CONVEY-ALL™

TUBE CONVEYOR with PADDLE BELT

Models:
TCP-1620, TCP-1625, TCP-1630,
TCP-1635, TCP-1640, TCP-1645

OPERATOR'S MANUAL

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 extents 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

CONVEY-ALL™

WARRANTY REGISTRATION FORM and INSPECTION REPORT

CONVEY-ALL INDUSTRIES INC.
130 CANADA STREET
WINKLER, MANITOBA R6W 0B3
TF: (800) 418-9461 FX: (204) 325-8116
www.convey-all.com

The Dealer must fill out this form. It is to be signed by both the Dealer and Buyer at the time of delivery. Scan or photograph the completed form (be sure it is legible). 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: ☐ Private ☐ Commercial

UNIT INSPECTION

- ☐ All Fasteners Tight
- ☐ Drive System Rotates Freely
- ☐ Driveline Secured to Machine
- ☐ Machine and All Bearings Lubricated
- ☐ Conveyor Belt Aligned and Tensioned
- ☐ Conveyor Belt Moves Freely
- ☐ Tube Raises and Lowers Smoothly Using Winch
- ☐ Tire Pressure Checked

SAFETY INSPECTION

- ☐ All Guards/Shields Installed and Secured
- ☐ All Safety Decals Clear and Legible
- ☐ Reflectors, Slow Moving Vehicle (SMV) Sign Clean
- ☐ All Lights Clean and Working
- ☐ Safety Chain on Hitch
- ☐ 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 the applicable 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™ Tube Conveyor with Paddle Belt (TCP) to complement your seed delivery system in your farming operation.

This equipment 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.

1.1 OPERATOR ORIENTATION

The directions; left, right, front and rear, as mentioned throughout this manual, are as seen from the tow vehicle driver's seat, facing the direction of travel. The hopper is the front of the conveyor.

1.2 SERIAL NUMBER

Always give your dealer the serial number of your conveyor when ordering parts, requesting service or asking for other information. The serial number for the conveyor is located between the hopper and the winch.

Please mark the identifying numbers in the space provided for easy reference.

Conveyor Model No: _____

Conveyor Serial No: _____

Motor Model No: _____

Motor Serial No: _____

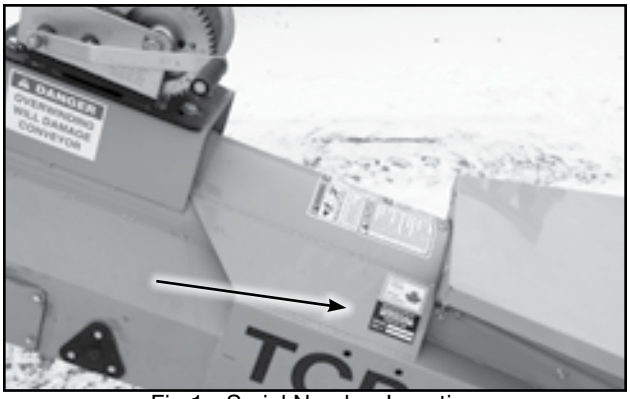

Fig 1 - Serial Number Location

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Section 2: SAFETY

The Safety Alert Symbol means:

ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

3 Big Reasons why safety is important to you:

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

The Safety Alert Symbol identifies important safety messages on the Paddle Belt 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.

2.1 SAFETY ORIENTATION

YOU are responsible for the SAFE operation and maintenance of your Convey-All™ Paddle Belt 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 operator is not qualified to operate the machine.

- Have a first-aid kit available for use should the need arise and know how to use it.

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

- Do not allow riders.

- Do not allow children, spectators or bystanders within hazard area of machine.

- Wear appropriate protective gear. This list includes 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 in 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 must have a thorough understanding of all the safety precautions.

  Review the safety instructions with all personnel annually.

- In order to provide a better view, some images in this manual may show an assembly with a safety guards removed.

  

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

- This equipment is dangerous to children and people 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 - DON'T 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 or in good, working condition.

2.4 SAFETY DECALS

- Keep safety decals clean and legible at all times.

- Replace safety decals that are missing or have become illegible.

- Replaced parts that displayed a safety decal should also display the current decal.

- 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, or directly from Convey-All Industries Inc.

2.4.1 How to Apply Safety Decals:

1. Be sure that the area is clean and dry. Preferably, apply the decals inside.

2. Ensure temperature is above 10°C (50°F).

3. Remove all dirt, grease, wax from the surface.

4. Clean with a non-ammonia based cleaner.

5. Wipe the clean surface with Isopropyl alcohol on paper towel, and allow to dry.

6. Determine exact position before you remove the backing paper.

7. Peel the smallest portion of the split backing paper.

8. Align the decal over the specified area. Use a squeegee to carefully press the small portion, with the exposed adhesive backing, into place.

9. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal into place.

10. Small air pockets can be pierced with a pin and smoothed out using the squeegee, or a piece of sign backing paper.

2.5 WORK PREPARATION

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

  Also, read the engine operator's manual.

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

- Personal protection equipment including:
  - Hard hat
  - Eye protection
  - Protective shoes
  - Work gloves

  are recommended during installation, placement, operation, maintenance and removal of the implement.

- 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 80db.

  Noise over 85db 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 machine is in a stable position, is 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.

2.6 PLACEMENT SAFETY

- Be familiar with the machine hazard area. If anyone enters hazard area, shut down machine immediately. Clear the area before restarting.

- Operate the conveyor on level ground free of debris.

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 MAINTENANCE SAFETY

- Review the Section 4: Service and Maintenance of this Manual before working with, maintaining or operating the conveyor.

- Follow good shop practices:
  - Keep service area clean and dry.
  - Be sure electrical outlets and tools are properly grounded.
  - Use adequate light for the job.

- 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.

- Turn motor OFF, unplug power supply, and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.

- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.

- Replace parts with genuine factory replacements parts to restore your equipment to original specifications.

  Convey-All Industries Inc. will not be responsible for injuries or damages caused by the use of unapproved parts and/or accessories.

- Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.

- Place stands or blocks under the frame before working beneath the machine.

- Before resuming work, install and secure all guards when maintenance work is completed.

- Keep safety decals clean. Replace any decal that is damaged or not clearly visible.

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.

- Make certain that all electrical switches are in the OFF position before plugging in the conveyor.

- 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 TIRE SAFETY

- Failure to follow procedure when mounting a tire on a wheel or rim can produce an explosion and may result in serious injury or death.

- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.

- Have a qualified tire dealer or repair service perform required tire maintenance.

- When replacing worn tires, make sure they meet the original tire specifications.

  Never undersize.

- Reference the tire side wall for information on the maximum cold tire pressure (PSI). Keep the tires inflated to this setting.

2.11 WORKPLACE HAZARD AREA

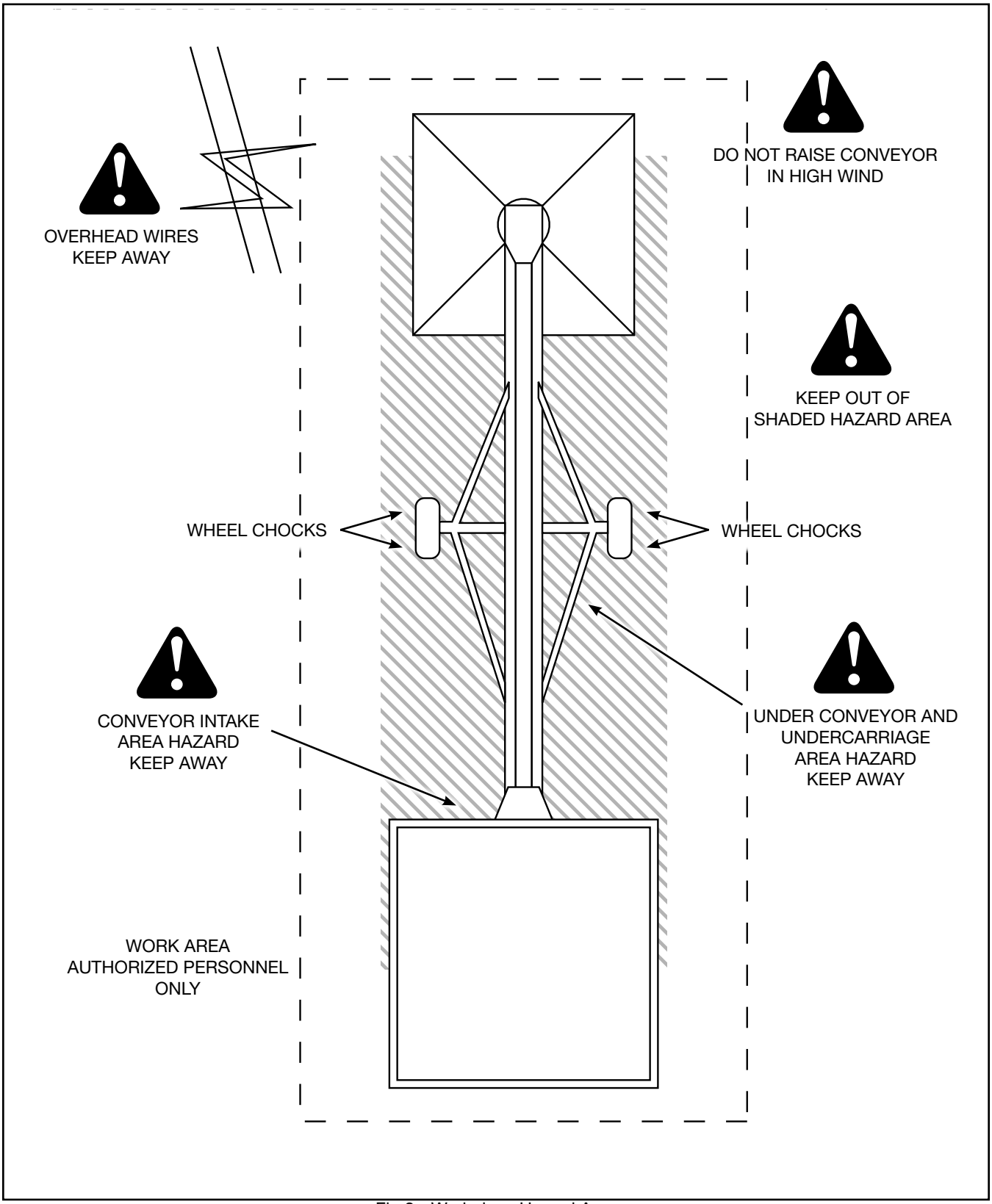

Fig 2 - Workplace Hazard Area

2.12 OPERATING SAFETY

- Be sure that anyone who will be operating the machine or working on or around the unit reads and understands the operating, maintenance and safety information in this operator's manual.

