

# Installation and Maintenance Manual For

## Dings Self-Cleaning Permanent Overhead Magnet



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## General Information

Magnet

**Dings Model:**

**Dings Part Number:**

**Dings Serial Number:**

### **Warnings:**

The magnet must be positioned or guarded so that no contact can be made with moving parts while the magnet is in operation.

### **CAUTION: STRONG MAGNET**

Strong magnetic field may have an affect on pacemakers and other electrical devices. Please contact the device manufacturer for further information.

### **Operating Temperature:**

Ceramic magnets: -40°F through 250°F (-40°C through 120°C).  
Rare earth magnets: 176°F (80°C) or less.

NOTE: Extreme temperatures may affect the performance of the magnet. Refer to Bulletin 1214T.

## **Unpacking and Handling**

Upon receiving, check all packaged material for shortage of parts and possible damage. Report shortages and damage to the carrier who delivered shipment. The magnet was shipped fully assembled, ready for operation. If a material deflector was supplied, it was shipped separately and must be bolted on before operation.

## **Magnet**

This Dings self-cleaning permanent magnet was shipped using 4" x 6" wooden beams as supports under the two sides of the magnet. This is done to protect the belt and the magnet surface from damage during shipment. After unloading, the magnet should never be placed directly on the ground. Rather, wood beams or some other means of support should be placed beneath the two sides of the magnet box to raise the magnet and belt above the ground.

The magnet should always be moved using the four lifting lugs provided. Never use a forklift or other device to lift the magnet from the bottom.

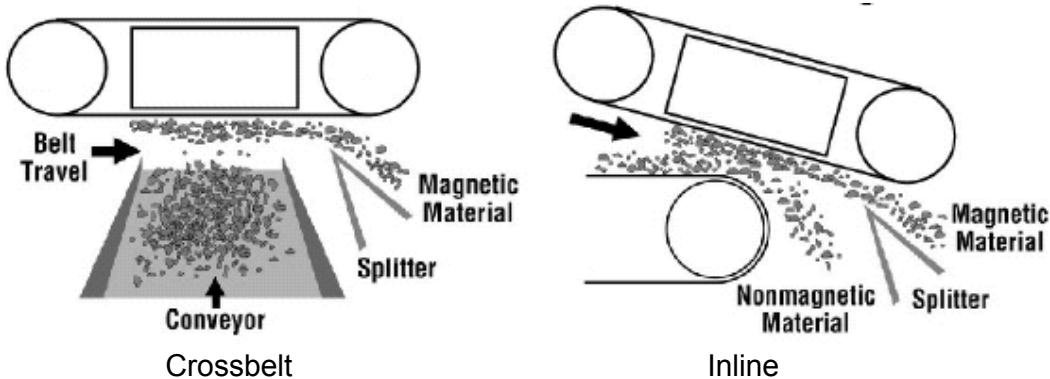
The magnet should be stored indoors prior to installation.

## Recommended Storage of Overhead Magnets

- 1) On a self-cleaner, remove tension from drive belts and conveyor belts.
- 2) The following precautionary procedures are recommended:
  - a) Store magnet indoors in a low humidity, even temperature environment if possible.
  - b) Keep water and any other form of moisture away from the magnet while in storage.
- 3) This is a procedure for indoor storage only. Outdoor storage is definitely not advised and will null and void our warranty on the magnet assembly.
- 4) Self-Cleaning Belt:  
All belting should be stored in a cool, dry room, free from sunlight, steam pipes, oil, water, moisture, and corrosive fumes.
- 5) Reducers:  
PERIODICALLY INSPECT STORED OR INACTIVE DRIVES AND SPRAY OR ADD RUST INHIBITOR EVERY SIX MONTHS, OR MORE OFTEN IF NECESSARY.  
INDOOR DRY STORAGE IS RECOMMENDED.
- 6) Motor:  
(One year or less.) Units should be stored indoors, in a clean, dry location. Winding should be protected from excessive moisture absorption.
- 7) Bearings:  
Rotate bearings every three months.

A Self-Cleaning permanent overhead magnet is built in 2 types: Inline and Crossbelt. An Inline type is installed over a conveyor head pulley so that the cleaning belt runs parallel to the travel direction of material falling off the conveyor. The head pulley must be made from non-magnetic material. A Crossbelt type is installed over a conveyor so that the cleaning belt runs at a right angle to the travel direction of the material on the conveyor.

