

CONVEY-ALLTM

ASSEMBLY AND OPERATOR'S MANUAL



UNDERBIN CONVEYOR

OPEN BED, LOW PROFILE (OBL)

OBL-16 • OBL-18 • OBL-24

LIMITED WARRANTY

Convey-All™ warrants to the buyer that the new machinery is free from defects in material and workmanship.

This warranty is only effective as to any new machinery which has not been altered, changed, repaired or treated since its delivery to the buyer, other than by Convey-All™ or its authorized dealers or employees, and does not apply to accessories, attachments, tools or parts, sold or operated with new machinery, if they have not been manufactured by Convey-All™.

Convey-All™ shall only be liable for defects in the materials or workmanship attributable to faulty material or bad workmanship that can be proved by the buyer, and specifically excludes liability for repairs arising as a result of normal wear and tear of the new machinery or in any other manner whatsoever, and without limiting the generality of the foregoing, excludes application or installation of parts not completed in accordance with Convey-All™ operator's manual, specifications, or printed instructions.

Written notice shall be given by registered mail, to Convey-All™ within seven (7) days after the defect shall have become apparent or the repairs shall have become necessary, addressed as follows:

**Convey-All Industries Inc.
130 Canada Street
Winkler, Manitoba R6W 0J3
Canada**

This warranty shall expire one (1) year after the date of delivery of the new machinery.

If these conditions are fulfilled, Convey-All™ shall at its own cost and at its own option either repair or replace any defective parts provided that the buyer shall be responsible for all expenses incurred as a result of repairs, labor, parts, transportation or any other work, unless Convey-All™ has authorized such expenses in advance.

The warranty shall not extend to any repairs, changes, alterations, or replacements made to the new equipment other than by Convey-All™ or its authorized dealers or employees.

This warranty extends only to the original owner of the new equipment.

This warranty is limited to the terms stated herein and is in lieu of any other warranties whether expressed or implied, and without limiting the generality of the foregoing, excluded all warranties, expressed or implied or conditions whether statutory or otherwise as to quality and fitness for any purpose of the new equipment. Convey-All™ disclaims all liability for incidental or consequential damages.

This machine is subject to design changes and Convey-All™ shall not be required to retrofit or exchange items on previously sold units except at its own option.

WARRANTY VOID IF NOT REGISTERED

**WARRANTY REGISTRATION FORM
and INSPECTION REPORT**

CONVEY-ALL™

CONVEY-ALL INDUSTRIES INC.
130 CANADA STREET, WINKLER, MANITOBA R6W 0J3
T: (800) 418-9461 P: (204) 325-4195 F: (204) 325-8116
www.convey-all.com seed@convey-all.com

The Dealer must fill out this form, and be signed by both the Dealer and Buyer at the time of delivery. Scan or photograph the completed form (must be legible), and email it to: register@convey-all.com A copy of this form may also be mailed to Convey-All Industries Inc, at the above address.

Buyer's Name _____	Dealer's Name _____
Address _____	Address _____
City _____	City _____
Province/State _____	Province/State _____
Postal Code/Zip Code _____	Postal Code/Zip Code _____
Country _____	Country _____
Phone Number _____	Phone Number _____
Unit's Model Number _____	Unit's Serial Number _____
Delivery Date _____	General Purpose: <input type="checkbox"/> Private <input type="checkbox"/> Commercial

UNIT INSPECTION

- All Fasteners Tight
- Drive System Rotates Freely
- Drive Belts Aligned and Tensioned
- Conveyor Belt Moves Freely
- Conveyor Belt Aligned and Tensioned
- Lubricated Machine

SAFETY INSPECTION

- All Guards/Shields Installed and Secured
- All Safety Decals Clear and Legible
- Reviewed Operating and Safety Instructions

I have thoroughly instructed the buyer on the above described equipment. The review included the content of the Operator's Manual, equipment care, adjustments, safe operation and warranty policy.

Date _____ Dealer's Signature _____

The above equipment and Operator's Manual have been received by me. I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date _____ Buyer's Signature _____

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Section 1: INTRODUCTION

Congratulations on your choice of a Convey-All™ Underbin Conveyor (Open Bed Roller, Low Profile - OBL) as an essential part of your seed site.

This underbin conveyor has been designed and manufactured to meet the exacting standards for such equipment in the agricultural industry and will keep your seed delivery operation working at optimum efficiency.

Keep this manual handy for frequent reference. Pass it on to new operators or owners. Call your dealer, distributor or Convey-All Industries Inc., if you need assistance, information, additional/replacement copies, or a digital copy of this document.

Information provided herein is of a descriptive nature. Convey-All Industries Inc. reserves the right to modify the machinery design and specifications provided herein without any preliminary notice.

Performance quality may depend on the material being handled, weather conditions and other factors.

Once the installation of your underbin conveyor is complete; we, the manufacturer, recommend that Convey-All™ service personnel commission your conveyor before using it to move product.

1.1 SERIAL NUMBER

Always give your dealer the serial number of your conveyor when ordering parts, requesting service or other information. The serial number is usually located at the tail end on the right side (when facing the discharge end) of the conveyor beside the tensioning bolt.

Use the space provided for easy reference.

Conveyor Model No: _____

Conveyor Serial No: _____

Motor Model No: _____

Motor Serial No: _____

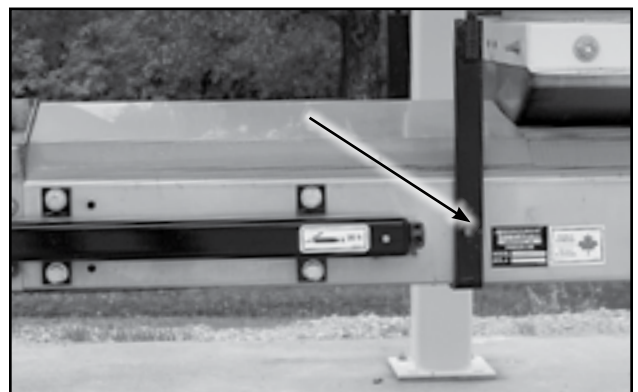


Fig 1 - Serial number at tail end

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Section 2: SAFETY

3 Big Reasons why safety is important to you:

- Accidents Disable and Kill
- Accidents Cost
- Accidents Can Be Avoided

The Safety Alert Symbol means:

**ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!**

The Safety Alert Symbol identifies important safety messages on the conveyor and in this manual.

The following signal words are used in this manual to express the degree of hazard for areas of personal safety.

When you see the symbol and/or the signal words described below, obey the accompanying message to avoid possible injury or death.

 **DANGER**

Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations. Typically for machine components which, for functional purposes, cannot be guarded.

 **WARNING**

Indicates a hazardous situation, if not avoided, could result in death or serious injury. This word identifies hazards that are exposed when guards are removed. It may be used to alert against unsafe practices.

 **CAUTION**

Indicates a hazardous situation, if not avoided, could result in minor or moderate injury. It may be used to alert against unsafe practices.

NOTICE

Indicates practices or situations which may result in the malfunction of, or damage to equipment.

SAFETY INSTRUCTIONS

Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

2.1 SAFETY ORIENTATION

YOU are responsible for the SAFE operation and maintenance of your Convey-All™ conveyor. Be sure that everyone who will operate, maintain or work around it, is familiar with the safety, operating and maintenance procedures.

This manual will take you step-by-step through your working day. It will alert you to all the safe practices that should be adhered to while operating the conveyor.

It has been said, "The best safety feature is an informed, careful operator." Good safety practices not only protect you but also the people around you. Make these practices a dynamic part of your workday.


Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Conveyor owners must give operating instructions to operators or employees before allowing them to operate the machine.


Procedures must be reviewed annually thereafter, as per OSHA (Occupational Safety and Health Administration) regulation 1928.57.


- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to understand all safety and operating instructions in this document, and to follow them.
- An untrained operator exposes himself and bystanders to possible serious injury or death.
- Think SAFETY! Work SAFELY!

2.2 GENERAL SAFETY

- Read and understand the Operator's Manual and all safety decals before operating, maintaining, adjusting or unplugging the conveyor. 

- Only trained, competent persons shall operate the conveyor. An untrained person is not qualified to operate the machine.

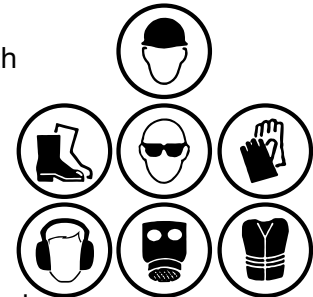
- Have a first-aid kit available for use should the need arise. 

- Provide a fire extinguisher for use in case of an accident. Store in a highly visible place. 

- Do not allow children, spectators or bystanders within the hazard area around the conveyor.

- Wear appropriate protective gear. This list may include but is not limited to:

- Hard hat
- Protective shoes with slip resistant soles
- Eye protection
- Work gloves
- Hearing protection
- Respirator or filter mask
- Hi-Visibility safety vest



- Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment.

Consult your doctor about operating this machine while taking prescription medications.

- If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.

- Review safety related items annually with all personnel who will be operating or maintaining the conveyor.

2.3 EQUIPMENT SAFETY GUIDELINES

- Safety of the operator and bystanders is one of the main concerns when designing and developing this conveyor. However, every year many accidents occur which could have been avoided by a few seconds of thought, and a more careful approach to handling equipment.
- Do not allow personnel to operate this unit until they have read this manual. They should have a thorough understanding of the safety precautions.

