

SECTION FOUR MAINTENANCE AND SERVICE INSTRUCTIONS

TRUCK-MOUNTED CONVEYORS

FBR-FIBERGLASS SERIES TURNTABLES- RTH 3000, RTH 4000, RTH 6000

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GENERAL

This section contains instructions for maintaining and servicing, (1) FBR conveyors; (2) RTH 3000, RTH-4000 and RTH-6000 full hydraulic turntables. The service record card included with these operating instructions shows the factory recommended maintenance schedule. Also use this card to keep track of maintenance and repairs performed.

(CM) engineers its conveyors to provide years of service in for heavy, continuous use. With proper maintenance, the conveyor system will work when you need it.

Failure to maintain your conveyor and turntable will cause it to wear out faster than it normally would.

- Always perform the scheduled maintenance before putting the conveyor in service.

NOTE

Only trained, qualified personnel should perform maintenance and adjustments.

ROUTINE MAINTENANCE

Daily Maintenance

Inspect each conveyor and turntable unit daily before leaving the yard. Inspect (1) the conveyor boom; (2) all hydraulic hoses and fittings, and (3) the turntable post and head for cracks, splits or other damage. Inspect all steel pins, nuts and bolts (including (a) the pins that connect the conveyor saddle to the post; (b) the pins that connect the cylinders). Make sure the right nuts and cotter pins that keep these items in place are securely attached. Check all fittings for leaks and clear the truck bed of all oil residue. Similarly, inspect stabilizers.

Weekly Maintenance

Service each conveyor and turntable unit weekly while in use. Schedule a specific day in the week to perform maintenance, preferably before leaving the yard. It should take about ten to fifteen minutes

1.) Maintain tire pressure as specified on the truck tire side walls. Be sure all to complete. Follow the ten-point service program as listed below:

2.) Inspect hydraulic hoses, valves, motors and fittings for leaks or damage, tighten, repair or replace, as necessary;

3.) Keep the valve bank clean and free from obstructions. Replace valve handles when rubber becomes worn and clear the truck bed of all extraneous material and oil;

4.) Grease the inner turntable post to avoid abrasive wear. Always keep the post well-lubricated. Lubricate using only a good grade of lithium-based all-purpose grease.

5.) Grease the pin used to hinge the conveyor saddle or platform to the

turntable post. Always keep the pin well greased (the grease zerk is located on the top of the post);

6.) Grease the thrust gear bearing bolted to the underneath side of the turntable base plate (the thrust gear bearing has a grease zerk on the inside of the bearing to permit lubrication);

7.) Inspect all cylinder and hinge pins for wear and be sure all cotter and clip pins are present. Replace if missing, or if wear is visible.

8.) Tighten all nuts and bolts.

9.) Check the gear alignment and condition of the teeth on both the small and the large gear. Always keep the bearing greased and inspect: (a) the ear (located on the inner turntable post) to which the cylinder that lifts the conveyor up and down is pinned; (b) the ear on the saddle where the other end of the cylinder is pinned. Replace the entire post or saddle if cracks, breaks, sagging or other signs of wear are visible.

Monthly Maintenance

When in use, adjust and align major turntable and conveyor components even if no problems are evident upon visual inspection. Check the following items every month:

1.) Check the hydraulic oil level, and add fluid as necessary. (CM) recommends use of Conoco No. 46 Anti-Wear hydraulic oil or equivalent.

2.) Check the conveyor belt for tension and alignment according to the instructions contained below.

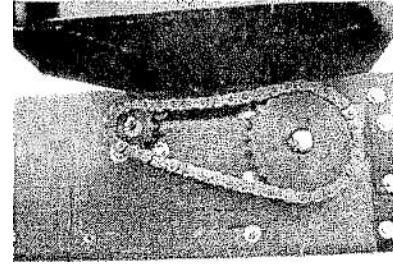


Fig. 4-1 Inspect the chain and adjust the chain tension

3.) Inspect the chain drive sprockets located at the top end of the conveyor (see Fig. 4-1).on the inside of the conveyor frame, for true alignment and correct chain tension. Realign the sprockets and tighten the set of screws as necessary. Press the chain with your thumb midway between the sprockets. You should be able to move the chain about $\frac{1}{2}$ inch with thumb pressure. Tightening the chain too tightly can damage the bearings. Lubricate the No. 60 roller chain on the chain drive. (CM) recommends a multi-purpose lubricant such as a lithium-based spray grease.