Magnetic performance may be affected by magnetic material in the field. This includes such items as I-beams, metal supports, hoppers, or splitters. These and other ferrous objects need to be kept out of the magnetic zone.



Suspension height is critical to the performance of the magnet. This distance is measured from the bottom of the magnet face to the surface of the material handling belt.

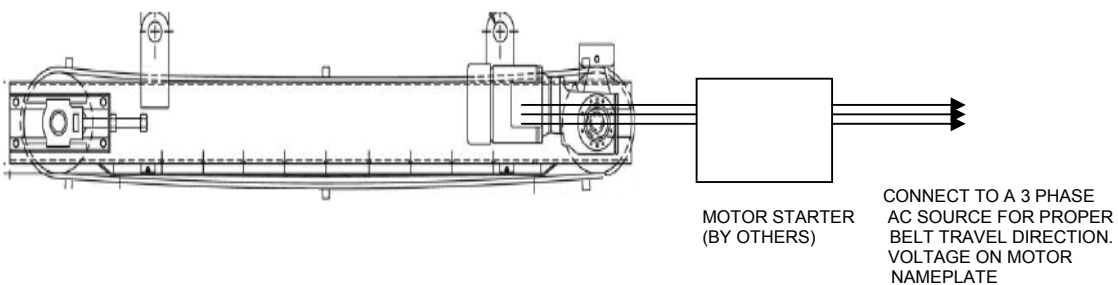
The recommended suspension height is related to properties of the conveyor system and burden being processed. Assistance in determining the recommended suspension height is available by contacting the factory. To best determine this height, information including belt width, belt speed, troughing angle, burden bulk density, burden depth, maximum lump size, magnet orientation and model (if known) is required (see <http://www.dingsmagnets.com/magnet-literature/Overhead-Magnet-Application-Data.pdf> for a copy of the application data sheet).

### Electrical Connections

Wiring should be in accordance with prevailing local and national electric codes. Wire size should be based on the nameplate wattage.

Voltage of magnet terminals should be within  $\pm 5\%$  of nameplate voltage.

After electrical connections have been completed, connect a-c power to the motor thru a motor starter. Be sure line voltage and frequency agree with voltage and frequency shown on motor nameplate. Check the cleaning belt for correct travel direction.



## LUBRICATION SCHEDULE FOR OVERHEAD PERMANENT MAGNET

ITEM	QUANTITY	BRAND & GRADE	INTERVAL
Magnet Gearmotor	1.9 Quarts	Mobilgear SHC 630 Synthetic Oil or Equivalent	2,500 Hours
Magnet Bearings	As Required	Lithium Base NLG 1 Grade 2EP or Equivalent	2-6 Months

### **DRIVE ASSEMBLY**

GEARMOTOR - Inspect motor at regular intervals. Keep motor clean and the ventilation openings clear of dust or other debris. See attached Nord Gearmotor manuals for specific information.

### **BEARINGS**

LUBRICATION - If conditions are clean, lubricate every 2 to 6 months. If dirty, lubricate every 2 weeks or on a schedule consistent with other equipment in the same environment. Lubricate with a lithium based grease conforming to NLGI Grade 2.

GENERAL - Periodically check hex head set screws and bearing bolts for tightness, tighten if loose.

### **SELF-CLEANING BELT**

BELT - Periodically inspect for signs of wear. If belt replacement instructions are needed, contact factory.

FASTENERS - Periodically check for wear, especially on the underside. If fastener replacement instructions are needed, contact factory.

TRACKING - If belt needs to be retracked, refer to belt tracking section below.

### ZERO SPEED SWITCH (Optional)

Periodic inspection of the shaft seal is recommended. Bearings are of the permanently lubricated type.

