Field Loader Top Drive

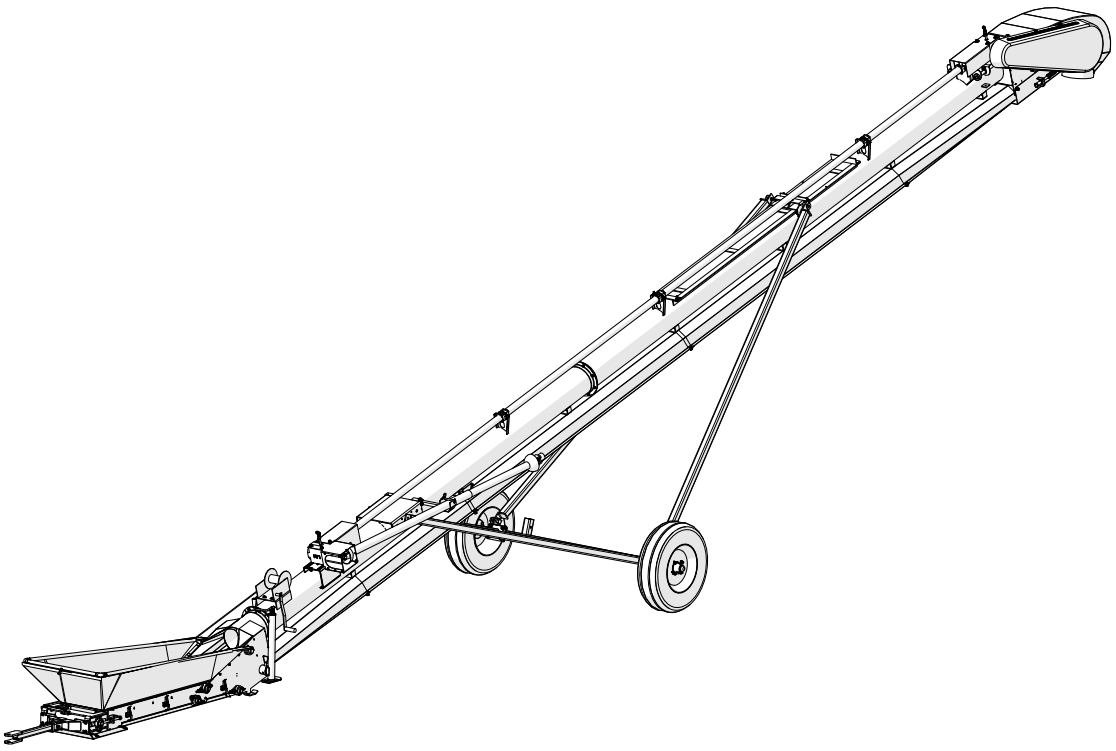
Portable Grain Belt Conveyor Assembly Manual

This manual applies to:

Batco BCX²1544

PTO Top Drive

Original Instructions



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: P1512182 R0

Revised: August 2019

CONTENTS

1. Safety

1.1. Safety Alert Symbol and Signal Words

This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

Signal Words: Note the use of the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.

DANGER Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.

WARNING Indicates a hazardous situation that, if not avoided, could result in serious injury or death.

CAUTION Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

NOTICE Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

1.2. General Product Safety

YOU are responsible for the **SAFE** use and maintenance of your conveyor. **YOU** must ensure that you and anyone else who is going to work around the conveyor understands all procedures and related **SAFETY** information contained in this manual.

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. All accidents can be avoided.

- It is the conveyor owner, operator, and maintenance personnel's responsibility to read and understand **ALL** safety instructions, safety decals, and manuals and follow them when operating or maintaining the equipment.

- Owners must give instructions and review the information initially and annually with all personnel before allowing them in the work area. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- Use the conveyor for its intended purposes only.
- Do not modify the conveyor in any way without written permission from the manufacturer. Unauthorized modification may impair the function and/or safety, and could affect the life of the conveyor. Any unauthorized modification will void the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.