  Review the manual annually.

- Clean or replace all safety decals if they cannot be clearly read and understood.

- Place all controls in neutral, and stop the electric motor. Unplug power supply and wait for all moving parts to stop before adjusting, repairing or unplugging.

- Keep all bystanders, especially children, away from the machine when running.

  Also, when authorized personnel are carrying out maintenance work.

- Establish a Lock-Out, Tag-Out policy 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 equipment.

- Be familiar with machine 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.

- Do not allow riders on the conveyor when moving or transporting it.

- Keep working area clean and free of debris to prevent slipping or tripping.

- Stay away from overhead obstructions and power lines during operation and transporting. Electrocution can occur without direct contact.

- Do not operate machine when any guards are removed.

- Chock wheels of conveyor before starting.

- Be sure that conveyor tube is empty before raising or lowering.

- High winds may overturn conveyor. To avoid damage to structures and equipment, do not raise conveyor fully in windy conditions.

  Also, do not leave the conveyor raised, when it is not in use.

2.13 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 unloading system.

- Provide tags on the machine and a sign-up sheet to record tag out details.

2.14 TRANSPORT SAFETY

- The conveyor belt must be empty before raising or lowering the tube.
- Always transport conveyor in collapsed position.
- Check that all the lights, reflectors and other lighting requirements are installed and in good working condition.
- Never allow riders on the conveyor.
- Comply with all local laws governing safety and transporting of equipment on public roads.
- Do not exceed a safe travel speed. Slow down for rough terrain and when cornering.
- Stay away from overhead power lines. Electrocution can occur without direct contact.
- Plan your route to avoid heavy traffic.
- Do not drink and drive.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.

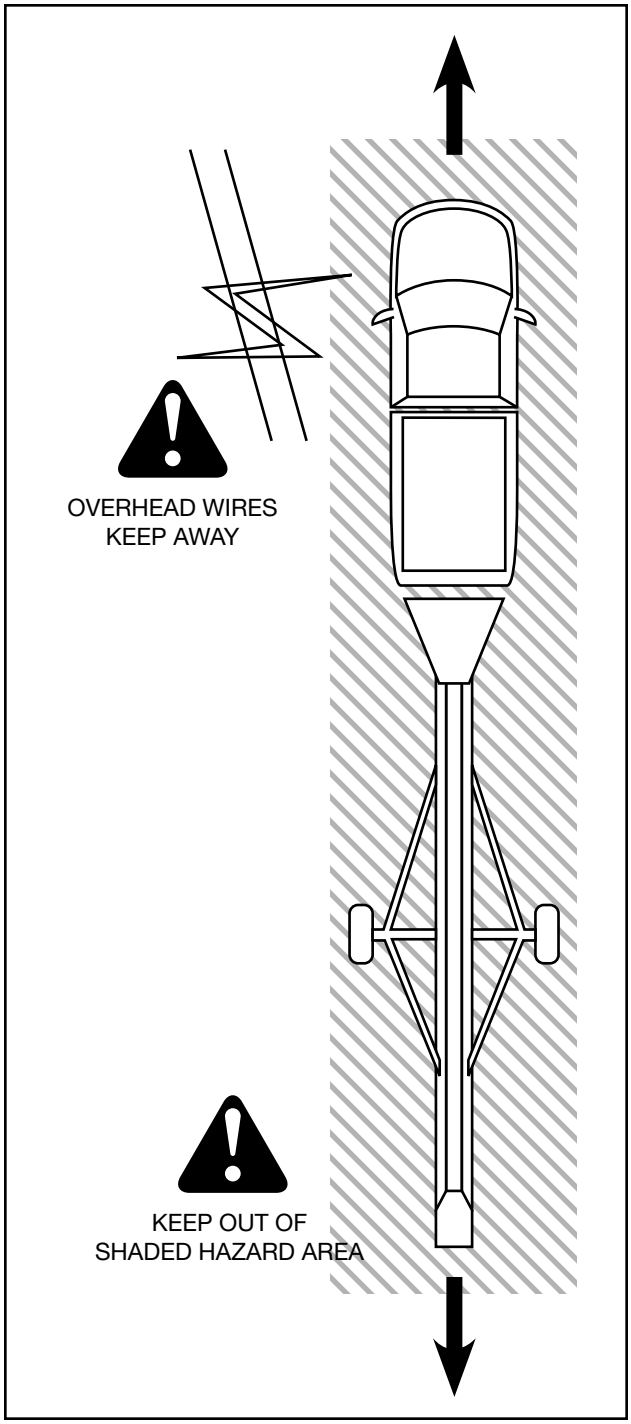

Fig 3 - Transporting Hazard Area

2.15 STORAGE SAFETY

- Store the conveyor on a firm, level surface.
- Store in an area away from human activity.
- If required, make sure the unit is solidly blocked up.
- Remove the battery and store in dry location. Do not sit battery on a cold, concrete floor.
- Make certain all mechanical locks are safely and positively connected before storing.
- Do not permit children to play on or around the stored machine.

2.16 SAFETY SYMBOL IDENTIFICATION

There are many types of safety symbols on decals placed in various locations on the conveyor. Good safety practices include being familiar with these signs, the type of warning, the area, and the particular function related to that area.

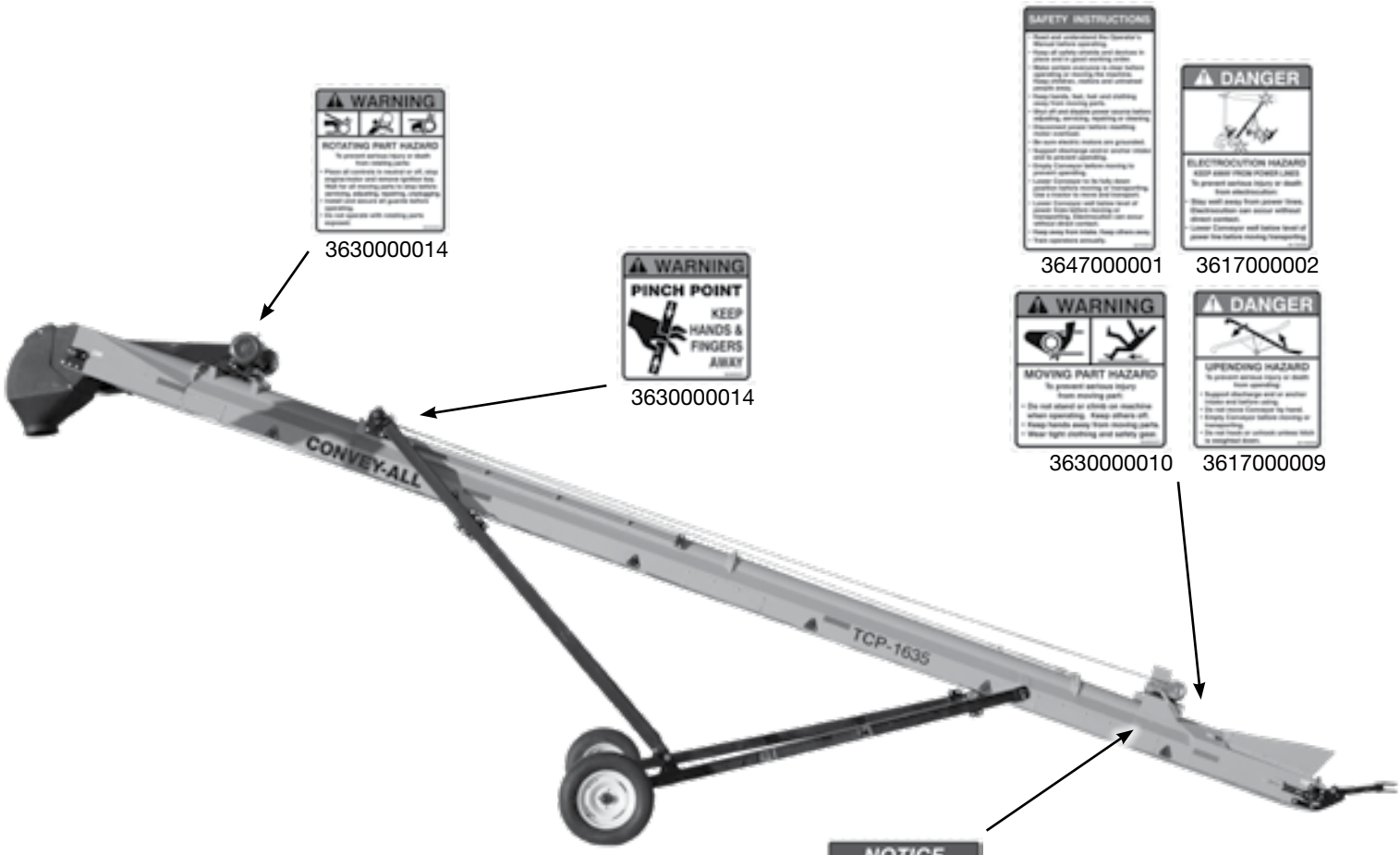

Fig 4 - Driver Side of Conveyor

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.