Review the safety instructions with all users annually.

- In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with safety guards removed.

Equipment should never be operated in this condition. Keep all guards in place. If removal becomes necessary for repairs, replace the guard prior to use.



- This equipment is dangerous to children and persons unfamiliar with its operation.

The operator must be responsible, properly trained and physically able. You should be familiar with farm machinery in general.

- Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - DO NOT TRY IT.
- Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.
- The design and configuration of this conveyor includes safety decals and equipment. They need to be clean, readable and in good condition.

2.4 SAFETY DECALS

- Keep safety decals clean/legible at all times.
- Replace safety decals that are missing or have become illegible.
- Replaced parts must display the same decal(s) as the original parts.
- All safety decals have a part number in the lower right hand corner. Use this part number when ordering replacements.
- Safety decals are available from your authorized distributor, dealer's parts department or from Convey-All Industries Inc.

2.4.1 Safety Decals Application:

1. Be sure the application area is clean and dry. Ensure the surrounding temperature is above 10°C (50°F).
 - Remove all dirt, grease, wax from the surface.
 - Clean with a non-ammonia based cleaner.
 - Wipe the clean surface with isopropyl alcohol on paper towel, and allow to dry.
2. Determine the exact position before you remove the backing paper.
3. Peel a small portion of the split backing paper.
4. Align the decal over the specified area. Use a squeegee to carefully press the small portion, with the exposed adhesive backing, into place.
5. Slowly peel back the remaining paper and carefully smooth the rest of the decal into place.
6. Small air pockets can be pierced with a pin and smoothed out using the squeegee, or a piece of sign backing paper.

2.5 SAFETY DECAL LOCATION

The following illustration show the general location of safety decals on this conveyor. The position of decals may vary depending on the machine's options. Decals are no shown at actual size.

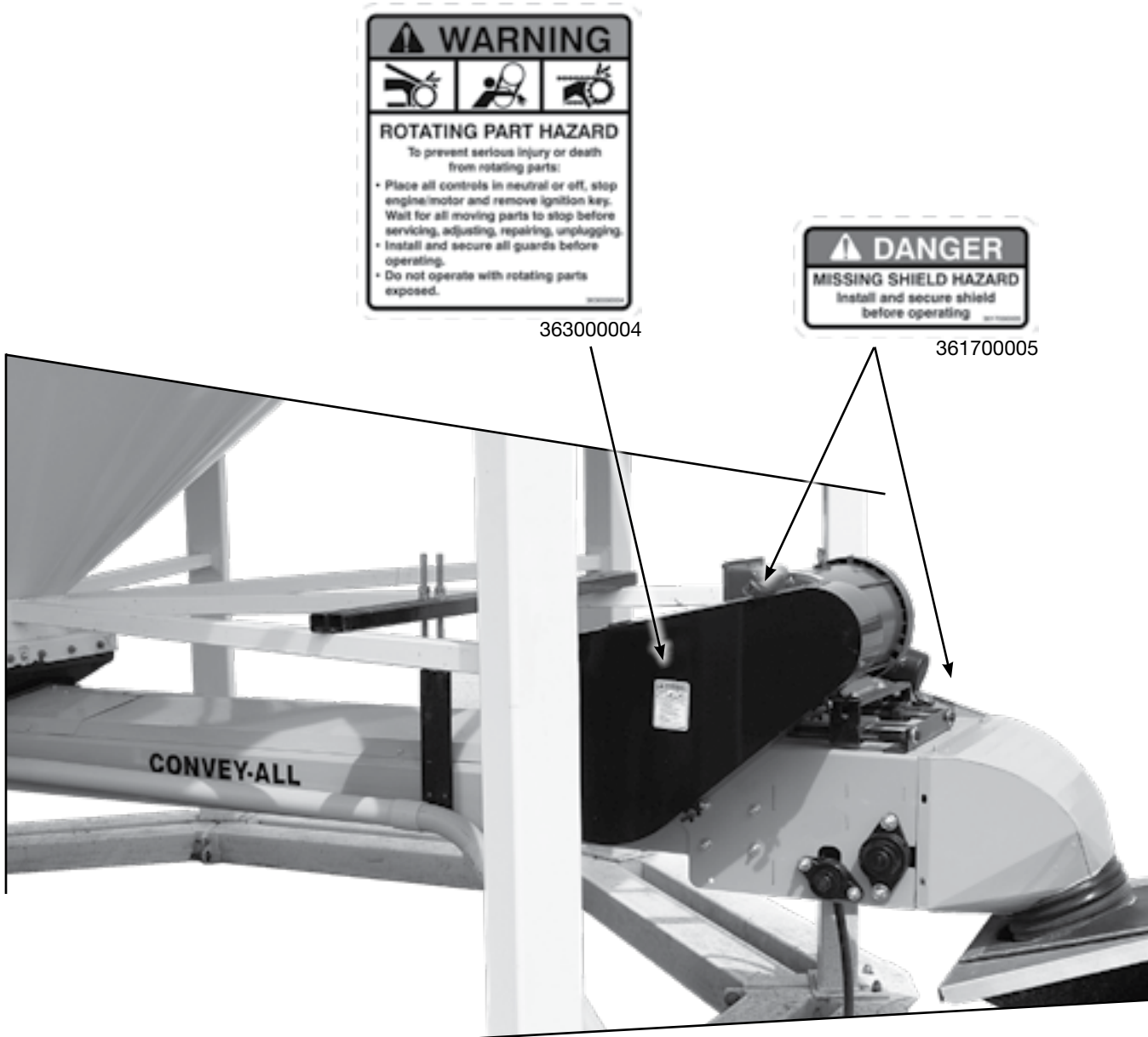


Fig 2 - Locations of safety decals

REMEMBER - If safety decals have been damaged, removed, become illegible or parts were replaced without signage, new ones must be applied. New decals are available from your authorized dealer.

2.6 WORK PREPARATION

- Never operate the conveyor and its motor until you have read this manual, and understand the information.

Also, read all auxiliary equipment manual.

- Be familiar with the safety messages found on the decals around this unit.

- Personal protective equipment (PPE) include:
 - Hard hat
 - Eye protection
 - Protective shoes
 - Work gloves



They are recommended during installation, operation, maintenance and removal of any equipment.

- Do not allow long hair, loose fitting clothing or jewelry to be around equipment.
- **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Agricultural equipment can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80 db.



Noise over 85 db on a long-term basis can cause severe hearing loss.

Noise over 90db adjacent to the operator over a long-term basis may cause permanent, total hearing loss.

Note:

Hearing loss from loud noise (tractors, chain saws, radios, etc.) is cumulative over a lifetime without hope of natural recovery.

- Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.
- Operate only in daylight or good artificial light.
- Be sure the conveyor is stable, adjusted and in good operating condition.
- Ensure that all safety guards and safety decals are properly installed and in good condition.
- Before starting, inspect the unit for any loose bolts, worn parts, cracks, leaks or frayed belts. Make the necessary repairs.

Always follow the maintenance instructions.

2.7 LOCK-OUT TAG-OUT SAFETY

- Establish a formal Lock-Out Tag-Out program for your operation.
- Train all operators and service personnel before allowing them to work around the area.
- Provide tags on the machine and a sign-up sheet to record tag-out details.

2.8 ASSEMBLY SAFETY

- Read and understand Section 3, and all safety signs before starting.
- Follow good safety practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job.
- Use properly sized tools, stands, jacks and hoists at all times.
- Have two people available to handle heavy and/or bulky components.
- Keep as much room as possible open around and under the bins to work.
- Keep the assembly area neat and clean to prevent slipping or tripping.
- Be sure components are hanging securely under the bin before working underneath.
- Stay away from overhead obstructions when lifting the components during assembly. Contact with obstructions can damage components or cause them to fail.
- Tighten all fasteners to their specified torque before using the machine.



2.9 ELECTRICAL SAFETY

- Have only a qualified electrician supply power. All wiring should comply with the ANSI/NFPA 70 electrical requirements.
- Make certain that the conveyor motor is properly grounded at the power source.
- Ensure that all electrical switches are in the OFF position before plugging the conveyor in.
- Turn machine OFF, shut down and lock out power supply (safety lock-out devices are available through your Convey-All dealer parts department) and wait for all moving parts to stop before assembling, servicing, adjusting, maintaining or repairing.
- Disconnect power before resetting any motor.
- Replace any damaged electrical plugs, cords, switches and components immediately.
- Do not work on the conveyor's electrical system unless the power cord is unplugged or the power supply is locked out.

2.10 MAINTENANCE SAFETY

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Follow good safety practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Turn motor OFF, unplug power supply, and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.
- Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance work. Use heavy or leather gloves when handling sharp components.
- Be sure the conveyor is hanging securely before working beneath the machine.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. Convey-All™ will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
- Periodically tighten all bolts, nuts and screws and check that all electrical connections are properly secured to ensure unit is in a safe condition.
- Function, ensure all safety shields and devices are installed before placing unit in service.
- Keep safety signs clean. Replace any sign that is damaged or not clearly visible.