IMPORTANT NOTE

When inspecting the FBR conveyor belt, read the notice regarding BELT REPLACEMENT, see "IMPORTANT INFORMATION", p-i.

4.) Inspect the conveyor belt for proper tension. It is normal for the belt to loosen after its initial use. The amount the belt will stretch depends upon the loads it carries, but will probably be somewhere around three (3) percent. Pull up hard on the belt at the center of the conveyor so as to lift it up off the conveyor frame. There should be between 4-6 inches of clearance maximum between the belt and the frame (see Fig 4-2)



Fig 4-2 Conveyor belt tension is correct when belt can be lifted 4-6 inches in middle on conveyor.

5.) If the clearance is more than the specified distance, tighten the belt by adjusting the take-up screws at the bottom end of the conveyor (see Fig. 4-3). If the clearance is less than the specified distance, loosen the belt similarly. Running the conveyor with the belt too tight can damage the belt and cause excessive bearing wear.

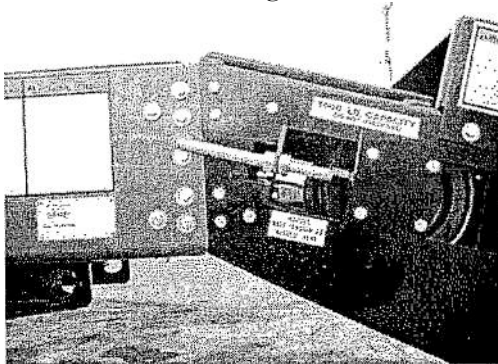


Fig 4-3 Conveyor belt tension is adjusted by turning the adjusting screws at the base at the end of the conveyor.

6.) Inspect the belt to make sure the "V"-Guide on the bottom side of the conveyor runs in the center of the head and tail pulleys and in between the channel underneath the belt. A belt that

is too loose may walk excessively, even if it is properly aligned. Similarly, you can align the belt at the bottom end by adjusting the long take-up screws that tighten the belt.

5.) Check all seated bearings for wear. Replace worn bearings.

6.) The conveyor rotates by means of a hydraulic motor mounted underneath the base plate of the turntable. The rotation system is a gear-to-gear drive system driven with a small 2-inch pinion gear that in turn, drives a 22-inch by 2-inch gear and bearing. The bolts that fasten the gear bearing to the base plate are special high-strength steel alloy fasteners. During assembly of the turntable, these bolts are torqued to a value of 201 ft.-lbs. [5/8 inch SAE Grade 8 bolts]. It is necessary for your safety, and that of others, to maintain the bolt at the specified torsional value.

CAUTION -verify proper torsional value by applying a torque wrench to each bolt connecting the bearing/gear to the base plate. Verify all bolts in the pattern, both on the upper and lower mounting surfaces once **EVERY THREE MONTHS. DO NOT EXCEED THE SPECIFIED TORSIONAL VALUES.**

7.) Keep the gears greased.

7.) Inspect and replace any damaged or otherwise deteriorated warning or safety labels (see Section 5 for appropriate labels and locations). Replacement labels are available free of charge from your local dealer, distributor or service center. If you are unable to locate a local representative, contact CMI for replacements.

Preparation for Storage

When the conveyor will remain unused for more than one month, conduct the following maintenance before placing the unit in storage:

- 1.) Clean the truck, conveyor, and turntable thoroughly.
- 2.) Perform the weekly and monthly maintenance described above. Maintain

the truck as recommended in the owner's manual.