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Section 3: OPERATION

Operating Safety

- Read and understand the Operator's Manual, 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.
- Be familiar with machine 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.
- Do not allow riders on the conveyor or tractor when transporting.
- Stay away from overhead obstructions and power lines during operation and transporting. Electrocution can occur without direct contact.
- If a safety shield or guard is removed for any reason, it must be replaced before the machine is again operated.
- Set park brake on tractor, chock wheels of conveyor before starting.
- Lower conveyor to its fully collapsed position before moving or transporting or when not in use.
- Be sure that conveyor is empty before raising or lowering.

The Convey-All™ Paddle Belt Conveyor is designed to efficiently move grain, pulse crops, or granular material as part of a seed treating site or a storage facility. Power is provided by an electric motor. Be familiar with the machine before starting.

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

The design and configuration of this conveyor includes safety decals 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 to learn how to operate the machine safely. There are instructions on how to set it, to provide maximum efficiency. By following the operating instructions, in conjunction with a good maintenance program, your TCP will provide many years of trouble free service.

3.1 MACHINE COMPONENTS

This series of conveyors can move granular product at steep angle of up to 40 degrees.

An electric motor supplies power to the belt drive located at the top before the discharge spout.

A hand-operated winch is used to raise or lower the frame.

The main components are listed below:

a. Main Tube
b. Discharge Spout
c. Winch
d. Conveyor Belt Housing Guard
e. Conveyor Belt Alignment Bolts / Tension Springs
f. Electric Motor
g. Undercarriage
h. Intake Hopper
i. Drive Belt
j. Document Holder

Fig 5 - Tube Conveyor with Paddle Belt

3.2 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.

Electric Motor On/Off:
All conveyors with electric power option rely on the dealer and customer to select the motor with the appropriate horsepower and to hire a licensed electrician to provide power.

A variety of switches can be used.

Minimum Power Requirements:

Model	Electric HP
1620	420 fpm
1625	420 fpm
1630	420 fpm
1635	420 fpm
1640	450 fpm
1645	450 fpm

Table 1 - Power Requirements

Discharge Spout:
The standard discharge spout can be manually adjusted to tilt the spout into the preferred position. Product can be directed further out or straight down.

Remove the spout to throw the material as far as possible. This configuration works well when making piles or working inside buildings.

Hand Winch:
These conveyors are designed with a winch and cable pulley system to raise and lower the frame.

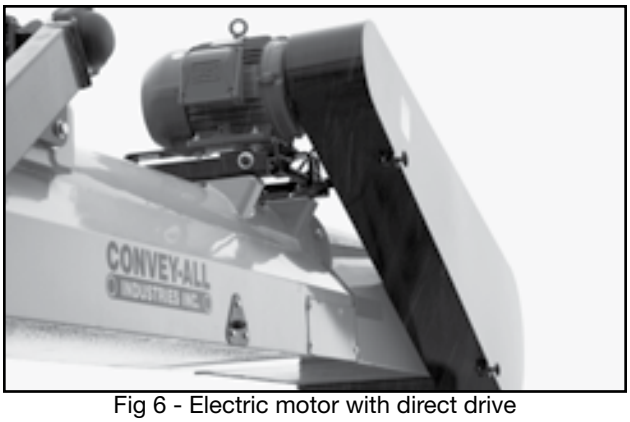


Fig 6 - Electric motor with direct drive

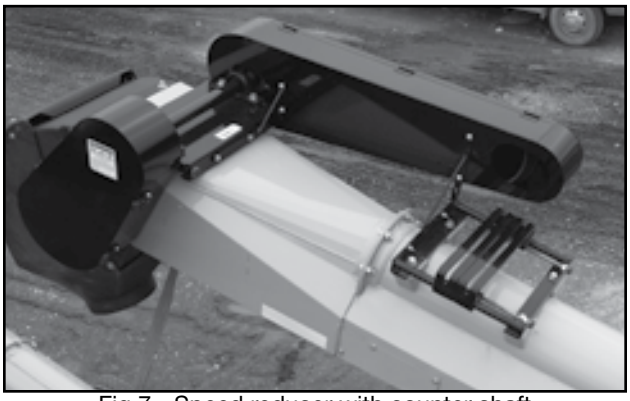


Fig 7 - Speed reducer with counter shaft


Fig 8 - Discharge Spout

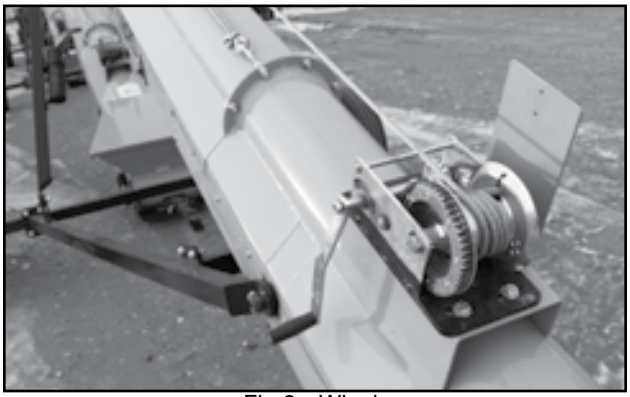


Fig 9 - Winch

Metal Hopper:
Our metal hopper is standard for the paddle belt conveyors.

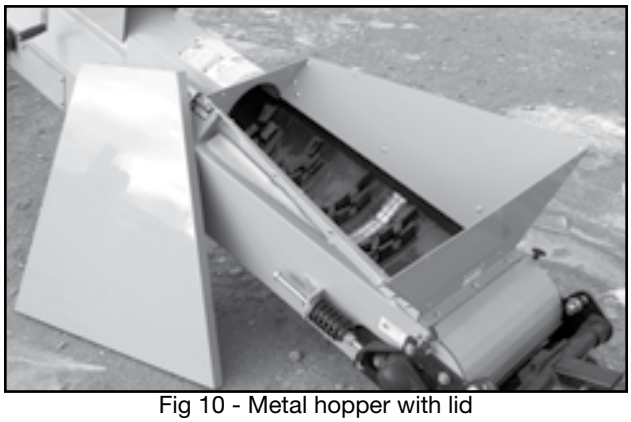


Fig 10 - Metal hopper with lid

Hopper Lid (Optional):
A lid is available, to cover and protect the belt when not in use.

Collapsible Canvas Hopper (Optional):
A collapsible, canvas hopper is available. It is designed with a spring loaded frame.


Fig 11 - Optional collapsible hopper

Adjustment Bolts:
The adjustment bolts on both sides of the Idler Roller, at the hopper, are used to tension and correct the tracking of the belt.

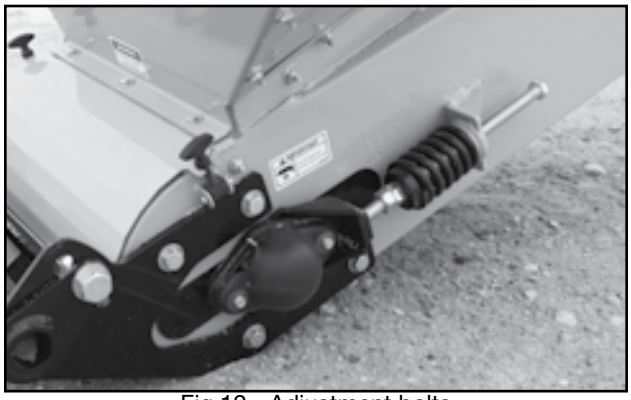


Fig 12 - Adjustment bolts

Hitch:
The hitch is designed to be adjustable. It can pivot to the preferred height.

Hopper End Belt Guard:
The belt guard can be removed for full access to clean out the hopper.

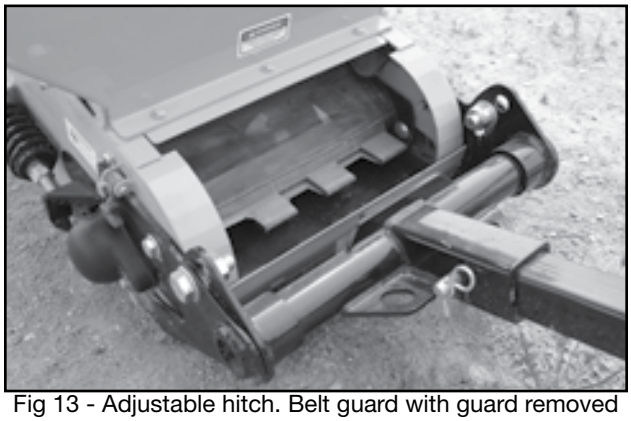


Fig 13 - Adjustable hitch. Belt guard with guard removed

3.3 MACHINE BREAK-IN

Although there are no operational restrictions on the conveyor when used for the first time, it is recommended that the following mechanical items be checked:

Before Starting Work:

1. Read the conveyor and power unit operator's manuals.

2. Run the unit for half an hour to seat the belting and flashing around the intake hopper. It is normal for rubber from the flashing to be expelled out the discharge and form a pattern on the belt.