2.11 OPERATING SAFETY

- Please remember it is important that you read and heed the safety signs on the conveyor. Clean or replace all safety signs if they cannot be clearly read and understood. They are there for your safety, as well as the safety of others. The safe use of this machine is strictly up to you, the operator.
- Stop the electric motor. Unplug power supply. Wait for all moving parts to stop before servicing, adjusting or repairing.
- Make sure that anyone who will be operating the conveyor or working on or around the unit reads and understands all the operating, maintenance and safety information in the operator's manual. Review safety related items annually.
- Keep all bystanders, especially children, away from the machine when loading or unloading is being done, or when authorized personnel are carrying out maintenance work.
- Establish a Lock-Out Tag-Out program for the work site. Be sure all personnel are trained in and follow all procedures. Lock-Out Tag-Out all power sources before servicing the unit or working around loading/unloading equipment.
- Be familiar with conveyor hazard area. If anyone enters hazard areas, shut down machine immediately. Clear the area before restarting.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Keep working area clean and free of debris to prevent slipping or tripping.
- Do not operate machine when any guards are removed.

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Section 3: UNDERBIN ASSEMBLY



Assembly Safety

- Read and understand Assembly Instructions and all safety signs before starting.
- Follow good safety practices:
 - Keep assembly area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Use properly sized tools, stands, jacks and hoists at all times.
- Have two people available to handle heavy and/or bulky components.
- Be sure the components are hanging securely before working underneath the conveyor.
- Tighten all fasteners to their specified torque before using the machine.
- Close and secure all safety guards before running the conveyor.

3.1 RECEIVING

This underbin conveyor is modular, and is shipped from the factory disassembled but bundled together.

When you receive the conveyor shipment, check your parts list, to be sure that you have all the components, parts and supplies required to assemble your underbin conveyor.

Contact the transport company and the factory immediately if anything is missing.



Fig 3 - Bundled components for shipping



Fig 4 - Bundled components for shipping

3.2 PREPARE BIN TRANSITION

⚠ CAUTION

HEAVY COMPONENT HAZARD

To prevent injury, have two people move heavy and awkward components.

Each conveyor section weighs more than 50 lb. Two people must work together on assembling the components. Together, they can handle large, heavy or unwieldy components.

Whether the gate will have a manual crank or an air cylinder depends on the customer. Use the supplied hardware to put the gate assembly together, then attach the bin hopper transition.

Install the gate assembly onto the bottom of the bin hopper.

- Use the supplied hardware to fasten.

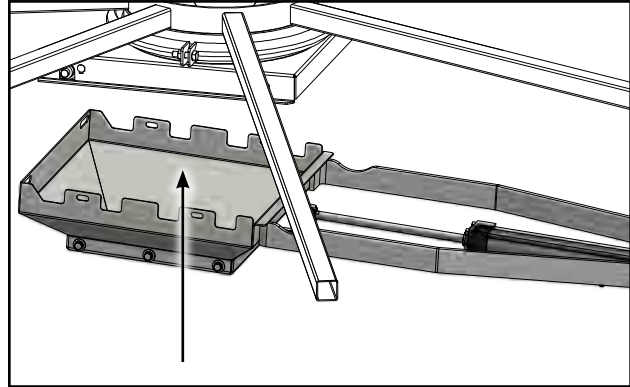


Fig 5 - Gate assembly with cylinder

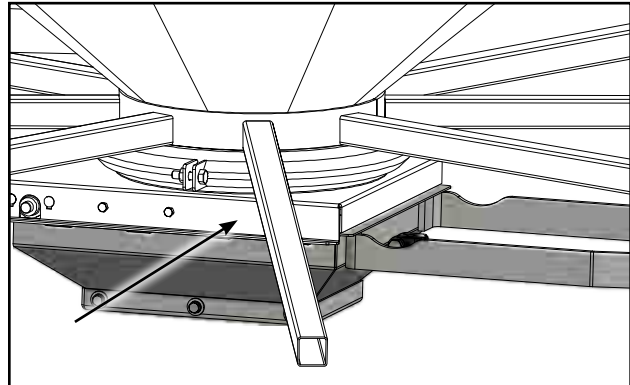


Fig 6 - Attach gate assembly to bin



Fig 7 - Gate assembly with manual crank

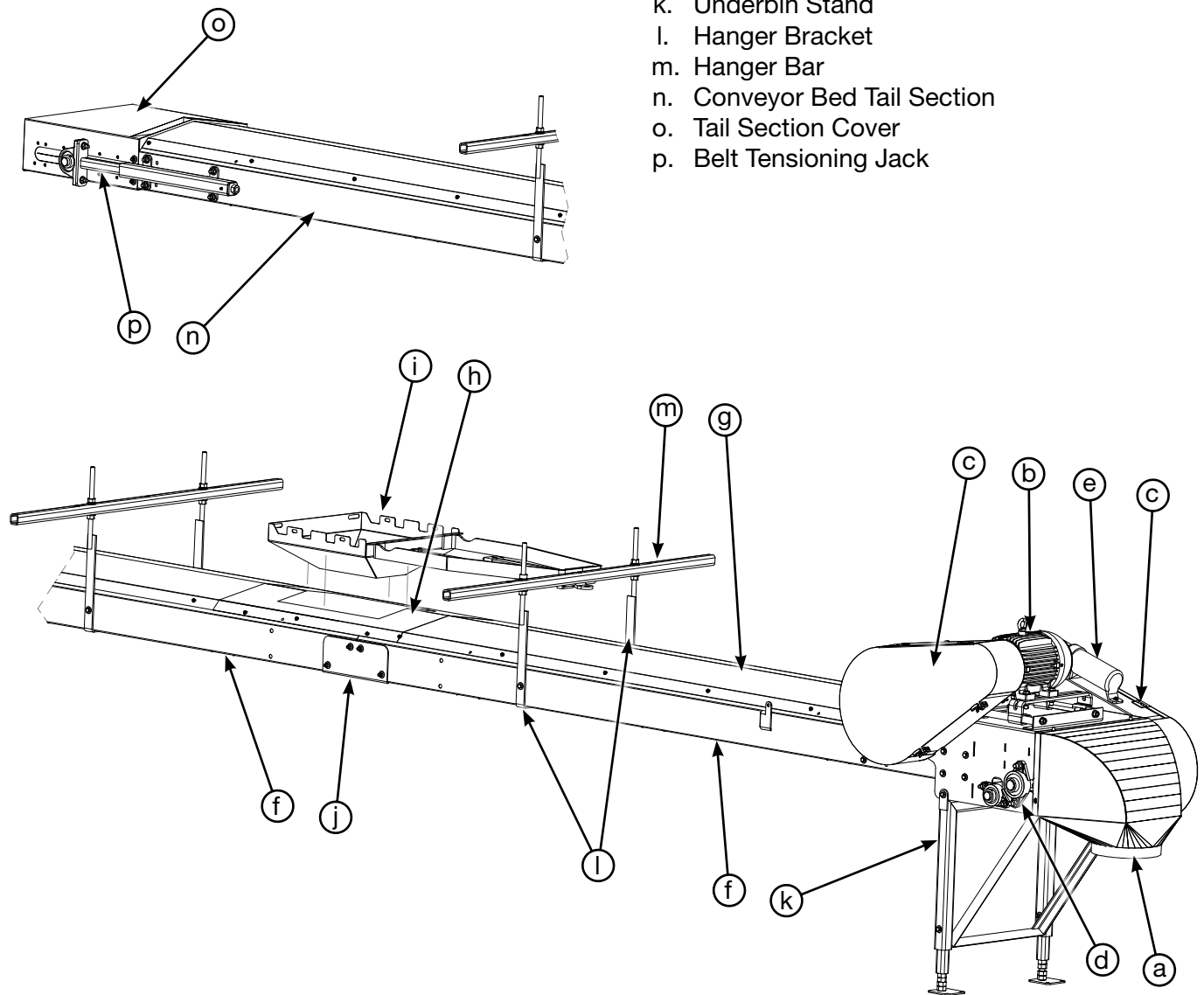
3.3 MACHINE COMPONENTS

The assembly of the underbin system should be a simple process.

The conveyor is typically hung under the bins, and power is supplied by an electric motor.

The main components are listed below:

- a. Discharge Hood or Spout
- b. Electric Motor
- c. Drive Belts Inside Guard
- d. Drive Roller
- e. Document Holder
- f. Bed Section (varied lengths)
- g. Weather Cover (varied lengths)
- h. Bin Transition Cover
- i. Bin Transition and Gate Assembly
- j. Bed Bolt Plate
- k. Underbin Stand
- l. Hanger Bracket
- m. Hanger Bar
- n. Conveyor Bed Tail Section
- o. Tail Section Cover
- p. Belt Tensioning Jack



3.4 CONVEYOR INSTALLATION

⚠ CAUTION

PINCH POINT HAZARD

Wear gloves to avoid pinching fingers while assembling.

LIMITED HEAD SPACE

Assembly takes place in limited space and awkward locations.

⚠ WARNING

HEAVY COMPONENT HAZARD

Use appropriate lifting techniques.

1. Line up all bed sections end to end under the bins, starting at the discharge end.
2. Lay the sections on blocks, so they are just below the bin hoppers.
3. Fasten all bed sections together with supplied bolts and plates. Tighten bolts.
4. Lay the bin transition covers on the top of the conveyor bed. Align the openings in each cover with the corresponding bin hopper transition above it.

Note:

Do not install the discharge hood and tail cover yet. Access to the rollers will assist with threading the belting.