- 3.) To prevent rust, oil all exposed cylinder rods with the same grade of hydraulic oil specified for use in the system.
- 4.) Order any replacement parts required, and schedule any maintenance necessary to prepare the unit for the next season.

UNIT REPLACEMENT

In addition to the required periodic servicing and maintenance detailed above, note that certain parts of the conveyor need periodic replacement. Important: **Read the special instructions for belt and hydraulic line replacement for FBR conveyors located at the beginning of the manual.** Although (CM) employs every effort to assure that customer expectation of performance is exceeded, from time to time however, it may be necessary to replace components following extended use. As is the case with any mechanical system, components wear out. The rapidity with which this occurs is a function of a number of factors, including environmental conditions, extremes in hot and cold or damp conditions. Also and most significantly, hours in service and the nature of use rather light, moderate or heavy. These and other factors all come to bear in predicting component longevity. Cleasby Conveyors, recommends that you replace certain parts before they fail. A complete failure of certain components may create a safety hazard or cause extensive damage to other costly parts. The following replacements

are highly recommended when a careful inspection indicates excessive wear or damage:

- 1.) It is very important that you see to it that the safety and warning labels placed on the conveyor and turntable at the factory are always readable. If not, they must be replaced. Replacement labels are available, free of charge from either your dealer, distributor or directly from the factory.



Risk of DEATH or SERIOUS INJURY if the Conveyor or Load comes in Contact with or Proximity to Power Lines

Never replace Hydraulic lines with metal or rubber substitutes

The Belt Must Not be replaced except with an IDENTICAL belt that must be ordered from Cleasby Conveyors (800) 453-2446

- 2.) As a result of exposure to the elements, the rubber hydraulic hoses on the conveyor will deteriorate even if the

unit is not in regular use. Heavy use or damage can also abrade the outer cover on the hoses. Under normal usage, the hoses should last two to four years. When the hoses show deep or extensive cracking or splitting of the outer cover, replace them.

3.) Inspect the pinion gear and gear bearing. Insure that the teeth are in good shape, and that the gears are aligned properly. Make sure the motor mounting bolts are tight (see previous instructions).

IMPORTANT: When using a FBR-Series fiberglass conveyor, change the hydraulic oil every **SIX MONTHS** at least. This will eliminate any metal chips or other particles suspended in the hydraulic system and help insure the electrical insulation standards for the fiberglass conveyor.

4.) After three to five years, it may be necessary to replace the seals in the valves, cylinders and pump. Operating the unit with dirty or contaminated oil, however will shorten the life of these parts significantly. Dirt in the oil can cause scoring of the interior metal surfaces, while contaminants can cause rust, corrosion and seal deterioration. Drain and replace the oil with Conoco No. 46 anti-wear hydraulic oil, or its equivalent. If oil becomes contaminated through pump or other component failure, replace the fluid immediately.

5.) Replace the saddle hinge pin, cotter pins and clips, if wear is evident.

NOTES

Lubricate the saddle hinge pin by using the grease zerk on top of the turntable post.

Keep all nuts bolts tight. Torque the bolts that hold the thrust gear bearing to the base plate (top and bottom) to 201 ft.-lbs. [5/8 inch SAE Grade 8 Bolts]. Keep all other nuts and bolts tight.

Lowering The Conveyor without Power

The quick instruction is: **DON'T EVEN TRY!** Hydraulic power may be unavailable if the truck motor won't start. If a hose breaks, or if a power take-off fails. If this happens, do one of two things, first, bring in a portable power supply to get the conveyor to the rack, second, get to a repair facility, or use a crane to lift the conveyor back into the traveling position.

The hydraulic cylinder that raises and lowers the conveyor has a velocity fuse valve that maintains pressure in the raise side of the cylinder until the pressure releases. This keeps the conveyor in position, even if there is no hydraulic power.