After Operating or Transporting for 1/2 hour:

3. Re-torque all the wheel bolts fasteners and hardware.

4. Check the drive and conveying belt tension and alignment. Adjust as required.

5. During the conveyors first few minutes of operation, check belt alignment to ensure preset alignment and tension does not vary under loaded conditions.

6. Check the flashing seal on the hopper. If any product comes out of the hopper around the flashing; stop, loosen flashing mounting screws and adjust. Retighten anchor screws and try again. Repeat until no product is lost.

7. Check that all guards are installed and working as intended.

After Operating For 5 Hours and 10 Hours:
Repeat steps 1 through 7 above.

Go to the normal servicing and maintenance schedule as defined in the Section 10: Service and Maintenance.

3.4 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. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining the good mechanical condition of the conveyor that this checklist is followed.

Before operating the conveyor and each time thereafter, the following areas should be checked off:

1. Check work site. Clean up working area to prevent slipping or tripping.

2. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.

3. Check the drive and conveying belt tension and alignment. Adjust as required.

4. Check that conveying belt is not frayed or damaged and that it is properly adjusted and aligned.

5. Be sure conveyor wheels are chocked.

6. Check that discharge and intake areas are free of obstructions.

NOTICE: Upending Hazard
Anchor or support conveyor during operation. When lower half of conveyor empties of product, the weight balance transfers to the upper end of the machine, which can cause upending.

3.5 ATTACHING TO TOW VEHICLE

It is recommended that the conveyor be attached to a tractor whenever it is moved around a yard or into working position. It may be towed by a truck when transporting over long distances.

Follow this procedure when attaching to or unhooking from a tow vehicle:

1. Make sure that bystanders, especially small children, are clear of the working area.

2. Be sure that there is sufficient room and clearance to back up to the conveyor.

3. Align the drawbar with the hitch of the conveyor while backing up.

4. Set the park brake before dismounting.

5. The hitch is removable. Install hitch and secure with the anchor pin and retainer before using hitch.

6. The hitch receptacle is adjustable to the preferred height and angle.

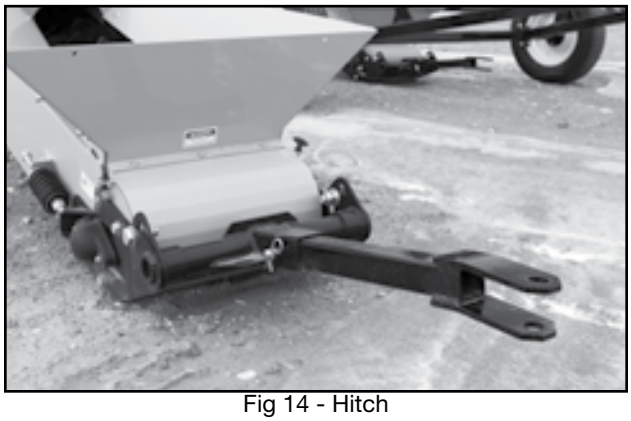


Fig 14 - Hitch

NOTICE: Upending Hazard
The machine is closely balanced. Do not lift unless there is downward weight on the hopper end to prevent upending.

7. Connect the hitch to the tow vehicle.

8. Tow the conveyor to work site, and back into position.

DANGER: Electrocution Hazard
Ensure enough clearance from overhead obstructions and power lines when moving the conveyor.

3.6 CONVEYOR PLACEMENT

Follow this procedure when placing the conveyor into its working position:

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

WARNING: Electrocution Hazard
Ensure enough clearance from overhead obstructions, power lines or other equipment to move the machine into working position.

2. Attach conveyor to the tractor.
   Refer to Section 3.5

3. Back conveyor up to the storage facility while it is in its lowered configuration.

4. Set the park brake on the tractor before dismounting.

5. Winch slowly, to raise the machine into position. Stay away from power lines.

6. Slowly back the conveyor until the discharge spout is over the opening in the storage facility.

7. Use the winch to lower the spout, over the storage facility.

8. Place chocks around each wheel.

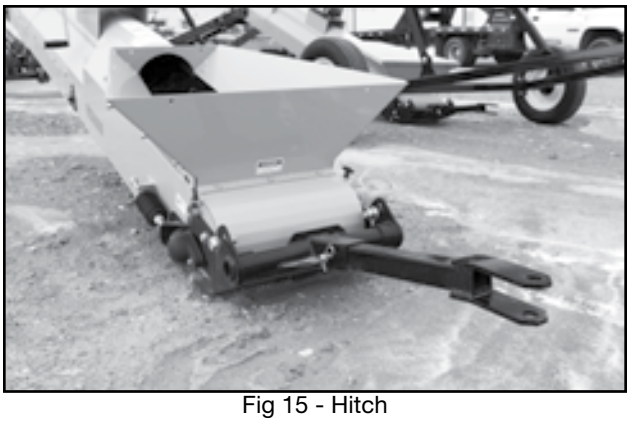


Fig 15 - Hitch

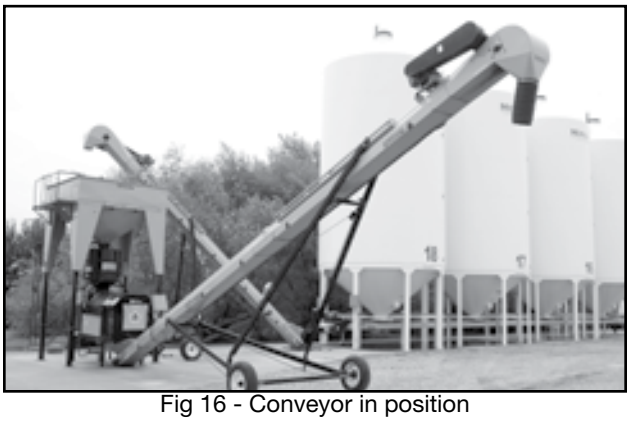


Fig 16 - Conveyor in position


Fig 17 - In position to unload

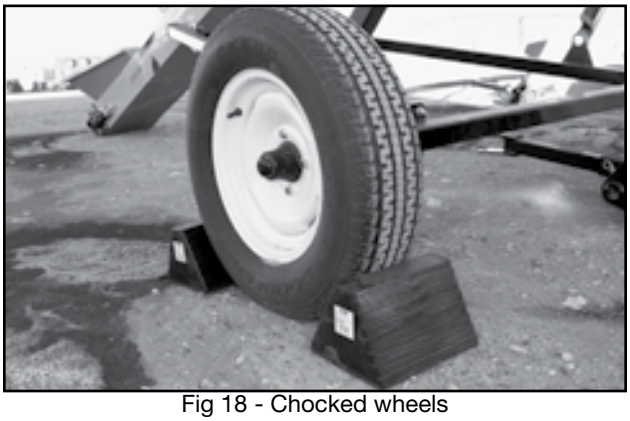


Fig 18 - Chocked wheels

9. Unhook the unit from the tractor or towing vehicle and lower to the ground.

NOTICE: Upending Hazard
Always check the weight of the hopper end to prevent upending.

10. Stake or weigh down the hopper end to prevent upending when the machine is emptying.

11. Lower machine until discharge spout is in final position above the storage facility.

    To prevent belt damage, be sure the belt does not rest on the storage facility.

12. Remove the hitch from the conveyor to prevent interfering with other equipment if required.

13. Have a licensed electrician provide power to the electric motor.

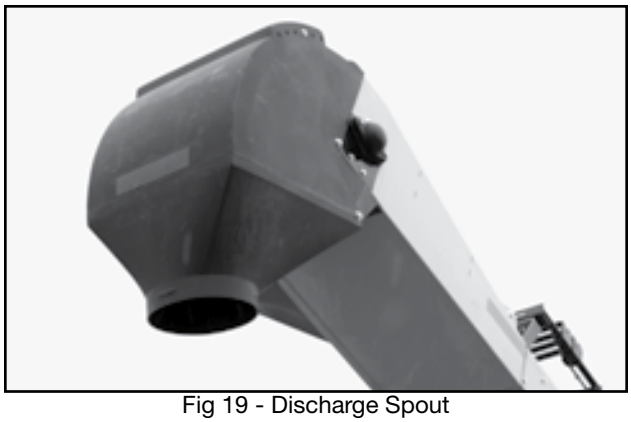


Fig 19 - Discharge Spout

Fig 20 - Motor Control Box

3.7 OPERATING ON SITE

When operating the conveyor, follow this procedure:

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

2. Review the Pre-Operation Checklist before starting. Refer to Section 3.4

3. Review the Workplace Hazards schematic, Figure 2. Take extra care when inside the hazard area. Keep all spectators and bystanders out of this area.

   Should anyone enter this area, stop the machine immediately.

