

# Installation, Operation and Maintenance Instructions

A large black rectangular area containing the text "BELT CONVEYORS" in a bold, white, sans-serif font. To the left of this black area is a vertical grey bar.

## BELT CONVEYORS

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

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## ERIEZ BELT CONVEYORS

### Introduction

There are two types of Belt Conveyors, magnetic and non-magnetic. Both types of conveyors are available in various shapes and styles, as illustrations show only some of the many possibilities.

1. Belt surfaces can be smooth, rough or cleated, FDA or USDA approved.
2. Belt speed may be constant or have variable speed controls.
3. Transfer of materials can be horizontal, vertical, inclined, turned or inverted.
4. Materials being conveyed can be washed, air-blasted, demagnetized, filled, etc.
5. Other options - stainless steel construction, hoppers, side guides, covers, chutes, etc.

**⚠ 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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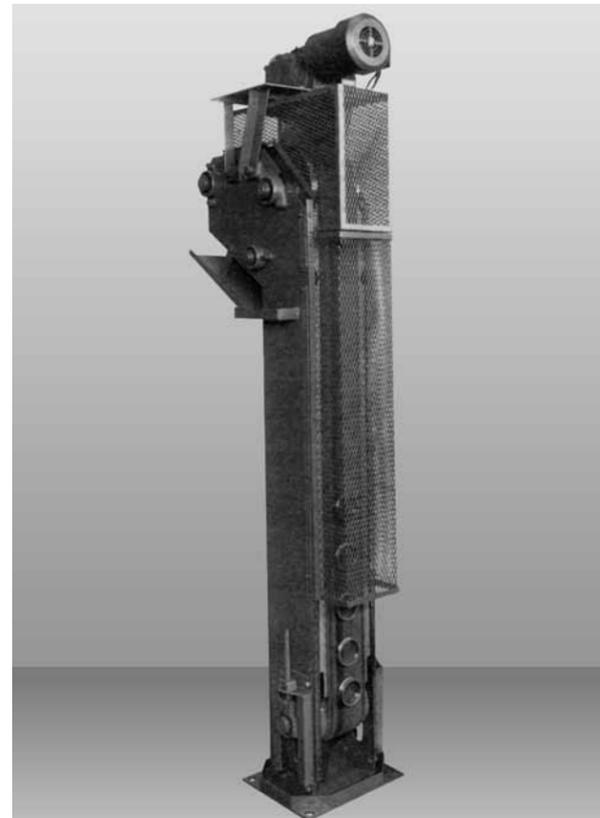
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# Installation

## IDENTIFICATION TAG

The identification tag is located at the drive end of the conveyor. This tag indicates the model, style and serial number of the conveyor. Be sure to include this information in any correspondence concerning parts or service.

## HANDLING

When shipped, the conveyor is carefully packaged by crating. It is physically supported wherever necessary to protect and support it. It should remain in a supported state until installed in its operating position, where it is supported either by its own frame or by structural members supplied by the user.

When the unit is uncrated, handle it carefully to avoid twisting, wracking or bending. If you must lift the conveyor to place it in its operating position, use the lift lugs provided or the motor mounting blocks as lift points.

To lift the conveyor by the motor mounting blocks, connect the chain as follows: First, bring both ends of the chain down in front of the motor mounting plate (between the motor and the conveyor discharge). Then pass both ends of the chain under the motor mounting plate. Finally, hook the ends of the chain to the motor mounting blocks on the sides of the conveyor.

## FLOOR MOUNTING OR SUSPENSION

Belt Conveyors usually are bolted to the floor, but in some cases, they are bolted to walls, adjoining machinery or some even suspended from above.

## WIRING

If the conveyor is to remain in a fixed position, wiring to the motor should enter from conduit or a flexible conduit. Use of a motor starter and branch circuit protection is recommended if not supplied with the conveyor.

When wiring the motor, the drive chain should be removed before start-up and the motor turned on briefly to make certain that the motor is running in the right direction - that is, so the sprocket and chain move toward the discharge end of the conveyor.

