CONVEY-ALL
INDUSTRIES INC.

TCP-1600 CONVEYOR
WITH "A" FRAME UNDERCARRIAGE
ASSEMBLY 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., Box 2008, 130 Canada St., Winkler, Manitoba, R6W 4B7.

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

TABLE OF CONTENTS

1 INTRODUCTION

Congratulations on your choice of a Convey-All TCP-1600 Series to compliment your material handling operation. This equipment has been designed and manufactured to meet the needs of a discerning material handling industry.

Safe, efficient and trouble free operation of your Convey-All Belted Conveyor requires that you and anyone else who will be using or maintaining the Belted Conveyor, read and understand the Safety, Assembly and Troubleshooting information contained within the Assembly Manual.

This manual covers the Convey-All TCP-1600 Series 20, 25, 30, 35, 40 and 45 foot units. Use the Table of Contents or Index as a guide to locate required information.

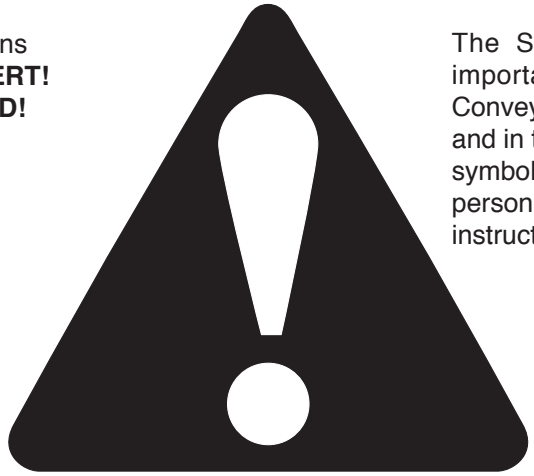
Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Convey-All dealer if you need assistance, information or additional copies of the manual.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout this manual, are determined when standing under the discharge and looking toward the front (hopper) end of the machine. When towing, driver's side is left and passenger side is right.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the Convey-All TCP-1600 Series Conveyor and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER, WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

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

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

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

If you have any questions not answered in this manual or require additional copies of the manual or the manual is damaged, please contact your dealer or Convey-All Industries Inc., Box 2008, 130 Canada St., Winkler Manitoba, R6W 4B7. 1-800-418-9461 • ph: 204-325-4195 • fax: 204-325-8116

SAFETY

YOU are responsible for the SAFE operation and maintenance of your Convey-All TCP-1400 Series Belted Conveyor. **YOU** must ensure that you and anyone else who is going to use, maintain or work around the Belted Conveyor be familiar with the using and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be used while using the Belted Conveyor.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** using this equipment is familiar with the recommended using and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Belted Conveyor owners must give operating instructions to assemblers, operators or employees before allowing them to assemble or operate the machine, and at least annually thereafter.

- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.

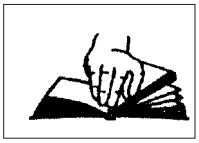
- A person who has not read and understood all assembling, operating and safety instructions is not qualified to use the machine. An untrained assembler or operator exposes himself and bystanders to possible serious injury or death.

- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.

- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before using, maintaining, adjusting or cleaning the Belted Conveyor.



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

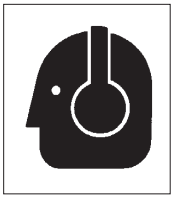
3. Have a fire extinguisher available for use should the need arise and know how to use it.

4. Wear appropriate protective gear. This list includes but is not limited to:

   - A hard hat
   - Protective shoes with slip-resistant soles
   - Protective glasses, goggles or face shield
   - Heavy gloves
   - Hearing Protection
   - Respirator or filter mask

5. Install and secure all guards before starting.

6. Wear suitable ear protection for prolonged exposure to excessive noise.



7. 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, repairing or unplugging.

8. Clear the area of people, especially small children, before using the unit.

9. Review safety related items annually with all personnel who will be assembling, operating or maintaining the Belted Conveyor.

2.2 ASSEMBLY SAFETY

1. Read and understand the Assembly Manual and all safety signs before starting.

2. 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.

3. Use properly sized tools, stands, jacks and hoists at all times.

4. Use two men to handle heavy and/or bulky components.

5. Position in a large open area to allow access from all sides during assembly.

6. Keep the assembly area neat and clean to prevent slipping or tripping.

7. Place safety stands under the machine or components before going underneath the component for assembly.

8. Stay away from overhead obstructions when lifting the machine during assembly. Contact with obstructions can damage components or cause them to fail.

9. For North America make certain that sufficient amperage, at proper voltage and appropriate frequency for your geographical area is available before connecting power. All wiring should comply with ANSI/NFPA 70 electrical requirements. Have a licensed electrician provide power to the machine.

10. Tighten all fasteners to their specified torque before using the machine.

2.3 ELECTRICAL SAFETY

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

2. Make certain that the conveyor motor is properly grounded at the power source.

3. Make certain that all electrical switches are in the OFF position before plugging the Belted Conveyor in.

4. **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.**

5. Disconnect power before resetting any motor.

6. Replace any damaged electrical plugs, cords, switches and components immediately.

7. Do not work on the Belted Conveyor electrical system unless the power cord is unplugged or the power supply is locked out.

2.4 MAINTENANCE SAFETY

1. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

2. 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.

3. **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.**

5. 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.

7. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.

8. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.

9. Periodically tighten all bolts, nuts and screws and check that all electrical and fuel connections are properly secured to ensure unit is in a safe condition.

10. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

2.5 LOCK OUT SAFETY

1. Establish a formal Lock-Out Tag-Out program for your operation.

2. Train all operators and service personnel before allowing them to work around the Conveyor.

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

2.6 STORAGE SAFETY

1. If required, make sure the unit is solidly blocked up.

2. Make certain all mechanical locks are safely and positively engaged before storing.

3. Store away from areas of human activity.

2. Do not allow children to play on or around the stored machine.

3. Lock out power by turning OFF at master control panel or junction box and padlocking the door shut to prevent electrocution or unauthorized start-up of the Conveyor.

6. Inspect the braided wire cable at the end of the season. Replace immediately if there are any broken strands on any of the hanging cable or the cable on the winch reel or through the pulleys.

3.0 ASSEMBLY

The machine is shipped from the factory in a completely disassembled and crated manner for easy shipping. This manual will take the assembler step-by-step through the assembly process. Each assembly will be treated as a separate section to assist in organizing the work.

3.1 TOOLS

A variety of tools are required when assembling the Conveyor. Gather the required tools and have them available prior to starting the assembly. Tool requirements include but are not limited to:

- Two ratchets 3/8'' drive
  - Shallow socket 3/8'' drive: 3/8, 7/16, 1/2, 9/16''
  - Deep socket 3/8'' drive: 7/16, 1/2, 9/16''
  - Extension bar 3/8'' drive
- One ratchet 1/2'' drive
  - Shallow socket 1/2'' drive: 9/16, 5/8, 11/16, 3/4 and 15/16''
  - Deep socket 1/2'' drive: 3/4 and 15/16''
  - One 3'' and one 6'' Extension bar 1/2'' drive
  - Breaker bar 1/2'' drive +/- 16''
- SAE wrench: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 7/8, 15/16 and 1 1/8''
- SAE Ratchet: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 7/8 and15/16"
- Adjustable wrench: one 6'' and one +/- 12''
- Allen keys: 1/16 to 3/8''
- Multi-driver
- Flathead screwdriver
- 24'' Flex Magnet pick up took
- 10'' bent nose plier with wide cutter
- 7'' cutting plier
- 32 oz ball peen hammer
- Cordless impact wrench heavy duty 18 V 1/2'' drive, 1/2 to 3/8'' reducer
- Two (2) 10'' aligning punch 1/4" diameter
- One 6" centering punch
- One 6'' cold chisel
- One 500 watts light with a 100' extension wire
- Grease gun
- Two (2) rolls of electrical tape
- One 100' measuring tape
- One good quality marker
- Level
- One reel of fish wire
- One ton capacity winch with 200 feet of cable

3.2 RECEIVING

The conveyor is shipped from the factory completely disassembled and packed into a large crate. Use a forklift to unload the crate from the truck.

When the crate is unloaded, follow this procedure:

1. Open the crate.

2. Lay out the contents on the ground.

3. Use the packing slip as a guide and confirm that all listed parts and bags have been included in the crate.

4. Contact the transport company and the factory immediately if any components or bags are missing.

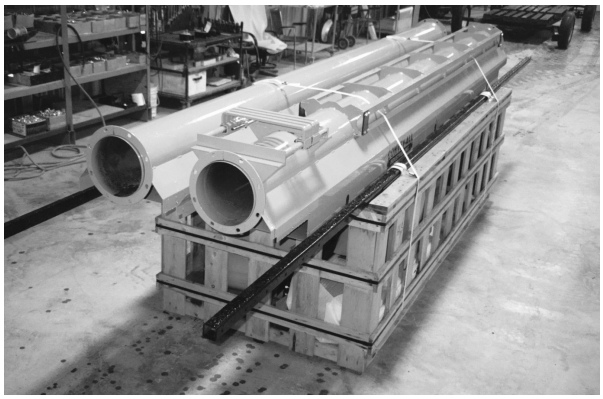


Fig. 1 CRATE

3.3 TUBE ASSEMBLY

The assembling should be done in a large open area with sufficient space to allow access to the machine from any side at any time. Always have 2 people working on the assembly to assist with large, heavy or unwieldy components. Always use stands, hoists, jacks, cranes, winches and other assembly support systems with sufficient capacity to handle all conveyor components safely during the assembly procedure.

When assembling the conveyor, follow this procedure:

1. Place all the tube assemblies on stands.

NOTE
Place 2 stands under each tube segment to support each end of the segment.

Fig. 2 STANDS

2. Move tube segments together with flanges touching.

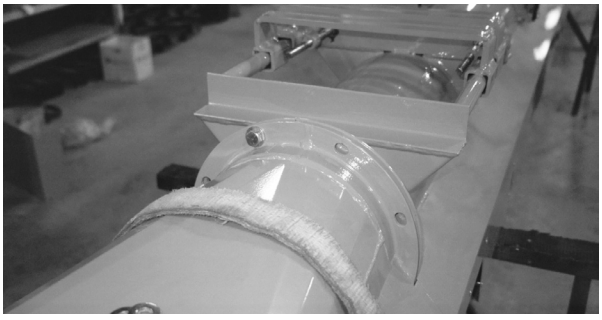
IMPORTANT
Always assemble upper tube frame flange inside bottom tube flange.

Fig. 3 FLANGES

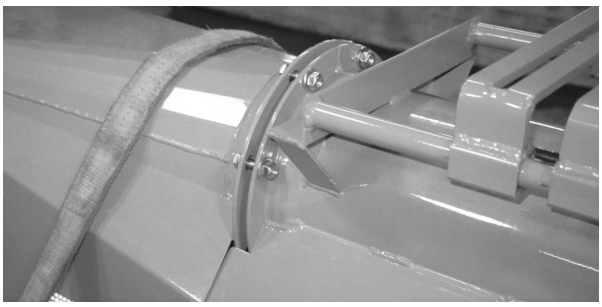
3. Install mounting bolts with the heads pointing to the discharge end.

NOTE
Use flat washers under bolt head and nut.

4. Install 4 bolts on top and 4 on the bottom of half of the tube.



One Bolt



Top Bolts

Fig. 4 MOUNTING BOLTS (Discharge End)

5. Snug up the bolts but do not torque them until all junctions have their bolts installed.

Fig. 5 SNUGGED UP

6. Sight along tube and adjust if required to be sure the flat surfaces at the hopper and discharge hood are in the same place.

Fig. 6 SIGHTING

7. Tighten the bolts at the top 2 junctions to their specified torque.

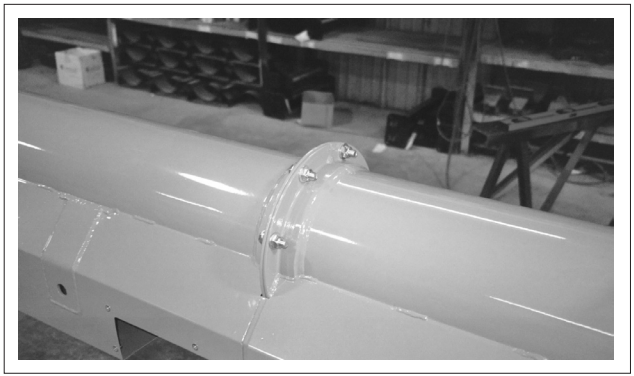


Fig. 7 TIGHT

8. Tighten bolts at the hopper except the 2 bottom center bolts.

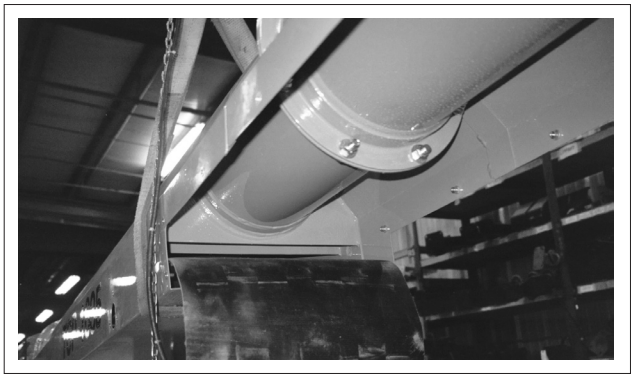


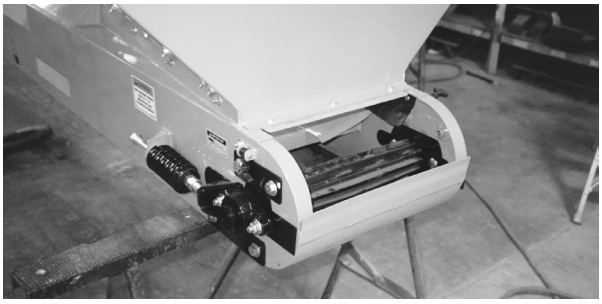
Fig. 8 BOTTOM CENTER BOLTS

9. Attach the hitch to the frame.

   a. Loosen and remove top and bottom side brackets.

   b. Slide hitch frame over front of the frame.

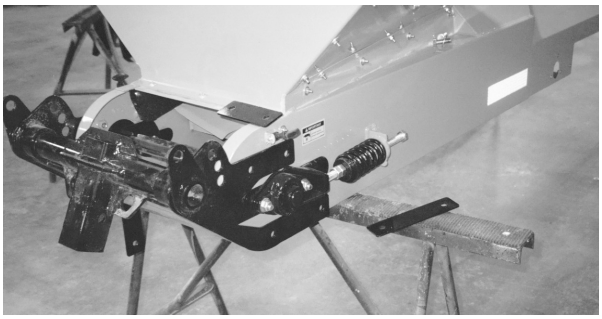
Left



Right

Fig. 9 SIDE BRACKETS

   c. Install spacers between hitch frame and conveyor frame before installing anchor bolts.



