

## Wire Mesh Belt Installation and Adjustment Instructions

### INTRODUCTION

This Service Bulletin explains how to install and adjust the wire mesh belts used on the Besser Cuber Inboard and Outboard Conveyors and the Besser Belt Feeder.

### SAFETY

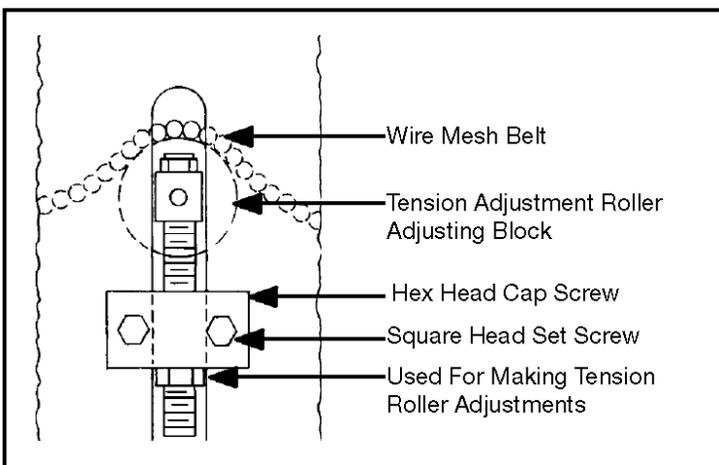
Follow all standard safety procedures when working on the conveyors, including the safety procedures noted in the cuber catalog. Before replacing the wire mesh belt, make sure the cuber is off, the cuber's main electrical panel and hydraulic power unit are turned off and locked out, and all cuber components' motions are stopped. Before returning the cuber to operation, properly close and secure the cuber's main electrical panel and ensure hydraulic unit is restarted.

### STEP 1: Examine the New Parts

1. Do you have all of the proper replacement parts?
2. Are the parts free from damage?

### STEP 2: Remove the Old Wire Mesh Belt

1. Completely loosen the tension adjustment roller by loosening the roller's adjustment screws (Fig. 1).
2. Using a wire cutter, snip off both ends of one of the wire mesh belt's cross rods.
3. Pull out the cross rod and remove the wire mesh belt.



*Fig. 1. The Tension Adjustment Roller*

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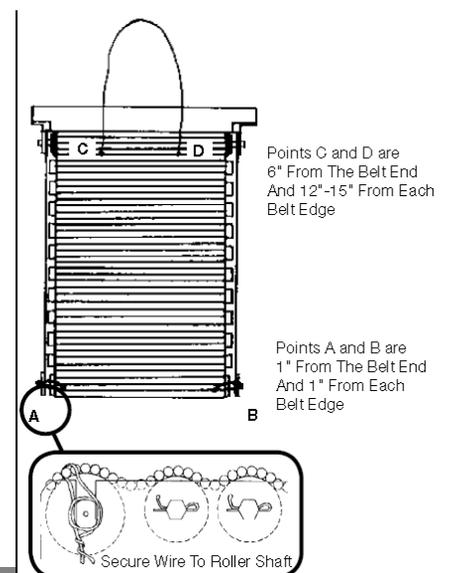
### Examine the Conveyor

Before installing the wire mesh belt, it is important to check the following:

1. Check the rollers for roundness, free turning bearings and “run-out” accuracy as they rotate (straight across the face and not bent).
2. Check the tension adjustment roller for proper operation. The tension adjustment roller should be restricted to a uniform parallel motion. A tilted tension adjustment roller can seriously affect the tracking of the wire mesh belt and can stretch one edge of the belt, making further tracking difficult or impossible.
3. Check all edge guides and other conveyor parts which could drag on the wire mesh belt. Sharp edges and abrupt corners should be ground smooth or otherwise corrected to prevent possible scraping of the belt surface. The wire mesh belt’s life may be shortened due to excessive rubbing against conveyor parts. If wear is evident, corrections should be made to ensure the new belt does not drag or wear along its edges.
4. Check the cam followers on the cuber conveyers for free turning bearings and smoothness. If wear is evident, the cam followers should be replaced.
5. Having checked the conveyor alignment and the various parts as outlined, the wire mesh belt is now ready for assembly into the conveyor.

### STEP 4: Installing the Wire Mesh Belt

1. Uncrate the wire mesh belt carefully to avoid damaging the belt. All woven spiral metal mesh belts are carefully checked by the manufacturer for proper tracking. Each belt is tagged with a small metal tag that indicates the belt’s proper direction of travel. Place the wire mesh belt on top of the conveyor’s runout rollers, making sure the belt’s labeled direction of travel corresponds to the conveyor’s direction of travel. Before installation, make sure that none of the spirals are turned up. The spirals should be flat and free to hinge around their proper axis.



