of masking tape. Replace access doors.

DEEP REACH EASY TO CLEAN

The two permanent magnets are rigidly bolted to the housing. **These magnets are not to be removed.** To clean, open clamps on front of housing and pull the Easy To Clean drawer out from the housing. The collected tramp iron drops free from the drawer when it is removed from the magnetic area. The released tramp iron falls outside of the housing. Replace drawer and close clamp.

DEEP REACH SWING BOLT

The two permanent magnets are hinged and latched to the housing with swing bolts for easy cleaning. To clean, loosen the swing bolts on the slotted bar end and rotate bolts out of the slots. This will unlatch the magnet and allow it to swing away from the housing. Simply wipe the accumulated tramp iron from the magnet face with a rag. Further fine iron removal can be achieved by blotting the magnet surface with the sticky side of masking tape. Push the magnet back against the housing, swing the bolts back in place and tighten. Repeat this procedure for the other magnet.



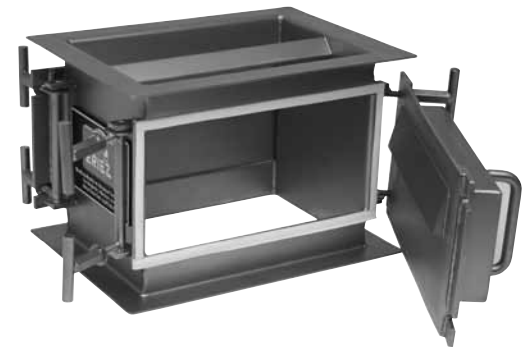
Standard Unit



Easy To Clean



Swing-Bolt



Self-Cleaning

Operation and Maintenance *(cont.)*

DEEP REACH SELF-CLEANING

RECEIVING THE SELF-CLEANING DEEP REACH

After carefully uncrating the unit, notice that there are two sections, the unit itself and the control panel. Two pneumatic hoses should connect them. The hoses were used to test the unit at our facility and can be used as-is or new hoses or piping can be used to locate the panel further from the unit. The push button station may also be remotely located.

AIR SUPPLY AND CONNECTIONS

A 60 to 80 psi air supply is required to the 3/8 NPT port connection at the filter regulator.

Connect 3/8 tubing from the solenoid valve to the right angle connectors on the product housing. No specific tube to fitting connections can be easily reversed after wiring the control to the solenoids, if necessary.

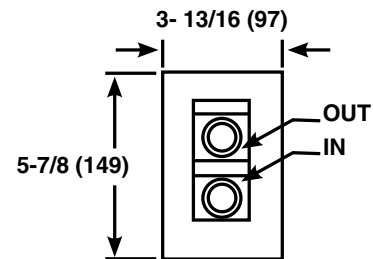
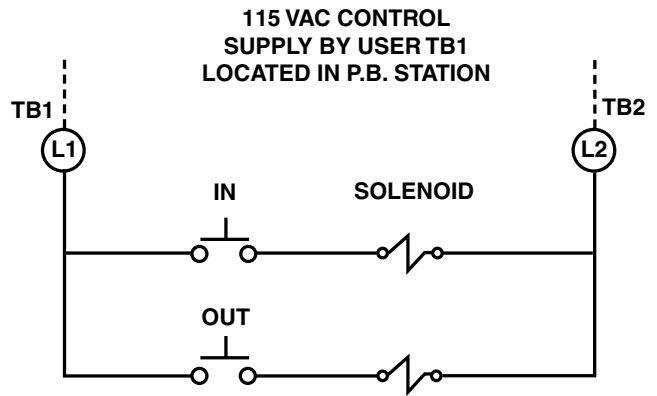
ELECTRICAL CONTROL TO SOLENOID VALVE

This is a double solenoid valve, 120/60 VAC.

A signal is required to each solenoid in turn to “spool” the valve in each direction. The solenoid requires a momentary signal and should not be continuously energized.

A certified electrician should complete this connection.

Below is the push button control schematic:



PUSH BUTTON STATION
NEMA-4/13, 3-1/4 (82) DEEP
ERIEZ NO. 2N-9900579

FERROUS DISCHARGE OPTIONS

The ferrous (scrap) discharge area is located under the safety housing flange. Space must be provided so that scrap discharge can clear the safety housing and not back up into the unit. Continuation of the deflectors to a collection point is the most common method of eliminating this waste. Typical scrap collection methods include:

- A tray or hopper. Analysis can be conducted on scrap amount and sources.
- A bucket, bag or barrel for periodic disposal.
- A conveying system for removal to a remote location.

IMPORTANT: The product flow must be shut off before the cleaning cycle is activated.

The pressure regulator is pre-set at the factory to cycle the air cylinders smoothly. Adjust the air pressure based on your product and cycling load. A smooth, steady cycle is better than one that slams the drawer in each direction.

The processing steps are as follows:

1. Product flow with contaminants (2-3 hours to start).
2. Ferrous material collect on the Easy To Clean Drawer.
3. Product shut off before cleaning cycle.
4. Activate drawer with push button marked “out.”
5. Air cylinders push drawer out of product area.
6. Ferrous contamination falls off outside product area.
7. Cleaning is finished in about 5 seconds.
8. Push “In” button to return drawer to product area.

Each individual user can determine the cleaning cycle frequency. The factors that determine the time between cycles are the amount of ferrous contamination in the product and how magnetic the contamination is (how well it will be held by the magnet). The cleaner the magnet surface, the more efficient the magnet will be.

Between batch operations is an ideal time to clean the magnet. Connecting the control in conjunction with the shut off valve or other device upstream is ideal.

CYCLE TIME ADJUSTMENT

Contamination levels or convenient cycling times can also determine cleaning cycles.

For example:

Very light contamination — 8 hours (each shift)

Average contamination — 2-3 hours

Heavy contamination — 30-60 minutes

! WARNING

This unit contains moving parts. Turn off and lock out electrical power and pneumatic supply before opening safety housing.

EXAMINATIONS

If properly cared for, the permanent magnets should never lose strength and require no maintenance. They do require periodical visual examinations, necessary especially with highly abrasive products.

The air cylinders should be examined every month under normal operating conditions. No lubrication of the air cylinders or drawer is required.

Examine the product housing and ferrous discharge areas for product build up, as necessary based on your product. Product build up is most likely the cause of product leaking or the drawer not completing the cycle.

Note: Some safety warning labels or guarding may have been removed before photographing this equipment.

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