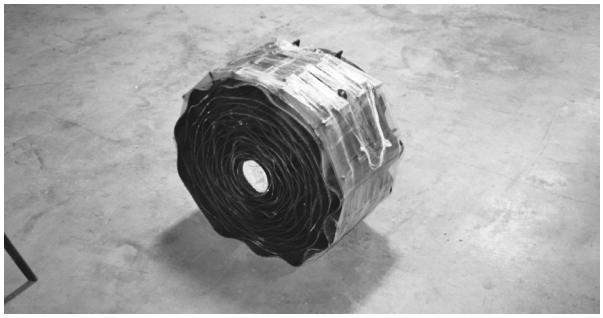
Left

Right

Fig. 10 SPACERS

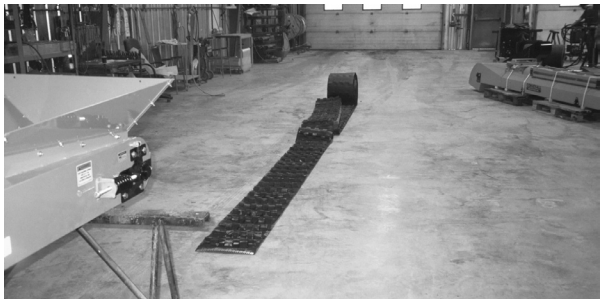
   d. Tighten fasteners to their specified torque.

10. Prepare belt.



Shipping

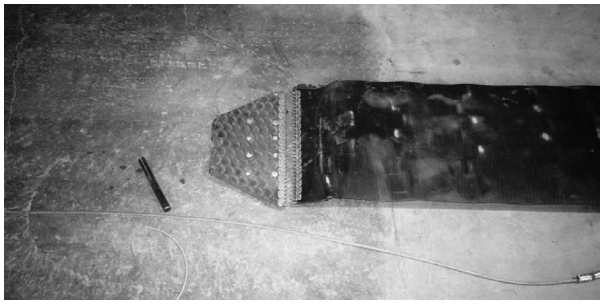
a. Roll out belting with the end pointing toward the hopper.



Lay-Out

b. Attach the short pulling segment to the end of the belt.

c. Secure with rod.



Pulling Segment / Rod

Fig. 11 BELT

11. Thread fish tape (or a long piece of flexible wire) through the tube.

a. Start at bottom opening above hopper on bottom of conveyor.

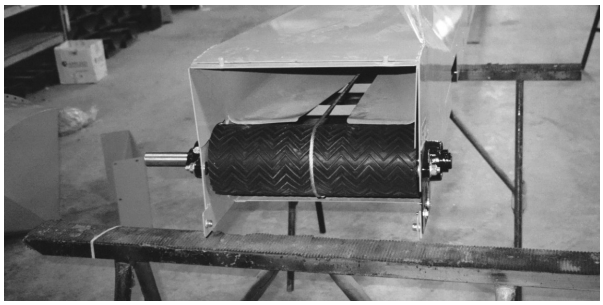
b. Thread fish tape (or wire) into wind guard toward discharge.

c. Wrap wire around drive roller in discharge.

d. Pull tape or wire back through until it gets to the hopper.

e. Stop threading when the wire reaches the bottom hopper roller.

Bottom Opening



Top Roller

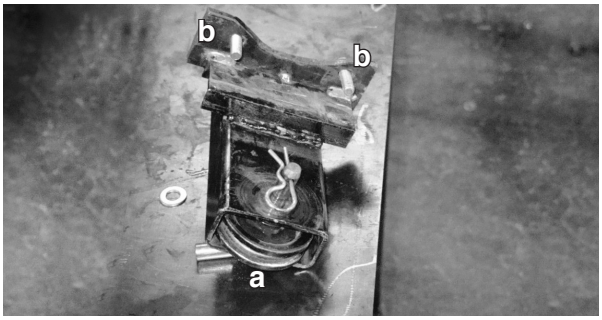
Fig. 12 FISH TAPE

12. Mount pulley to bottom center bolt on flanges.

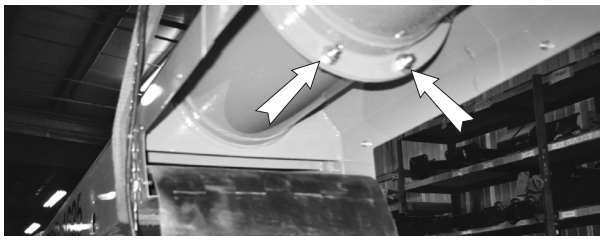
    a. Make a pulley holder to mount on tube flange at hopper.

NOTE

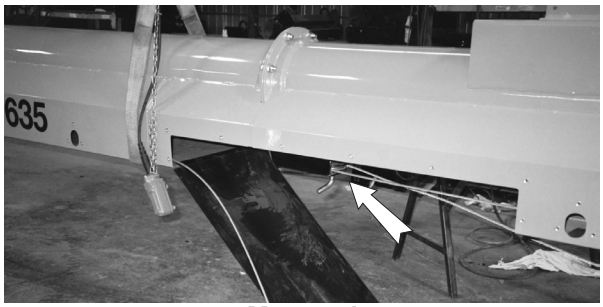
Construct a pulley holder, similar to the one shown to attach to the bottom of the flange.



a. Pulley b. Flange Mounting Bolts Assembly (Typical)



Flange Mounting Bolts



Mounted

Fig. 13 PULLEY HOLDER (Typical)

13. Thread the cable that is used to pull the belt through the tube.

    a. Thread the end of the cable around the pulley and around the front roller.

    b. Connect to the fish tape or wire.

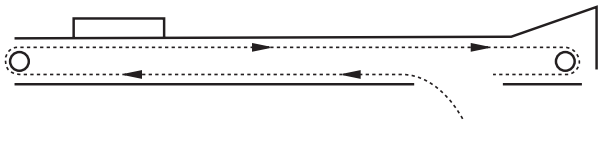
NOTE

Thread the cable around the roller with the end going over the top of the bottom hopper roller.

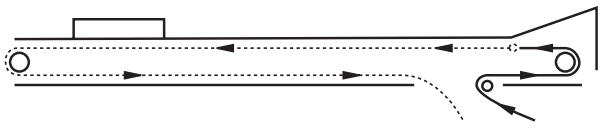
    c. Pull on the fish tape or wire to pull the cable through the tube.

NOTE

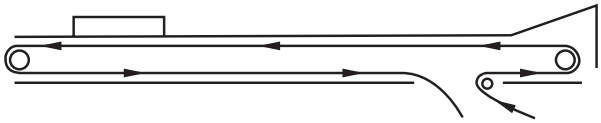
It is recommended that the cable be attached to a winch so it can be reeled in to thread the belt.



Fish Tape or Wire



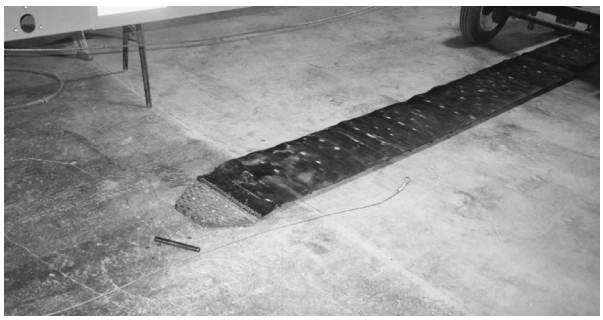
Starting Cable



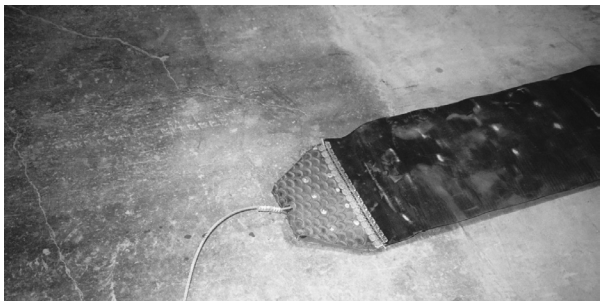
Cable Threaded

Fig. 14 THREADING CABLE

14. Attach cable to end of belt.



Lay-Out



Attached

Fig. 15 CABLE / BELT

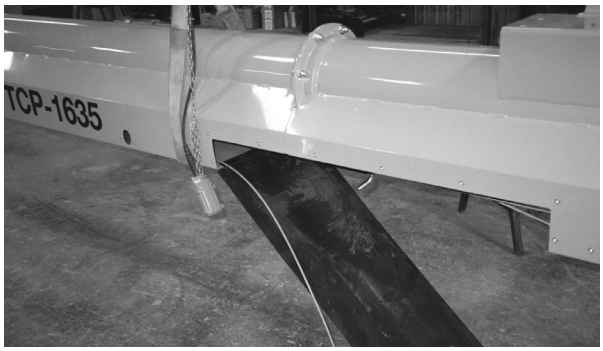
15. Position winch and tube.

NOTE

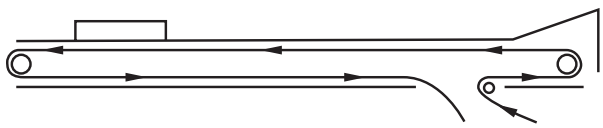
The tube and winch need to be kept apart when the winch pulls the cable. Anchor the tube and winch frames or brace them against each other as shown. Develop a method that works for your application.

Fig. 16 BRACING

16. Place a guide under the bottom of the tube to guide the belt into the tube frame.



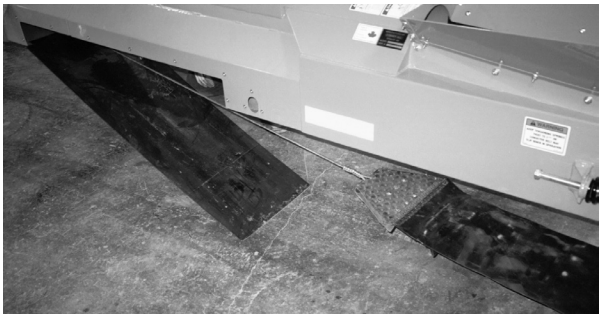
Positioned (Typical)



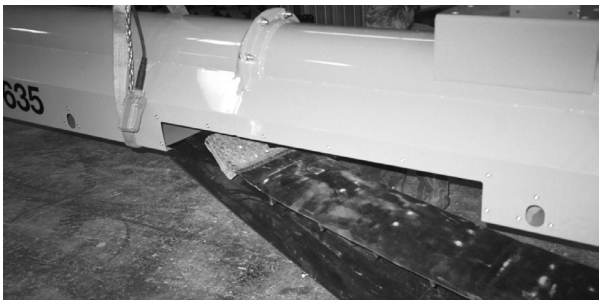
Schematic

Fig. 17 GUIDE

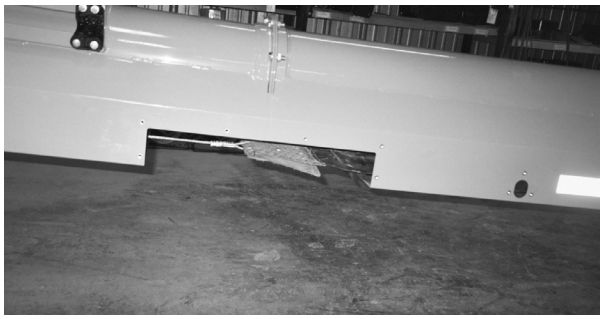
17. Thread the belt by winching in the cable.



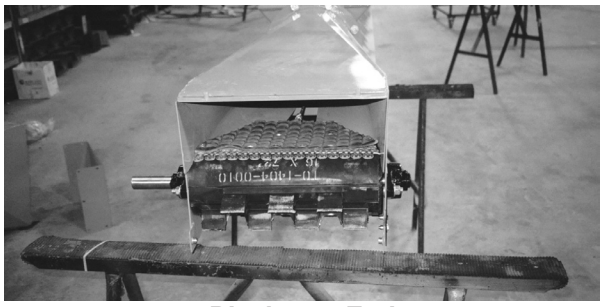
Starting



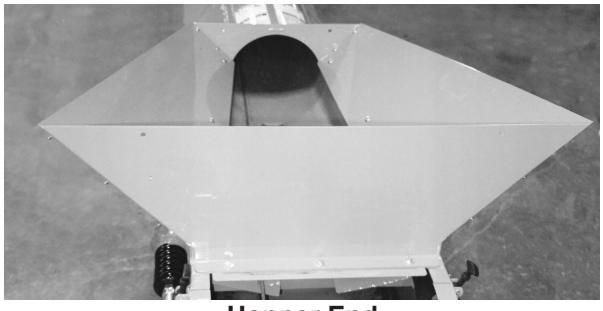
Into Tube Frame



Middle Opening



Discharge End



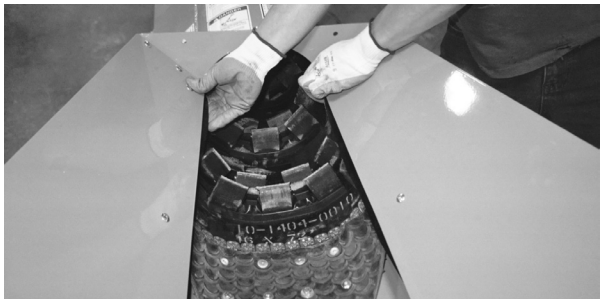
Hopper End

Fig. 18 THREADING

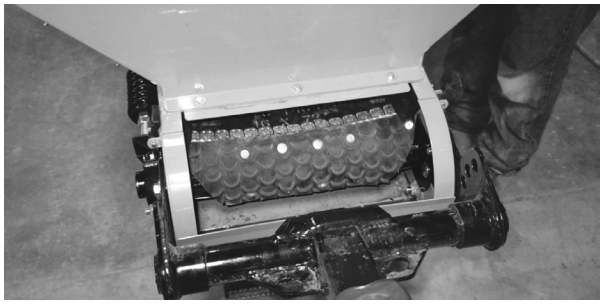
18. Threading the hopper.

    a. Lift flashing so belt goes under it.