5. If the discharge and/or tail end will sit on stands, assemble and install them now.

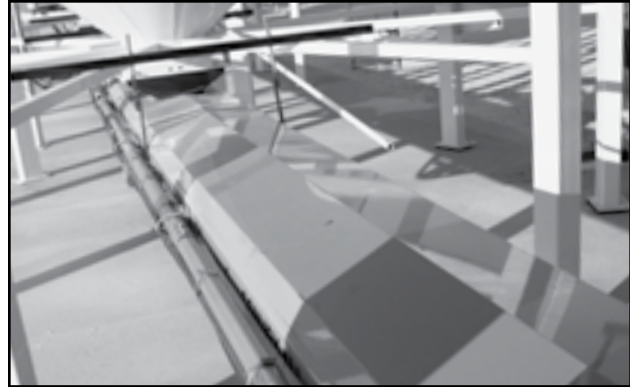


Fig 8 - Hanging bed section

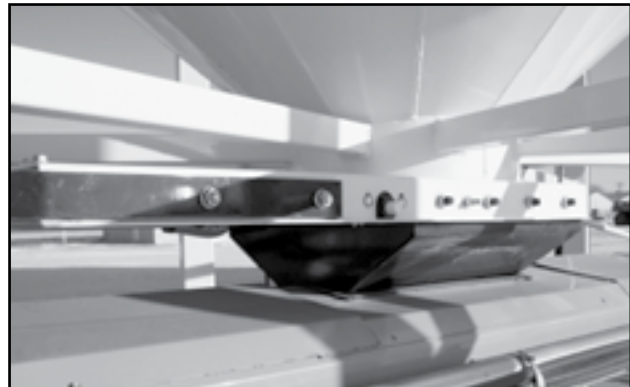


Fig 9 - Storage bin transition



Fig 10 - Bed bolt plate



Fig 11 - Discharge on a stand

6. Lay the hanger bar across the bin cross braces.
7. Insert the hanger brackets into the hanger bar
 - Loosely fasten with bolts and washers.
8. Lift the conveyor into place and lay between the hanger brackets.

IMPORTANT:

Brackets should be spaced at a maximum of 10 feet apart, depending on the length of each section. Longer sections need more support.

9. Secure the hanger brackets to the side of the conveyor frame using self-tapping screws.
10. Use the bolts on the hanger bracket to adjust your conveyor height.
11. Level and straighten the entire length of the conveyor unit.

Note:

Air hoses, electrical cables, accessories can be run and attached to the conveyor frame as needed.

NOTICE

BELT INTERFERENCE HAZARD

Be careful not to interfere with the belt path when attaching accessories to frame.



Fig 12 - Hanger bar with brackets bolted on



Fig 13 - Hanging bed section

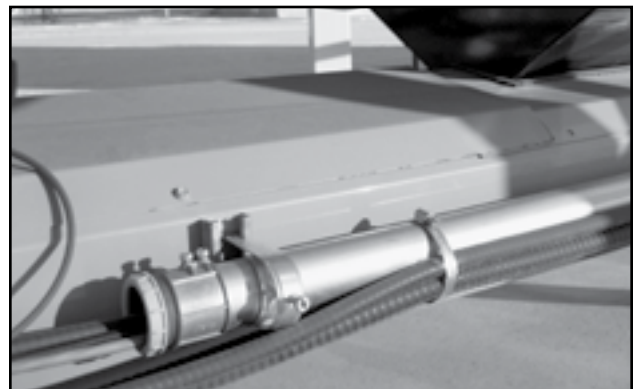


Fig 14 - Cables and hoses attached to bed frame

3.4.1 Conveyor Belt Installation:

IMPORTANT:

Be sure to loosen belt tensioning jacks fully, so it is easier to connect the belt.

12. Remove the tail section cover.
13. Bring the roll of belting to the tail end of the conveyor.
14. Lift it off the ground using a stand or forklift, to allow it to unroll easily.
15. Pull the belt, laying it on the bed, towards the discharge.
16. Wrap the belt around the discharge roller and between it and the drive roller.

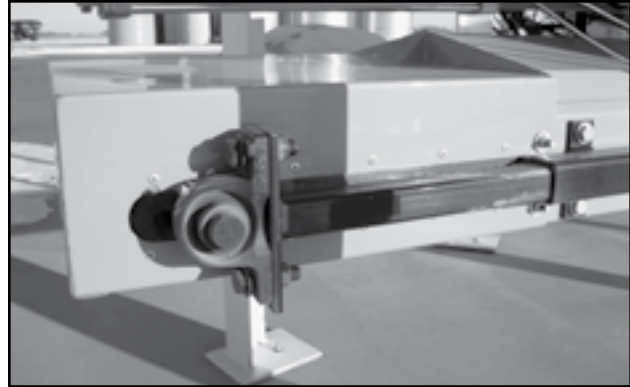


Fig 15 - Tail section cover

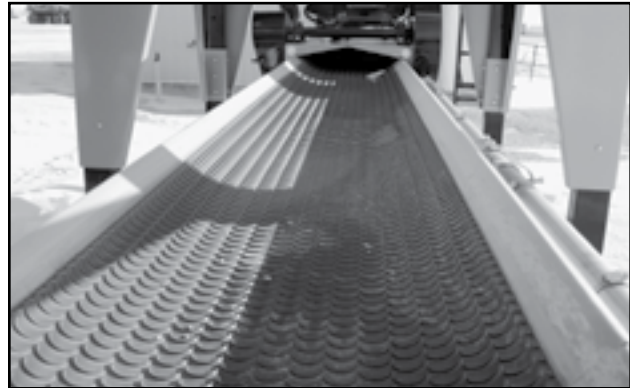


Fig 16 - Pull belt across the bed

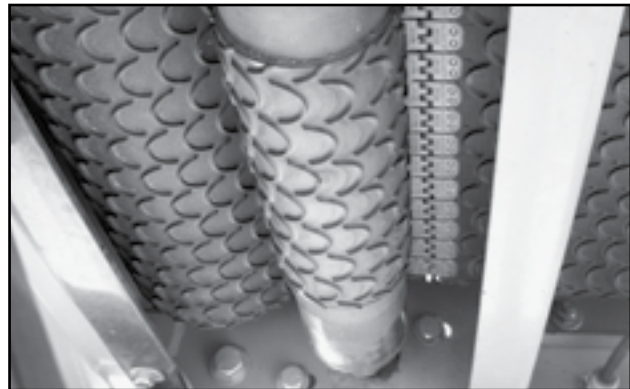


Fig 17 - Belt between discharge and drive roller

17. Pull the belt along the underside of the bed, and thread it inside the frame.
 - Pull the belt back to the tail end.

Note:

A Come-Along Winch can be used.

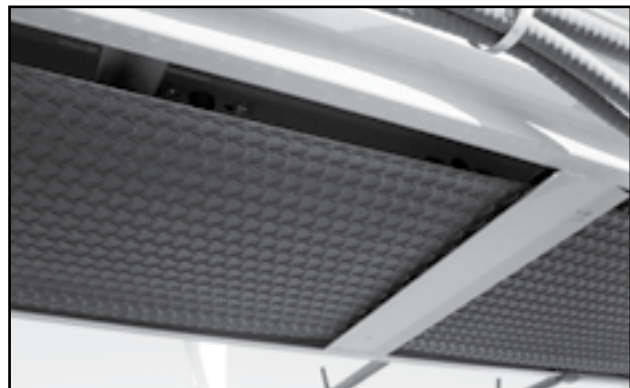


Fig 18 - Belt is inside bed frame

18. Wrap the end of the belt around the tail roller and below the bed.
19. Pull both ends of the belt so they meet.
 - Use a clamp to help pull.



Fig 19 - Clamp the belt

Note:
A Come-Along Winch can be used to pull the belting ends together.



Fig 20 - Use a Come-Along Winch to pull

20. Link the ends of the belt lacing.
21. Thread the lacing cable through the lacing to fasten the belt.

Note:
A cordless drill can be used to thread the cable.

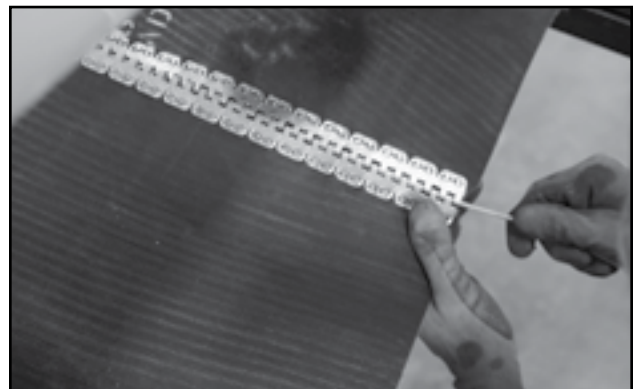


Fig 21 - Thread the lacing cable

22. Cut off the excess cable.
23. Crimp the lacing at one end to lock the cable in place.
24. Cut and taper the belt corners, at both ends of the lacing.

IMPORTANT:
Taper the belt corners, so they don't catch when belt is running.

