

Thank you for purchasing an Industrial Magnetics Inc. Magnetic Slide Conveyor. The conveyor is very easy to operate and to maintain, but we do require that all personnel installing/operating/maintaining this equipment read and understand all contents of this owner's manual thoroughly before using the conveyor.

This manual provides installation instructions, start-up procedures, safety tips, assembly drawings, and information regarding preventative maintenance, lubrication and troubleshooting. This machine is durable and has been designed for a long service life.

NOTE: The information contained in this manual is correct at the time of printing, but due to continuing development of our products, changes in specifications are inevitable. IMI reserves the right to implement such changes without notice.

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** One or more of the above will be included in the last pages of this manual.

Safety Warnings

IMPORTANT....REQUIRED READING!

To ensure this quality product is safely and correctly utilized, all instructions within this manual must be read and understood prior to equipment start-up. Be aware of all safety labels on machinery. If you do not understand any of the safety instructions or feel there may be safety labels missing, contact your supervisor or product supplier immediately!

1. Make sure that the slider bed and all safety devices, guards and guarding are in place at all times. The only time that they may be removed is when the power is locked out for maintenance or cleaning.
2. Always know where the emergency stop buttons are located.
3. Always know or have quick access to emergency phone numbers.
4. Always have a standard break-in time for a new operator. A minimum of two hours is suggested.
5. Always wear safety glasses when operating conveyor.
6. Always “LOCK-OUT/TAG-OUT” power at the disconnect when conveyor is not in use, when servicing, or when performing routine maintenance – including cleaning.
7. Never operate this or any other machine while under the influence of drugs, alcohol, or medications.
8. Never wear loose fitting clothing, ties, or jewelry while in the vicinity of this conveyor.
9. Never allow long hair to be worn in the vicinity of this conveyor without the use of a protective hair net.
10. Never place any part of your body in or on any part of this conveyor while it is in operation.
11. Never stand, sit, climb, or walk on any part of conveyor.
12. Never allow anyone other than the operator within ten feet of conveyor while it is in operation.
13. Never remove guards, perform maintenance, or clear debris from conveyor without first locking out the power.
14. Never allow horseplay around the conveyor.
15. Never remove product from conveyor while the power is on.
16. Never allow personnel with medical implants to operate or service conveyor.

NOTE: The conveyor will be equipped with warning stickers. The stickers shown below are a few examples of some of the standard stickers that are placed on the conveyor.

INSTALLATION

UNLOADING/UNCRATING YOUR NEW CONVEYOR

Your new Industrial Magnetics Inc. Magnetic Slide Conveyor has been secured to a pallet for shipping, if it was shipped common carrier. If it was shipped on a flat bed, the conveyor is secured by the driver. Please inspect all equipment immediately for any shipping damages that may have occurred.

Using a lift truck or crane, remove the conveyor from the carrier and transport to the operation site. Remove all plastic wrap and discard responsibly.

CAUTION:

-USE EXTREME CARE AROUND SLIDER BED SURFACE TO ENSURE DENTING WILL NOT OCCUR. DENTING OF THIS SURFACE WILL CAUSE EXCESSIVE WEAR TO MAGNETS WHICH TRAVEL JUST BELOW SLIDER BED.

ELECTRICAL INSTALLATION

All electrical installations and service must be accomplished by a qualified electrician. Follow all national and local electrical codes and ordinances.

WARNING: LOCK-OUT/TAG-OUT POWER IN OFF POSITION

WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.

CAUTION: IF NOT PROVIDED BY FACTORY, USE EXTREME CARE WHEN CHOOSING AND LOCATING WIRES AND CONTROLS IN WET OR SUBMERSED APPLICATIONS.

CONVEYOR INSTALLATION

Place conveyor into proper start up position, securing it to adjoining machine or lagging to floor to prevent tipping or undesired motion. Set adjustable legs to proper level if applicable.

CAUTION:

-USE EXTREME CARE WHEN TRANSPORTING CONVEYOR TO PREVENT ANY TWISTING OF THE FRAME. THE FRAMING MUST MAINTAIN SQUARENESS TO ENSURE PROPER OPERATION OF THE CONVEYOR.

