

Installation, Operation and Maintenance Instructions



EASY-TO-CLEAN GRATE MAGNET

ERIEZ MAGNETICS HEADQUARTERS: 2200 ASBURY ROAD, ERIE, PA 16506-1440 U.S.A.
WORLD AUTHORITY IN ADVANCED TECHNOLOGY FOR MAGNETIC, VIBRATORY and INSPECTION APPLICATIONS

Introduction

This manual details the proper steps for installing, operating and maintaining the Eriez Easy-to-Clean Grate.

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

If there are any questions or comments about the manual, please call Eriez Manufacturing at 814/835-6000 for Grate 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 "workpiece" being lifted.
- 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.



Description

Eriez Easy-to-Clean Grates eliminate the costly shutdown of product lines typically required to remove, clean and reinstall the magnetic elements. Easier, more frequent cleaning prevents excessive iron contamination build-up on the magnets and assures maximum separating efficiency. The magnet grates are individually removed from the product stream to insure constant protection. At a point outside the product flow, contamination is discharged. The entire cleaning operation takes place in seconds per bank.

Eriez Easy-to-Clean Grates remove minus 1/2" ferrous contamination from almost any dry, granular, free-flowing material including grains, feeds, spices, foods, sugar, powders, plastics, dry pulps, ceramic materials, chemicals and minerals. If ferrous contamination is larger than 1/2" size, a non Easy-to-Clean Grate In-Housing should be used.

Easy-to-Clean Grates are available in both standard ceramic magnetic material and Eriez' exclusive Erium® 3000, the strongest permanent magnetic material on the market today.

Installation

Select a location in the system where the product will free fall through the grate magnets, such as a section below a product shut off valve, delumper or other area where product will not backup into the grate. Standard unit height is 11-1/4" (286mm) flange to flange.

Installation is most desirable at chest height or approximately 4 or 5 feet (1200 to 1500mm) above the standing surface.

Installation must permit room for the magnet grate to extend fully and also permit 3 to 4 feet (900 to 1200mm) of room for the person doing the cleaning. The grate extension length of your particular size unit is given on the outline drawing or can simply be measured on the unit.

The grate housing is designed to be flange mounted to the pipe, chute or ductwork. The unit must be rigidly attached, and supported if necessary. The horizontal pull force of the magnet grate will be 15 to 40 lbs. (67 to 178N) depending on the amount of ferrous material collected on the magnet tubes.