4. Check that all guards are in place and working as intended.

5. Back the truck into position for unloading.

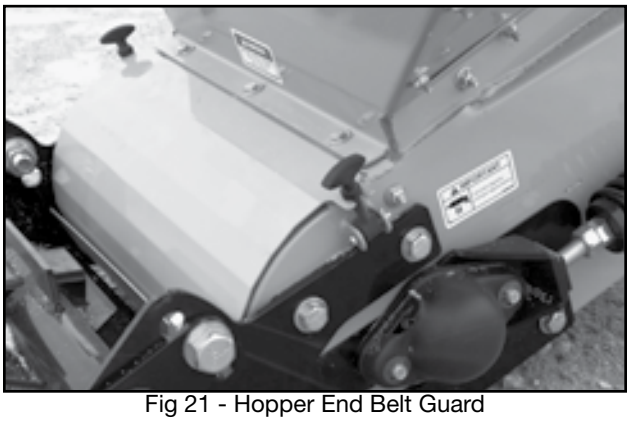


Fig 21 - Hopper End Belt Guard

Fig 22 - Motor Control Box

3.7.1 Starting Conveyor:

6. Turn power on at master control box.

Note:
Have a licensed electrician provide power to motor.

7. Plug in power cord.

8. Turn conveyor motor on.

3.7.2 Stopping Conveyor:

9. Stop unloading.

10. Run until conveyor is empty.

11. Turn power off.

12. Turn main power off at master panel and unplug power cord.

3.7.3 Emergency Stopping:
Although it is recommended that the tube be emptied before stopping, in an emergency situation, stop or shut-down the power source immediately.

Correct the emergency before resuming work.

3.7.4 Restarting with Full Tube:
When the machine is shut down inadvertently or for an emergency, the belt will probably be full of material.

Remove as much product from hopper as possible before restarting.

Note:
Maintain tail roller spring dimension at
3-3/4 inches for most operating conditions.

3.7.5 Operating Angle:
The TCP can be set at any angle between 12° and 40° when operating.

Do not position at more than 45°.

Note:
The lower the angle,
the greater the capacity.

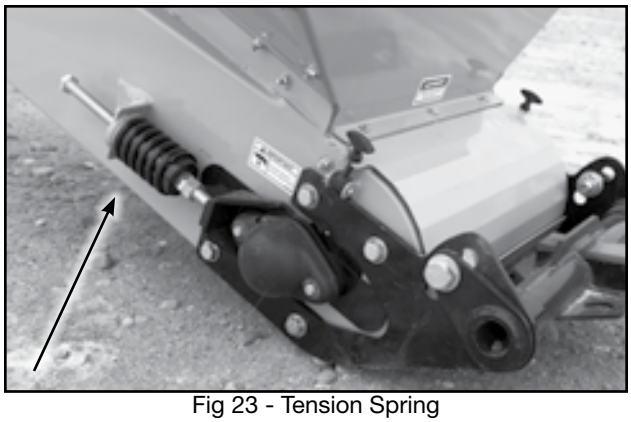


Fig 23 - Tension Spring

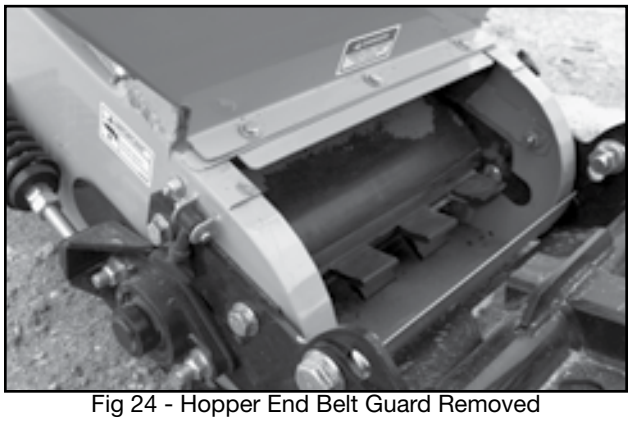


Fig 24 - Hopper End Belt Guard Removed

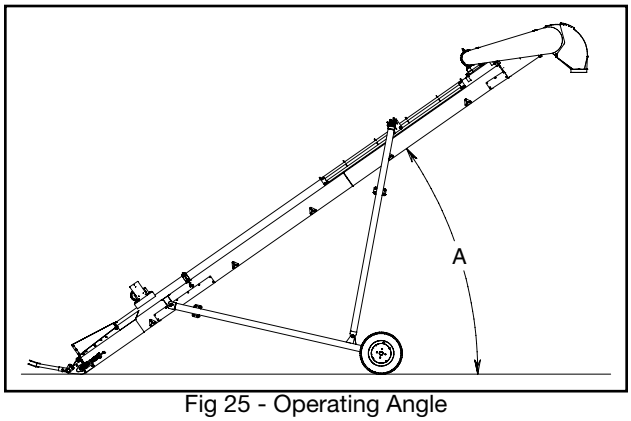


Fig 25 - Operating Angle

3.8 OPERATING HINTS

- Keep the hopper full for maximum capacity. Most efficient results will be obtained when flow of incoming material is directed to the front (closer to the tube) of the hopper.

- 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.

- Never allow anyone into the workplace hazard area. If anyone enters, stop immediately. The visitor must leave before resuming work.

- Do not run the machine for long periods of time without product on the belt. This increases the wear.

  Run belt only when moving product.

- Do not move the machine by hand. Always use a tractor.

- Do not support discharge end directly on the storage facility. Stake the hopper or weight it down to prevent up ending.

- The hopper is designed with flashing to seal the junction of the belt with the sides of the hopper. It must be kept in good condition to prevent the material from "leaking" out of the hopper. Replace flashing if "leakage" occurs.

- Belt Speed:
  The best results are obtained when the input drives are set to provide a belt speed of 400 ft./min.

  Count the number of belt revolutions per unit time to determine belt speed. Belt length is double the length of your machine plus 6 inches. Use the belt lacing as a reference when counting belt revolutions.

- Belt Tension:
  There may be a rapid decrease in belt tension during the first few hours of operation until the belt has been broken-in. The correct operating tension is the lowest tension at which the belt will not slip under peak load conditions.

3.9 TRANSPORTING

Convey-All™ conveyors are designed to be easily and conveniently moved from place to place.

When transporting, follow this procedure:

1. Review the Transport Safety Schematic before starting.

2. Be sure all bystanders are clear of the machine. Unplug the power cord, wrap it around frame and secure to prevent dragging.

NOTICE: Upending Hazard
Ensure the conveyor is balanced. Remove stakes or weights slowly to prevent upending.

3. Remove the stakes, or weights from the hopper end.

4. Reinstall the hitch and jack to the conveyor.

5. Attach to a tractor or truck using a hitch pin with a retainer and a safety chain. (Refer to Attaching Section).

Note:
It may be necessary to raise the discharge end above the storage facility to provide clearance to raise the intake end.

6. If equipped with lights or an optional lighting package, connect wiring harness to the towing vehicle and secure across the hitch. Do not allow the harness to hang or drag on the ground.

7. Remove chocks from the wheels.

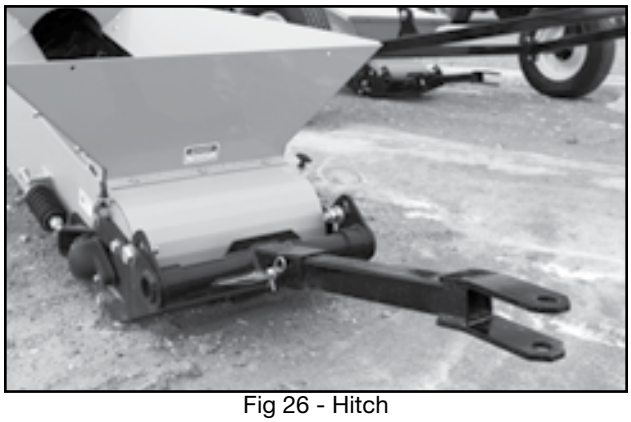


Fig 26 - Hitch

Fig 27 - Wheel Chocks

Fig 28 - Ball hitch with safety chains

WARNING: Electrocution Hazard
Ensure enough clearance from overhead obstructions, power lines or other equipment before moving the conveyor.

8. Slowly pull away from the storage facility and stop as soon as the discharge end clears.

9. Stop and lower the conveyor into its fully collapsed position. The tube should be resting on the undercarriage.

10. Never drive across slopes of more than 20°.

11. Ensure the SMV (Slow Moving Vehicle) emblem and all lights and reflectors, which are required by law, are in place.

    They must be clean and able to be seen by all ovetaking and oncoming traffic.

12. It is not recommended to transport the conveyor in excess of 32 km/h (20 mph).

Road Speed	Weight of fully equipped or loaded implement(s) relative to weight of towing machine
up to 32 km/h (20 mph)	1 to 1, or less
up to 16 km/h (10 mph)	2 to 1, or less
Do not tow	More than 2 to 1

Table 2 - Road Speed

Fig 29 - Conveyor hitched to truck

3.10 STORAGE

After the season's use, the conveyor should be thoroughly inspected and prepared for storage.

Repair or replace any worn/damaged components to prevent unnecessary down time next season.