**CAUTION: Do not allow the conveyor to run in reverse direction.**

## TAKE-UP MECHANISM

Belt tracking is adjustable with the take-up frame and bearings, mounted to the conveyor housing. Belts are tracked by increasing or decreasing the tension on the belt, using the take-up unit. (Example: By tightening the right side take-up bolt, the belt will track to the left side of slider plate.) Care should be taken not to over-tighten belt which may cause premature wear to component parts.

## GEARCASE VENT

The gearcase is shipped with a solid plug in the pressure relief hole (Fig. 1) unless the conveyor is shipped upright from the factory. This plug must be removed and the attached vented plug inserted before the unit is operated.

The vent plug is designed to prevent dirt and water from entering the gearcase and also release air pressure caused by heat generated in the gearcase. Without proper air venting, the increase in air pressure may force lubricant through the oil seals and result in oil seal leakage and damage to the oil seal. **Do not restrict the operation of the vent with paint or other obstruction.**

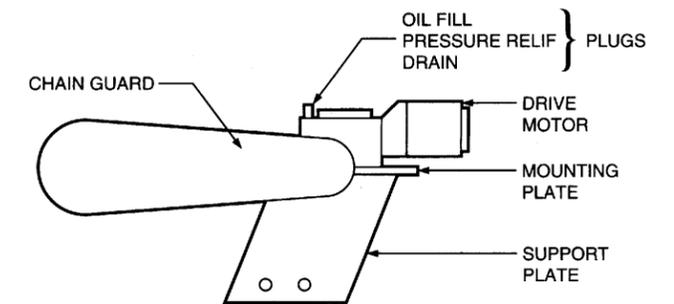


FIGURE 1

# Operation

## MOTOR

### Starting

The motor should start quickly and run smoothly with little noise. If the motor should fail to start it may be that the load is too great for the motor, the applied voltage is low or the motor has been improperly connected. In any case, immediately shut off the motor and investigate the cause.

### Overload Protection

Motors supplied with thermal protectors are furnished with either a manual or automatic reset type to protect against destructive over-heating. If the protector trips, proceed as follows:

#### FOR MANUAL RESET TYPE

1. Wait two minutes
2. Push in reset plunger until it catches.

#### FOR AUTOMATIC RESET TYPE

This type will reset itself when the motor cools sufficiently. If the thermal protector continues to trip, some abnormal condition exists. This condition must be corrected before the motor will operate normally.

## RECOMMENDED WIRE AND

# Lubrication & Maintenance

## DRIVE SHAFT BEARINGS

Lubricate the drive shaft bearings every 1500 hours or six months with a good grade of ball bearing grease when changing gear lubricant. **DO NOT OVER LUBRICATE GREASE PACKED BEARINGS.**

## GEARMOTORS & REDUCERS

Gearmotors and gear reducers are accurately adjusted and tested at the factory. Care must be taken when the gearcase is disassembled and reassembled. This should be done by an authorized service station as damage to internal parts may result if done improperly. Whenever the motor unit is assembled to the reducer, the spline must be lubricated with a molydisulfide lubricant, preferably Mobil Temp No. 78.

Motors are warranted by the motor manufacturer.

## FUSE SIZES

Refer to national Electric Code and/or applicable Local Area Code for wire and fuse sizes.

### WARNING: Automatic Reset Thermal Protector

**A motor which can restart automatically after the thermal shut-down should not be installed so that its automatic restarting can result in injury to persons.**

## CONVEYOR SPEED

Each conveyor has its own best belt speed range for the product it is designed to handle. This belt speed has been determined at the time unit was designed based on application and number of pieces required.

# Lubrication & Maintenance

The proper lubricant must be selected for the operating ambient temperature range, with seasonal changes in lubricant grade when necessary. Output speeds above 300 rpm may require a lighter grade of lubricant. Select the lubricant from the proper column in the table on page 5. Lubricants other than those listed should not be used without specific factory approval as performance or gear life may be adversely affected.