Starting



Under Flashing



Front Roller

Fig. 19 THREADING HOPPER

19. Stop winch when the end of the belt reaches the opening.

Belt End

Threading End

Fig. 20 BELT ENDS

20. Pull stub connector into gap and stop.

21. Unhook cable and anchor pin from the stub connector.

Fig. 21 GAP / ANCHOR PIN

22. Remove the pulley from its position that used the bottom 2 bolts in the hopper end flange.

23. Install and tighten flange bolts.

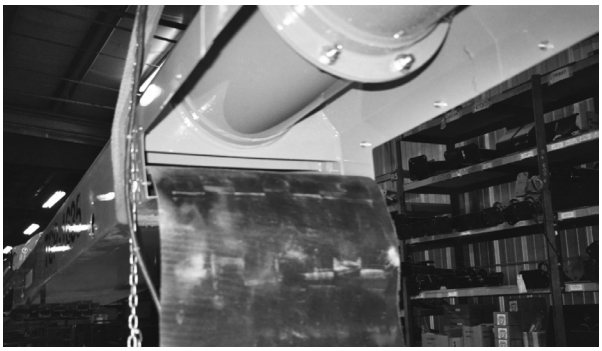
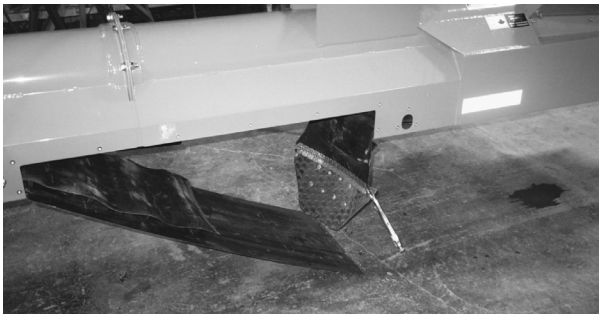


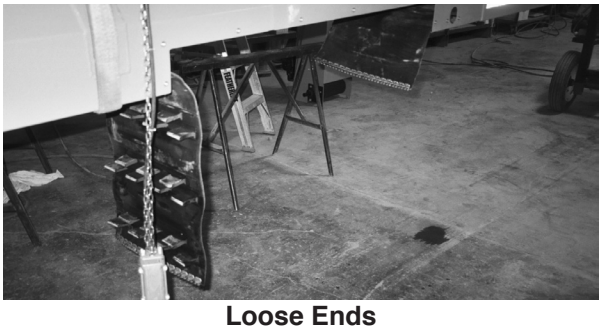
Fig. 22 FLANGE BOLTS

24. Use a vise grips, pliers or other tool to remove the rod from the stub belting.

25. Remove the plywood or sheet of steel used to guide the belt into the tube while threading.



Pin Removed



Loose Ends

Fig. 23 OPENING

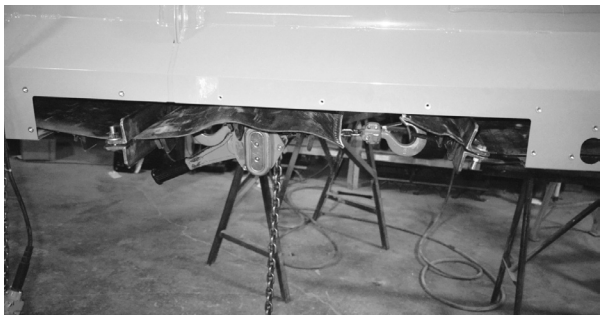
26. Mount clamps on each end of the belt (discharge and hopper).

Discharge

Both

Fig. 24 CLAMPS

27. Attach "Come Along" to brackets on each end of the belt.



Attached

28. Ratchet up "Come Along" to pull lacing ends together.

Lacing

Fig. 25 "COME ALONG"

29. Install rod through lacing on each end.

Rod

30. Loosen, unhook and remove "Come Along".

"Come Along" Removed

Fig. 26 BELT ENDS

31. Remove clamps.

Fig. 27 CLAMPS REMOVED

32. Use a vise grips, pliers or a similar tool to pinch clamp outer lacing segment to rod to prevent it from moving out of lacing.

Fig. 28 VISE GRIPS

33. Use a wire cutter to clip the corners of the belt next to the rod and lacing to minimize the chance of catching or snagging.

Clipped Belt

34. Cut the excess off the end of the rod - the best results are obtained when approximately 1/4" (6 mm) extends beyond the last lacing piece.

Rod

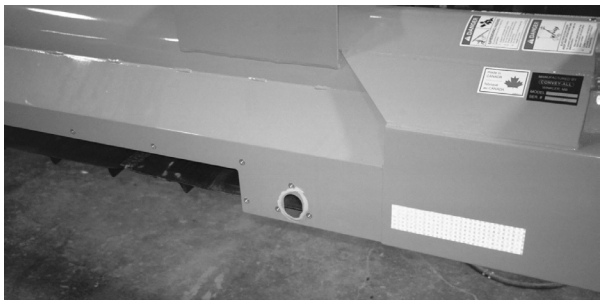
Fig. 29 TRIMMING

35. Install belt return guides along both sides.

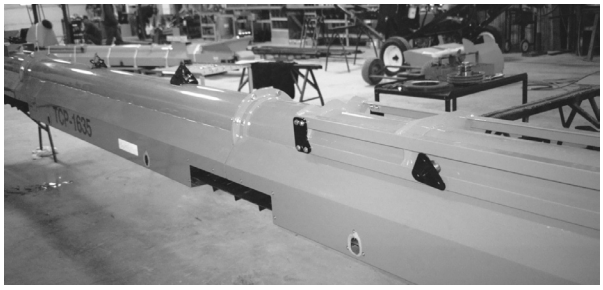
    a. Lay out fasteners and guides.

Fig. 30 LAY-OUT

    b. Apply silicon around each mounting hole to seal it when operating.



Right Side



Left Side

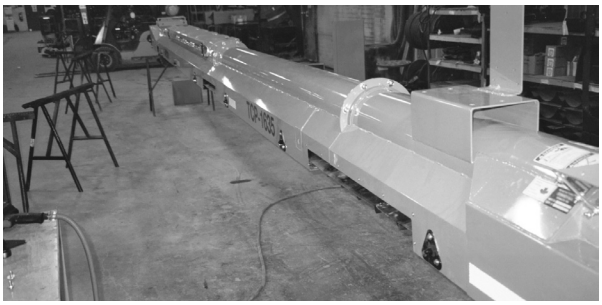
Fig. 31 SILICON (Typical)

c. Use your fingers to lift the belt so the return belt guide roller is positioned under the belt when installed.

d. Secure with fasteners.

Lifting

Fasteners



Installed (Typical)

Fig. 32 RETURN BELT GUIDES (Typical)

36. Mount panels on the bottom side of the tube to close frame (3 locations).

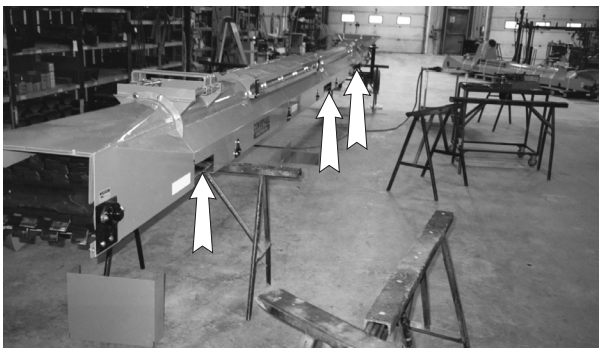
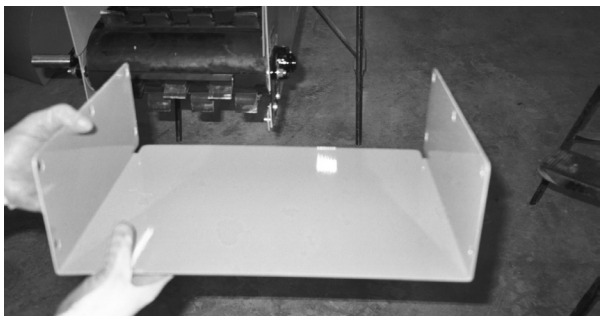


Fig. 33 PANEL LOCATIONS

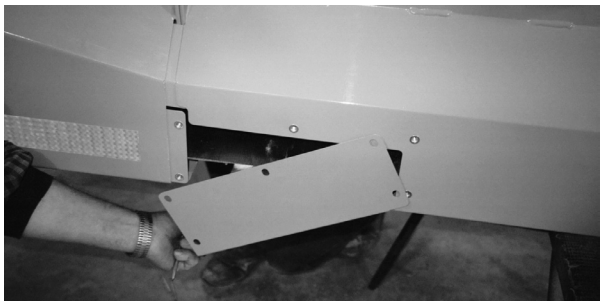
a. Discharge end.

- Panel is designed with slots to allow the panel to slide over the adjacent panel to direct any debris down the frame.



Fitting

- Slide into position.



Mounting

- Secure with 5 fasteners on each side.

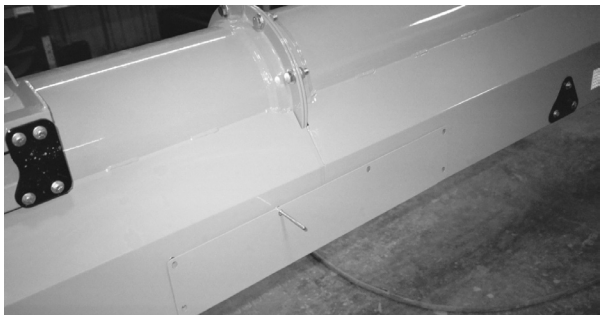
Aligning

Fig. 34 DISCHARGE END PANEL

b. Center and hopper ends.

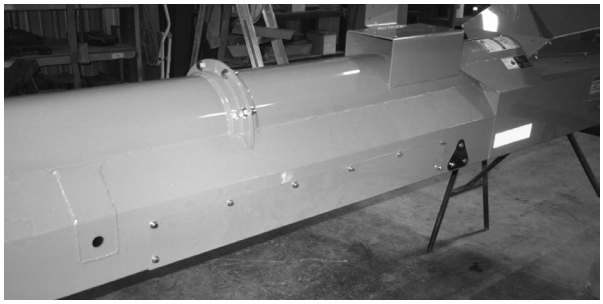
NOTE
Use a similar procedure when installing the other panels.

- Install center panel.



Align Center

- Install hopper end panel.



Hopper End

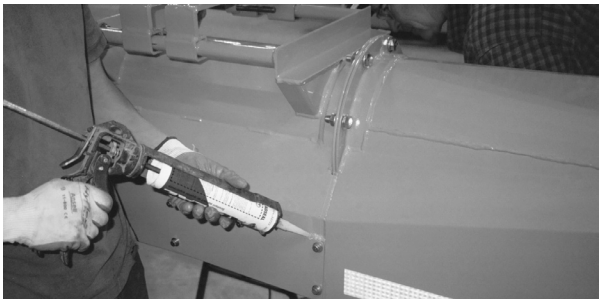
Fig. 35 PANELS (Typical)

37. Use silicon to seal the seams of all panels.

- At the flange.

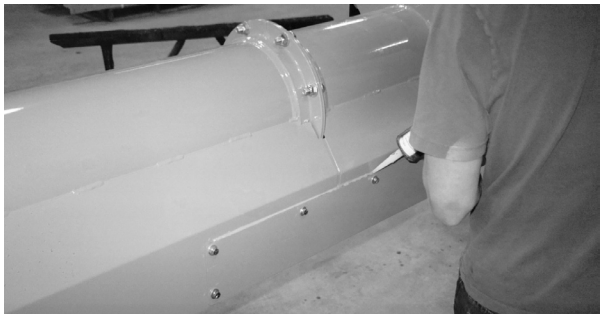
Flange

- At the large holes around panels.



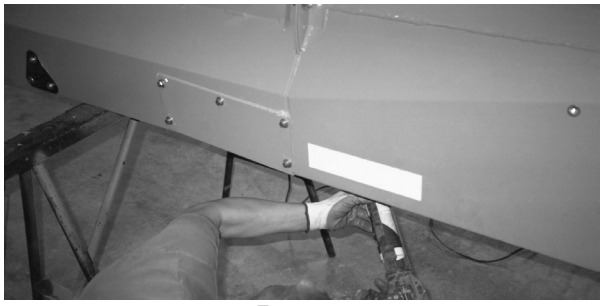
Holes

- At center panel.



Center Panel

- On the bottom.



Bottom

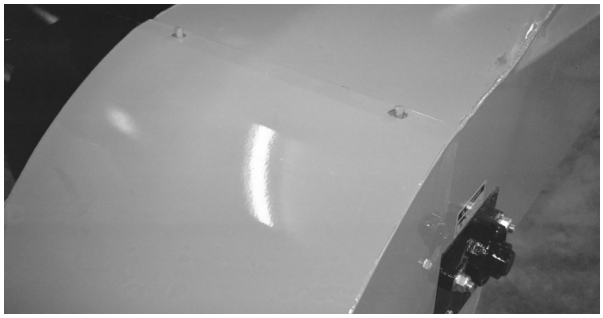
Fig. 36 SILICON SEALING

38. Attach discharge hood.

a. Lay out all components.

Fig. 37 LAY-OUT

b. Hook the hood over the studs on the top of the frame.



Studs

c. Slip over the end of the discharge frame with the slots/cut-outs mating with the sheet metal bottom lip.

Aligning

d. Install the fasteners on both sides. Do not tighten yet.

Fasteners

Fig. 39 DISCHARGE HOOD

e. Attach outer discharge shroud.

f Secure with fasteners but do not tighten.

g. Adjust and center both components.

h. Tighten fasteners on both sides.

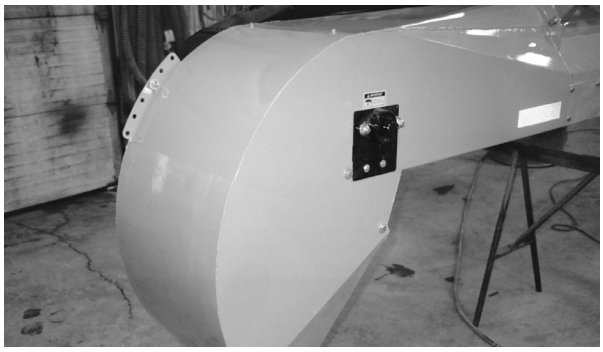


Fig. 40 DISCHARGE SPOUT

3.4 ELECTRIC MOTOR 20' to 35' MODELS

1. Mount the electric motor for the 20 to 35 foot models.

NOTE

Skip forward to Section 3.5 if your conveyor is more than 37' in length.

a. Lay out drive components.

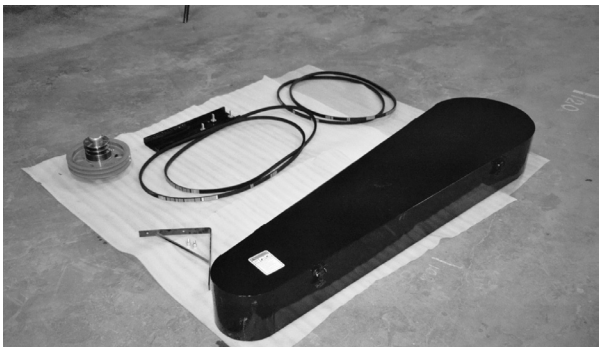
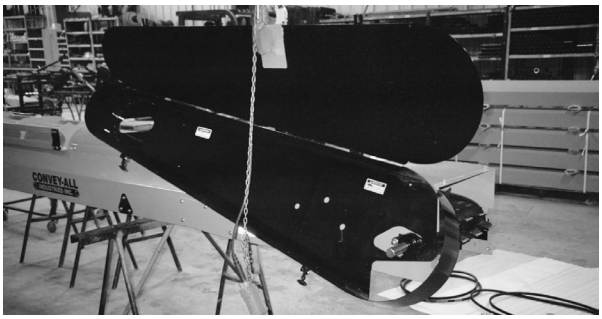


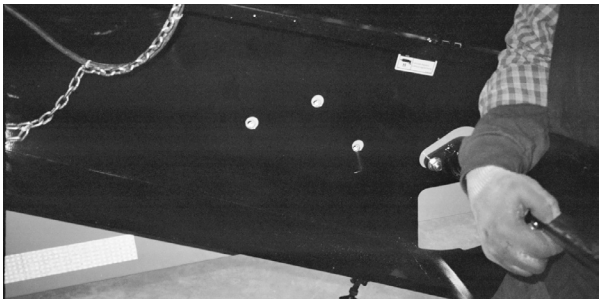
Fig. 41 LAY-OUT

b. Mount the guard on the left side.



