

# Service Instructions

Idler  
Operation  
Installation  
Maintenance  
Safety  
Instructions



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## TO OUR CUSTOMER

This manual contains complete instructions for the installation, operation and maintenance of SMH idlers. The reliable operation and long service life of these idlers depend on the care taken during installation, operation and the degree of maintenance.

All standard idlers are manufactured to the standard of the Conveyor Equipment Manufacturer's Association (CEMA) for North America and to the standard of Deutsches Institut für Normung (DIN) for international markets.

Supplementary instructions should be followed for components not furnished by SMH. Components installed without approval of SMH Technologies, Inc. are the sole responsibility of the purchaser or final user.

## SAFETY

Safety is a basic factor that must be considered at all times in the operation and maintenance of mechanical equipment. Use of proper tools and methods can prevent serious accidents that may result in injury to you and your fellow workers.

A number of safety precautions are listed throughout this manual. Study them carefully and follow them; insist that those working with you do the same. Remember – an accident is usually caused by carelessness or negligence. In addition, nearly all employees are subject to the federal Occupational Safety and Health Act of 1970, as amended, which requires that an employer be kept abreast of the regulations which have been issued under its authority.

Safe practices for operating belt conveyors are given in detail in American National Standard Publication "Safety Standards for Conveyors and Related Equipment" ANSI B20.1, Section 5 and 6.01. Only persons completely familiar with these standards should be permitted to operate or maintain the conveyors.

 **CAUTION:** Failure to follow these precautions may result in serious PERSONAL injury or damage to equipment.

The following is a list of precautions which should always be exercised around belt conveyors.



**CAUTION:** Before performing any maintenance, the circuit should be opened at the switch box, and the switch should be padlocked in the **OFF** position.

1. **ALWAYS** operate conveyor in accordance with instructions in this manual.
2. **DO NOT** place hands or feet on conveyor while in operation.

3. **NEVER** walk on conveyor belt unless drive has been locked out and tagged.
4. **DO NOT** put conveyor to any other use than that for which is was designed.
5. **AVOID** poking or prodding material on conveyor with bar or stick inserted through openings.
6. **ALWAYS** have a clear view of loading and unloading points and all safety devices.
7. **KEEP** area around conveyor, drive, and control station free of debris and obstacles.
8. **NEVER** operate conveyor without guards and other safety devices in position.

## PRE-INSTALLATION CARE

Belt conveyor idlers are usually mounted on pallets for shipment to their destination. Since they frequently arrive well in advance of their installation date, it may be necessary to temporarily store them out-of-doors. Protect them during this period by covering each pallet with a tarpaulin.

## IDLER INSTALLATION

**⚠ CAUTION:** ALWAYS LIFT IDLERS BY THE FRAME, NEVER BY THE ROLLS.

1. Remove mud, stones, burrs, or any other debris from the stringers so that the pulleys and idlers will sit squarely in position. This precaution will help prevent belt training problems.
2. Mount pulleys level with the plane of the conveyor and perpendicular to the line of belt travel.
3. Position idlers perpendicular to the line of belt travel. **THE MIDDLE OF EACH CENTER ROLL MUST BE ON THE CENTERLINE OF THE CONVEYOR.** Tighten all four mounting bolts.
4. Rotate each roll to be sure it turns freely. If a roll is tight, look for some external interference or evidence of damage to roll or frame.
5. Install training idlers with the same care and accuracy used in mounting the basic carrying and return idlers.
6. Bolt the training idlers with the actuating rolls so that they extend TOWARD THE APPROACH SIDE OF THE BELT. See figure 1.

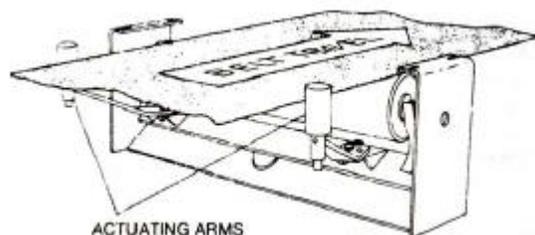


Figure 1

7. One-way rolls have one head painted a different color for easy identification. The head is marked with arrows showing the direction of rotation. Extreme care must be taken to ensure that the roll is installed correctly in order for the system to work properly. See figure 2.

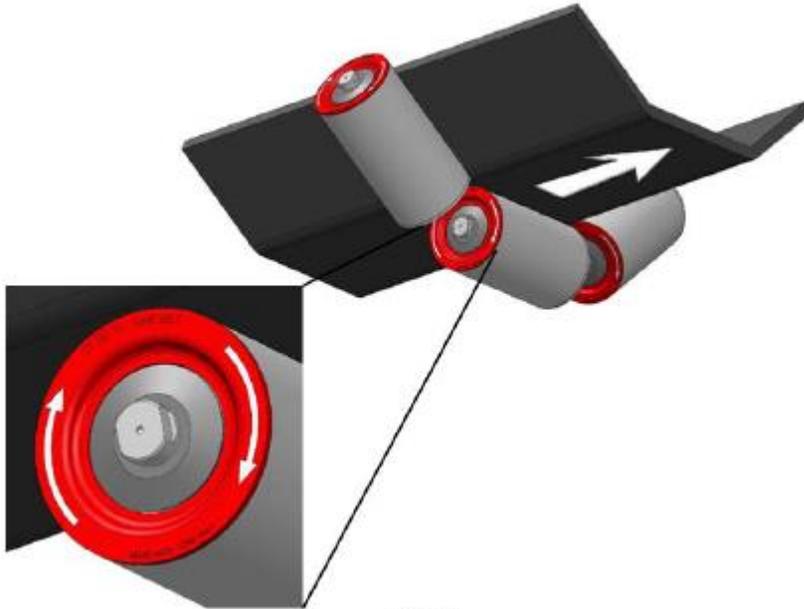


Figure 2

8. Inspect roll surfaces and remove any foreign material, especially abrasive dust, to prevent damage to the underside of the belt.