For a long, trouble free life, this procedure should be followed when preparing the unit for storage:

1. Remove all residual material from the hopper and tube.

2. Inspect all moving or rotating parts to see if anything has become entangled in them. Remove the entangled material.

3. Wash the entire machine thoroughly using a water hose or pressure washer to remove all dirt, mud, debris or residue.

4. Touch up all paint nicks and scratches to prevent rusting.

5. Select an area that is dry, level and free of debris.

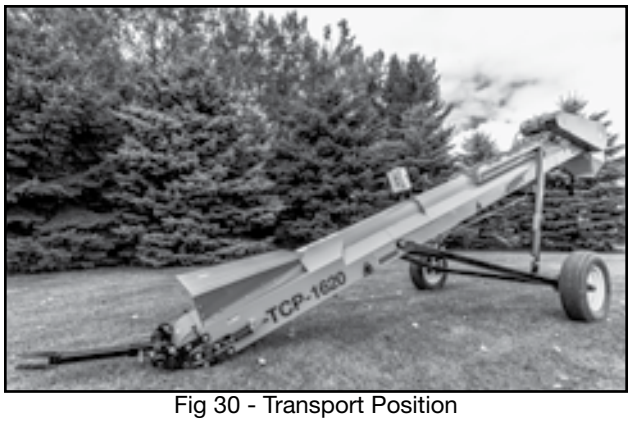


Fig 30 - Transport Position

Section 4: SERVICE AND MAINTENANCE

Servicing Safety

- Review the Operator's Manual and all safety items before working with, maintaining or operating the machine.
- Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
- Place all controls in neutral. Stop motor, unplug the cord. Wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Follow good shop practices:
  - Keep service area clean and dry.
  - Be sure electrical outlets and tools are properly grounded.
  - Use adequate light for the job at hand.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Place stands or blocks under frame before working beneath the unit.
- Before resuming work, install and secure all guards when maintenance work is completed.
- Keep safety decals clean. Replace any decal that is damaged or not clearly visible.

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

4.1 FLUIDS AND 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.

Store them in an area protected from dust, moisture and other contaminants.

4.1.1 Greasing:
Use the Service Record provided on page 4-15, to keep a record of all scheduled maintenance.

1. Use a hand-held grease gun for all greasing.

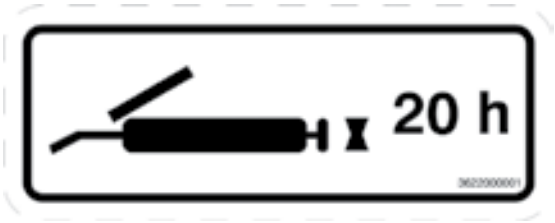
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.

3. All bearings are sealed and greasable. They require minimal grease.

   Recommended greasing is 1 small stroke every 2 weeks. 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.



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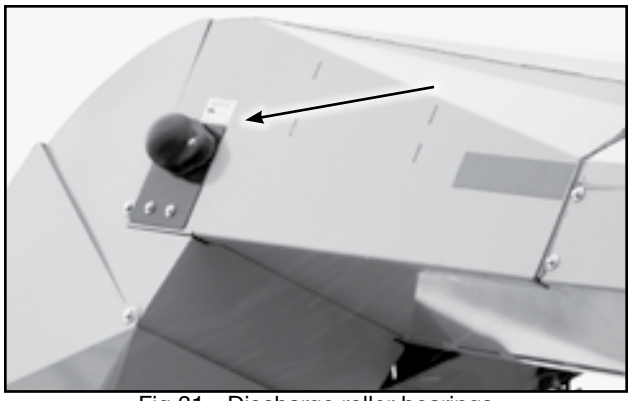
Fig 31 - Discharge roller bearings

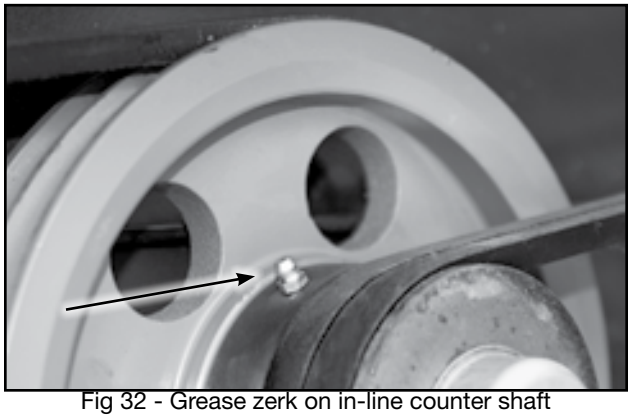
Fig 32 - Grease zerk on in-line counter shaft

4.2 SERVICING INTERVALS

The conveyor belt alignment is preset to run true under a condition of no load. It is important to check alignment and make adjustments, if required, during the initial few minutes of loaded operation.

Check bearings for wear daily.

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

Schedules may vary depending on options and engine model contained in the present unit.

4.2.1 After 10 Hours or Daily:

1. Grease counter shaft bearings.
2. Grease idler roller bearings.
3. Grease discharge roller bearings.

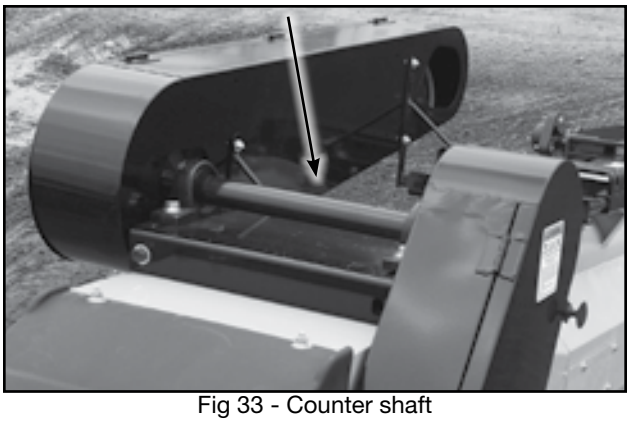

Fig 33 - Counter shaft

4.2.2 After 50 Hours or Weekly:

4. Check drive belt tension and alignment.
   Refer to Section 4.3.4 to 4.3.6
5. Check the conveyor belt tension.
   Refer to Section 4.3.1

Note:
A properly tensioned belt will not slip
when in operation.

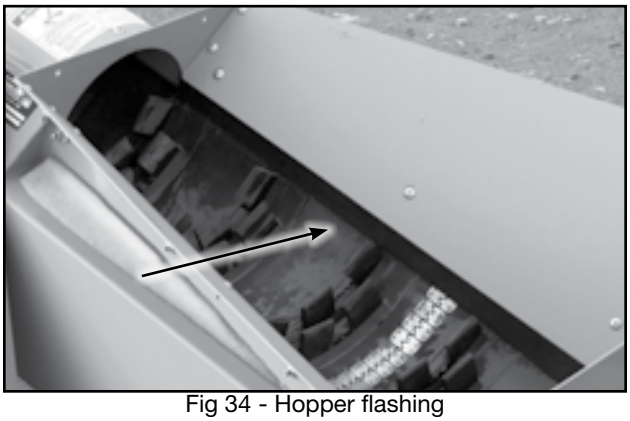

Fig 34 - Hopper flashing

6. Check conveyor belt alignment.

   Watch the alignment more frequently during the first 10 hours of operation. It usually seats itself and can be checked weekly after that.
   Refer to Section 4.3.2

7. Check the condition of rubber hopper flashing located beneath the metal hopper panels, and can be seen without removing them. Be sure it still seals the hopper to prevent leaking.

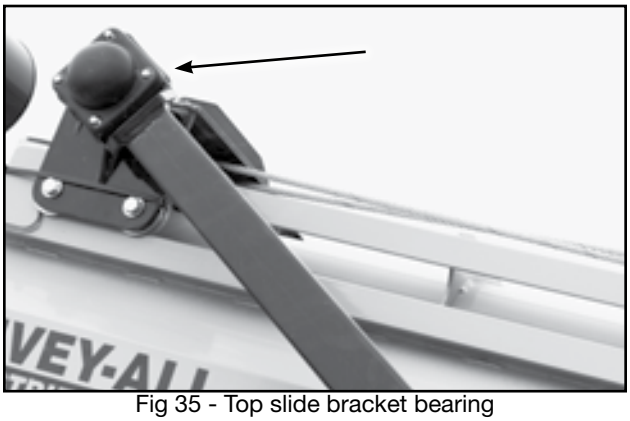

Fig 35 - Top slide bracket bearing

4.2.3 After 200 hours or Annually:

8. Grease top slide bracket bearings.
9. Check for tube straightness. Adjust eyebolt if required.
10. Repack wheel bearings.
11. Wash the machine

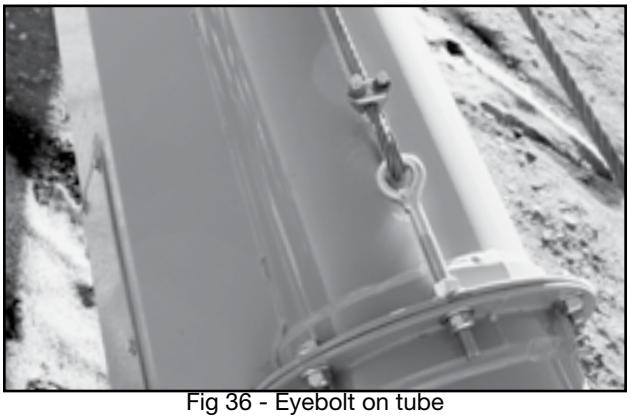

Fig 36 - Eyebolt on tube

4.3 MAINTENANCE PROCEDURES

This section contains more detailed information regarding the conveyor belt and engine care.