OIL-FILL INSTALLATION

Your Industrial Magnetics Inc. Magnetic Slide Conveyor may be designed for high temperature applications. In this condition, special UHMW chain guides and oil filled liquid tight frames with dipsticks are featured. (Ref. Assembly drawings in this manual to confirm your conveyor options).

If the conveyor is an oil-filled unit, remove dipstick and ensure #10 wt. Motor oil is at proper operating level. Conveyor must be idle for 15 minutes to allow drainage of oil into pan for accurate reading. (If needed, add additional oil with funnel inserted in dipstick opening).

Installation is now complete, and the IMI Magnetic Slide Conveyor is now ready for production.

SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.

OPERATION START-UP

PRE-START-UP PROCEDURE

- Σ Familiarize yourself with all controls.
- Σ Ensure that all safety devices, guards, guarding and covers are in place.
- Σ Ensure that area is clean.
- Σ Check conveyor slider bed for debris, discarded tools, etc.

START-UP- (IF CONVEYOR WAS SHIPPED WITH STARTER)

Turn on power. Depress forward button momentarily and check product flow direction. If direction is incorrect, have a qualified electrician correct the input power phasing.

To stop conveyor at any time, depress the stop button. If there is an emergency, the stop button may be depressed at any time. For normal stopping situations, wait for the conveyor slider bed to empty itself of all material before shutting off the conveyor.

CONVEYOR OPERATION

- Σ Always start conveyor prior to loading of conveyor. Starting a loaded conveyor may cause serious damage.
- Σ Conveyor capacity is reached when material starts to accumulate faster than the magnets can remove the product. When this occurs, magnets may be unable to break the product free from the pile. Therefore, all product should be fed at a uniform rate. Product should never be batch loaded or dumped.
- Σ Any residue build up from dried coolant, oil, or other material should be cleaned from slider bed periodically to achieve best production rate attainable.
- Σ Scrap or parts should be 2 inches shorter than magnet spacing. This will keep material from crossing over 2 magnets at once. If product does chain across 2 magnets, a cross circuit shorting will occur and product may be unable to move. (Reference that assembly drawing for the magnet spacing of your conveyor).
- Σ Material that is hard to convey include: long and stringy lathe or drill scrap, oily balls of chips, and large scrap pieces.
- Σ To increase the long life of your conveyor, impacts to the slider bed should be eliminated. These impacts will increase warping of slider bed, which in turn causes magnet wear, drive drag, and increased magnetic field gap. These results directly effect the production and life of the conveyor.

MAINTENANCE

The INDUSTRIAL MAGNETICS MAGNETIC SLIDE CONVEYOR is engineered to provide long life and minimal maintenance. To prolong this life and avoid any costly downtime, the below detailed instructions will provide valuable information to ensure you achieve the optimal performance from your conveyor.

LUBRICATION

- If the conveyor has the high temperature “oil-fill” option, check oil level with provided dipstick. Conveyor must be idle for 15 minutes to allow internal drainage of oil to pan. Add #10 wt. oil, if needed, using a funnel inserted in “pipe-nipple” opening. Oil should never need changing, however if desired, remove “pipe-plug” to drain.
- If the conveyor has no “oil-fill” option, lubrication of the sprockets and chain will aid in prevention of their wear. Although, the oil-filled UHMW chain guide prevents the need for the conveyor to be oil-filled, lubricating the chain and sprockets is recommended every 3 months using the provided oil-fittings (if applicable) and 10 wt. motor oil.
- Lubricate all re-greaseable bearings. Use multi-purpose bearing grease.
- Follow the instructions on page 8 for reducer maintenance and cleaning.

SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.

*INFORMATION AND MAINTENANCE FOR TYPICAL GROVE REDUCER

MAINTENANCE / CLEANING

1. Frequently check the oil level of the reducer. If the oil level is low, add proper lubrication through the fill/vent plug until it is full, as shown in the above diagram.
2. Inspect vent plug often to ensure that it is clean and operating.
3. Unit should be drained and filled with fresh lubricant every 2500 operational hours or six months (whichever occurs first) under normal operation conditions. More frequent oil changed may be required for severe or unusual operational or environmental conditions.