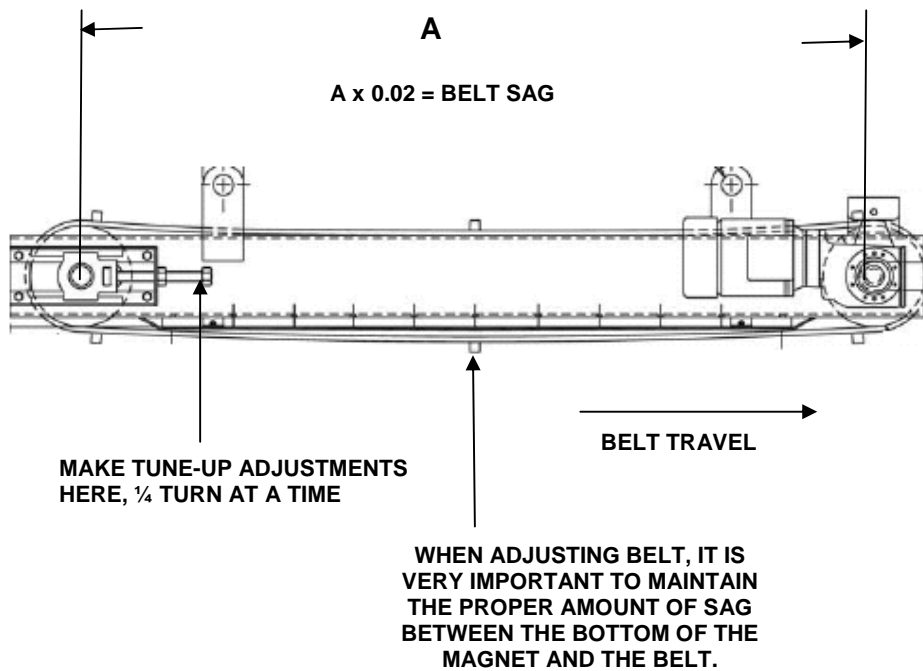
### **PULLEY/SHAFT ASSEMBLIES**

All crown curved pulley compression hubs are properly tightened to the manufacturers' recommended torque at the factory. Shortly after initial start-up, the hub bolts should be retightened to the following torques:

Shaft Diameter	Torque
1 15/16"	180 in. lbs.
2 3/16"	180 in. lbs.
2 7/16"	180 in. lbs.
2 15/16"	360 in. lbs.

Check every 2 to 6 months and retighten as needed.

### **BELT TRACKING/TENSION**



LOOKING AT THE TAKE-UP END OF THE MAGNET:  
 2 PULLEY DESIGN:  
 TO MOVE BELT LEFT,  
 TIGHTEN THE RIGHT TAKE-UP  
 TO MOVE BELT TO RIGHT,  
 TIGHTEN THE LEFT TAKE-UP

Belt track and tension should be checked at least every three hours for the first two days of operation. Once every three days after that.

If the separator is to be installed on an angle (inclined crossbelt) we recommend that the belt be tracked with the magnet level, then suspend it at its intended position. The maximum recommended angle of tilt for a crossbelt separator is 20 degrees. If the belt is running off towards the lower side, tighten the take-up on the high side or the side that the belt is traveling away from.

If the belt is still proving difficult to track, check the following:

- Are the bearings bolted down tightly to the frame?
- Have any moved or shifted?
- Is the magnet self-cleaning frame twisted or bent in any way?
- Has the self-cleaning belt been stretched so that one side is longer than the other?
- Have the ends of the belt been cut square to the edge of the belt prior to the splice being installed?



1. After the removal of the original or damaged belt, both take-ups should be taken in as far as they can go.
2. The new replacement belt should be laid out flat underneath the separator, cleats facing down.
3. Draw both ends of the belt together so that the splice hinge pin can be installed.
4. Place the first retaining collar over one end of the hinge pin (leave approximately 3/8" gap between the collar and the splice end loop).
5. Loosely set all three screws evenly around the hinge pin so all knurled points are in contact with the hinge pin. Then finish tightening all three screws securely.
6. Place the second retaining collar over the opposite end of the hinge pin (leave approximately 3/8" gap between the collar and the splice end loop).
7. Loosely set all three screws evenly around the hinge pin so all knurled points are in contact with the hinge pin. Then finish tightening all three screws securely.
8. The final step is to properly track the new belt and adjust the take-ups as required in order to keep the belt centered on the pulleys. The proper amount of belt sag must be maintained in order for the belt to track properly. The proper amount of sag is equal to 2% of the distance between the pulley centers. If the belt is too loose, you may have a problem keeping the belt centered on the pulleys. If the belt is too tight, it will put excessive strain on the splice.