1.3. Moving Conveyor Belt Safety

⚠ WARNING

- DO NOT step on or touch moving conveyor belt.
- Shut off and lock out power to adjust, service, or clean.

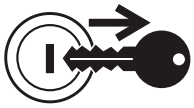
1.4. Rotating Parts Safety

⚠ WARNING

- Keep body, hair, and clothing away from rotating pulleys, belts, chains, and sprockets.
- Do not operate with any guard removed or modified. Keep guards in good working order.
- Shut off and remove key or lock out power source before inspecting or servicing machine.

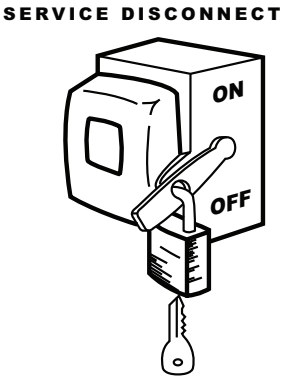
1.5. Drives and Lockout Safety

Inspect the power source(s) before using and know how to shut down in an emergency. Whenever you service or adjust your equipment, make sure you shut down the power source and unplug or remove the key (as applicable) to prevent inadvertent start-up and hazardous energy release. Know the procedure(s) that applies to your equipment from the following power source(s). Ensure that all personnel are clear before turning on power to equipment.



1.5.1 Electric Motor Safety

⚠ WARNING **Power Source**



- Electric motors and controls shall be installed and serviced by a qualified electrician and must meet all local codes and standards.
- A magnetic starter should be used to protect your motor.
- You must have a manual reset button.
- Reset and motor starting controls must be located so that the operator has full view of the entire operation.
- Locate main power disconnect switch within reach from ground level to permit ready access in case of an emergency.
- Motor must be properly grounded.
- Guards must be in place and secure.
- Ensure electrical wiring and cords remain in good condition; replace if necessary.
- Use a totally enclosed electric motor if operating in extremely dusty conditions.

Lockout

- The main power disconnect switch should be in the locked position during shutdown or whenever maintenance is performed.
- If reset is required, disconnect all power **before** resetting motor.

1.5.2 Hydraulic Power Safety

⚠ WARNING **Power Source**

- Refer to the rules and regulations applicable to the power source operating your hydraulic drive.
- Do not connect or disconnect hydraulic lines while system is under pressure.
- Keep all hydraulic lines away from moving parts and pinch points.
- Escaping hydraulic fluid under pressure will cause serious injury if it penetrates the skin surface (serious infection or toxic reaction can develop). See a doctor immediately if injured.
- Use metal or wood as a backstop when searching for hydraulic leaks and wear proper hand and eye protection.
- Check all hydraulic components are tight and in good condition. Replace any worn, cut, abraded, flattened, or crimped hoses.
- Clean the connections before connecting to equipment.
- Do not attempt any makeshift repairs to the hydraulic fittings or hoses with tape, clamps, or adhesive. The hydraulic system operates under extremely high pressure; such repairs will fail suddenly and create a hazardous and unsafe condition.

Lockout

- Always place all hydraulic controls in neutral and relieve system pressure before disconnecting or working on hydraulic system.

1.6. Tire Safety

⚠ WARNING Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion that 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 the replacement tire.
- DO NOT weld to the tire rim with the tire mounted on the rim. This action may cause an explosion which could result in serious injury or death.
- Inflate tires to the manufacturer's recommended pressure.
- Tires should not be operated at speeds higher than their rated speed.
- Keep wheel lug nuts tightened to manufacturer's recommendations.
- Never reinflate a tire that has been run flat or seriously under-inflated without removing the tire from the wheel. Have the tire and wheel closely inspected for damage before remounting.

1.7. Hand Winch Safety

⚠ WARNING **When Equipped:**

- Inspect lift cable before using. Replace if frayed or damaged. Make sure lift cable is seated properly in cable sheaves and cable clamps are secure.
- Tighten brake lock by turning winch handle clockwise at least two clicks after lowering the conveyor.
- Lower the conveyor fully before towing, then rotate winch handle until cable has light tension.
- Do not lubricate winch brake discs.