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2. Using a wire of approximately 14 gauge, loop a wire through the wire mesh belt at point A (Fig. 2 Inset) and secure the wire to the first conveyor roller's shaft. Repeat this procedure at Point B (Fig. 2).
3. Using another piece of approximately 14 gauge wire, tie a 6'-8' loop of wire at points C and D at the other end of the wire mesh belt as shown in Fig. 2.
4. 4. Manually pull the wire loop underneath the rollers. Make sure to feed the wire loop over the top of the tension roller and under the drive pulley roller (Fig. 3).
5. Continue to pull the wire loop through the conveyor until the ends of the wire mesh belt are close to meeting.
6. Using a forklift, hoist, etc., pull the wire loop upwards until the wire mesh belt ends meet (Fig. 4).

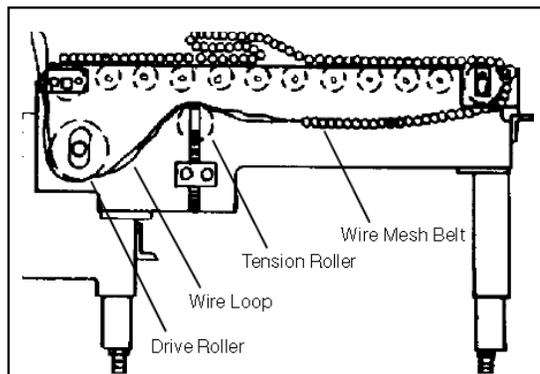


Fig. 3 Feed Wire Loop Over Tension Roller and Under Drive Roller

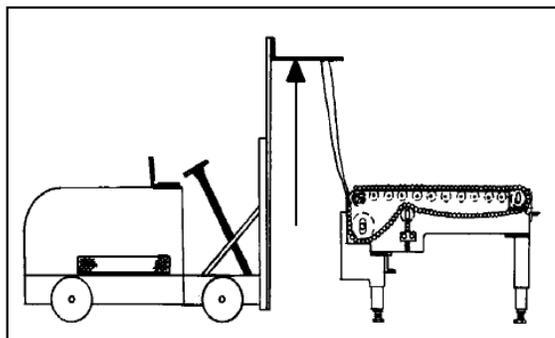


Fig. 4 Use a Forklift To Bring Belt Ends Together

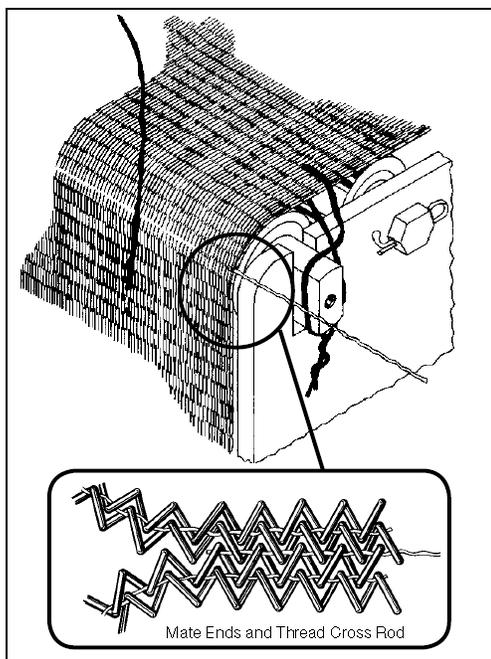


Fig. 5. Mate Belt Ends Together and Thread Cross Rod

7. As shown in Fig. 5, mate the wire mesh belt ends together like a zipper, making sure the belt's outer edges are even. Push the wire mesh belt's cross rod through each of the mated end loops. This will make the wire mesh belt complete.
8. 8. Cut the wire mesh belt's cross rod flush with the belt's edges.
9. 9. Remove all securing wire (Fig. 1, Points A,B,C and D).

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### STEP 5: Adjusting the Wire Mesh Belt Note

Due to the nature of wire mesh belts and the inability to use crowned rollers often found on rubber belting, the wire mesh belt will never consistently track perfectly in the center of the conveyor. All wire mesh belts have some degree of runout and anything up to 3/4" is not unusual. If the runout exceeds 3/4", it should be corrected as outlined below. The objective of the following adjustment and break-in procedures is to eliminate severe tracking problems that cause the belt to ride against the cam followers or flange rollers with a force that exceeds one pound.

1. Before applying tension to the belt, make sure that none of the spirals are turned up. The spirals should be flat and free to hinge around their proper axis. Before starting the conveyor, equally tighten both tension roller adjustment screws (Fig. 1). Tighten the tension rollers to a point where the wire mesh belt is snug but not absolutely tight against the conveyor.