Positioned

c. Center upper hole around the discharge roller shaft.



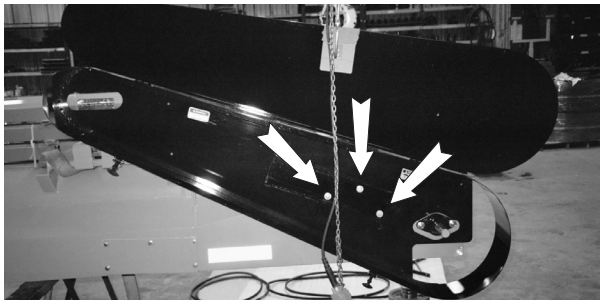
Centered

d. Align center pulley slide around 3 mounting fasteners.

e. Mount pulley slide but do not tighten fasteners.

Pulley Slide

f. Position guard to allow space for drive pulley and snug up pulley slide fasteners to hold guard.



Positioned

Fig. 42 LEFT GUARD

2. Place electric motor on mounting assembly base.

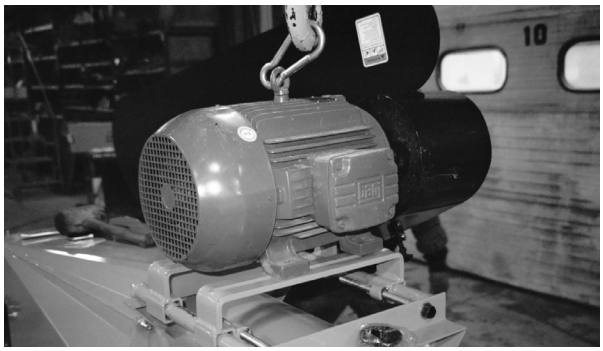


Fig. 43 MOUNTING BASE

3. Center motor shaft in the drive shaft slot.

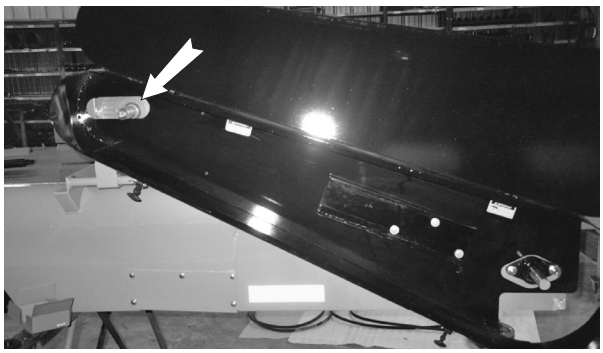


Fig. 44 DRIVE SLOT

4. Install guard brace on the back side of the guard.

   a. Position the brace on the discharge side of the motor mounting base.

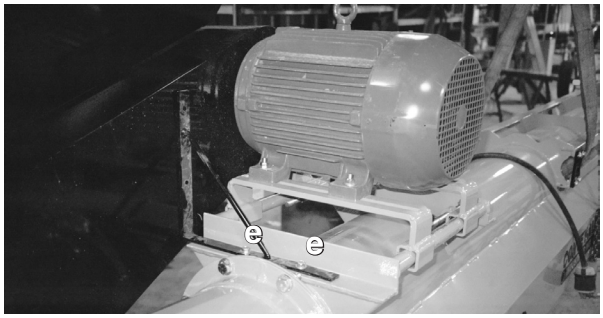
   b. Position the vertical portion of the brace against the guard.

   c. Use a marker to mark the bolt positions through the holes in the brace.

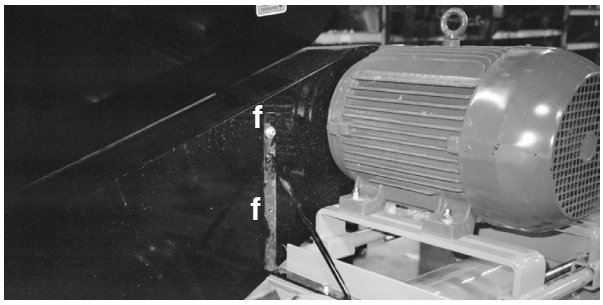
   d. Drill the horizontal and vertical mounting holes.

   e. Install and tighten horizontal mounting bolts.

   f. Install and tighten vertical mounting bolts.



Horizontal Bolts



Vertical Bolts (Typical)

Fig. 45 GUARD BRACE

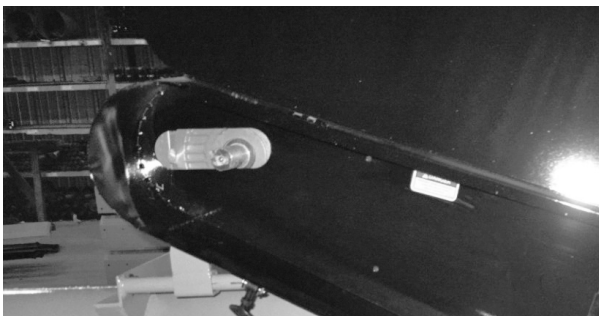
5. Install drive pulley.

   a. Remove key from shaft.

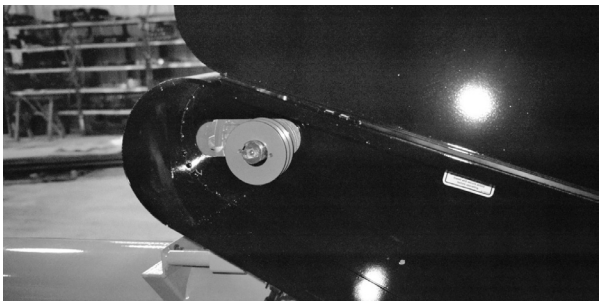
   b. Place pulley on shaft.

   c. Insert tapered lock hub but do not tighten.

   d. Insert key into keyway until 1/8" (3 mm) past shaft end.



Key



Pulley

Tapered Lock Hub

Fig. 46 DRIVE PULLEY

6. Install center pulley into its slide.

Fig. 47 CENTER PULLEY

7. Install pulley on discharge roller shaft.

   a. Remove key from shaft.

Remove Key

   b. Slide pulley over shaft.

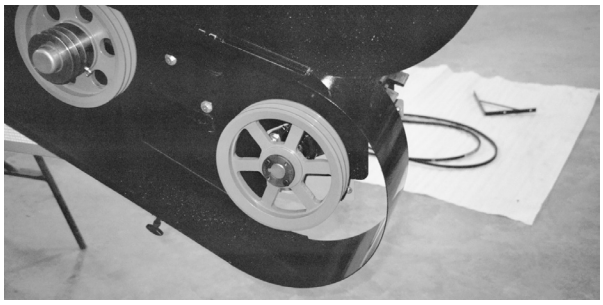
Pulley

   c. Insert tapered lock hub but do not tighten.

Tapered Lock Hub

   d. Install key into keyway until 1/8" (3 mm) past shaft end.

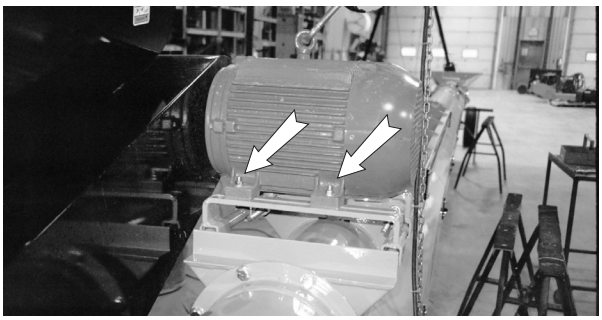
   .



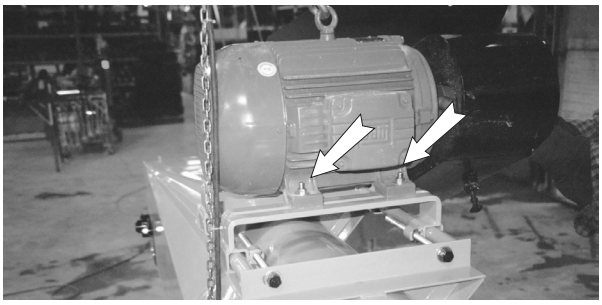
Key

Fig. 48 DISCHARGE ROLLER PULLEY

8. Install and tighten all motor mounting bolts.



Discharge End



Hopper End

Fig. 49 MOTOR (Typical)

9. Move motor into its loosest belt position.

10. Center shaft and pulley in slot opening.

Fig. 50 CENTERED

11. Install belts.

    a. Mount primary drive belt.

    b. Mount secondary drive belt.

Primary

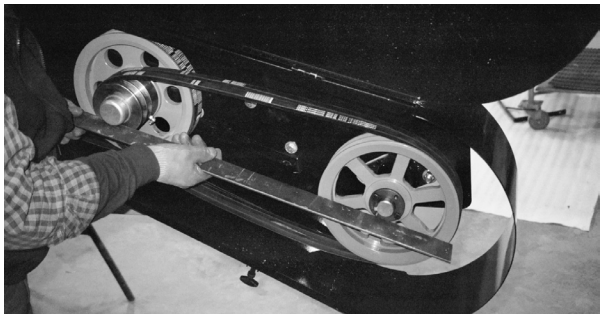
Secondary

Fig. 51 INSTALL BELTS

12. Align pulleys.

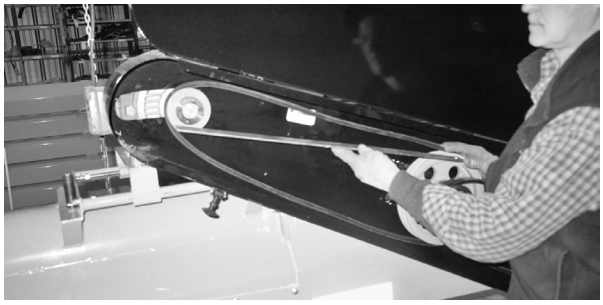
    a. Lay a straight-edge across the pulley faces.

    - Secondary



Secondary

    - Primary

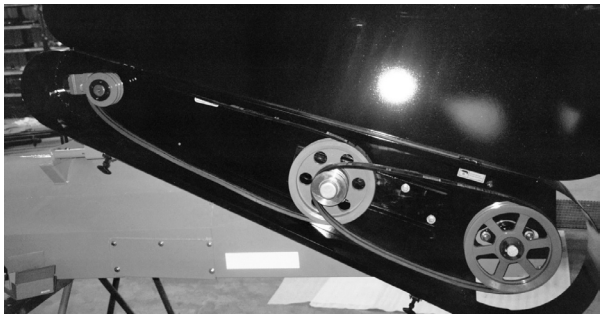


Primary

    b. Use the tapered lock hub to adjust the alignment of the pulley faces to less than 1/16" (1.5 mm) clearance.

    c. Start adjusting from the motor end and then on to the driven end pulley.

    d. Tighten tapered lock hub bolts to their specified torque.



Hubs

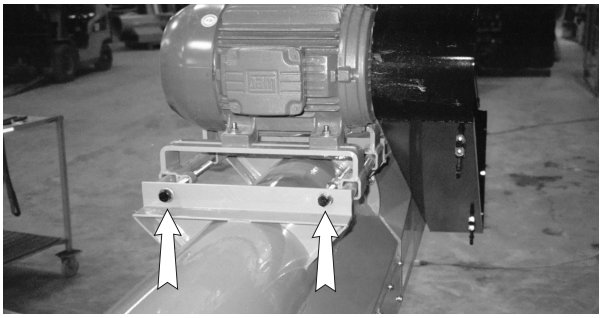
Fig. 52 ALIGNING

13. Set tension.

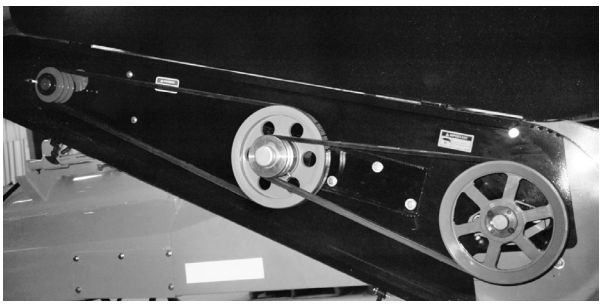
    a. Use the motor position bolts to set belt tension.

    b. Check tension of belts. They should be very tight to transmit the required power.

    c. Recheck pulley alignment. Faces can not be out by more than 1/16" (1.5 mm). Use tapered lock hub to adjust alignment if required.



Motor Position Bolts



Tensioned

Fig. 53 BELT TENSION

14. Close and secure guard doors with rubber latches.

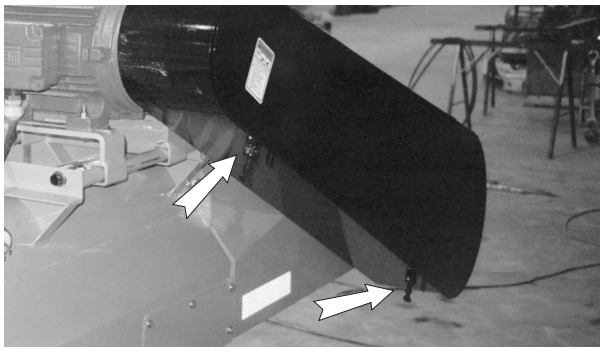


Fig. 54 GUARD

15. Check alignment of belt.

    a. Provide power to the motor and plug in.

    b. Observe the discharge end - belt must be centered on roller when running.

    c. Observe the hopper end - belt must be centered on roller when running.

NOTE

Belts that are not properly aligned will always track toward the loose side or loosening tight side.

    d. Set the tracking by loosening the bearing mounts on the tight side and moving the end of the roller into the required position. Tighten the bearing mount.

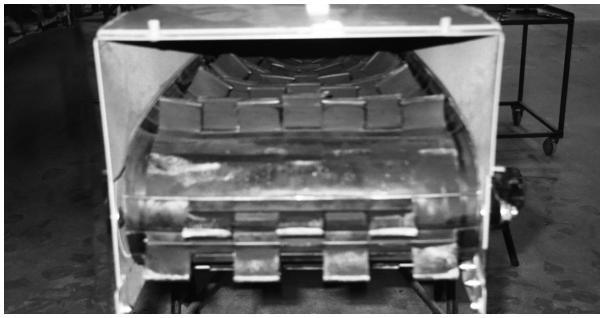
    Move the belting another revolution and check the tracking again. Loosen the tight side slightly again if required. Repeat the adjusting and checking procedure until the belting centers on the input or discharge end roller and stays centered when running.