APPROVED STANDARD LUBRICANTS CHART

MANUFACTURER

30 DEGREES TO 100 DEGREES AMBIENT TEMPERATURE AGMA COMPOUNDED NO.7

50 DEGREES TO 125 DEGREES AMBIENT TEMPERATURE AGMA COMPOUNDED NO. 8

Amoco Oil Co.	Worm Gear Oil	Cylinder Oil #680
Chevron Oil Co.	Cylinder Oil #460X	Cylinder Oil #680X
Exxon Co. USA	Cyllestic TK – 460	Cyllestic TK – 680
Gulf Oil Co.	Senate 460	Senate 680D
Mobil Oil Corp.	600 W Super Cylinder**	Evtra Hecla Super
Shell Oil Co.	Valvata Oil J460	Valvata Oil
Sun Oil Co.	Gear Oil 7C	Gear Oil 8C
Texaco	Honor Cylinder Oil	650T Cylinder Oil
Union Oil Co. of CA	Steaval A	Worm Gear Lube 140

NOTE: Additional lubricants available for food grade and synthetics

*NOTE: If Grove reducer is not used, see manufacturer information for lubrication requirements.

**Standard factory installed lubricant

CHAIN TENSION

Although your INDUSTRIAL MAGNETICS INC. MAGNETIC SLIDE CONVEYOR is internally spring loaded, engineered, and factory set to provide proper chain tension for its entire life expectancy, it may be quickly adjusted. When the chain becomes wore, and chain tension is low, the magnet assemblies and chain will produce undesirable noise. By following the instructions listed below, proper chain tension can be maintained.

- WARNING – DISCONNECT AND LOCK / TAG OUT POWER PRIOR TO SERVICING EQUIPMENT.

- Remove side guides and slider bed.

- Increase chain tension by tightening of spring take up nuts.

(NOTE: Tighten each spring in small equal increments to ensure alignment)

- ***CAUTION*** - DO NOT OVER TIGHTEN CHAIN – This will cause excessive wear on the roller chain. Roller chain stretches gradually in the first few months, and less frequent thereafter. Therefore, chain inspection is recommended early in the first few months after installation. (See drawing below for proper chain tension)

- Reassemble slider bed and side guides. (NOTE: If a water tight seal is desired, apply 100% black silicone between slider bed and frame before assembly)

SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.

SLIDER BED

Maintaining the nonmagnetic slider bed surface is crucial to the smooth running operation of the conveyor. Daily inspections of the bed will prevent any extensive damage to the internal mechanisms of the conveyor and will provide maximum product flow. By following the listed instructions below, the stainless steel slider bed will provide long lasting life to your conveyor.

- Ensure slider bed is not getting damaged due to product feeding onto the conveyor. If so, special chutes, baffles, and impact plates may be needed to absorb these demanding impacts.
- Remove all dents to slider bed as outlined in the service section. This will prevent undue wear to magnet assembly which rides just below bed surface. Also, this will maintain proper air gapping between the magnets and the bed to ensure maximum product flow.
- To prevent internal damage to conveyor, replace slider bed if dents become non-repairable.

MAGNET ASSEMBLY

Maintaining the magnet assembly consists of only 2 major functions: an audible inspection and a visual inspection. If excessive scraping, banging, or rattling can be heard during operation or during internal inspection of the conveyor and/or damage can be seen to the face of the magnet assemblies, replace or repair magnets as outlined in the service section of the manual. Slider bed dents and interferences will cause this wear to the cover face of the magnet assembly. Repair any dents to the bed before production resumes.

SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.

SERVICE REMOVAL OF SLIDER BED

- **WARNING: – DISCONNECT AND LOCK / TAG OUT POWER PRIOR TO SERVICING OF EQUIPMENT.**

- **WARNING : REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.**

Whether the slider bed has been removed for repair, replacement, or for internal conveyor inspection and repair, the instructions listed below will ensure the bed is removed and reassembled properly. (See drawing below)

- Remove side guide fasteners.
- Remove side guides and slider bed.
- Repair any damages to slider bed.
- Make any internal conveyor inspections or repairs at this time.
- Remove all loose silicone resulting from removal of slider bed.
- Apply 100% black silicone to the surfaces shown below.
- Re-fasten slider bed and side guides.

SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.