1.8. Personal Protective Equipment

The following Personal Protective Equipment (PPE) should be worn when assembling the equipment.

Safety Glasses

- Wear safety glasses at all times to protect eyes from debris.

Work Gloves

- Wear work gloves to protect your hands from sharp and rough edges.

Steel-Toe Boots

- Wear steel-toe boots to protect feet from falling debris.

Coveralls

- Wear coveralls to protect skin.

Hard Hat

- Wear a hard hat to help protect your head.

1.9. Safety Equipment

The following safety equipment should be kept on site:

Fire Extinguisher

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

First-Aid Kit

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

1.10. Safety Decals

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available **free of charge** from your distributor, dealer, or factory as applicable.

1.10.1 Decal Installation/Replacement

1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the sign backing paper.

1.10.2 Safety Decal Locations and Details

Replicas of the safety decals that are attached to the conveyor and their messages are shown in the figure(s) that follow. Safe operation and use of the conveyor requires that you familiarize yourself with the various safety decals and the areas or particular functions that the decals apply to, as well as the safety precautions that must be taken to avoid serious injury, death, or damage.

Figure 1. Conveyor Safety Decal Locations

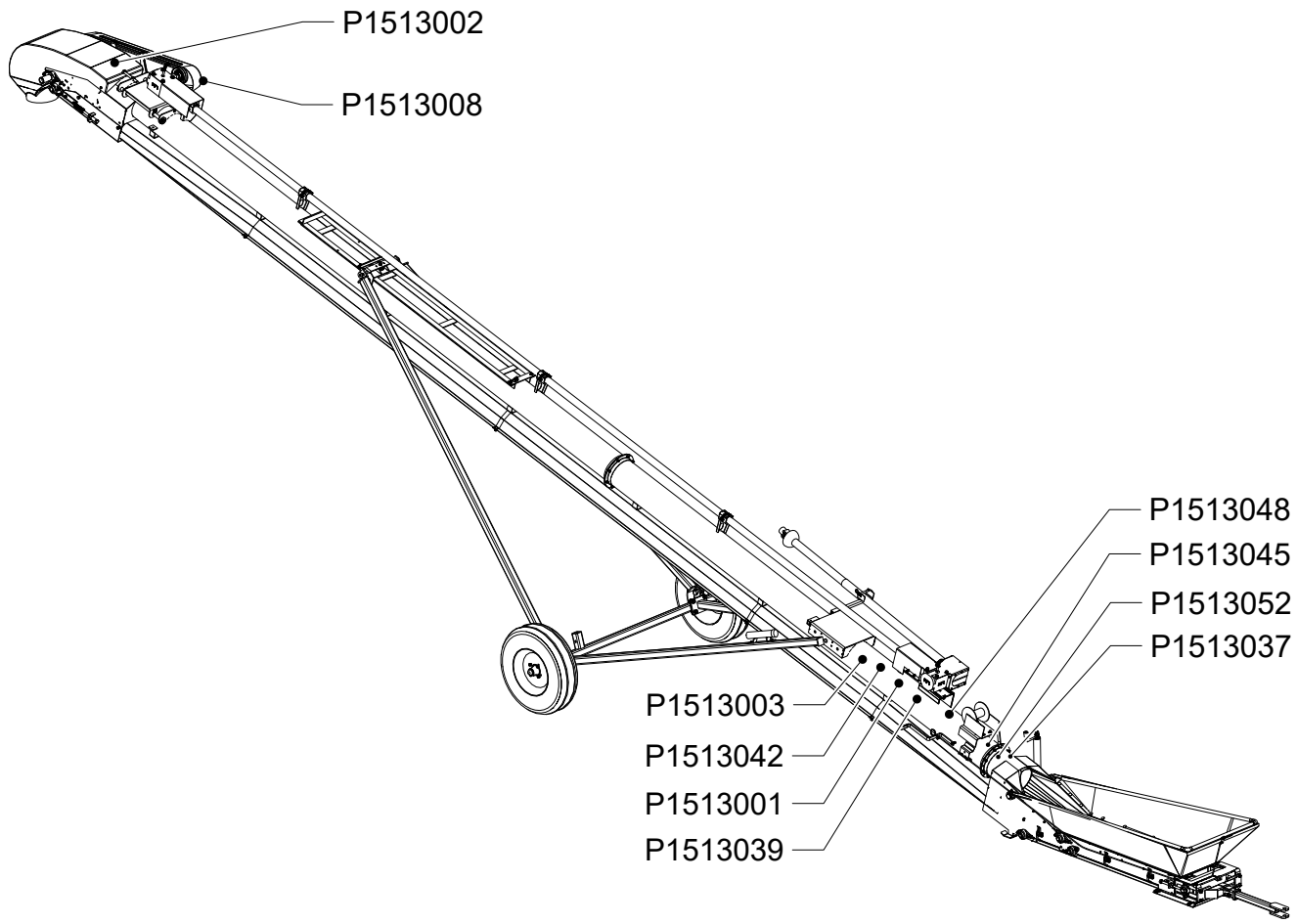


Table 1. Safety Decals

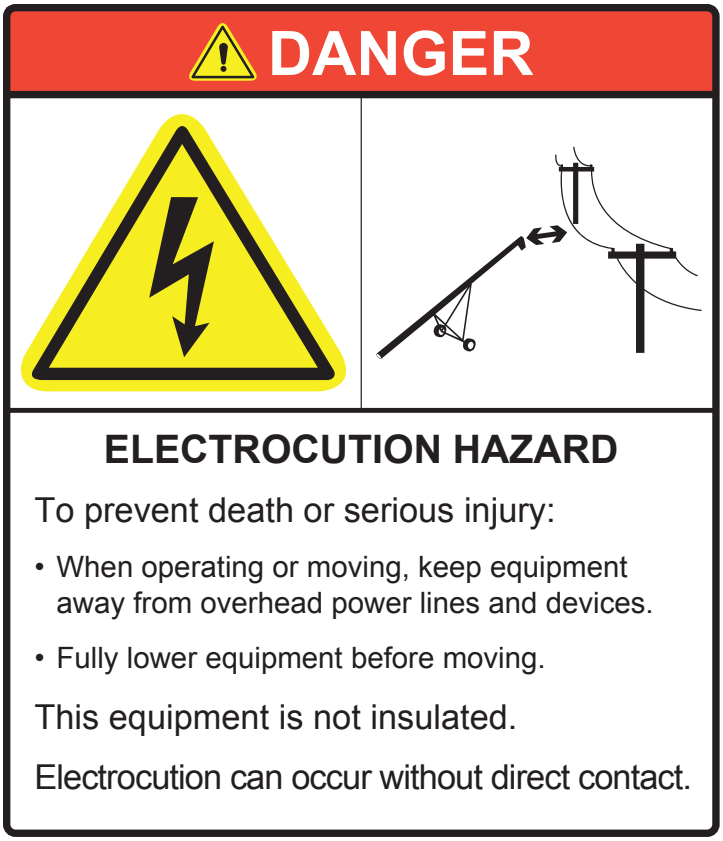
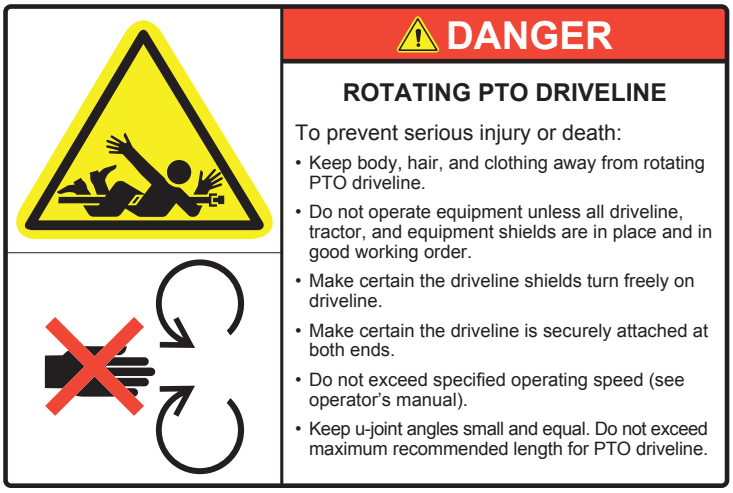
Part Number	Description
P1513003	
P1513048	