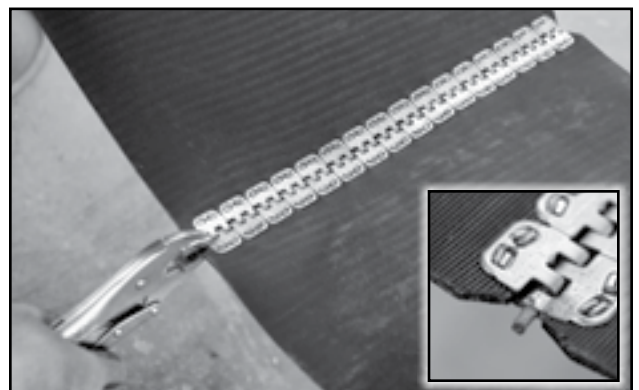


Fig 22 - Crimp lacing

3.4.2 Install Drive System:

25. Check to ensure the drive, discharge and tail rollers are square to the conveyor bed.
26. Install the motor onto the mount at the discharge end.
27. Install all safety guards.
28. Install the counter shaft, pulleys and V-belts for the drive assembly.
Refer to Section 5.3 for drive belt alignment and tensioning.
29. Tighten the belt using the tensioning jacks on both sides at the tail end.

Belt should be tight enough so there is no slack in the belt between the cross braces on the underside of the conveyor.

⚠ WARNING

UNFORESEEN HAZARD
During the test run, guard yourself against unforeseen equipment failure, or flying objects.

ENTANGLEMENT HAZARD
Long hair, jewelry and loose clothing can become caught in running parts.

3.4.3 Test and Finish Installation:

30. Test run the conveyor:
 - Have three people available; one watching at each end, and a third to work the power.
 - Run power in short, slow bursts to check the belt.
 - Check that belt is running smoothly and not hooking on any bed joints.
 - Make adjustments as required.
31. Check the alignment down the entire length. Make sure the belt down the centre of the bed and at all roller contact points.



Fig 23 - Drive assembly



Fig 24 - V-belts and pulleys

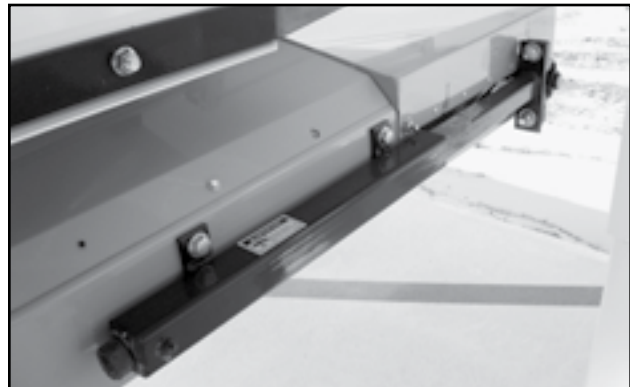


Fig 25 - Tensioning jacks



Fig 26 - Something catching on belt lacing

32. If the belt runs to one side, adjust the rollers under the belt to bring it back to centre.

IMPORTANT:

Fine adjustments now will avoid premature belt wear.

33. After test running the conveyor, recheck tension of belt.
- Adjust as required.

34. Install the discharge hood/spout once the discharge rollers have been adjusted and the belt is centred.

35. Install weather covers over conveyor bed.
- Starting at the discharge and work down.
- Trim covers as needed to fit around bin hopper transition covers.

IMPORTANT:

Be sure to overlap the joints by 2 inches so water will run off.

36. Use self-tapping screws to fasten the covers to the frame.

37. Install the tail cover once the weather cover installation is complete.

Note:

Caulking sealant or foam tape maybe used to seal the spaces around the transitions and weather covers.

We recommend that Convey-All™ service personnel commission your conveyor before using it to move product.



Fig 27 - Rollers are adjustable

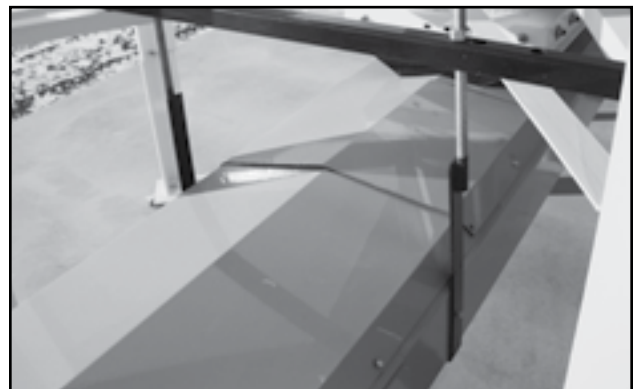


Fig 28 - Install weather covers

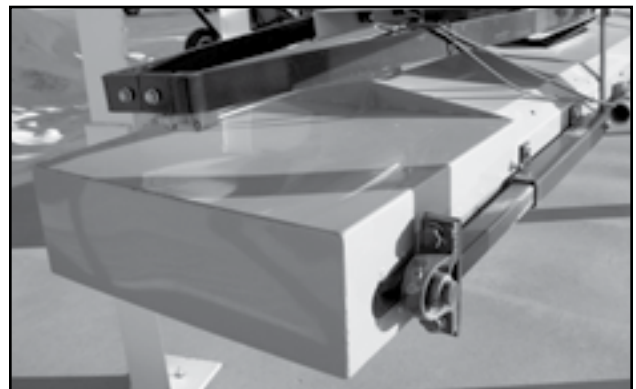


Fig 29 - Install tail cover

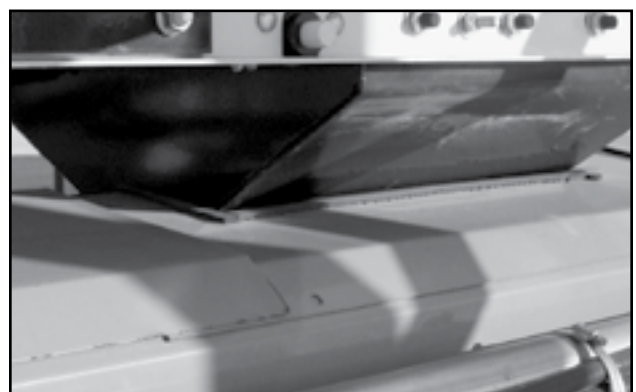


Fig 30 - Seal joints

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Section 4: OPERATION



Operating Safety

- Read and understand operating instructions and all safety signs before using.
- Stop the motor, unplug, place all controls in neutral and wait for all moving parts to stop before servicing, adjusting, repairing.
- Clear the area of bystanders, especially children, before starting.
- Establish a Lock-Out Tag-Out program for the work site and make sure the procedures are followed.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Do not operate machine when any guards are removed.

The Convey-All™ Open Bed, Low Profile Conveyor (OBL) is designed to efficiently move grain, pulse crops, or granular material from a storage facility to another location. Power is provided by an electric motor. Be familiar with the equipment before starting.

It is the responsibility of the owner and operator to read this manual and to train all personnel before they start working with the machine. Follow all safety instructions exactly - it is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, co-workers and bystanders in the area around the work site.

The design and configuration of this underbin conveyor includes safety signs and equipment. Hazard controls and accident prevention are dependent upon the personnel operating and maintaining it. Their awareness, concern, prudence and proper training are crucial.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully for instructions on how to set it to provide maximum efficiency.

By following the operating instructions in conjunction with a good maintenance program, your conveyor will provide many years of trouble free service.

4.1 COMPONENTS AND CONTROLS

Before starting to work, all operators should familiarize themselves with the location and function of the components and controls of their specific unit.

Options and locations may change without notice.

Electric Motor:

All OBLs are run by electric motors. The appropriate horsepower depends on the length of the conveyor. The dealer and customer must together select the motor, and the placement of the control box.

Have only a qualified electrician supply power. All wiring should comply with the ANSI/NFPA 70 electrical requirements.

Bin Hopper Transition and Gate Assembly:

The bin hopper gate(s) are an integral part of the underbin conveying system. The gate(s) may be operated manually or using air cylinders.

Tail End:

The tail end of the conveyor contains the tension jacks which are used to adjust the belt.



Fig 31 - Electric engine and drive assembly

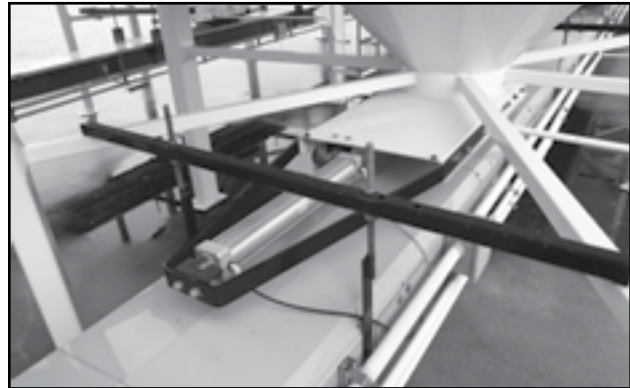


Fig 32 - Gate assembly



Fig 33 - Tail end

4.2 MACHINE BREAK-IN

There are no operational restrictions on the conveyor when used for the first time.

It is recommended that the following mechanical items be checked when breaking-in the machine.

Before Starting Work:

1. Read this manual.
2. Run the unit for half an hour to seat the belt.
3. During the conveyors first few minutes of operation, check belt alignment to ensure the alignment does not vary under loaded conditions.
4. The belt tension will vary depending on the load it is carrying, but it should not slip on the drive roller.

After Operating for 1/2 hour:

5. Check the drive and conveyor belts tension and alignment.
 - Adjust as required.
6. Check that all guards are installed and working as intended.

After Operating For 5 Hours and 10 Hours:

7. Repeat steps 1 through 6 above.
8. Proceed with the regular servicing and maintenance schedule as defined in the Section 5.2 and 5.3.

4.3 PRE-OPERATION CHECKLIST

Efficient and safe operation of the conveyor requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation list is provided below.