4.3.1 Conveying Belt Tension:

The tension of the belt should be checked weekly, or more often if required, to be sure that it does not slip or run to one side. To maintain the belt, follow this procedure:

WARNING: Rotating Belt Hazard
If tension is adjusted while belt is moving, avoid contact with belt and rollers.

Belt tension is pre-set at the factory, under no load. Check the tension often while breaking-in the conveyor, because the belt may stretch.

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

1. Components (See Figure 37):
   a. Idler roller spring adjustment bolt
   b. Tension spring
   c. Lock nut

2. Use the idler roller spring tension bolts to set the tension of the belt.

   The conveying belt should not slip on its drive and idler rollers during operation.

   Tighten tension bolt until spring measures 3-3/4" (95 mm).

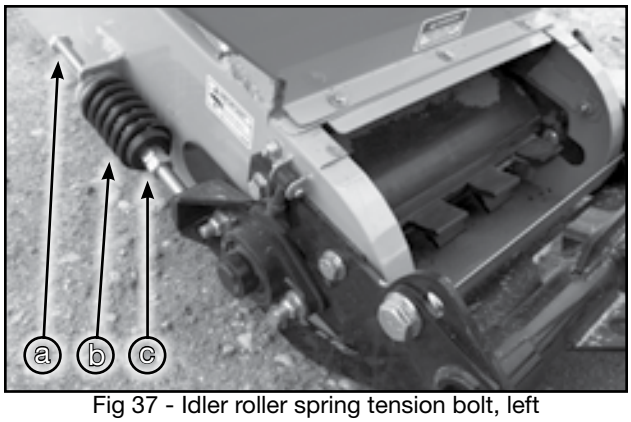

Fig 37 - Idler roller spring tension bolt, left

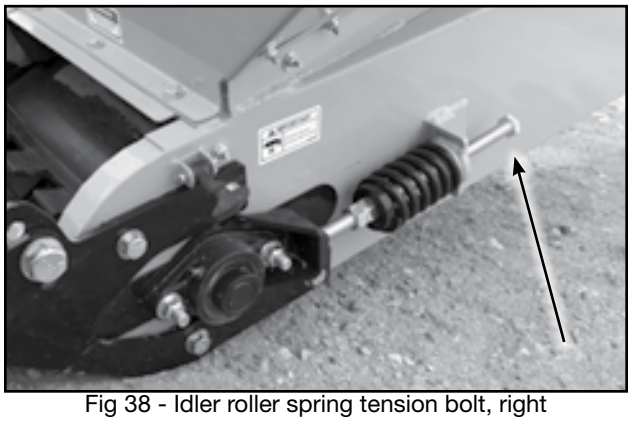
Fig 38 - Idler roller spring tension bolt, right

4.3.2 Conveyor Belt Alignment:

The belt is properly aligned when it rotates in the centre of the rollers on the ends of the conveyor. As with tensioning, the alignment should be checked weekly, or as required.

WARNING: Rotating Part Hazard
Turn off electric motor and unplug power cord before working on belt.

1. Rotate the conveyor belt a half revolution when the belt is new and check the drive and idler rollers.

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

2. Tighten or loosen the adjustment bolt by a 1/4 turn to 2 turns.

3. Run a couple of revolutions and check again.

4. Tighten the tension bolt lock nut. See Figure 34

Check frequently during the first few minutes of operation and then several times during the first 10 hours.

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

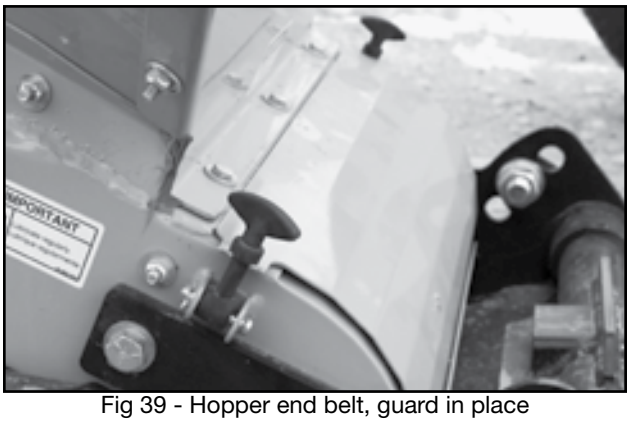

Fig 39 - Hopper end belt, guard in place

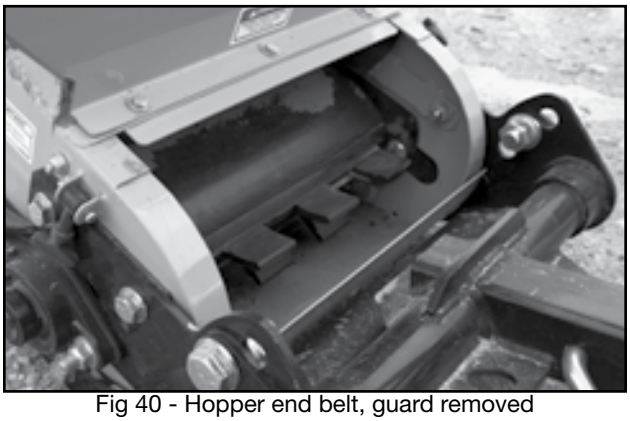
Fig 40 - Hopper end belt, guard removed

4.3.3 Conveyor Belt Replacement:

1. Open the belt access panel underneath the conveyor wind guard.
2. Rotate the belt until the seam is positioned at the open access panel.
3. Move the adjustment bolt in the idler housing to its loosest position. See Figure 37
4. Pull all the slack to the seam area.
5. Remove the lacing pin and open the belt.
6. Attach one end of the replacement belt to the end of the existing belt which is hanging closest to the hopper.
7. Pull the end of the old belt which is coming from the direction of the discharge spout. The new belt will follow and be threaded into place.
8. Disconnect the old belt.
9. Connect the ends of the new belt together.
10. Close the Access panel.
11. Set the belt tension. Refer to Section 4.3.1
12. Check and set the belt alignment. Refer to Section 4.3.2

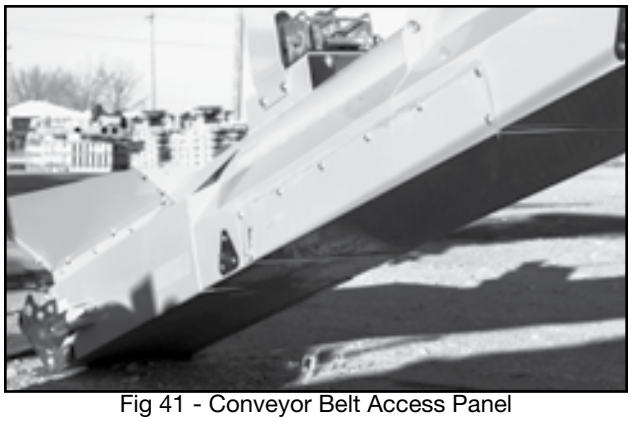

Fig 41 - Conveyor Belt Access Panel

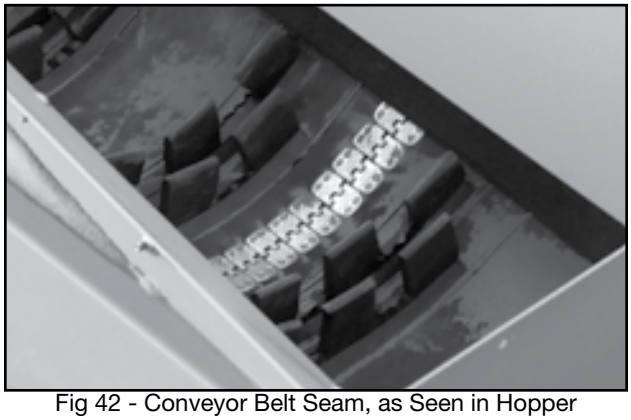

Fig 42 - Conveyor Belt Seam, as Seen in Hopper

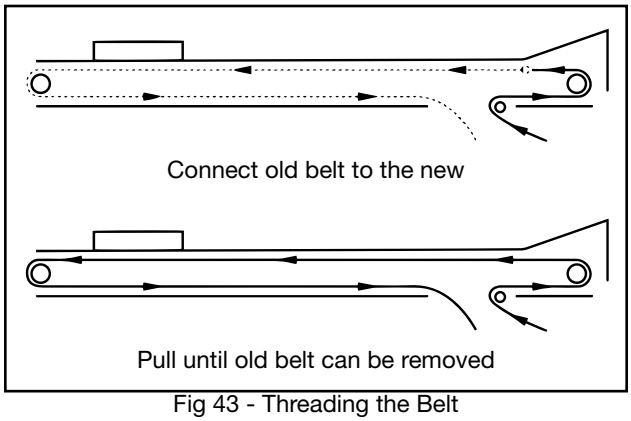

Fig 43 - Threading the Belt

4.3.4 Speed Reduction Drive:
To adjust belt tension, follow this procedure:

WARNING: Rotating Part Hazard
Turn off electric motor and unplug power cord before working on belt.

First,
Set Tension On Counter Shaft To Drive Belt:

1. Open the guard over the V-belt pulley.
2. Loosen counter shaft bearing mount anchor nuts and jam nuts.
3. Use bearing mount position bolts to set countershaft position and set belt tension.