MAINTENANCE AND SERVICE RECORDS

A permanent maintenance and service record is critical to the proper maintenance of a reliable and safe conveyor system. On the following pages you will find blank maintenance and service pages. Please feel free to make photocopies for permanent use in your maintenance and service records. There are spaces provided for the operator or service person to date and initial the record each time a service is performed. There is also a space provided for comments concerning problems and to note when repairs are made. If a separate maintenance group maintains the

conveyor system, forward this section and the maintenance and service records to that group. In most cases, the operator will perform the daily maintenance. Therefore, the daily maintenance record should stay with the conveyor.

CLEASBY CONVEYORS MAINTENANCE & SERVICE INSPECTION LIST

Customer Name: _____
 Address: _____
 Phone: _____

Inspection Date: _____
 Work Order #: _____
 Truck #: _____

O.S.H.A. INSPECTION REQUIREMENTS: O.S.H.A. 1926.550 requires that an employer shall perform daily and monthly inspections and maintain results of inspections for each hoisting machine and piece of equipment. It further requires that a thorough annual inspection of hoisting machinery be made by a competent person, or by a government or private agency recognized by the U.S. Department of Labor; and that the employer maintain a record of the dates and results of inspections of each hoisting machine and piece of equipment. The following are suggested inspection items to perform on Cleasby conveyors, turntables and stabilizers in order to comply with O.S.H.A Regulation 1926.550.

GENERAL INSTRUCTIONS: All inspections listed should be performed as schedule indicates. Daily inspections do not have to be recorded but should be verified and recorded monthly. This inspection form does not eliminate or replace prescribed maintenance in parts manual furnished by the company for your conveyor, turntable, and stabilizer. A copy of completed form should remain with conveyor at all times. **If you do not understand these instructions, or if you are not sure whether or not a part should be replaced, please call the manufacturer; Cleasby Conveyors, 1-800-453-2446**

D = Daily W = Weekly M = Monthly S = Semi-Annually	INSPECTION DESCRIPTION	P = Pass F = Fail	REPAIRED YES/NO DATE
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Conveyor Model # _____ Serial # _____

D	Check safety and warning decals for legibility and replace if necessary			
D	Check conveyor mounting pin and brass bushing for excessive wear			
D	Check hydraulic hose and fitting for leaks and replace only with orange NON-CONDUCTIVE hydraulic hose			
D	Check instruction tube at the bottom side of conveyors for manual			
D	Check on/off belt control valve for smooth operation			
W	Check loading guard. Replace if damaged or bent			
W	Check nose loops for wear and replace if necessary			
W	Check roof support legs and pins and replace if missing			
W	Check chain and sprocket guard and replace if missing or damaged			
W	Clean conveyor to eliminate conductive contaminates			
M	Inspect fiberglass channel for cracks, excessive wear or holes			
M	Check conveyor saddle for wear or cracks in welds or metal			
M	Check drive chain and sprockets for alignment or excessive wear			
M	Check tail pulley wheels, bushings, shaft and take up plates for wear			
M	Check drive drum wheels, bearings, shaft and grease if necessary			
M	Check belt for excessive wear, cracks and tension and replace with only a NON-CONDUCTIVE PVC belt			
M	Tighten all nuts and bolts			
M	Check all cleats on belt to make sure nuts and bolts are tight. Replace any cleats that may be missing.			
M	Check belt return rollers and tracking guides for excessive wear.			

CLEASBY CONVEYORS MAINTENANCE & SERVICE INSPECTION LIST (CON'T)

Turntable Model # _____ Serial # _____

D	Check safety and warning decals for legibility and replace if necessary			
D	Check velocity fuse, hose and restrictor fitting and replace if missing			
D	Check hydraulic hose and fitting for leaks and replace if necessary			
D	Check four spool control valve for smooth operation			
W	Check cylinder pins, washers and cotter pins, replace if worn or missing			
W	Check hydraulic reservoir for proper oil level. Change oil semi-annually			
W	Check brass wear pads and Teflon wear plug for wear, replace if necessary			
W	Check post cylinder ears and weld for cracks and repair if necessary			
W	Check control valve handles and labels, replace if necessary			
M	Check inner and outer post for wear and excessive play			
M	Check gear bearing for excessive wear and grease as needed			
M	Check gear bearing bolts, replace if worn, cracked, stripped or broken			
M	Check pinion gear and gear bearing for alignment			
M	Check top and bottom inner post cylinder pins and cotters, replace if necessary			
M	Check all metal welds for cracks and wear			
M	Check turntable mounting bolt and blocks for wear			
M	Check turntable posts for grease. Add grease as needed.			
S	Change hydraulic oil filter on return line			