## **IDLER INSPECTION**

Costly interruptions in production can often be avoided by a program of regularly scheduled inspections of the system and all components.

Many operators and maintenance supervisors find it economical to inspect the belt daily for breaks in the rubber covering or signs of edge rubbing. It is better to make this inspection before the system is operated and while the belt is empty.

1. After start-up, check belt loading. Chutes should deliver an even flow of material and load it centrally on the belt.
2. Check for unusual vibrations. They can loosen mounting bolts, allow idlers to shift and cause misalignment. If this condition occurs, eliminate the cause; then realign all loose idlers and retighten the mounting bolts.
3. Be sure spilled materials do not interfere with swiveling of training idlers, or the free rotation of idler rolls. Good housekeeping is essential to high operating efficiency.
4. If an idler is sluggish, but its movement is not retarded by material buildup, a choked interior or an impending bearing failure is indicated. The latter condition is almost always signaled by an unusual noise, generally a high-pitched squeal. Sluggish, noisy, or completely stalled rolls require immediate

attention because they waste power and cause excessive belt wear. If stalled rolls remain in the system, the outer shell will eventually wear through and the resulting sharp edges will severely damage the belt. When a faulty roll is discovered, tag the idler immediately and remove it from the conveyor as soon as the system is shut down. Even though only one roll is affected, inspect all **three** rolls.

## IDLER MAINTENANCE

Link-Belt® idlers are easy to maintain because only periodic inspection of a few rolls is required to determine the need for replacement. Idler removal and replacement are also simple tasks. The following instructions will assist you in both matters.

### FIXED FRAME IDLER REMOVAL



**CAUTION:** Before performing any maintenance, the circuit should be opened at the switch box, and the switch should be padlocked in the **OFF** position.

1. Remove mounting bolts.
2. Tip idler forward or backward, whichever is more convenient, until it rests on decking. If the installation does not include decking, additional **precautions must be taken** to prevent the idler from falling through to the return run and causing damage or injury. A suitable plank might be used to support the idler when it comes to rest.
3. Slide the idler out from under the belt.

NOTE: When idler is reinstalled, be sure it is accurately aligned and securely bolted in place.

### Roll Removal

1. Remove end and center retainers.
2. Remove both end rolls. It may be necessary to tap the rolls to free them from the brackets. Use a rubberhead mallet.
3. Remove the center roll.

### Roll Installation

1. Place center roll in idler frame.
2. Install end rolls and secure with end and center retainers. NOTE: End and center retainers are an integral part of the idler assembly and must be installed.

## Regreasable Idler Lubrication (Regreasable idler only)

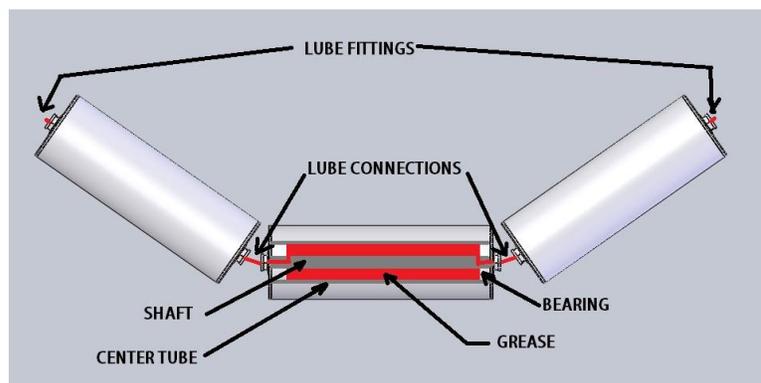
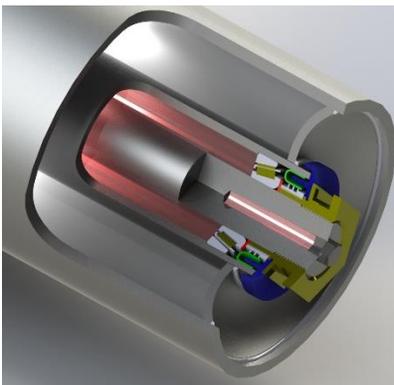
Under normal conditions, relubrication should be scheduled every 4000 to 6000 hours. It is recommended that the same or an equivalent grease be used. When using any other type of grease, it is imperative that it be compatible with the original grease.

The lubrication cycle can be lengthened in applications where operating conditions are clean, dry, of moderate temperature and slow speed ( $\leq 500$  rpm). The cycle should be shortened in applications where severe dirt, high humidity, elevated temperatures, high speeds, water, prolonged shutdown, or other extreme conditions are encountered. Periodic inspection during the first few years of operation will provide the best determination of required relubrication frequency.

Link-Belt® idlers are greased at the factory with a high performance EP grease with a NLGI #2 consistency having the following characteristics:

1. Excellent low temperature pumpability
2. Excellent rust and oxidation protection
3. Extreme pressure and anti-wear additives
4. Operating range of +225°F to -65°F
5. Oil separation 1% maximum
6. Water washout 5% loss maximum

When lubricating idlers, the use of high pressure equipment is not only unnecessary, but is actually undesirable unless used with great care. High pressure may cause damage to bearings and seals. It is recommended that a VOLUME TYPE GREASE GUN BE USED: one that delivers an ounce of grease per seven to ten strokes of the lever. All fittings should be wiped clean before lubricating so as not to introduce dirt into the system. For troughing idlers, pumping should be stopped when a clean bead of grease appears at the tip of the lube fitting on the opposite wing roll.



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