   Calculate the tension (See Figure 46):
   - Measure the length of span between pulleys
   - Allow 1/64" of deflection per inch of span
4. Tighten bearing mount anchor nuts.
5. Tighten adjusting bolt(s) and lock nut(s).
6. Close and secure guard over pulleys.

Second,
Set Tension On Engine To Counter Shaft Belt:

7. Open the guard over the V-belt pulley.
8. Loosen engine/motor mount nuts and jam nuts.
9. Use motor mount nuts to set belt tension.

   Calculate the tension (See Figure 46):
   - Measure the length of span between pulleys
   - Allow 1/64" of deflection per inch of span
10. Tighten motor mount anchor nuts.
11. Tighten adjusting bolt(s) and lock nut(s).
12. Close and secure guard over pulleys.

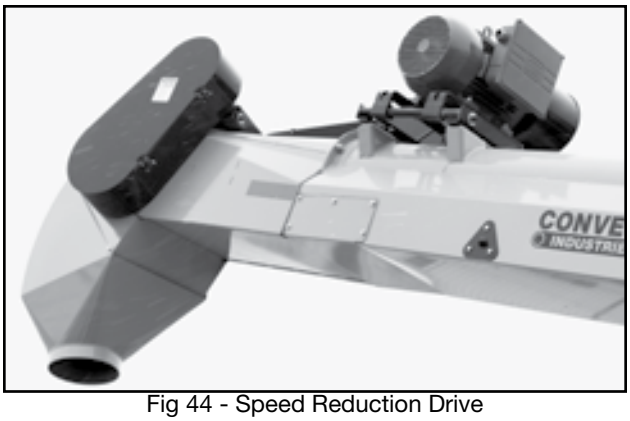

Fig 44 - Speed Reduction Drive

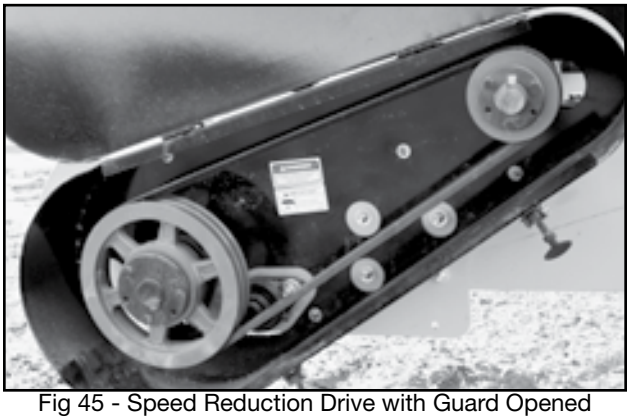
Fig 45 - Speed Reduction Drive with Guard Opened

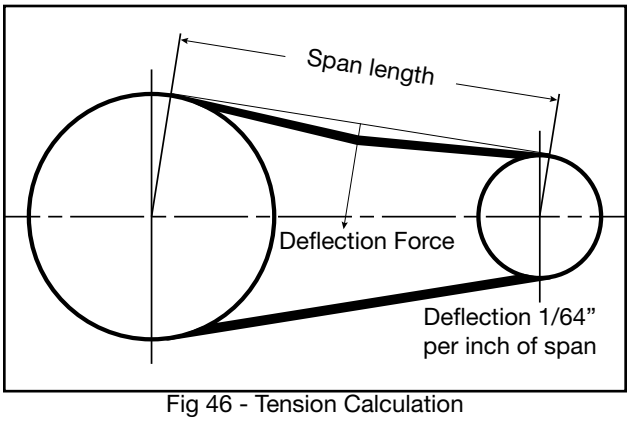

Fig 46 - Tension Calculation


Fig 47 - In-Line Drive

4.3.5 In-Line Drive:

1. Open the guard over the V-belt drive system.
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. See Figure 46:
   - Measure the length of span between pulleys
   - Allow 1/64" of deflection per inch of span
6. Tighten the lock nuts to their specified torque.
7. Close and secure guard.

4.3.6 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 center 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.

4.3.7 Drive Belt Replacement:

1. Place drive system into its loosest position.
2. Remove old belt.
3. Install replacement belt.
4. Set belt tension.
   Refer to Section 4.3.4 and 4.3.5
   See Figure 46
5. Check pulley alignment. Refer to Section 4.3.6

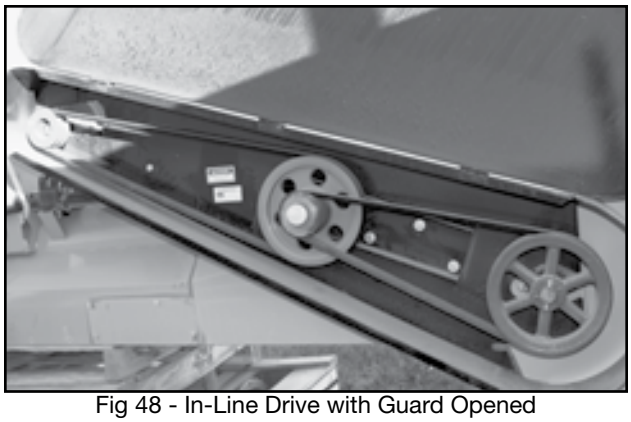

Fig 48 - In-Line Drive with Guard Opened

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 3 - Belt Deflection Force

4.4 SERVICE RECORD

The Servicing Intervals 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														
Grease Idler Roller Bearings														
Grease Counter Shaft Bearings														
Grease Discharge Roller Bearings														
50 Hours or Weekly														
Check Drive Belt Tension														
Check Drive Belt Alignment														
Check Conveyor Belt Tension														
Check Conveyor Belt Alignment														
Check Hopper Flashing														
200 Hours or Annually														
Grease Top Slide Bracket Bearings														
Check Tube Straightness														
Repack Wheel Bearings														
Wash Machine														

4.5 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 5: 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
Hopper flashing too tight	Adjust to loosen the flashing
Conveyor belt doesn't turn	
Hopper flashing may be stuck to belt, because it is running dry and rubber is heating up	Turn off unit! Manually peel flashing up and off hopper. Then run dry product through to create barrier between flashing and belt
Belt loose	Tighten and align
Belt frozen to tube 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.
Drive belt loose	Tighten drive belt
No power	Start engine, increase speed to maximum RPM
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.
Conveyor belt doesn't track correctly	
Roller lagging may be worn	Replace roller or have it re-lagged
Conveyor Belt Fraying	
Belt not aligned	Align and adjust tension

Problem *- cont'd*

Possible Cause	**Possible Remedy**

Product leakage

Product may be getting under the belt at the hopper, traveling up inside the belt and leaking off delivery end	Replace hopper flashing

Low capacity

Drive roller warn out or is slipping	Replace drive belt
Electric system - drive roller is slipping	Replace V-belt
Conveyor angle exceeds 45 degrees	Reposition with a lower tube slope

Section 6: 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 7: 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).

Specifications and measurements are subject to change without notice.

7.1 SPECIFICATIONS

Model	Type of Under-carriage	Tube Diameter	Belt Width	Capacity per Hour	Wheel Track	Transport Height	Transport Length
TCP-1620	A-frame	10"	16"	4000bu/hr*	6' 9"	6' 10"	24' 4"
TCP-1625	A-frame	10"	16"	4000bu/hr*	8' 5"	9' 11"	28' 9"
TCP-1630	A-frame	10"	16"	4000bu/hr*	8' 5"	11' 9"	33' 4"
TCP-1635	A-frame	10"	16"	4000bu/hr*	8' 5"	12' 8"	38' 4"
TCP-1640	A-frame	10"	16"	4000bu/hr*	8' 5"	12' 9"	43' 7"
TCP-1645	A-frame	10"	16"	4000bu/hr*	8' 5"	13' 4"	48' 7"

7.2 WORKING MEASUREMENTS

Model	30°		35°		40°	
	Height	Length	Height	Length	Height	Length
TCP-1620	8' 9"	18' 2"	10' 3"	17' 6"	11' 8"	16' 8"
TCP-1625	11' 3"	22' 6"	13' 1"	21' 7"	14' 11"	20' 6"
TCP-1630	13' 9"	26' 10"	16' 0"	25' 8"	18' 1"	24' 3"
TCP-1635	16' 3"	31' 2"	18' 10"	29' 9"	21' 4"	28' 2"
TCP-1640	18' 9"	35' 6"	21' 9"	33' 10"	24' 6"	32' 0"
TCP-1645	21' 3"	39' 10"	24' 7"	38' 10"	27' 9"	35' 9"

* 4000 bushels per hour at 40 degrees

7.3 BOLT TORQUE

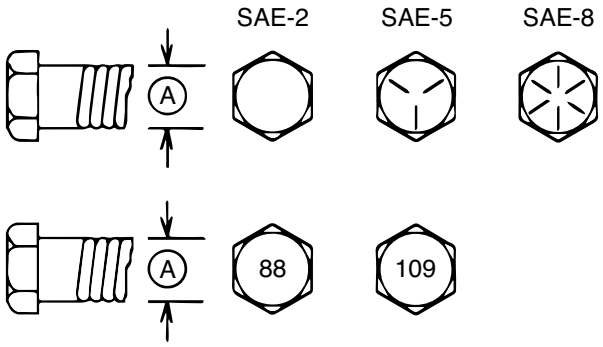
The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

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 4 - 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 5 - 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.

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