2. Using the manual control, start the conveyor at the slowest possible speed. If the wire mesh belt tracks radically to one side, the conveyor should be stopped immediately and the tension roller loosened so the belt can be repositioned in the middle of the conveyor. When retightening the tension roller, tighten it to a point a little less than before and restart the conveyor.

3. All belts have some "run out" (i.e. wobble or movement in and out of the belt edge as viewed from any fixed point on the conveyor). The new belt will not normally track the same as the old belt and it should not be assumed that tracking adjustments are not needed. A tracking problem occurs when a belt tends to run to one side of the conveyor and rides against the cam follower or flange rollers. It is recommended that nothing touch the belt edge that might drag on the belt, although it is allowable for the belt to ride against the cam roller as long as the force does not exceed one pound. Tracking problems must be corrected or serious damage may occur to the belt. The tracking of the wire mesh belt can be adjusted by tightening the tension roller adjustment screw that is on the side the wire mesh belt is tracking away from.

4. Proper "break-in" of the new belt is very important. When the belt appears to be tracking well enough for constant running (no danger of tracking off into the side of the conveyor), start increasing the counter tension by equally tightening the tension roller's adjustment screws. This should be done slowly because the belt's tracking may change as belt tension increases.

5. Once the wire mesh belt is fully tightened, run the empty conveyor for a minimum of four

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hours. The wire mesh belt may stretch during this time due to the “seating” of the spirals on the cross rods of the belt. Tracking problems may occur during this seating process so it is necessary to constantly monitor the conveyor during this time period. Correct any tracking problems as instructed in Point 3 above. If significant loosening of the wire mesh belt occurs, tighten the tension roller adjustment screws until the belt is once again fully tightened.

6. Now that the wire mesh belt has been properly broken in, the conveyor is ready to be put into production. Additional seating may occur at this time so it is necessary to check the wire mesh belt frequently during the first few days of operation to make any additional tracking adjustments. The belt should then be periodically checked for tracking problems.

7. If, during this procedure of adjusting the tension on the wire mesh belt, the tension roller adjustment screws are fully tightened and yet the tension on the wire mesh belt is still not adequate, a section of the belt must be removed. This means going back to STEP 2, cutting the ends off of the two cross rods of the belt section to be removed and reinstalling the belt as outlined in Steps 3 through 5.

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### **SAFETY BULLETIN**

This notice is issued to advise you that some previously accepted shop practices may not be keeping up with changing Federal and State Safety and Health Standards. Your current shop practices may not emphasize the need for proper precautions to insure safe operation and use of machines, tools, automatic loaders and allied equipment and/or warn against the use of certain solvents or other cleaning substances that are now considered unsafe or prohibited by law. Since many shop practices may not reflect current safety practice and procedures, particularly with regard to the safe operation of equipment, it is important that you review your practices to ensure compliance with Federal and State Safety and Health Standards.

### **IMPORTANT**

The operation of any machine or power-operated device can be extremely hazardous unless proper safety precautions are strictly observed. Observe the following safety precautions:

#### **ALWAYS:**

- ✓ Be sure proper guarding is in place for all pinch, catch, shear, crush, and nip points.
- ✓ Be sure that all personnel are clear of the equipment before starting it.
- ✓ Be sure the equipment is properly grounded.
- ✓ Turn the main electrical panel off and lock it out in accordance with published lockout/tagout procedures prior to making adjustments, repairs, and maintenance.
- ✓ Wear appropriate protective equipment such as safety glasses, safety shoes, hearing protection, and hard hats.
- ✓ Keep chemical and flammable material away from electrical or operating equipment.
- ✓ Maintain a safe work area that is free from slipping and tripping hazards.
- ✓ Be sure appropriate safety devices are used when providing maintenance and repairs to all equipment.

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### **NEVER:**

- ✓ Exceed the rated capacity of a machine or tool.
- ✓ Modify machinery in any way without prior written approval of the Besser Engineering Department.
- ✓ Operate equipment unless proper maintenance has been regularly performed.
- ✓ Operate any equipment if unusual or excessive noise or vibration occurs.
- ✓ Operate any equipment while any part of the body is in the proximity of potentially hazardous areas.
- ✓ Use any toxic flammable substance as a solvent cleaner.
- ✓ Allow the operation or repair of equipment by untrained personnel.
- ✓ Climb or stand on equipment when it is in operation.

It is important that you review Federal and State Safety and Health Standards on a continual basis. All shop supervisors, maintenance personnel, machine operators, tool operators, and any other person involved in the setup, operation, maintenance, repair or adjustment of Besser-built equipment should read and understand this bulletin and Federal and State Safety and Health Standards on which this bulletin is based.