It is important for personal safety and the maintaining of good mechanical condition of this conveyor that this list is followed.

Each time, before operating the conveyor, the following areas should be check:

1. Service conveyor as outlined in Section 5.2.
2. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.
3. Clean up working area and remove anything unnecessary to prevent slipping or tripping.
4. Check the drive and conveyor belts tension and alignment.
 - Adjust as required.
5. Check that conveyor belt is not frayed or damaged.

4.4 OPERATION

When operating the conveyor, follow this procedure:

1. Clear the area of bystanders, especially small children, before starting.

Should anyone enter this area, stop the conveyor immediately.

2. Review the Pre-Operation Checklist before operating (Section 4.3).
3. Check that all guards are in place and working as intended.

Note:

Have a licensed electrician provide power to motor.

4.4.1 Starting Conveyor:

4. Turn power on at master control box.
 - If the motor has it's own switch turn it on.

IMPORTANT:

Operate one gate at a time to keep from plugging the conveyor.

4.4.2 Stopping Conveyor:

5. Close the gate to stop unloading.
6. Run conveyor until it is empty.
7. Turn conveyor power off.
 - Turn off power at master panel and unplug the electrical cord.

4.4.3 Emergency Stopping:

Although it is recommended that the belt be emptied before stopping, in an emergency situation, turn off the motor immediately.

Correct the emergency before resuming work.

4.4.4 Restarting After Emergency Stop:

When the conveyor is shut down inadvertently or in an emergency, the conveyor belt will still be covered with product.

Remove as much product from the discharge as possible, before restarting the motor.

The bin hopper gate may be plugged open. As soon as possible after restarting, close the gate.

Since start-up torque loads are much higher than normal when the belt is full, run power in short, slow bursts until the belt is empty.

Once the belt is running empty the gate can be reopened to unloaded product onto the belt.

4.4.5 Unplugging:

In unusual moisture, crop or product conditions, the machine can become plugged. When unplugging, follow this procedure:

1. Turn off the conveyor motor.
2. Lock-out, tag-out the controls.
3. Remove product from the discharge and bin hopper transition.
4. Run power in short, slow bursts until the belt is empty.

4.5 OPERATING HINTS

- Product should be unloaded into the centre of the belt.
- Do not unload product too close to the tail roller.
- Always listen for any unusual sounds or noises. If any are heard, stop the machine and determine the source. Correct the problem before resuming work.
- Do not run the machine for long periods of time with no product on the belting. This will increase the wear. Try to run only when moving product.
- Belt Speed:
The best results are obtained when the engine is set to provide a belt speed of 600 ft/min.

Count the number of belt revolutions per unit time to determine belt speed. Use the belt lacing as a reference when counting belt revolutions.

Contact your dealer or the factory for the appropriate drive components to give the recommended belt speed.

- Belt Tension:
There may be a rapid decrease in belt tension during the first few hours of operation until the belt has worn in.

The correct operating tension is the lowest tension at which the belt will not slip under peak load conditions.



Fig 34 - Conveying setup

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Section 5: SERVICE AND MAINTENANCE



Servicing Safety

- Review the manual and all safety items before maintaining or operating the machine.
- Stop the motor, unplug, place all controls in neutral and wait for all moving parts to stop before servicing, adjusting, repairing.
- Keep work area clean.
- Be sure electrical outlets and tools are properly grounded.
- Use adequate light for the job at hand.
- Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
- Keep safety signs clean. Replace any sign that is damaged or not clearly visible.
- Reinstall and secure all guards when maintenance work is completed.

By following the operating instructions, in conjunction with a good maintenance program, your conveyor will provide many years of trouble free service.

5.1 LUBRICANTS

Grease:

Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable, SAE multipurpose lithium based grease.

Storing Lubricants:

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants, and store them in an area protected from dust, moisture and other contaminants.

5.1.1 Greasing:

NOTICE

GREASING HAZARD

Too much grease causes excessive overheating. Under-greasing accelerates equipment wear.

No grease should be seen around bearings. If there is, too much grease was applied and the seal has ruptured!

IMPORTANT:

Grease bearings only one pump per month under normal usage conditions.

Greasing frequency should be determined by usage and conditions.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. All bearings are greasable, but require only minimal grease.

Recommended greasing is one small stroke every month. Be careful not to over-grease as this may push the seal out.

4. Replace and repair broken fittings immediately.
5. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.



Fig 35 - Discharge

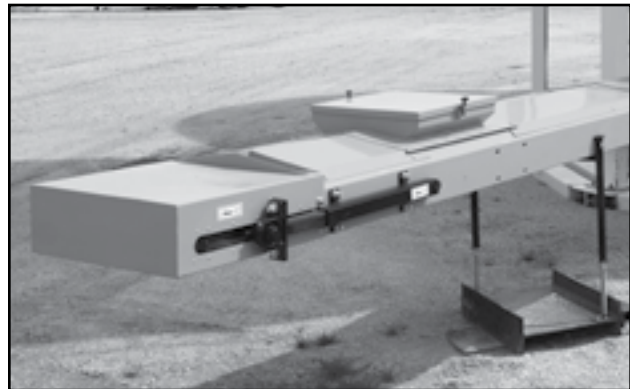


Fig 36 - Tail end

5.2 SERVICING INTERVALS

Use the Service Record provided on page 5-11 to keep a record of all scheduled maintenance.

It is important to check conveyor belt alignment and make adjustments, if required, during the initial few minutes of loaded operation. The belt usually seats itself and can be checked weekly after that.

Check bearings for wear daily.

The following recommended periods are based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

5.2.1 After 10 Hours or Daily:

1. Inspect conveyor belt lacing for wear.
2. Check the conveyor belt tension daily while breaking-in the conveyor.
 - Refer to Section 4.2.2
3. Check the conveyor belt alignment frequently during the first 10 hours of operation until it seats itself. Refer to Section 4.2.2
4. Inspect all rollers and bearings for play and wear.
 - Replace if necessary.

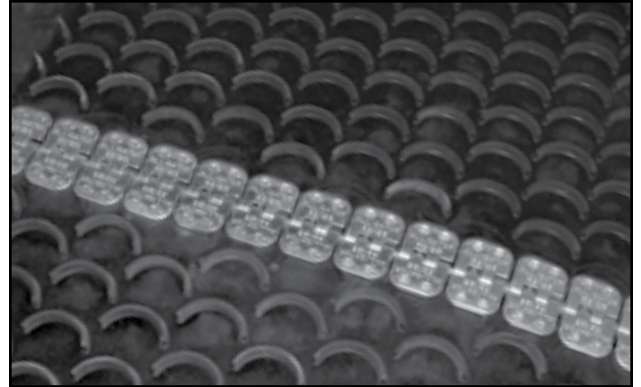


Fig 37 - Belt lacing



Fig 38 - Tensioning jack



Fig 39 - Tail roller from underneath

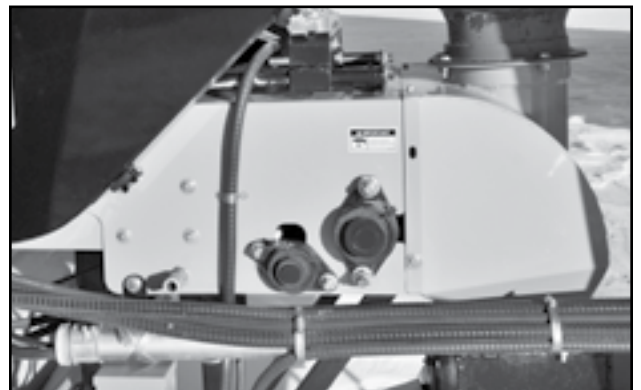


Fig 40 - Discharge and drive roller bearings

5.2.2 After 50 Hours or Weekly:

5. Check the conveyor belt tension.
Refer to Section 5.3.1
6. Check conveyor belt alignment.
Refer to Section 5.3.2
7. Check drive belt tension.
Refer to Section 5.3.4
8. Check pulley alignment.

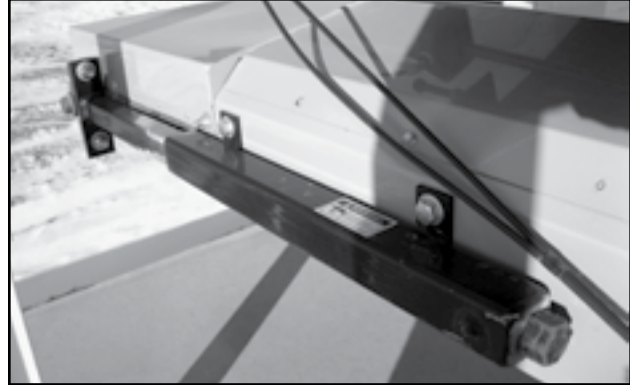


Fig 41 - Tensioning jack

5.2.3 After 100 hours or Monthly:

Note:

Recommended greasing is one small stroke every month. Be careful not to over grease as this may push the seal out.

9. Grease discharge and drive roller bearings.
10. Grease the tail roller bearings.
11. Grease the counter shaft bearings.



Fig 42 - Drive belts

5.2.4 After 200 hours or Annually:

12. Check, level and straighten the entire length of conveyor unit.
13. Wash the entire conveyor thoroughly using a water hose or pressure washer to remove all dirt, mud, debris or residue.
 - Wash the outside.
 - Wash around the bin hopper gates and transitions.
 - Remove the weather covers, run the belt while washing inside the bed and the belt.