Table 1 Safety Decals (continued)

Part Number	Description
P1513045	
P1513037	

Table 1 Safety Decals (continued)

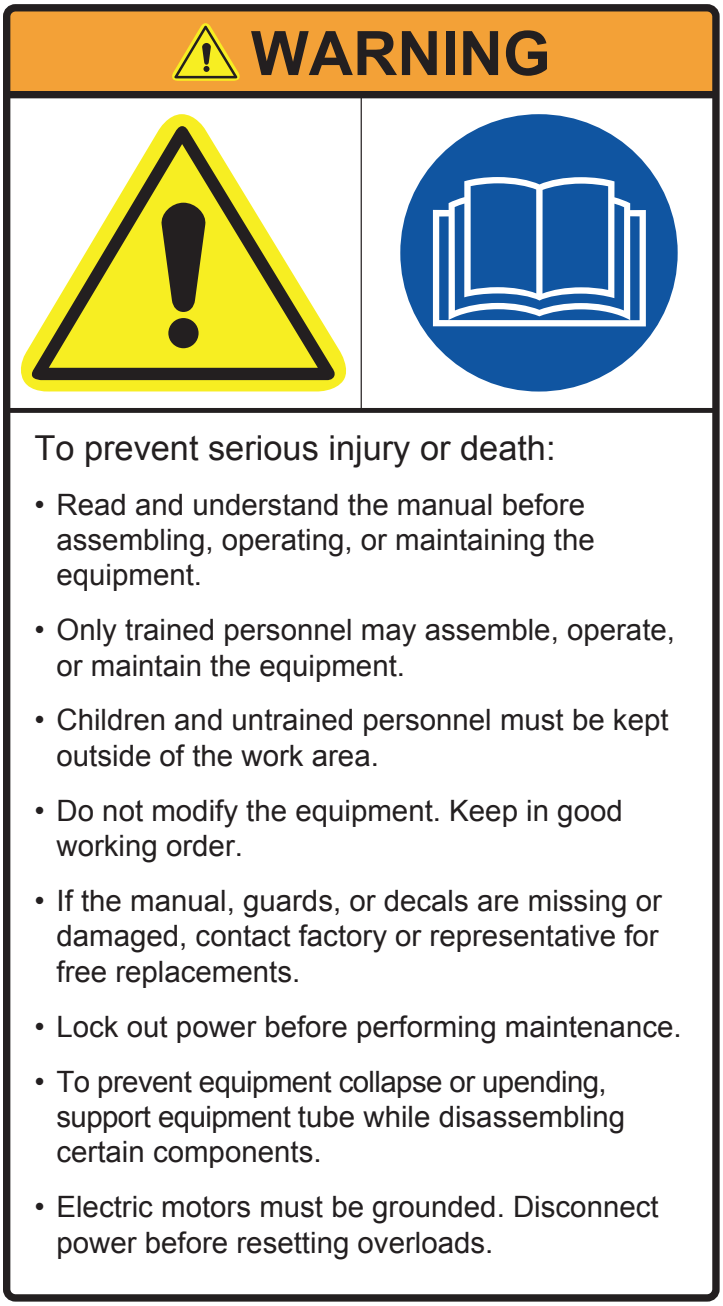
Part Number	Description
P1513001	

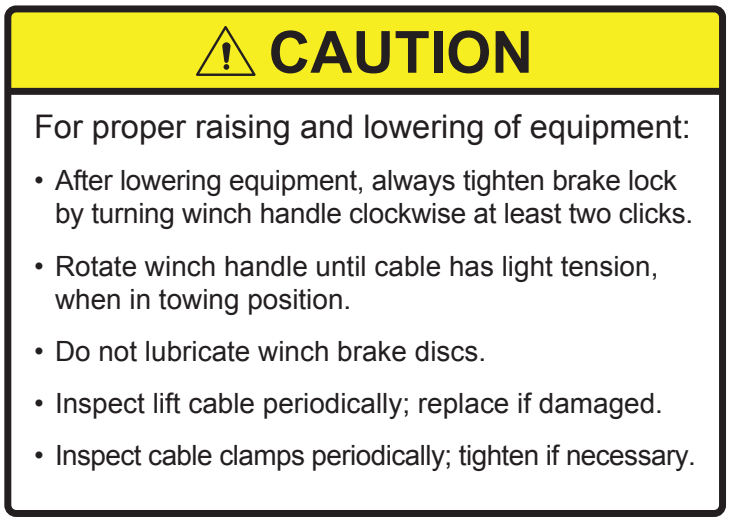
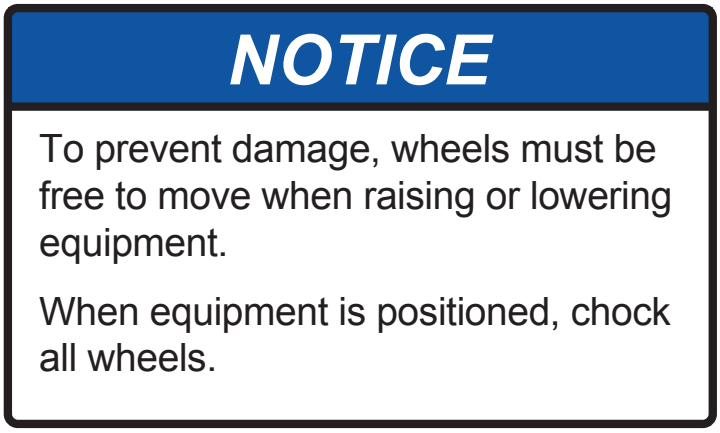
Table 1 Safety Decals (continued)

Part Number	Description
P1513042	

Table 1 Safety Decals (continued)

Part Number	Description
P1513002	
P1513008	

Table 1 Safety Decals (continued)

Part Number	Description
P1513039	
P1513052	

2. Features

This section covers the main features of the conveyor.