IMPORTANT

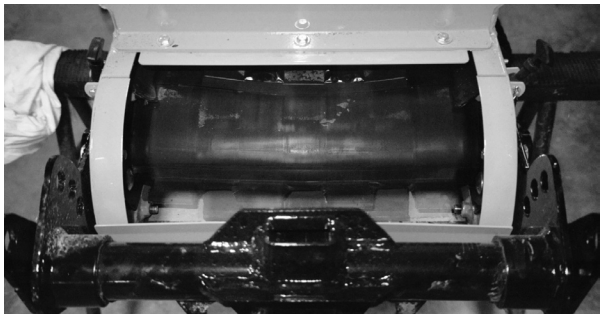
Check belt tracking at 1/2, 5 and 10 hours when the belt is new and adjust as required to insure belt is aligned.

    e. The belt can float a little from side-to-side on the roller for proper tracking but it must not contact the sides.

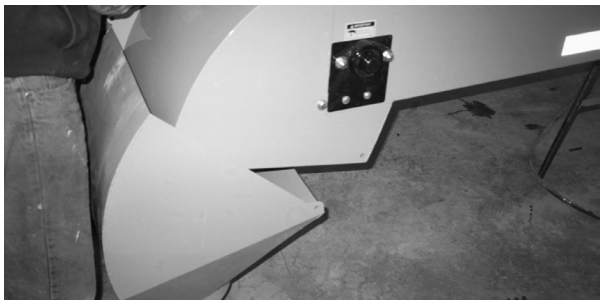
    f. Adjust tracking as required to prevent contact.



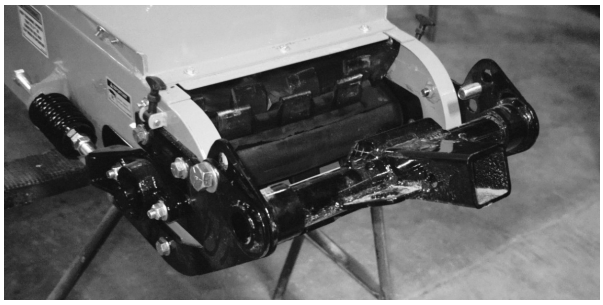
Discharge (Typical)



Hopper



Discharge Adjustment



Hopper Adjustment

Fig. 55 BELT TRACKING

16. Stop motor and disconnect power.

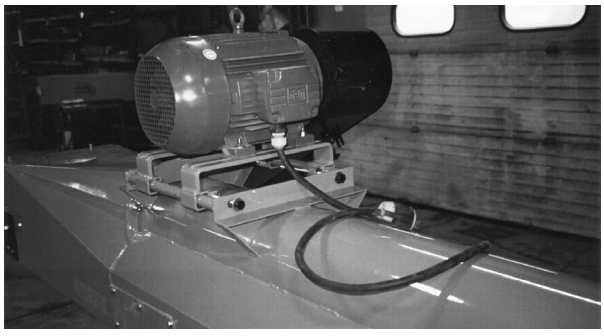


Fig. 56 DISCONNECTED

3.5 ELECTRIC MOTOR 37' and LARGER MODELS

1. Lay out guards, boxes and pulleys.

2. Remove keys from discharge roller shafts.

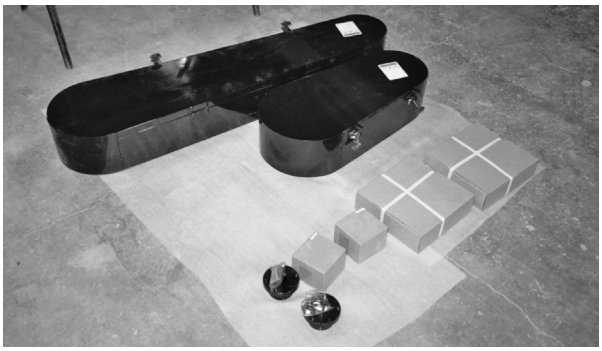


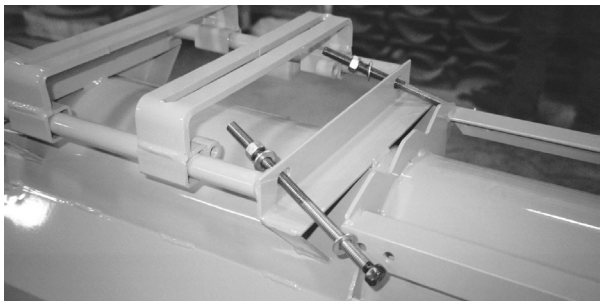
Fig. 57 LAY-OUT

3. Remove motor position adjusting bolts from motor mounting base assembly.

4. Apply grease to bolt to provide lubrication and rust prevention.

5. Install bolts back into motor base.

Grease



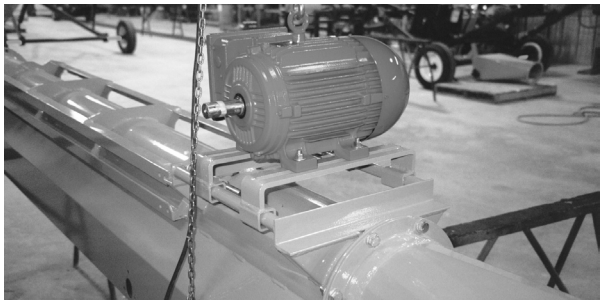
Installed

Fig. 58 BOLTS

6. Position the electric motor on top of the mounting assembly.

Mounting

7. Install mounting bolts.



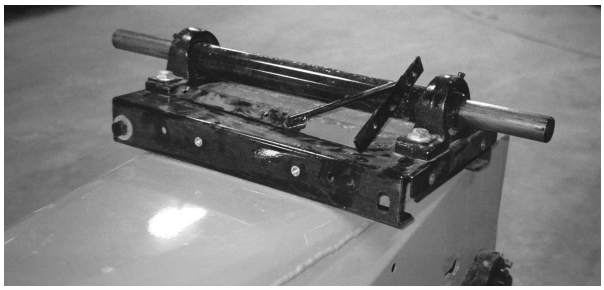
Bolts

Fig. 59 BOLTS

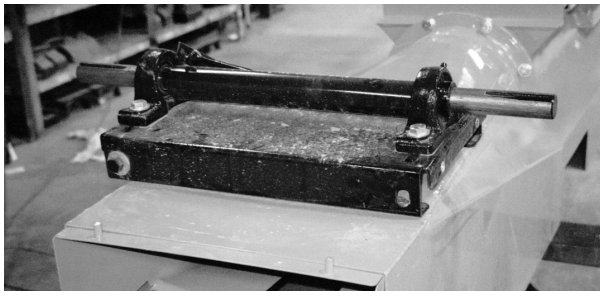
8. Place cross shaft assembly on the top of the discharge.

IMPORTANT

Position the base so it is parallel to the right face of the discharge roller bearing mount. Use a straight-edge to align frame before marking, drilling and securing. Position frame so the small guard can be secured to the 2 anchor nuts on the side.



Left Side



Right Side

Fig. 60 PLACEMENT

a. Drill the holes.

b. Install anchor bolts and tighten.

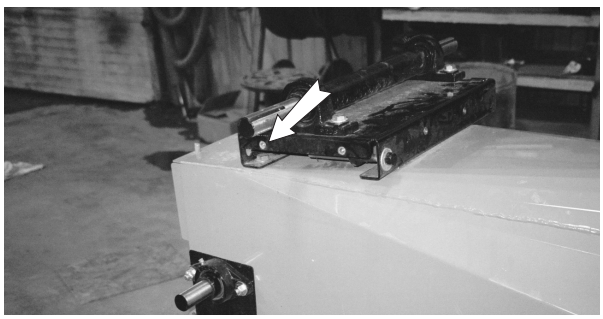
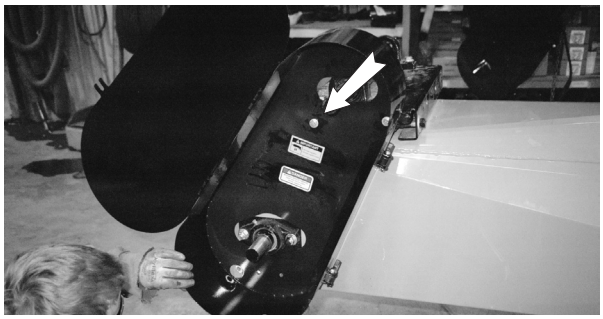


Fig. 61 FASTENERS (Typical)

9. Mount the small guard on right side of discharge.

   a. Install top 2 mounting bolts.

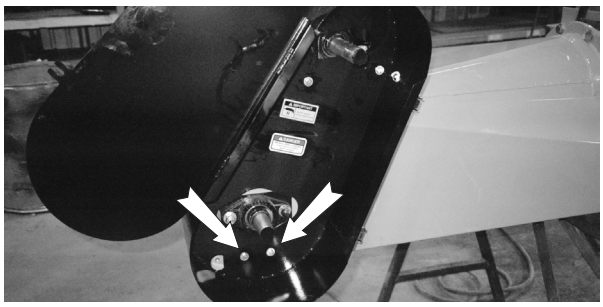


Top (Typical)

   b. Install bottom 2 mounting bolts.

   c. Position both shafts in the center of their slots / opening.

   d. Tighten top and bottom mounting bolts.



Bottom

Fig. 62 SMALL GUARD MOUNTING BOLTS

10. Lay out drive and driven pulleys.

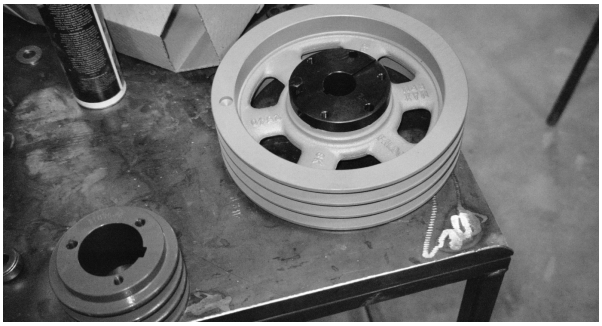


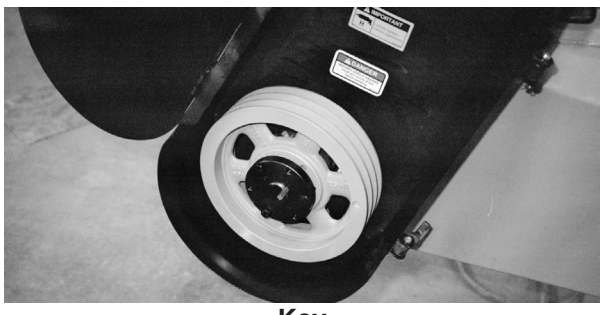
Fig. 63 PULLEYS

11. Install tapered lock bushing in the hub of the driven pulley.

12. Mount driven pulley to rotor shaft.

Mounted

13. Insert key until it is 1/8" (3 mm) past shaft end.



Key

Fig. 64 DRIVEN PULLEY

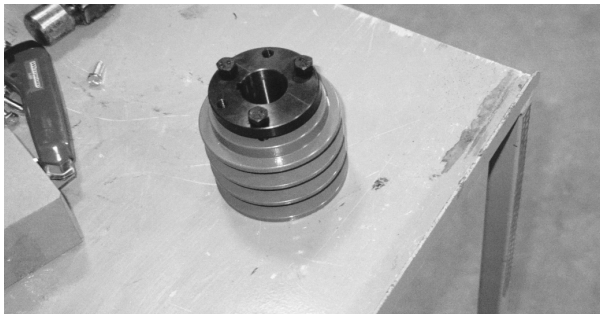
14. Mount drive pulley.

    a. Install tapered lock bushing into pulley.

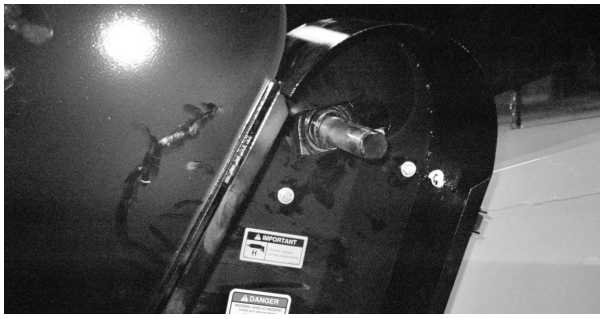
    b. Remove key from cross shaft and clean.

    c. Install pulley.

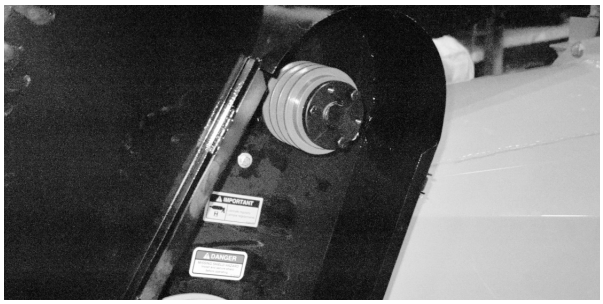
    d. Insert key until it is 1/8" (3 mm) past the end of the shaft.



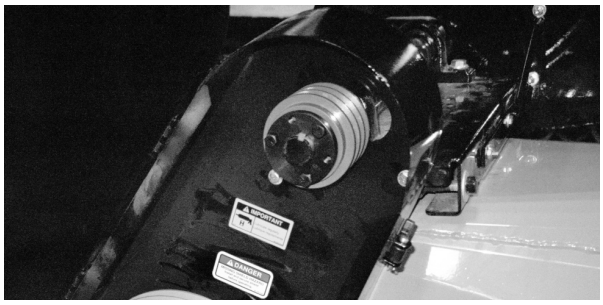
Bushing



Shaft



Mounted



Key

Fig. 65 DRIVE PULLEY

15. Align pulleys.

    a. Place a straight-edge across the faces of the pulleys.

    b. Use the tightening of the tapered lock bushing as the method to set the alignment.

    c. Loosen tapered lock bushing and readjust pulley position if there is more than 1/32" (0.75 mm) of clearance on the face of the pulley.

    d. Repeat until pulleys are aligned.

    e. Tighten tapered lock bushing fasteners to secure pulley.

16. Align pulleys.

    a. Install belts.

    b. Loosen cross shaft bearing housing bolts.

    c. Use position bolt to move bearing and shaft to set belt tension.

    d. Tighten bearing housing bolts when belt is properly tensioned.