NOTE: Do not operate this gear unit in ambient temperatures below -65 degrees F (-55°C) nor above +165 degrees F (75°C). For temperatures below +10 degrees F (-10°C), special seals are required.

## MOTOR

### Lubrication of Ball Bearings

The ball bearings are deep-grooved, double-shielded bearings with sufficient lubricant packed into the bearings by the manufacturer for "life lubrication." The initial lubricant is supplemented

by a supply packed into larger reservoirs in the end shield at the time of assembly. No grease fittings are provided as the initial lubrication is adequate for up to five years of operation under normal conditions.

### Lubrication of Sleeve Bearings

The bearing sleeve is steel on the outside for strength with a tin base babbitt lining on the inside for low friction and long wear. A storage space around the bearing is filled with Permawick, a commercial composition of special cellulose fibre highly saturated with oil. The initial factory lubrication is normally adequate for approximately two years under normal operation. Thereafter, lubricate about every six months. This requires about 3 to 4 squirts from an oil can. Use only light grade mineral oil (similar to SAE-10W) having viscosity of 210 sec. at 100 degrees F (40°C). If the motor has been subjected to storage prior to operation, it is advisable to lubricate as described on page 7.

RECOMMENDED GEARCASE LUBRICANTS:						
AMBIENT TEMPERATURE	LUBRICANT VISCOSITY GROUP					
	Up to 300 RPM		Over 300 RPM			
-65°F to 0°F (-55°C to -15°C)	318.59				318.59	
-45°F to +20°F (-45°C to -5°C)	318.60				318.60	
-5°F to +55°F (-20°C to 15°C)	318.61				318.62	
15°F to 110°F (-10°C to 45°C)	318.62				318.63	
100°F to 165°F (40°C to 75°C)	318.63					
<b>VISCOSITY GROUP</b>	<b>318.</b>	<b>59</b>	<b>60</b>	<b>61</b>	<b>62</b>	<b>63</b>
GULF OIL CO. HARMONY TRANSGEAR LUBE				90	140	204
E.F. HOUGHTON CO. MP GEAR OIL				90	140	
MOBIL OIL CO. AVREX MOBIL FLUID EXTRA HELCA	903		423			Super Cylinder
PHILLIPS PET. CO. PHILUBE				90	140	
SHELL OIL CO. SPIRAX HVY. DTY. AEROSHELL FLUID	4		5L	90	80-140	
ATLANTIC RICHFIELD CO. ARCO GEAR OIL				90	140	
TEXACO UNIVERSAL GEAR LUBE EP				90	140	

## GEARCASE

Lubrication is extremely important for satisfactory operation. Proper oil level must be maintained in the gearcase at all times. The correct level is indicated by the red plug. Frequent inspections with the unit not running (preferably when warm) should be made by removing this plug to see that level is being maintained. If low, (without replacing oil level plug) add lubricant through the oil fill hole until it comes out of the oil level hole. Replace the oil level plug securely.

Lubricant should be drained and the gearcase refilled after the first 250 hours of operation; then every 1500 hours or six months thereafter, whichever occurs first. Use only recommended lubricants.



# Spare Parts List

Some common spare parts. Each conveyor will have its own Spare Parts List.

- Motor
- Take-Up Unit
- Chain Connecting Links
- Reducer

- Sprockets
- Drive Pulley
- Belt & Lacing
- Drive Chain
- Slider Plate
- Bearings

# Troubleshooting

## 1. PROBLEM

Motor will not run.

### PROBABLE CAUSE

- a. Broken wire
- b. Improper wiring
- c. No electricity
- d. Heaters or fuses are open or tripped
- e. Faulty starter
- f. Power off at source

## 2. PROBLEM

Relays or starters kick out.

### PROBABLE CAUSE

- a. Overload imposed by electrical short
- b. Internal mechanical interference.

## 3. PROBLEM

Motor runs - but belt slips.

### PROBABLE CAUSE

- a. Not enough tension on belt
- b. Lagging needs replaced.



**World Authority in Advanced Technology for Magnetic, Vibratory and Inspection Applications**

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