Stabilizer Model # _____ Serial # _____

D	Check safety decals for legibility, replace if necessary			
D	Check control valve for smooth operation			
D	Check holding valve on stabilizer leg			
D	Check hydraulic hoses and fittings for leaks, replace if necessary			
W	Check hydraulic cylinder, pins and cotter, replace if necessary			
W	Check hydraulic cylinder ears and welds on legs for wear			
W	Check Stabilizer foot, leg and hinge pins for wear			
W	Check control valve handles and labels, replace if necessary			
M	Check stabilizer frame welds for cracks and wear, repair if necessary			

Powerbed Model # _____ Serial # _____

M	Check pinion and gear alignment			
M	Check gears for damage and wear			
M	Check chains, links, and pins for wear and bending			
M	Check if push bar is bent, damaged or has cracks			
M	Check if 2x3 rails have cracks, damage or wear			
M	Check safety doors if bent or missing			
M	Check hoses and fittings for leaks or wear			
M	Check all welds for cracks			

INSPECTION BY: _____ *** INSPECTION/REPAIR COMMENTS ON BACK PAGE**

Cleasby Conveyors Inc. of Utah

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Re: Replacement/Adjustment Procedure-RTH Series Turntable Wear Plugs

A coupler consisting of a Wear Plug Housing, Cap Screw and Delrin® Plug are depicted in Figure No. 1 in assembled and exploded view respectively (see below).

The Delrin® Plug provides low friction bearing support between contacting surfaces of the columns during extension and retraction of the inner post.

Normal use will require occasional replacement of the Delrin Plug. The repeated extension/retraction cycle of operation of the inner post, over time wears away the protruding segment of the plug. As the plugs wear (one on each side of the post, see Fig. 1) the gap or space between the columns narrows. To avoid metal to metal contact, the plugs must be adjusted for position to correct for the narrowed gap lost through wear or replaced if no further adjustment capability exists.

Replacement and/or periodic adjustment of position of the Plugs is best accomplished as follows:

1. Bring the conveyor into Horizontal Orientation 180 degrees from its normal resting position in the Headache rack in order to achieve a minimum gap between posts of approximately 1/4 inch. **DANGER!** Look up and around. Make Certain there are no overhead wires or power lines that may interfere or come into contact with the conveyor during positioning for replacement. **See the Owners Manual for additional Warnings and Instructions.** If you do not have an owner's manual, please contact Cleasby for a replacement. Dial **1-(800) 453-2446**.
2. **ADJUSTMENT:** Attempt to turn the Cap Screw by a clock-wise rotation. If by application of reasonable force you are unable to rotate the Cap Screw, heat may be required to break the chemical bond of a thread sealant applied at the factory. If by this rotation you encounter a dead stop i.e. threads bottom-out and the gap is not filled by protrusion of the Delrin® Plug, a new plug must be inserted, see step (3). Otherwise, go to step (4).
3. **REPLACEMENT:** Remove Cap Screw and insert a new Delrin® Plug into the Wear Plug Housing. A portion of the old plug may still be present. This residual portion of the former plug should remain in the Wear Plug Housing. If by inserting the new plug, you are unable to engage the threads of the Cap Screw and Wear Plug Housing, it will be necessary to reduce the length of the new plug by removing a portion sufficient to allow placement into the Wear Plug Housing and to engage the Cap Screw threads. **CAUTION:** for proper thread engagement, the end of the Cap Screw should not extend outside of a plane constituting the outbound end surface of the Wear Plug Housing. After satisfying yourself that the appropriate amount of trim has been removed (as necessary) sufficient to allow proper engagement of the threads, rotate the Cap Screw until tight
4. Remove the Cap Screw and apply to the surface of the threads **LOCTITE 262 Thread Locker** (follow manufacturers directions). The Cap Screw should then be reinserted and tightened (clock-wise rotation) until snug. The sealant will cure within a few minutes.

