MJ-2827B

Installation, Operation and Maintenance Instructions

ERIEZ®

MAGNETIC SWEEPERS

PERMANENT AND ELECTRO-MAGNETIC MODELS

ERIEZ MAGNETICS HEADQUARTERS: 2200 ASBURY ROAD, P.O. BOX 10608, ERIE, PA 16514–0608 U.S.A.

WORLD AUTHORITY IN ADVANCED TECHNOLOGY FOR MAGNETIC, VIBRATORY and METAL DETECTION APPLICATIONS

Introduction

This manual details the proper steps for installing, operating and maintaining the Eriez Magnetic Sweeper.

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 at 814/835-6000 for Magnetic Sweeper 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 of 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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General

PERMANENT MAGNETIC MODELS

A. Eriez Permanent Magnetic Roadsweepers and Floorsweepers have been engineered and manufactured from the finest materials to give long and satisfactory service when operated within the limits of their design. The high strength Erium® 25 permanent magnetic element is enclosed in a rugged box shaped housing that provides structural strength with a minimum of weight. A deep reaching field provides high efficiency for magnetically sweeping or removing tramp iron from road surfaces, yards, lots, airport runways and aprons, factory aisles, etc.

B. The Model 325 Permanent Magnetic Roadsweeper is available as a trailer type model or a suspended type model in 48, 60, 72, and 96" (1220, 1525, 1830, 2440 mm) widths. A tow hitch with parking stand and puncture-proof 10" tires are provided on the trailer type model. Saddles for fork lift operation are provided on the suspended type model, and in addition, mounting holes are provided for the installation of bumper brackets to facilitate mounting of the unit on trucks. Because of the unlimited number of bumper shapes and sizes that could be encountered, bumper brackets are not furnished.

   Eriez Model 325 Permanent Magnetic Roadsweeper is designed to operate at a maximum speed of 5 miles per hour (8 km/hr) with road clearance fixed at 3" (75 mm).

C. The light duty applications, the Model 200 Magna Sweep is available in 24" and 36" (610 & 915 mm) widths. Designed for hand operation, the unit is complete with 8" diameter puncture-proof tires and a wide tubular frame handle. Clearance is set at 2" (50 mm).

ELECTROMAGNETIC MODELS

A. Your Eriez Electro Magnetic Roadsweeper has been engineered and manufactured from the finest materials to give you long and satisfactory service when operated within the limits of its design and provided proper maintenance procedures are observed. The magnet is designed with a double gap magnetic field for maximum efficiency in magnetically sweeping or removing tramp iron from road surfaces, yards, lots, airport runways and aprons, factory aisles, etc.

B. Eriez Roadsweepers are available in two strengths, standard and heavy duty, with five widths in each strength.

C. Units are furnished as suspended type with turnbuckles, or trailer type with wheels and tow hitch. A terminal box and fully enclosed switch cabinet are provided. Gasoline engine generator sets are available to supply DC power to the sweeper.

Operation

PERMANENT MAGNETIC MODELS

Trailer Type Model

Trailer Type Sweepers should be coupled a satisfactory tow vehicle equipped with a tow hitch at the proper height so the sweeper and tow hitch are horizontal. Highest efficiency can be expected when the unit is operated on pavement or flat smooth unpaved areas. BECAUSE ROAD CLEARANCE IS FIXED AT 3" (75 mm), STRIKING ANY OBJECT THAT IS HIGHER THAN 3" (75 mm) COULD CONCEIVABLY DAMAGE THE UNIT ENOUGH TO MAKE IT INOPERABLE. REASONABLE OPERATOR CAUTION IS REQUIRED ANYTIME THE UNIT IS BEING MOVED.

Cleaning the unit is accomplished by lowering the cleaning lever to the tow bar causing the accumulated tramp iron to discharge. The handle can be latched into position until the sweeper has been moved forward far enough to expose the discharged pile of metal. Once the metal is collected and disposed of, the handle can then be unlatched lowering the magnet to the operating position so sweeping can be resumed.

The trailer type unit is designed for maximum towing speeds of 15 miles per hour (24 kph) to permit transporting the unit to different locations. When transporting the unit, the lever should be in the lowered (off) position and speeds should not exceed the 15 miles per hour (24 kph) maximum as damage to the unit could result.

Suspended Type Model

The Suspended Model 325 Permanent Roadsweeper can be installed on fork trucks by simply adjusting the fork spacing to agree with the mounting saddles of the sweeper. When mounting the sweeper, be sure the cleaning lever, when inserted into the socket, will be pointing away from the fork lift truck to permit easy cleaning of the unit. After the unit is mounted, adjust the forks to level the sweeper and allow a 3" (76 mm) maximum road clearance.

Highest efficiency can be expected when the unit is operated on pavement or flat smooth unpaved areas. BECAUSE ROAD CLEARANCE IS FIXED AT 3" (76 mm), STRIKING ANY OBJECT THAT IS HIGHER THAN 3" (75 mm) COULD CONCEIVABLY DAMAGE THE UNIT ENOUGH TO MAKE IT IN OPERABLE. REASONABLE OPERATOR CAUTION IS REQUIRED ANYTIME THE UNIT IS BEING MOVED.

Model 200 Magna Sweep

For convenience in packing and handling, the Model 200 Magna Sweeper shipped with the handle detached. To install the handle, it is necessary to place the handle mounting holes over the mounting studs and install lock washers and nuts which are furnished with the unit. The sweeper is then ready for operation.