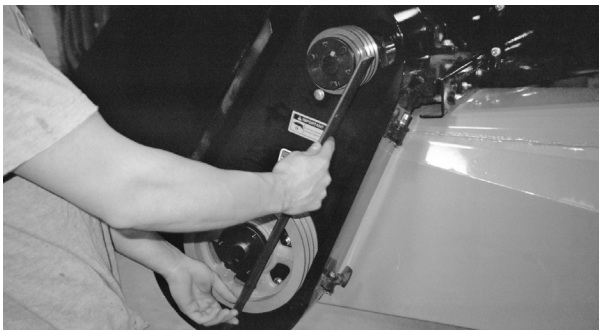
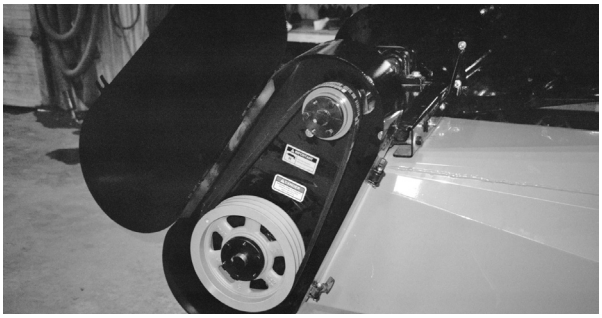
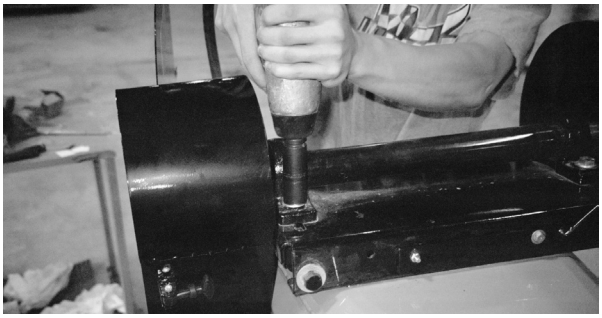


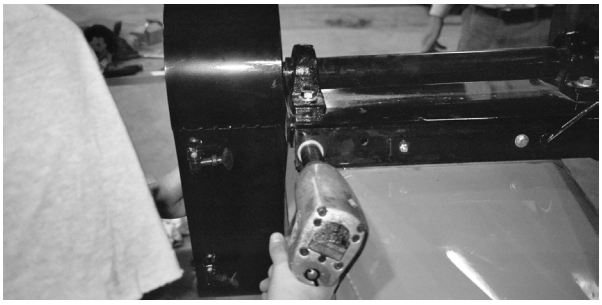
Fig. 66 ALIGNING



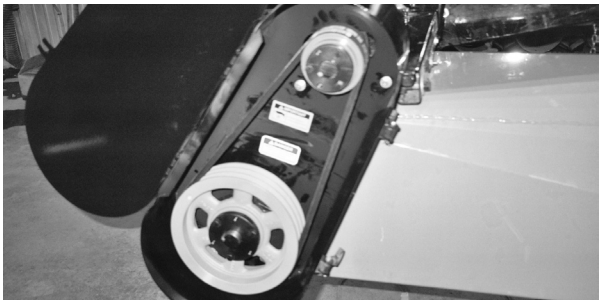
Installed



Bearing Housing



Positioning



Tightened

Fig. 67 BELT INSTALLATION

17. Mount large guard on left side of conveyor.

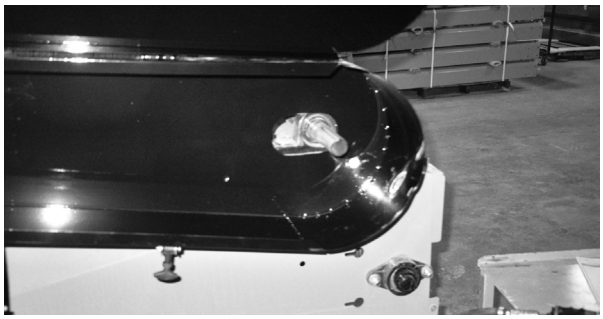
    a. Position the large guard on the left side.

Mounting

    b. Center the guard around the motor shaft.

Motor Shaft

    c. Center the guard around the cross shaft.



Cross Shaft

Fig. 68 LARGE GUARD

18. Attach anchor brace to discharge end of large guard.

    a. Attach brace to cross shaft assembly.

    b. Use brace as template to mark guard for drilling.

    c. Drill holes for mounting bolts.

    d. Install and tighten mounting bolts.

    e. Use a square to be sure guard is at 90° to discharge housing.

IMPORTANT

Shafts must be centered in their slots when bolting guard in position. Drill new holes if required to be sure shafts are centered and guard is at 90° to frame.

Template

Mounting Bolts

Mounted

Square

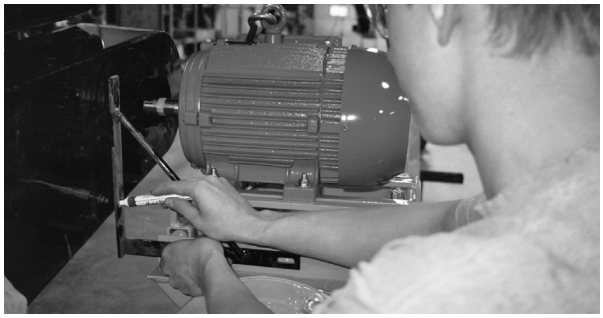
Fig. 69 ANCHOR BRACE - DISCHARGE END

19. Attach anchor brace to hopper end of large guard.

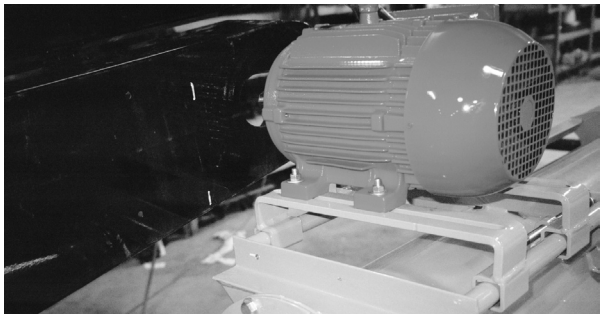
    a. Attach brace as a template to mark motor base and guard positions for mounting hardware.

    b. Drill the motor brace and guard.

    c. Install mounting bolts and tighten.

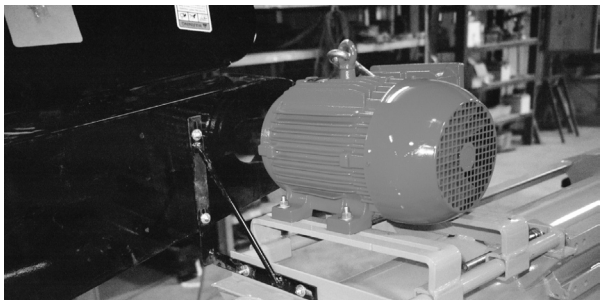


Template



Drilled

Bolting

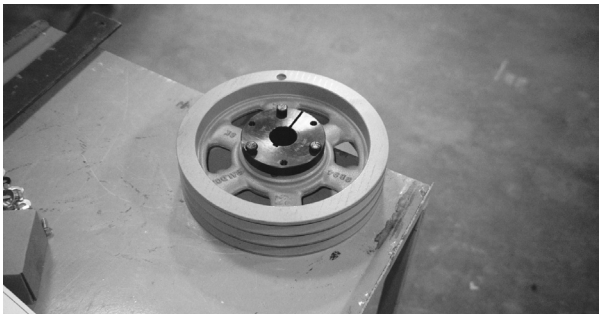


Mounted

Fig. 70 HOPPER END BRACE

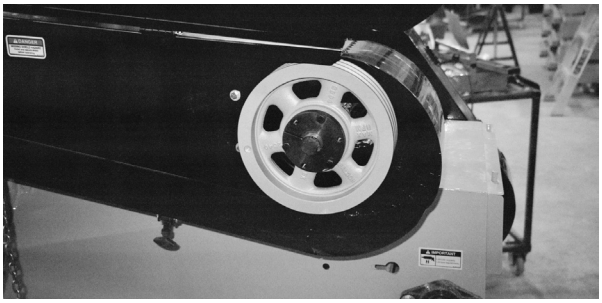
20. Mount large driven pulley.

    a. Install tapered lock hub into pulley.



Lock Hub

    b. Mount pulley on shaft.

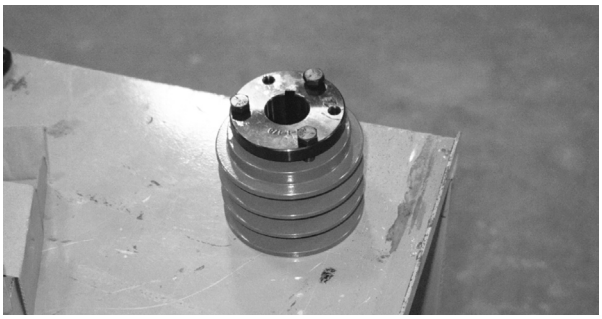


Mounted

Fig. 71 DRIVEN PULLEY

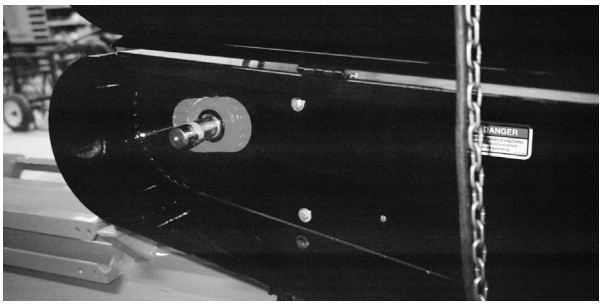
21. Mount small drive pulley on motor shaft.

    a. Install tapered lock hub into pulley.



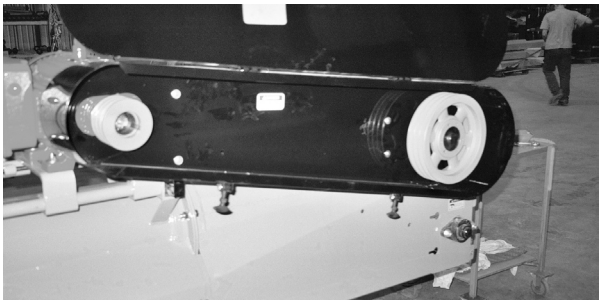
Lock Hub

    b. Remove key from shaft and clean shaft.



Shaft

    c. Mount pulley on motor shaft.



Mounted

Fig. 72 DRIVE PULLEY

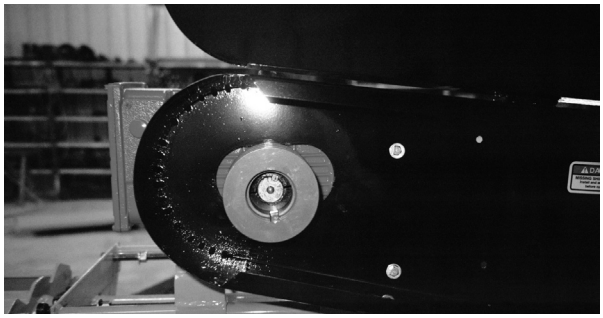
NOTE

Pulley can be mounted on the shaft with the locking hub in or out and depends on the pulley alignment needs and the length of the shaft. Measure pulley alignment to determine pulley orientation requirements.

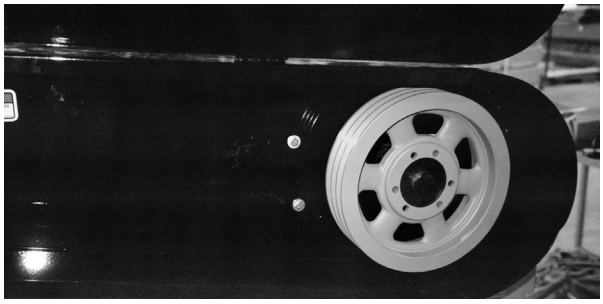
22. Install keys to 1/8" (3 mm) past the end of the shaft.

    a. Drive pulley hub.

    b. Driven pulley hub.



Drive



Driven

Fig. 73 KEYS

23. Align pulleys.

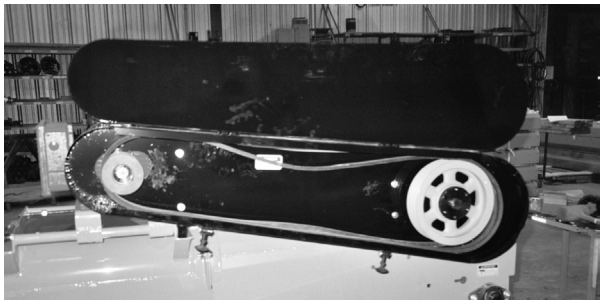
    a. Place a straight-edge across pulley faces.

    b. Use tapered lock hub hardware to set pulley position.

Straight-Edge

    c. Install drive belts.

    d. Tighten tapered lock hub hardware on both pulleys.



Belt

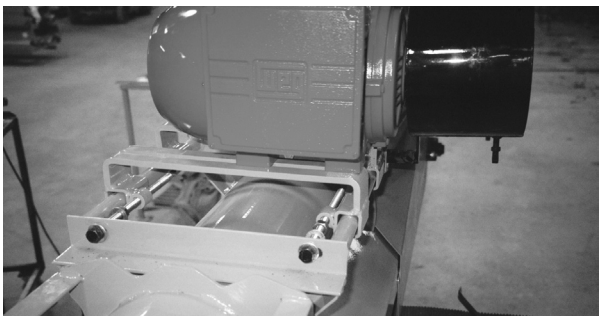
Fig. 74 ALIGNING

24. Set belt tension.

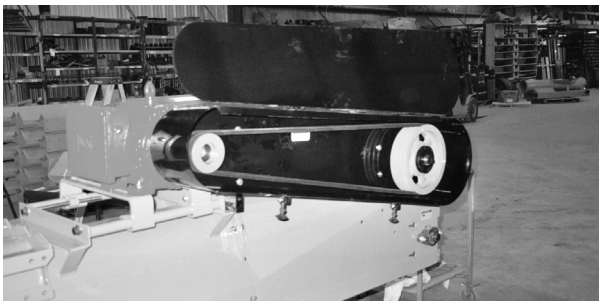
    a. Use motor mount position bolts to move motor as required to set tension.

NOTE

Move the bolts evenly to minimize the chance for the drive pulley to move out of alignment with the driven pulley.

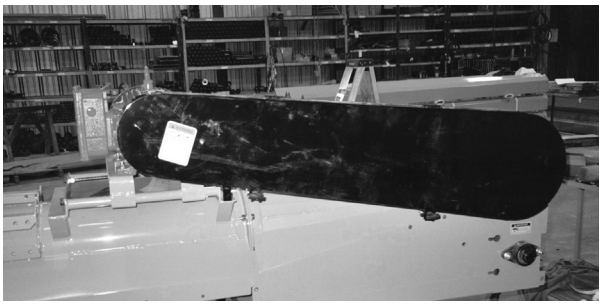


Adjusting Bolts



Tensioned

    b. Close and secure guard cover.



Closed

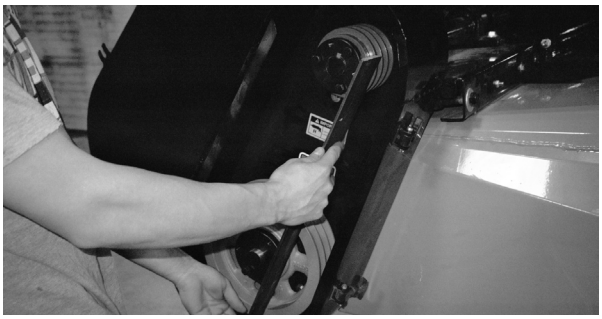
Fig. 75 BELT TENSION

25. Check all belt tensions and alignments.

    a. Start with secondary belt.