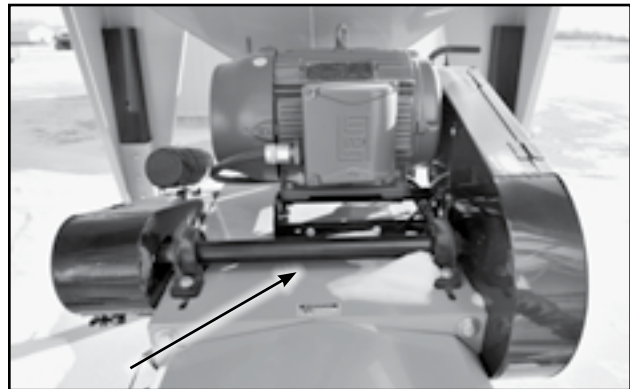


Fig 43 - Counter shaft



Fig 44 - Clean conveyor

5.3 MAINTENANCE PROCEDURES

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free service.

When checking the tension and alignment of the conveyor belt:

- Have three people available; one watching at each end and the third working the power.
- Run power in short, slow bursts to check the belt.
- Check that belt is running smoothly and not hooking on any bed joints.
- Make adjustments as required.

⚠ WARNING

ROTATING PART HAZARD
Be careful when adjusting the conveyor belt when it is running.



Fig 45 - Conveyor belt tensioning jacks

5.3.1 Conveyor Belt Tension:

The tension of the belt should be checked weekly, or more often if required, to be sure that it does not slip.

Use the tensioning jacks connected to the tail roller to set the tension of the belt.

The tension is correct when the belt deflects 5 to 6 inches when pulling with 40 lb of force at the centre of a 9 to 10 foot span.

IMPORTANT:

If tensioning the belt while it is running, adjust in small increments, alternating between the two sides often. This will keep the belt aligned.

Note:

Conveyor belt should not slip during operation.

5.3.2 Conveyor Belt Alignment:

NOTICE

BELT DAMAGE HAZARD

Alignment of the belt must be checked at the hopper, drive box and discharge. Inspect weekly. Unaligned belt will cause damage and void warranty.

NOTICE

BEARING FAILURE

If a roller is replaced, ensure both ends are evenly aligned with the frame before running. If not, bearing failure may occur.

The belt is properly aligned when it runs in the centre of all rollers.

Check frequently during the first few minutes of operation with a new belt, and then several times during the first 10 hours.

The new belt normally seats itself during the first 10 hours of operation and can be checked weekly after that.

⚠ WARNING

ROTATING BELT HAZARD

Idle the engine, then rotate the belt slowly when checking the alignment.

Turn off engine when adjusting rollers.

Belt Alignment at Tail Roller:

1. Rotate the conveyor belt slowly, and check the position of the belt on the tail roller.

Note:

If belt is out of alignment, it will move to the loose side. Tighten loose side or loosen tight side.

2. Adjust one side of roller at a time.
 - Use the tension jacks bring the belt into alignment.
3. Rotate the conveyor belt slowly, and check the position of the belt on the roller.
 - Repeat steps until the belt is centred.

Belt Alignment at Discharge Roller:

4. If necessary, remove the discharge spout to view the roller.

Note:

If belt is out of alignment, it will move to the loose side. Tighten loose side or loosen tight side.

5. Adjust one side of roller at a time.
 - Loosen the bearing housing, then adjust.
6. Tighten the discharge roller bearing housing.
7. Run the belt a couple of revolutions and check the alignment.
 - Repeat steps until the belt runs centred.
8. Replace the bearing housing guard when adjustment is complete.

5.3.3 Conveyor Belt Replacement:

⚠ WARNING
ROTATING PART HAZARD
 Turn off electric motor, Lock-Out Tag-Out, before adjusting the belt.

1. Rotate the belt until the Alligator® laced is accessible underneath the conveyor bed.
2. Loosen the tensioning jacks fully.
3. Pull all the slack to the lacing area.
4. Remove the lacing cable and open the belt.
5. Attach one end of the replacement belt to the end of the existing belt.
6. Pull the old belt out. The new belt will follow and be threaded into place.
7. Disconnect the old belt.
8. Link the ends of the new belt lacing.
9. Thread the lacing cable to fasten the belt.
 - **Note:** A cordless drill can be used to feed the cable.
10. Cut off excess cable.
11. Crimp the lacing at one end to lock the cable in place.
12. Cut and taper the belt corners, at both ends of the lacing.

IMPORTANT:

Taper the belt corners, so they don't catch.

13. Set belt tension. Refer to Sections 5.3.1
14. Set the belt alignment.
 Refer to Section 5.3.2

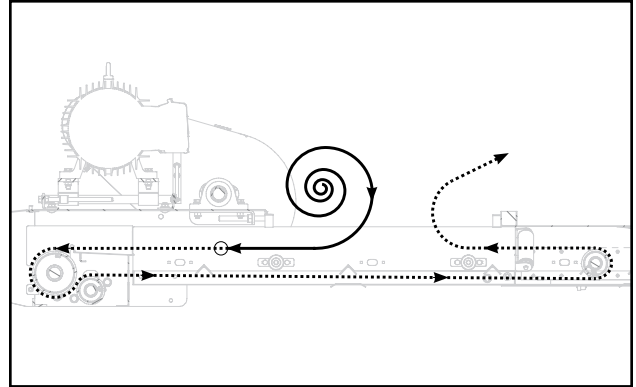


Fig 46 - Threading replacement belt

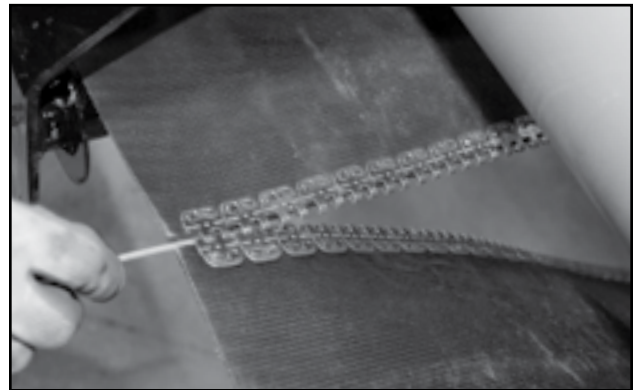


Fig 47 - Thread lacing rod

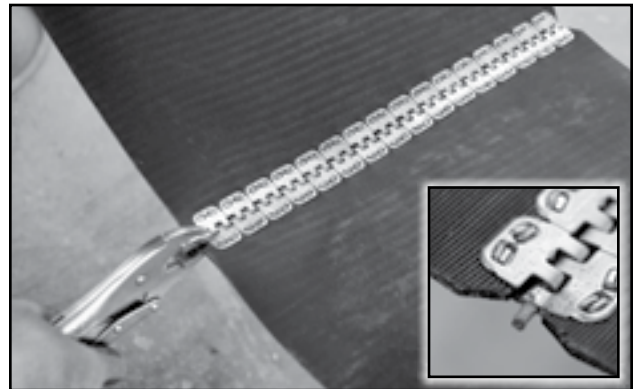


Fig 48 - Crimp lacing and tapered corners

5.3.4 Drive-Side Belt Tension:

Always adjust belt tension on the drive-side first.

⚠ WARNING

ROTATING PART HAZARD

Turn off electric motor and unplug power cord before adjusting the drive belt.

1. Open the guard over the drive.
2. Move the cross shaft to set the belt tension.
3. Loosen cross shaft bearing mount anchor bolts.
4. Use bearing mount position bolts to set cross shaft position and set belt tension.
5. Check that belt is at the correct tension.
6. Calculate the tension by (See Figure 35):
 - Add the length of the span between pulleys
 - Allow 1/64" of deflection per inch of span
7. Tighten bearing mount anchor bolts.
8. Tighten adjusting bolt(s) and lock nut(s).
9. Close and secure guard over drive.

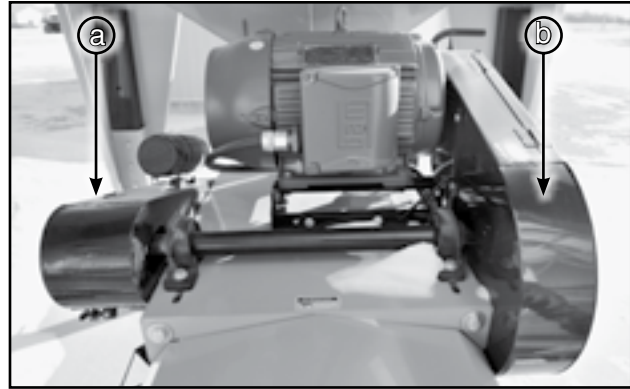


Fig 49 - Drive-side (a), Motor-side (b)

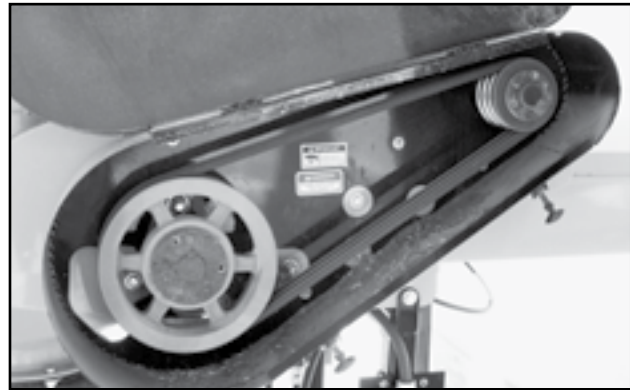


Fig 50 - Drive side with guard opened

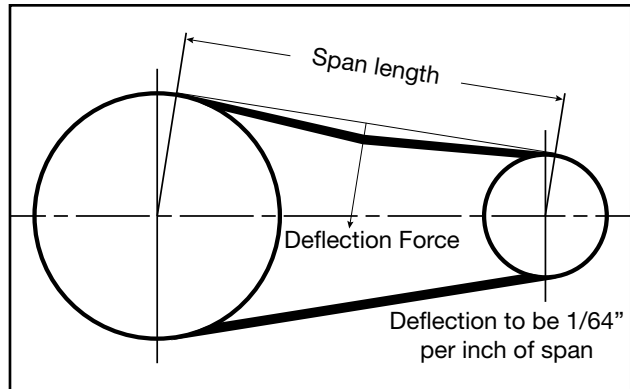


Fig 51 - Tension calculation

5.3.5 Motor-Side Belt Tension:

Adjust the tension on this side after adjusting the drive-side (Section 5.3.4).