Good performance can be expected when the unit is operated at a normal walking pace. Because clearance is fixed at 2" (50 mm), reasonable operator caution is required so that unit is not allowed to impact on any object over 2" (50 mm) high.

Cleaning is accomplished in the following manner:

1. With the operator behind the unit in the normal operating position, step down on the trailing edge of the stripper. The tramp iron will then discharge.
2. Tilt the handle forward approximately 15° beyond a vertical position.
3. While holding the handle in this position, roll the sweeper back until it is at least 12" (300 mm) behind the pile of tramp iron.
4. Move the handle back toward operating position and continue beyond this position by pivoting the unit about the casters until the stripper latches itself in place.
5. Return the handle to the operating position.

After collecting the accumulated tramp iron, sweeping can be resumed. To maintain high efficiency, periodic cleaning of the magnetic sweeper is required. If too much iron is allowed to build up on the magnet, efficiency will be reduced.

Operation (cont.)

ELECTROMAGNETIC MODELS

Electrical Connection

A. The Sweepers require DC power which may be supplied from any conventional DC power source such as a portable gasoline engine generator set, rectifier, etc. The magnet is supplied with a surge absorbing DC switch. If it is to operate from an existing DC power source, the magnet will have been wound to your specifications, to use available DC. If Eriez has supplied the power source, the coil voltage will conform to that of the power source.

B. Electrical connections are very simple. See diagram below:

NOTE: Polarity is critical.

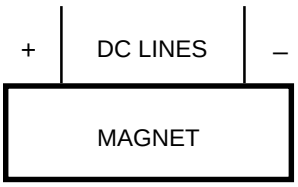

FIGURE 1. ELECTRICAL CONNECTION

Electric current is introduced to the coils through the terminal box. For roadsweepers furnished without a power unit or with a power unit for mounting separately, it is only necessary to connect the DC line from the power unit to the leads in the DC switch. All connections have been made for factory power units.

C. The voltage for which the magnet is wound is shown on the nameplate. Voltage more than ten percent higher or lower than normal will affect the sweeper's operation. Over voltage may cause coil failure. The unit will not function at full strength when voltage is low.

Start-up and Operation

A. Check instructions on auxiliary equipment carefully and be sure all necessary maintenance rules and precautions are observed. For roadsweepers supplied with power units, operation instructions for the power unit are attached when shipped.

B. To energize the sweeper (be sure DC switch is off) the DC power source should be turned on first. Next, close the DC switch for the magnet. Always turn the magnet off when not in use. Be sure that the "bullseye" pilot light in the switch box functions properly and replace it when burned out. Open and close switch quickly and firmly to minimize arcing. Some arcing may occur, but this is not normally harmful.

C. For units equipped for trailer operation, be sure tires are properly inflated and the parking stand retracted before towing.

D. For maximum efficiency the roadsweeper should be towed or carried slowly at - approximately 3" (76 mm) ground clearance for the standard duty model and approximately 4-1/2" (114 mm) for the heavy duty model. Clearances in excess of these limits are sometimes satisfactory. The standard duty models are designed to provide most effective sweeping at speeds under 5 miles per hour (8 kph), while the heavy duty models should not exceed 10 miles per hour (16 kph). Slower speeds and closer clearances ensure higher efficiency. Best performance will be obtained on smooth terrain.

To prevent damage to the axles and bearings on trailer type units, sweeping speeds should be reduced on rough terrain. When transporting the unit, speeds should not exceed 40 mph (64 kph) on smooth highways. On rough roads, speeds should not exceed 10-15 mph (16-24 kph) as damage to the unit could result.

E. Collected tramp iron should be discharged periodically to maintain maximum sweeping efficiency. Excessive iron buildup on the magnet face will shunt out the magnetic field causing reduced efficiency.

Adjustments

Height adjustments can be made on units furnished with turnbuckles simply by taking up or backing off on the turnbuckle. To adjust height for units furnished with tires, the magnet must be raised so the tires are suspended off the ground. Remove the height adjustment bolts and nuts located at each end of the magnet and set the wheel and adjustment plate assembly at the desired height. Replace and tighten the bolts and nuts.

Maintenance

GENERAL

- Be sure instructions on all auxiliary equipment are followed carefully.
- Provision should be made to protect the equipment from moisture. It should be kept under cover preferably indoors and not operated in wet weather.

TRAILER TYPE UNIT

Wheel bearings should be lubricated periodically (once per month or as required) with Lubriplate #70 grease or equivalent through grease fittings provided. New grease of sufficient quantity should be added to force a small amount of old grease to escape at the axle.

SUSPENDED TYPE UNIT

No maintenance required.

MODEL 200 MAGNA SWEEP

Wheel bearings should be lubricated periodically with Lubriplate #70 grease and oil added to the oil holes of the casters periodically. Frequency of lubrication is dependent on the frequency of use. No other scheduled maintenance is necessary or required.

Repairs

Repair, alteration or disassembly of this equipment in the field without written authorization and instructions by Eriez nullifies the responsibility and guarantee of the manufacturer.

If further information or advice is required, contact our sales office in your area or our factory direct.

World Authority in Advanced Technology for Magnetic, Vibratory and Metal Detection Applications

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