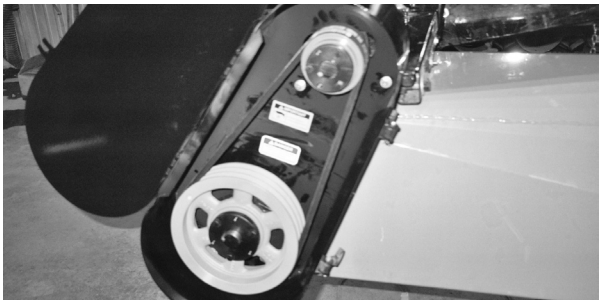
        • Tighten tapered lock hub fasteners.

        • Check pulley alignment.



Alignment

        • Set and adjust belt tension by moving cross shaft bearing housing.

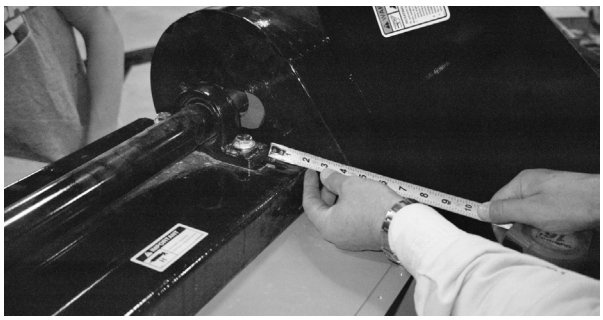


Tight

Fig. 76 SECONDARY BELT

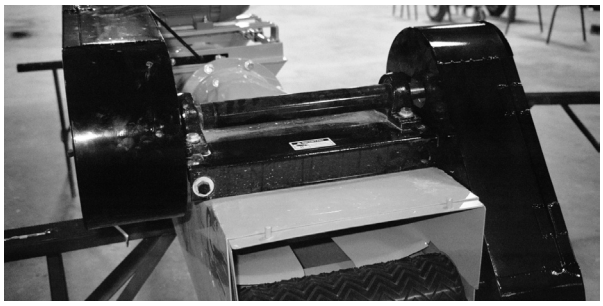
b. Check cross shaft alignment.

- Measure the distance of each bearing housing to the edge of the frame.

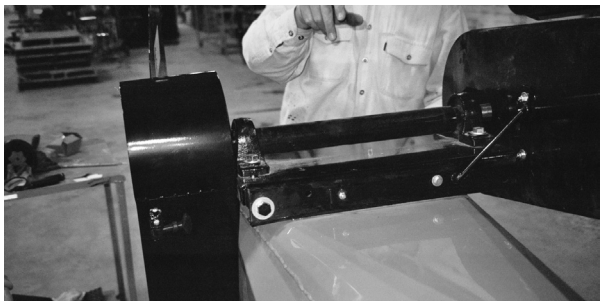


Measure

- Adjust bearing housing location so they are even.



Left Side Adjuster



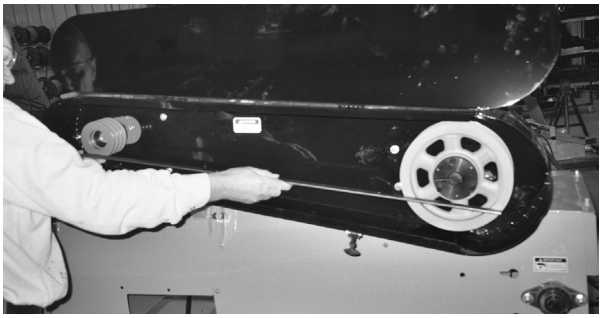
Right Side Adjuster

Fig. 77 CROSS SHAFT ALIGNMENT

- Tighten housing mounting bolts.

c. Primary belt system.

- Tighten tapered lock hub fasteners.
- Check pulley alignment. Reset if required.
- Set and adjust belt tension using motor mounting frame adjusting bolts.
- Tighten adjusting bolt jam nuts.



Alignment

Tension

Motor Adjusters

Fig. 78 PRIMARY BELT

26. Close and secure guard covers.

27. Have a licensed electrician provide power to the motor.

28. Run and check/set belt alignment.

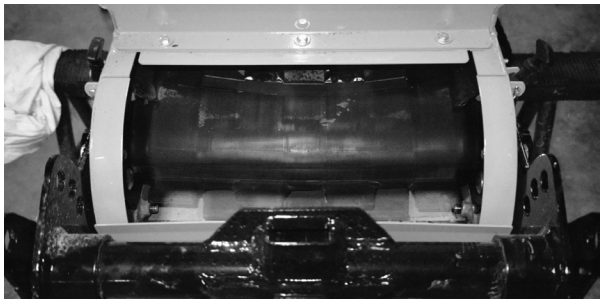
    a. Check tracking at discharge end and adjust as required.

Discharge

    b. Check tracking at hopper end and adjust as required.

NOTE

Belts that are not properly aligned will always track toward the loose side or loosening tight side.



Hopper

    c. Set the tracking by loosening the bearing mounts on the tight side and moving the end of the roller into the required position. Tighten the bearing mount.

    Move the belting another revolution and check the tracking again. Loosen the tight side slightly again if required. Repeat the adjusting and checking procedure until the belting centers on the input or discharge end roller and stays centered when running.

Adjusting

Fig. 80 TRACKING

IMPORTANT

Check belt tracking at 1/2, 5 and 10 hours when the belt is new and adjust as required to insure belt is aligned.

    e The belt can float a little from side-to-side on the roller for proper tracking but it must not contact the sides.

    f. Adjust tracking as required to prevent contact.

3.6 UNDERCARRIAGE ASSEMBLY

1. Lay out the undercarriage components and fasteners from the shipping container or crates.

Undercarriage

Fasteners

Fig. 81 LAY-OUT

2. Remove both slider frame end stops from one end of the frame.

Fig. 82 STOPS (Typical)

3. Mount the slider in the frame and secure by installing the stops on both sides.

Fig. 83 SLIDER

4. Install the undercarriage mounting cross shaft.

Installing

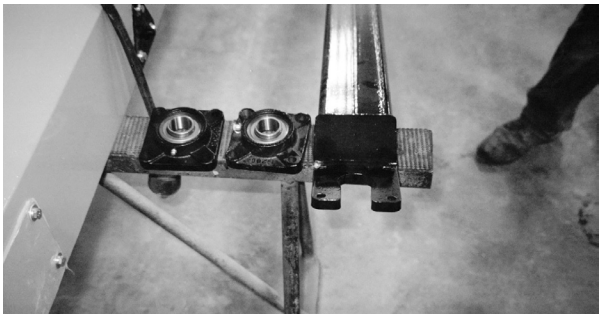
Left Side

Right Side

Fig. 84 CROSS SHAFT

5. Mount bearings to upper undercarriage arms.

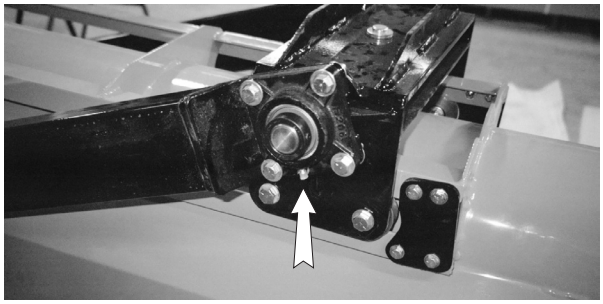
   a. Lay out bearings and arms with slots.



Lay-Out

   b. Orientate bearing housing with zerk pointing down.

   c. Install bearing arm to slide shaft on both sides.



Left Side - Zerk Orientation

   d. Install and secure bearing with lock collars.

NOTE

Assemble arms so red reflectors are facing rearward.

Installed

Fig. 85 UPPER UNDERCARRIAGE ARMS

6. Install left side lower undercarriage arm to front undercarriage pivot shaft.

   a. Remove lock collar from shaft.

   b. Mount arm over shaft.

   c. Install lock collar and retaining bolt.

Shaft

Arm / Shaft

Lock Collar

Fig. 86 LEFT SIDE ARM

7. Install right side lower undercarriage arm to front undercarriage pivot shaft.

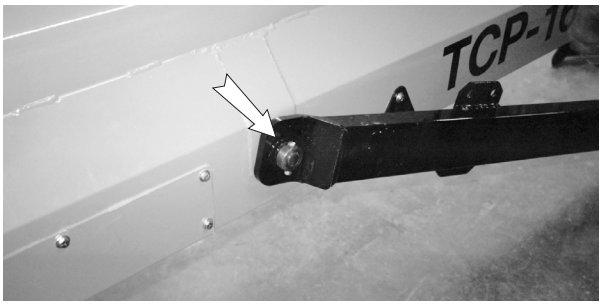
   a. Remove lock collar from shaft.

   b. Mount arm over shaft.

   c. Install lock collar and retaining bolt.

Shaft

Arm / Shaft

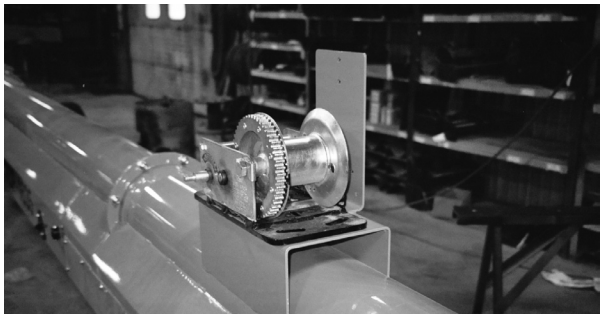


Lock Collar

Fig. 87 RIGHT SIDE ARM

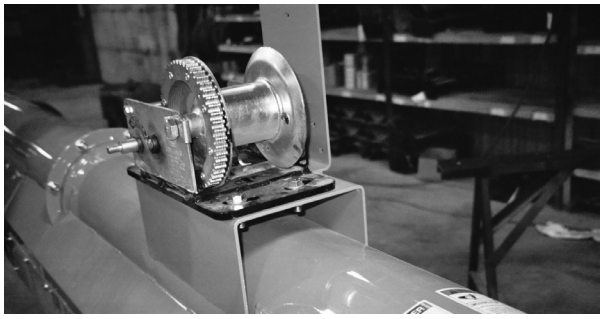
8. Install winch on mounting frame on top of tube.

   a. Place winch on mounting frame.

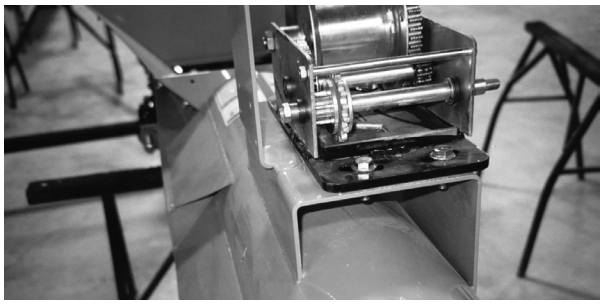


Placement

   b. Install mounting bolts and tighten.

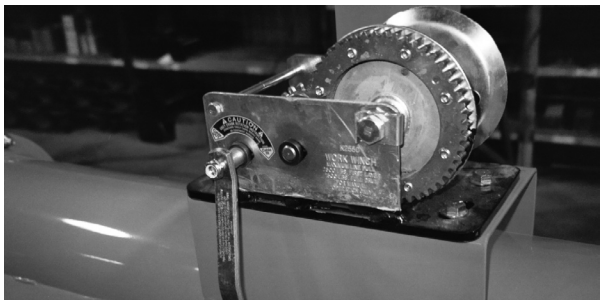


Bottom Bolts



Top Bolts

   c. Install and secure winch handle by tightening nut on shaft.



Handle

Fig. 88 WINCH INSTALLATION

9. Install plastic tie around slider and upper end of slider frame to prevent movement when installing cable.

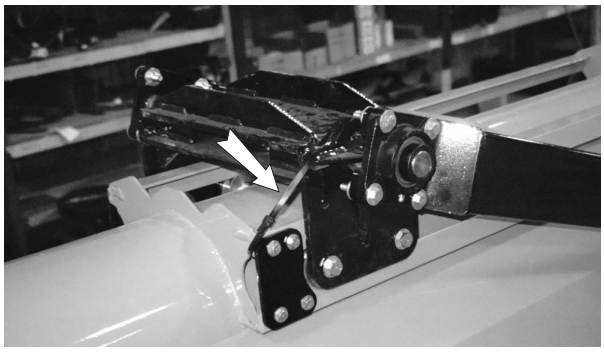


Fig. 89 PLASTIC TIE

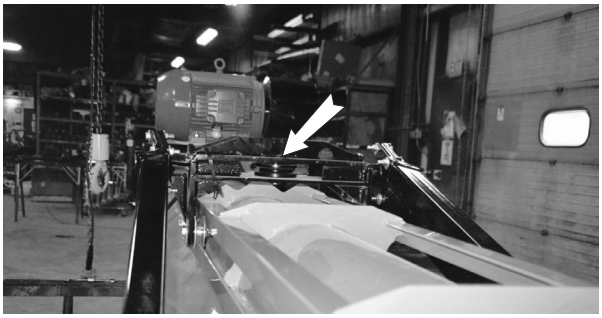
10. Lay out winch cable on top of tube.

    a. Check that the pulley in slider frame can turn freely.

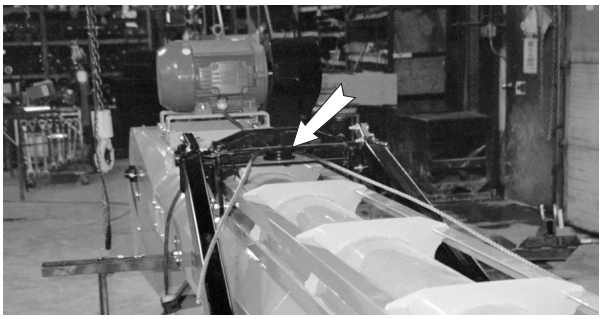
    b. Thread cable around pulley.

    c. Extend cable from winch, around pulley and back to front of frame.

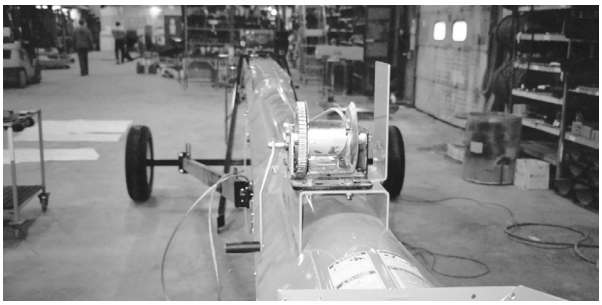
    d. Install and secure cable eye bolt anchor and thimble at 11:00 o'clock hopper flange position.