REMOVAL OF CHAIN & MAGNET ASSEMBLY

If excessive internal noise becomes apparent during operation of the conveyor, chain, or magnet damage may have occurred. When chain becomes worn and spring take up has reached its limit, replacement of chain is vital to the smooth operation of the conveyor. Because the chains attachment pins are used to mount the magnet assemblies, removal of chain and magnets together is required. By following the instructions listed below, replacement of worn chain or magnet assemblies can be easily accomplished.

- Remove slider bed as outlined previously in this section.
- Jog chains until connecting links are on the advanced (top) portion of chain loop. (Positioned as shown below). **WARNING – THIS PROCEDURE REQUIRES ALL PERSONNEL AND TOOLS TO BE CLEAR OF MOVING EQUIPMENT.**
- Disconnect and lock / tag out power.
- Release chain tension by loosening of take up nuts shown above.
- Remove reducer by loosening of setscrews and removing of anti rotate rod end assembly and fasteners. Unit can now be slid off shaft.

- *****CAUTION***** - Clamp or secure chain as required to prevent bodily pinch points caused by gravity roll back of magnet / chain assembly on conveyor inclined sections if applicable.
- Remove spring clip connecting links on both chains.
- Pull magnet / chain assembly from upper tracking of the lower horizontal section toward the tail of the conveyor on to a clean surface free from dirt and debris. (NOTE: An additional person may be required to keep magnet / chain assembly from over traveling down the inclined sections if applicable).
- Replace worn chain and magnet assemblies as required. (NOTE: Ensure that chain connecting link spring clips are facing center of conveyor to prevent chain guide interferences).

SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.

REMOVAL OF TAKE-UP SPROCKETS

- Remove slider bed as previously outlined in this section.
 - - Jog chains until connecting links are on the advanced (top) portion of chain loop and positioned between take-up sprockets and chain guides. **WARNING – THIS PROCEDURE REQUIRES ALL PERSONNEL AND TOOLS TO BE CLEAR OF MOVING EQUIPMENT.**
 - Disconnect and **LOCK OUT / TAG OUT** power.
 - Loosen (6) take-up shaft hex nuts and remove threaded rod.
 - Secure chain and magnet assembly if required and remove connecting links.
 - Slide take-up shaft and mating details (as shown above) to remove from conveyor.
 - Remove snap rings on take-up shaft and replace worn sprockets and bearings.
- SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.**

REMOVAL OF DRIVE SPROCKETS

To ensure proper mating of chain and sprocket, it is recommended to replace all sprockets when chains are replaced. The instructions below will provide detailed steps to easily complete the removal of drive sprockets.

- **WARNING:** – DISCONNECT AND LOCK / TAG OUT POWER PRIOR TO SERVICING OF EQUIPMENT.

- Remove slider bed as previously outlined in this section.

- Remove chain & magnet assembly as previously outlined in this section. (NOTE: This step also includes previously instructed removal of reducer).

- Loosen drive sprocket and flange bearing set screws.

- Slide sprockets off the keys, then remove keys.

- As shown above, remove drive shaft from conveyor. (NOTE: Be cautious to secure above noted details from dropping onto conveyor as details are slid off of the drive shaft).

SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.

REMOVAL OF CHAIN GUIDES

The INDUSTRIAL MAGNETICS INC. SLIDE CONVEYOR features UHMW-PE oil filled chain guides. These guides provide many advantages over the traditional steel tracking. They have 1/7 the weight of steel, create less friction than steel, outwear steel 3 to 1, are quieter than steel, and are corrosive free! If any damages occur to guides and replacement is desired, the instructions listed below will provide you with the necessary steps to complete this task.

- Disconnect and LOCCK-OUT / TAG-OUT power.

- Remove slider bed as previously outlined in this section.

- Remove chain & magnet assembly as previously outlined in this section. (NOTE: This step also includes previously instructed removal of reducer).

- Loosen fasteners as shown below.

- Replace chain guides as required.

- Refasten chain guides to conveyor frame. (NOTE: Realign top of chain guides to top flange of conveyor frame to ensure proper magnet spacing).

SAFETY WARNING: REPLACE ALL SAFETY DEVICES, GUARDS, AND GUARDING PRIOR TO EQUIPMENT START UP.