1. Open the guard over the drive.
2. Loosen the lock nuts on the motor mounting position bolts.
3. Use the nuts on the position bolt to move the motor mount to the required position to set belt tension.
4. Check the belt tension.
5. Calculate the tension by (See Figure 35):
 - Add the length of the span between pulleys
 - Allow 1/64" of deflection per inch of span
6. Tighten lock nuts to their specified torque.
7. Close and secure guard over drive.



Fig 52 - Motor side with guard opened

5.3.6 Check Pulley Alignment:

1. Use a straight edge across both drive and driven pulleys to check alignment.
2. Use the tapered lock hub in the centre of the pulley to adjust the position of a pulley if required.
3. Move a pulley to align if there is more than a 1/32 inch gap between the edge of the pulley and the straight edge.

5.3.7 V-Belt Replacement:

1. Place drive system into its loosest position.
2. Remove old belt.
3. Install replacement belt.
4. Set the belt tension.
5. Check the pulley alignment.

Cross Section	Smallest Sheave Diameter Range	RPM Range	Belt Deflection (Force Pounds)			
			Uncogged Hy-T® Belts and Uncogged Hy-T® Torque Team®		Cogged Torque Flex® and Machined Edge Torque Team® Belts	
			Used Belt	New Belt	Used Belt	New Belt
A, AX	3.0 - 3.6	1000-2500 2501-4000	3.7 2.8	5.5 4.2	4.1 3.4	6.1 5.0
	3.8 - 4.8	1000-2500 2501-4000	4.5 3.8	6.8 5.7	5.0 4.3	7.4 6.4
	5.0 - 7.0	1000-2500 2501-4000	5.4 4.7	8.0 7.0	5.7 5.1	9.4 7.6
B, BX	3.4 - 4.2	860-2500 2501-4000	n/a	n/a	4.9 4.2	7.2 6.2
	4.4 - 5.6	860-2500 2501-4000	5.3 4.5	7.9 6.7	7.1 6.2	10.5 9.1
	5.8 - 8.6	860-2500 2501-4000	6.3 6.0	9.4 8.9	8.5 7.3	12.6 10.9
C, CX	7.0 - 9.0	500-1740 1741-3000	11.5 9.4	17.0 13.8	14.7 11.9	21.8 17.5
	9.5 - 16.0	500-1740 1741-3000	14.1 12.5	21.0 18.5	15.9 14.6	23.5 21.6
D	12.0 - 16.0	200-850 851-1500	24.9 21.2	37.0 31.3	n/a	n/a
	18.0 - 20.0	200-850 851-1500	30.4 25.6	45.2 38.0	n/a	n/a
			Uncogged Hy-T® Wedge Belts and Uncogged Hy-T® Wedge Torque Team®		Cogged Hy-T® Wedge Belts and Hy-T® Wedge Machine Edge Torque Team®	
			Used Belt	New Belt	Used Belt	New Belt
5V	4.4 - 6.7	500-1749 1750-3000 3001-4000	n/a	n/a	10.2 8.8 5.6	15.2 13.2 8.5
	7.1 - 10.9	500-1740 1741-3000	12.7 11.2	18.9 16.7	14.8 13.7	22.1 20.1
	11.8 - 16.0	500-1740 1741-3000	15.5 14.6	23.4 21.8	17.1 16.8	25.5 25.0

Table 1 - Belt Deflection Force

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5.4 SERVICE RECORD

See Section 5.2 for service intervals. This section is only a general guide under good conditions. Under extreme, or unusual circumstances adjust service timing accordingly.

Print this page to continue record.

Maintenance	Hours																		
	Serviced By																		
10 Hours or Daily																			
Inspect Conveyor Belt Lacing																			
Inspect All Rollers And Bearings For Wear																			
50 Hours, or Weekly																			
Check Convey Belt Tension																			
Check Convey Belt Alignment																			
Check Drive Belt Tension																			
Check Pulley Alignment																			
100 Hours, or Monthly																			
Grease Discharge and Drive Roller Bearings																			
Grease Tail Roller Bearings																			
Grease Counter Shaft Bearings																			
200 Hours or Annually																			
Level and Straighten Entire Length																			
Wash Conveyor																			

5.5 ORDERING PARTS

Always give the Model Number and Serial Number when ordering parts.

To get your parts promptly the following information will be required:

- The part name and number
- Your Name, Address, Town, Province/State, Country
- Complete information for shipping

Confirm all phoned in orders in writing. If Purchase Orders are required please note the number on the written order.

Unless claims for shortages or errors are made immediately upon receipt of goods, they will not be considered.

Inspect all goods received immediately upon receipt. When damaged goods are received, insist that a full description of the damage is made with the carrier against the freight bill. If this is insisted upon, full damage can be collected from the transport company.

No responsibility is assumed for delay or damage to merchandise while in transit. Dealers responsibility ceases upon delivery or pickup of shipment from or to the transportation company. Any freight damage claims must be made with the transportation company, not with the dealer.

Section 6: TROUBLESHOOTING

In the following trouble shooting section, we have listed many of the problems, causes and solutions to the problems which you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please contact your authorized dealer, distributor or the factory. Before you call, please have this Operator's Manual and the serial number from your machine ready.

Problem

Possible Cause	Possible Remedy
----------------	-----------------

Electric motor labouring

Belt is sticky on the back side, because of oily product or wet/snowy conditions	Clean the belt
--	----------------

Conveyor belt doesn't turn or it slips

No power	Start engine, increase speed to maximum RPM
Conveyor belt loose	Tighten and align
Conveyor belt loose because it has stretched	Shorten belt
Drive belt loose	Tighten V-belt
Belt frozen to bed from operating in high humidity conditions in extreme cold	Remove conveyor from area of high humidity and continue to run empty so the belt dries prior to freezing
Seized bearing	Check all bearings, Replace any that are rough or seized
Belt/roller is jammed	Check for sticks, stones, other objects jammed in belt drive area and remove.

continued on next page

Problem

Possible Cause	Possible Remedy
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Conveyor belt runs to one side throughout bed

Roller lagging may be worn	Replace roller or have it relagged
Discharge end or tail end roller not square	Square roller
Buildup of material on bed	Remove material
Buildup of material on discharge end or tail end roller	Clean roller
Bad bearing	Replace bearing
Material is not in centre of belt	Adjust chute and loading conditions to place material in centre of belt.
Conveyor is not level, belt pulls to lower side	Level conveyor
Loose mounting bolts between conveyor beds	Tighten bed sections

Conveyor belt runs to one side on particular section

Belt not joined squarely	Square ends, re-splice
Bowed belt	Apply more tension to belt or replace
Bed roller not square	Square off bed rollers
Bed not aligned	Align and level entire conveyor unit

Conveyor belt fraying

Belt not aligned	Align and adjust tension
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Low conveying capacity

Conveyor belt slipping	
Drive roller worn out or is slipping	Replace drive belt

Section 7: SIGN-OFF FORM

Convey-All™ follows the general Safety Standards specified by the American Society of Agricultural Engineers (ASAE), and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the unit must read and clearly understand all Safety, Operating and Maintenance information presented in this manual.

Do not operate, or allow anyone else to operate, this equipment until this document has been read. Review this information annually, before the season start-up.

Make periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment.

The following Sign-Off Form is provided for your record keeping. Use it to show that all personnel who will be working with the equipment have read and understand the provided information. They also have been instructed in the operation of the equipment. Copy this page to continue the record.

DATE	EMPLOYEE'S SIGNATURE	EMPLOYER'S SIGNATURE

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Section 8: REFERENCE

For information not included here, or for a digital copy of this manual, please call your dealer, or Convey-All Industries Inc. directly for assistance (1-800-418-9461).

8.1 BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

ENGLISH TORQUE SPECIFICATIONS						
Bolt Diameter "A"	Bolt Torque*					
	SAE 2 (N.m) (lb-ft)		SAE 5 (N.m) (lb-ft)		SAE 8 (N.m) (lb-ft)	
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970

Table 2 - English Torque

METRIC TORQUE SPECIFICATIONS				
Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m) (lb-ft)		10.9 (N.m) (lb-ft)	
M3	0.5	0.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710

Table 3 - Metric Torque



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

CONVEY-ALL™

(800) 418-9461 | www.convey-all.com | conveyors@convey-all.com