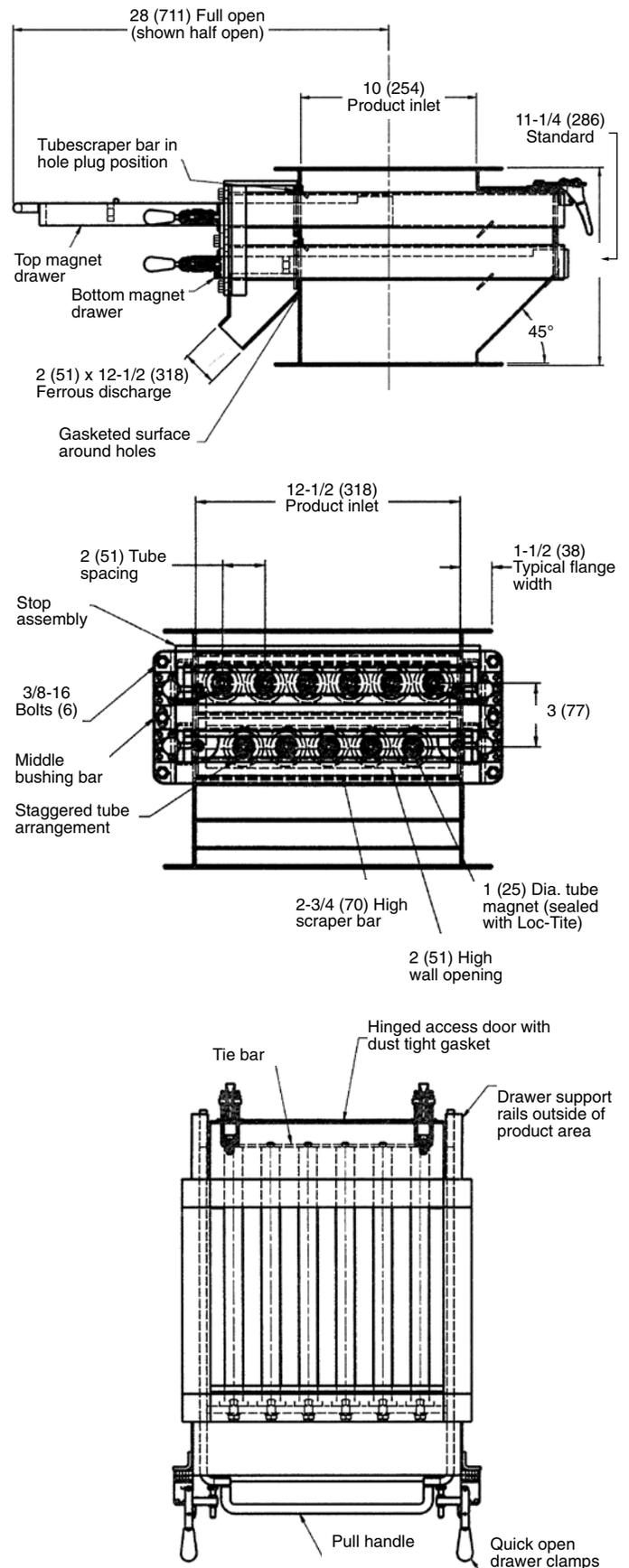


FIGURE 1
12-1/2" x 10" model shown

Space must be provided so that iron discharge can clear the discharge chute and not back up into the unit. Continuation of the discharge chute to a collection point is the most common method of eliminating this waste. The unit is not designed to hold pressure or seal under any positive pressure.

Operation

To clean ferrous material from the magnet tubes, simply release the quick release clamp on each side of the top grate handle during a product shutdown then pull out the magnet grate. Resistance of 15 to 40 lbs. (67 to 178N) should be expected depending on the amount of ferrous material collected on the magnet tubes.

Re-insert and relatch the top grate and then clean the second grate. By keeping one bank of magnets in the product flow at all times, the unit may be cleaned without shutting off the product flow. Note that the unit is not completely sealed, so dust may escape with dusty products.

Frequent cleaning will allow for easier grate retraction and optimum iron separation. Product testing or visual observation of magnet loading through the product access door will help determine your specific cleaning cycle. Overloaded magnets will have bands of iron particles built up from 1/8" to 1/4" (3 to 6mm) above the surface of the tube. It is not uncommon for some small amount of tramp metal to remain on the tubes after cleaning.

Maintenance

The Easy-to-Clean Grate requires no maintenance other than replacement of "wear" parts on a periodic basis. The replacement period will depend upon the abrasiveness of the product and the amount of ferrous material being removed from the product. The only recommended spare parts are the tubescrapers.

When an excess amount (1/32" to 1/16") (1 to 2mm) of ferrous metal remain on the tubes after cleaning, the

tubescrapers should be replaced. Note that the tubescrapers clean on both the in and out strokes. Examine the tubes in the product area to determine if excess ferrous material is remaining on the tubes. After both strokes, a minor amount of ferrous pass-thru is expected and is easily secured by the magnets.

To replace the wear items, the six 3/8-16 bolts should be removed from the front face flanges. The clamp bar should also be removed. The magnet banks can now be pulled from the housing. The tubescraper bars can be changed by first removing the tie bar from the end of the magnet tubes and then simply sliding the bars off the ends.

To reassemble, reverse the process and ensure the metallic (or Teflon) rings are sandwiched between the white plastic bars with holes in them. **Note:** Although the magnet tubes are not considered a wear item, periodic examination is necessary especially with highly abrasive products. If a magnet tube should wear through, repair at our facility is necessary. Alteration and disassembly of the magnet would disturb a carefully engineered magnetic circuit, which could only be restored by rebuilding and recharging. Repair, alteration or disassembly of this magnetic equipment in the field without written authorization and instruction by Eriez Manufacturing Company nullifies the responsibility and guarantee of the manufacturer.

Quantities of replacement parts are as follows:

UNIT SIZE	TUBESCRAPERS/UNIT
6-1/2 x 4	2
8-1/2 x 6	2
10-1/2 x 8	2
12-1/2 x 10	2
14-1/2 x 12	2
16-1/2 x 14	4
18-1/2 x 16	4
20-1/2 x 18	4
22-1/2 x 20	4
24-1/2 x 22	4

TABLE 1



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