Pulley

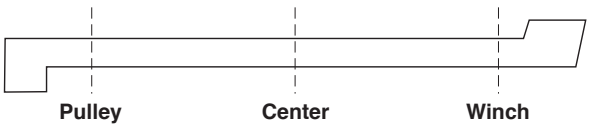


Pulley / Cable



Lay-Out

Eye Bolt (Typical)



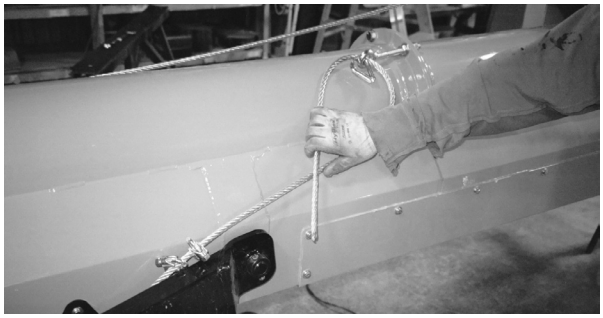
Schematic - Flange Locations

Fig. 90 CABLE

11. Attach end of cable to eye bolt anchor.

    a. Slide 2 clamps onto cable.

    b. Thread cable through eye bolt.



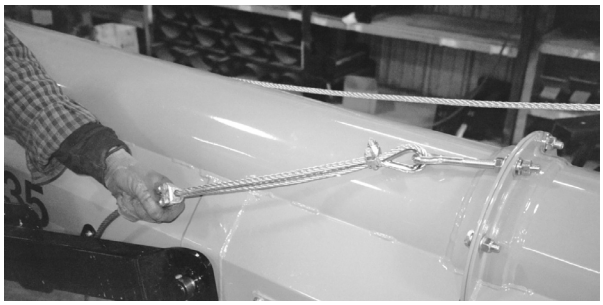
Clamps / Eye Bolt

    c. Thread clamps over both cables.

    d. Pull cable approximately 15" (375 mm) through eyebolt.

Threading Clamps

    e. Slide inner clamp up against thimble.

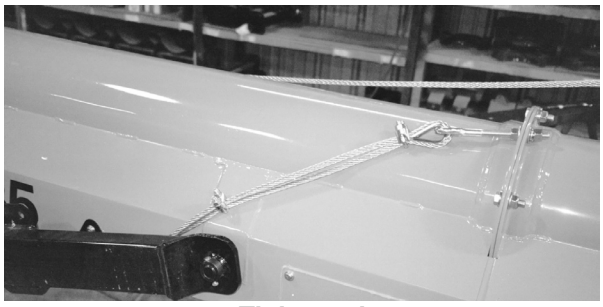


Tightening Clamps

    f. Tighten clamps.

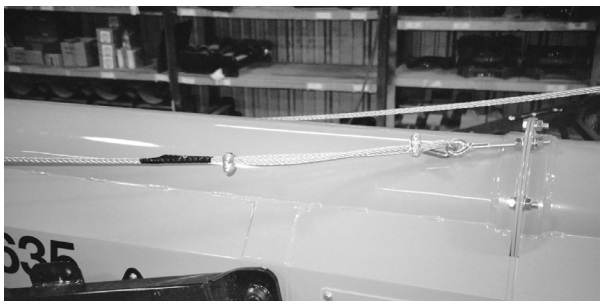
IMPORTANT

Position clamp with base on loaded side.



Tightened

    g. Wrap electrician's tape around the end of the cable.



Tape

Fig. 91 EYE BOLT ANCHOR

12. Thread cable around winch spool.

    a. Slide anchor bolt over the end of the cable.

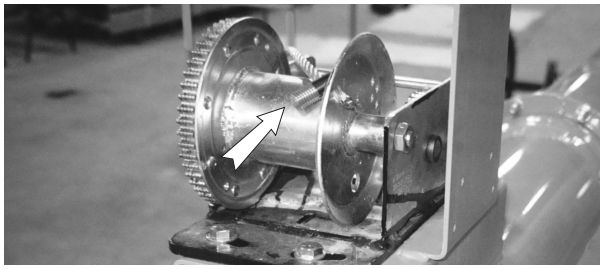
    b. Insert end of cable through hole in the side of the winch spool.

    c. Wind spool 1/2 turn and install clamp bolt through hole in the side of the winch spool.

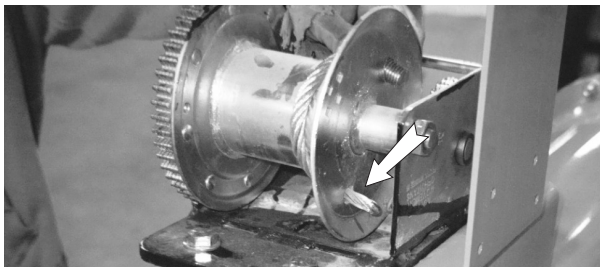
    d. Install nut on the end of the clamp bolt and tighten.

    e. Wind winch until there are 6 or more turns around spool.

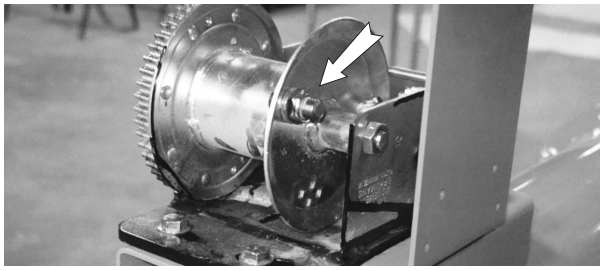
NOTE
Cable from factory is pre-cut to the required length for the conveyor.



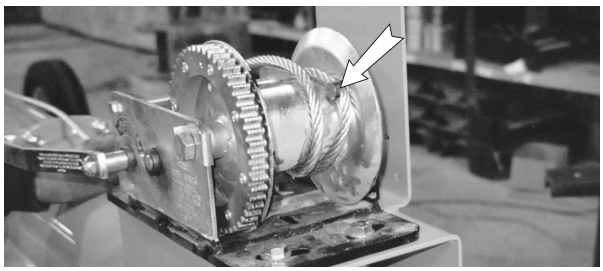
End



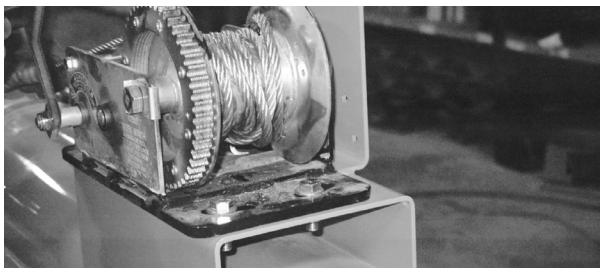
Anchor Bolt



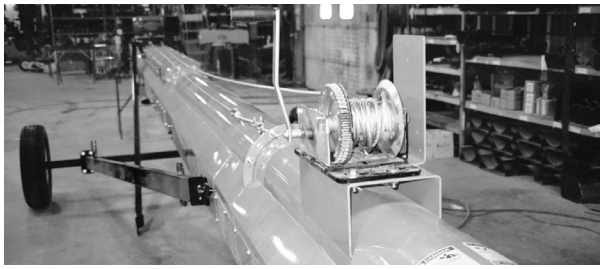
Anchor Nut



Turning



More Than Six Turns

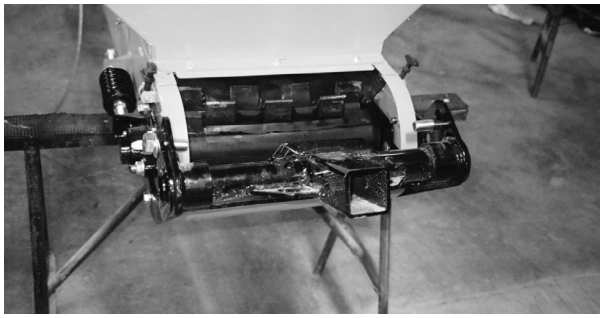


Installed

Fig. 92 WINCH SPOOL

13. Install hitch.

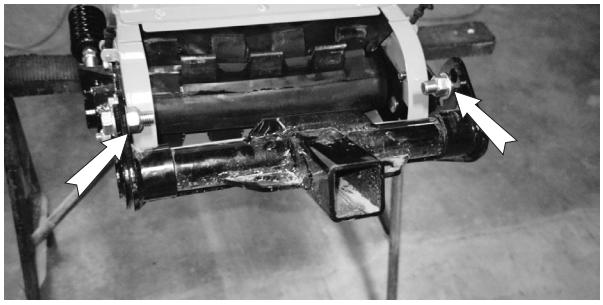
    a. Slide hitch around front frame.



Hitch

    b. Install mounting bolts.

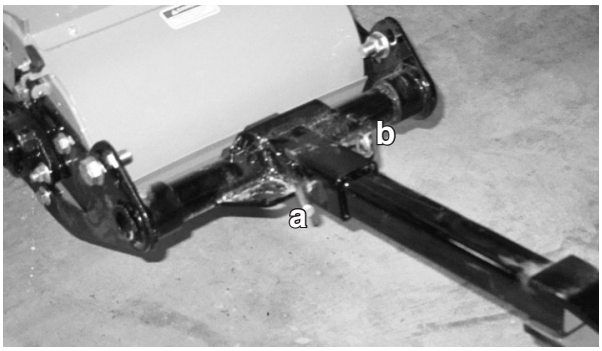
    c. Tighten mounting bolts.



Mounting Bolts

Fig. 93 HITCH INSTALLATION

14. Install tongue and secure with anchor pin and retainer.



a. Anchor Pin b. Retainer

Fig. 94 TONGUE

15. Assemble axle.

    a. Place axle on stands.

    b. Mount wheels on each axle.

    c. Lower wheels to the ground.

    d. Use a torque wrench to correctly tighten wheel bolts to their specified torque.

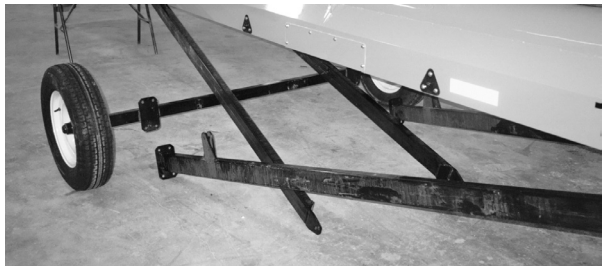
Stands

Mounted

Fig. 95 WHEELS

16. Install axles under frame.

    a. Move axle assembly under frame.

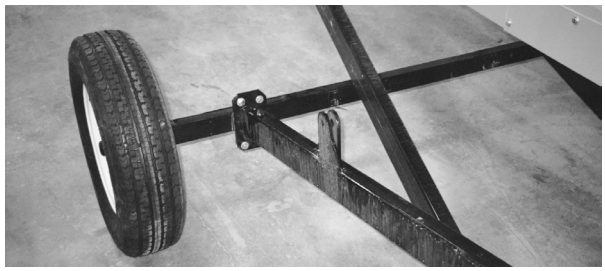


Positioned

    b. Raise front arms to match with mounting brackets.

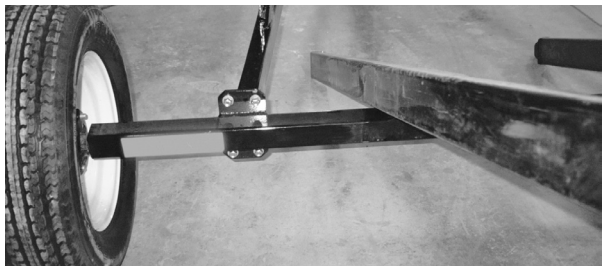
    c. Install fasteners.

    d. Tighten fasteners.



Right Side - Front

Right Side - Rear



Left Side - Rear

Fig. 96 AXLE INSTALLATION

17. Attach upper under carriage arms.

    a. Lift the discharge end and provide space for arms to match with front arms.

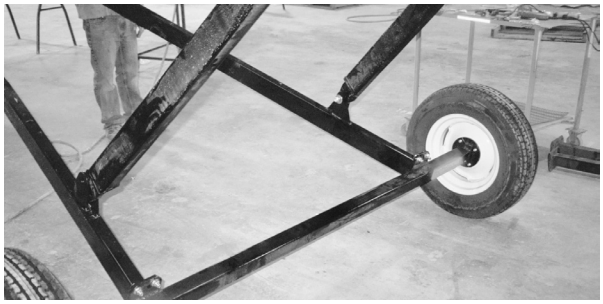
    b. Lift until lower end of arms match with pivot bracket.

    c. Install bolt through right side bracket.

    d. Install bolt through left side bracket.

    e. Snug up but do not tighten completely as junction must be allowed to pivot.

Lifting Frame



Right Side

Left Side

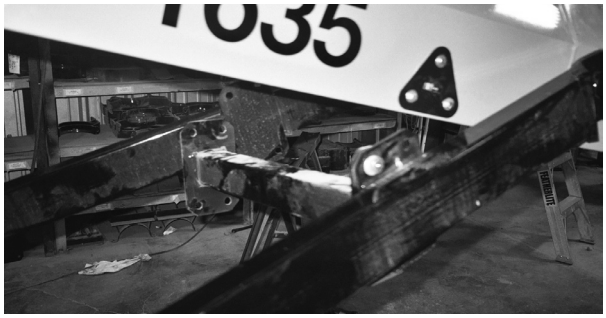
Fig. 97 UPPER UNDERCARRIAGE ARMS

18. Mount front lower arm cross brace.

    a. Align cross brace to mounting brackets.

    b. Install fasteners.

    c. Tighten fasteners.



Aligning

Installed

Fig. 98 LOWER ARM CROSS BRACE

19. Mount rear upper arm cross brace.

    a. Align cross brace to mounting brackets.

    b. Install fasteners.

    c. Tighten fasteners.

Aligning

Installed

Fig. 99 UPPER CROSS ARM BRACE

20. Cut and remove plastic tie on slider to release upper arm.

Fig. 100 PLASTIC TIE

21. Install amber reflector on left upper arm facing forward. Be sure surface is clean and dry.

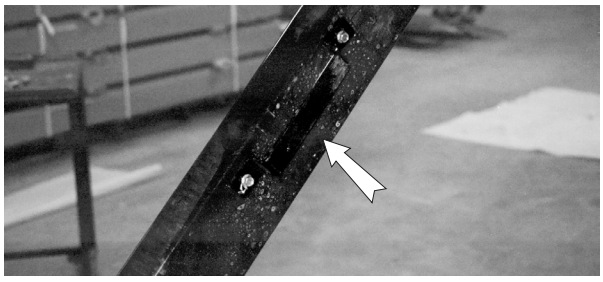
Fig. 101 AMBER REFLECTOR

22. Mount manual cannister to right upper arm.

    a. Lay out cannister.

Lay-Out

    b. Use self-tapping screws to attach mounting bracket.



Mounting Bracket

    c. Attach cannister to mounting bracket and tighten fasteners.

Mounted

Fig. 102 MANUAL CANNISTER

23. Mount optional lid if lid is part of package.

    a. Hook lid around upper end of hopper.

Upper

Mounts

    b. Install front fasteners to secure.

Fasteners

Fig. 103 OPTIONAL LID

24. Use a torque wrench to correctly tighten wheel bolts to their specified torque.

25. Conveyor is now assembled and ready for operation.

Fig. 104 ASSEMBLED

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PRINTED IN CANADA
ISSUE DATE: MAY 2013 **PART NUMBER: 26-1000-0005**