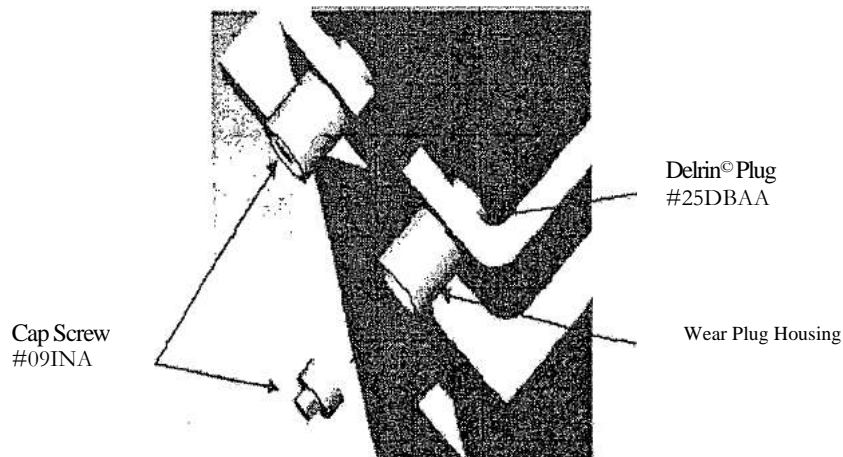


Fig. No 1

SAFETY & WARNING LABELS

LABELS PLACED BY THE MANUFACTURER

Cleasby Conveyors, Inc., places a number of warning labels on the conveyor and turntable to warn of dangers and to remind operators of correct operating procedures. **Note: The warning labels contain important warning information. Keep them visible and do not remove them.**

Instruct operators to review the warning labels daily as they start to make their deliveries. This daily review of safety precautions will help our operators be more safety conscious, reducing hazards to themselves and others.

Use care when cleaning the equipment to avoid damage to the warning labels by strong solvents or steam. Mask each label carefully before painting the unit. If the labels become damaged or unreadable, replace them promptly.

LABELS TO BE PLACED BY YOU OR YOUR INSTALLER

1.) **TruckCab Labels.** In addition to labels pre-installed on the turntable and conveyor, (CM) provides a warning labels that must be placed on the dash of the truck. Mount these labels in clear view of the operator and protect them from damage as described above.

2.) **TruckBed Label.** Cleasby Conveyors, also provides five (5) warning labels that must be placed at certain locations on the truck bed (see

WARNINGS AND CAUTIONS, Section One). These labels are 5 3/8 inches in width, so if the truck bed on which you are installing the conveyor is not thick enough to allow for good placement of these labels, mounting brackets are available from the manufacturer, see note below.

DIAGRAMS

SECTION ONE contains diagrams of where (CM) has pre-installed labels on the turntable and the conveyor; and facsimile of the labels themselves. The left-hand page in each instance contains the placement diagram. Arrows on the diagram designate each label's identification number and its location on the equipment. The right-hand page in each instance contains representations of the various labels, and approximate placement on the equipment relative to each other.

Clearer representations of each label appear in numerical order following the diagrams noted above, see SECTION SEVEN. These are shown at a fraction of actual size. At the time of delivery, and periodically thereafter, look at the equipment with this manual in hand, checking each label in turn until you are satisfied that all labels are properly positioned as specified in the manual.

NOTE

Additional labels and truck bed mounting brackets are available free of charge. Call your local dealer or distributor. If there is no dealer or distributor in your area, please call (CM) at (800) 453-2446.