Figure 2. Typical Field Loader Top Drive Components

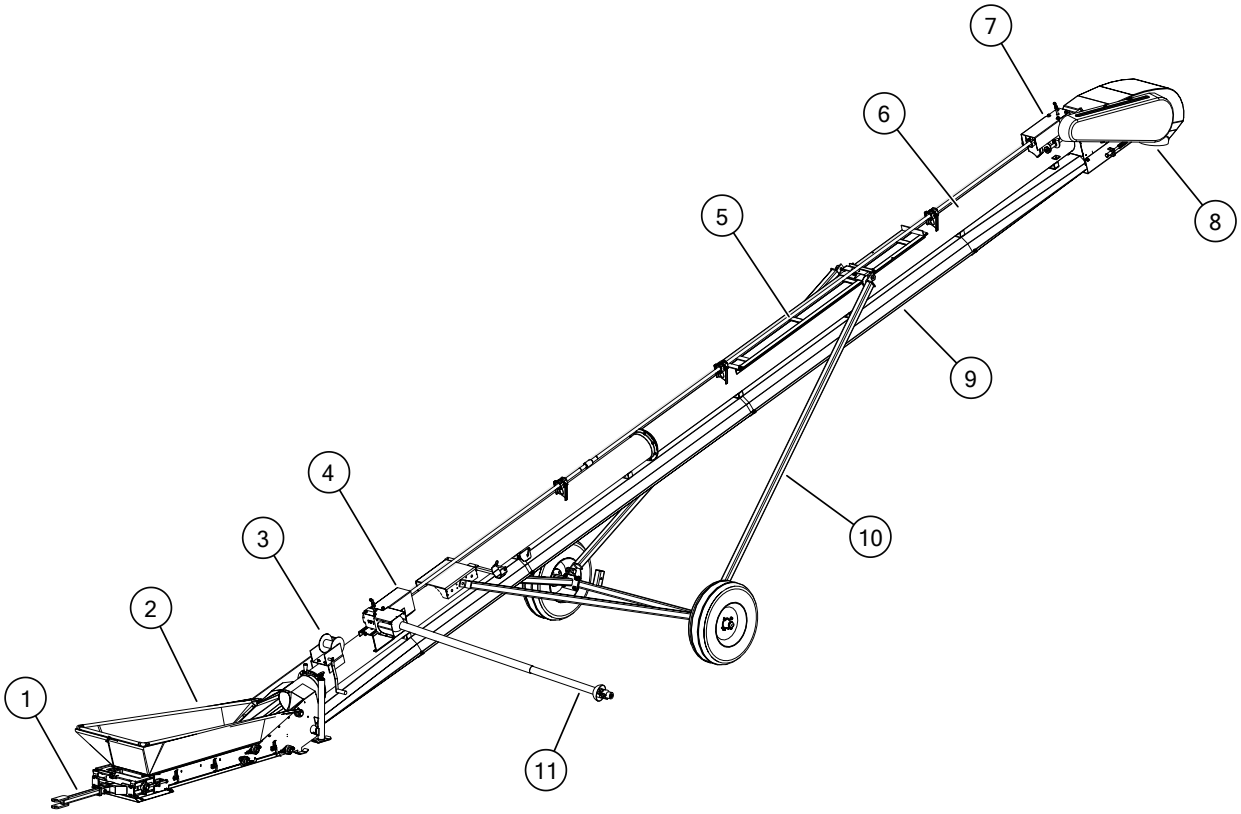


Table 2. Typical Field Loader Top Drive Components

Item	Description	Item	Description
1	Swing Away Hopper Conveyor Hitch	7	Top Gearbox Assembly
2	Hopper Assembly	8	Spout and Hood
3	Hopper Cloth Controls	9	Weather Guard Assembly
4	Bottom Gearbox Assembly	10	A Frame
5	Drive Shaft and Guard Assembly	11	PTO
6	Tube		

3. Assembly

Before continuing, ensure you have completely read and understood this manual's Safety section, in addition to the safety information in the section(s) below.

3.1. Assembly Safety

WARNING

- Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
- Carry out assembly in a large open area with a level surface.
- Always have two or more people assembling the conveyor.
- Make sure you have sufficient lighting for the work area.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.
- Stay away from overhead power lines and other obstructions during assembly. Contact with power lines can cause electrocution.
- Do not work in high winds.

3.2. Check Shipment

Unload the conveyor parts at the assembly site and compare the packing slip to the shipment. Ensure that all items have arrived and that none are damaged.

Report missing or damaged parts immediately to ensure that proper credit is received from AGI or your distributor/dealer, and to ensure that any missing parts can be shipped quickly to avoid holding up the assembly process.

Important

Do not assemble or install damaged components.

3.3. Required Tools

- 2–3 pipe stand(s)
- 2 sawhorse(s) (1200 lb [544.3 kg])
- 1 standard socket set(s)
- 2 wrench set(s)
- 1 torque wrench(es)
- 1 set(s) of Allen wrenches
- 1 hammer and punch
- 1 drill with bits 3/16”, 5/16”
- 2 tape measure(s) (25’ [7.6 m])
- 1 tape measure(s) (100’ [30.5 m])
- 1 ratchet strap
- 2 C-clamp(s) or vise grip(s)
- 1 fish tape (100’ [30.5 m])
- 1 tire pressure gauge
- 1 tire chuck
- 1 propane torch
- 1 picker with minimum reach of 12’ (3.7 m) and 4000 lb to 6000 lb (1814 kg to 2722 kg) lifting capacity

3.4. Before You Begin

Before you assemble the conveyor:

- Familiarize yourself with all the sub-assemblies, components, and hardware that make up the equipment.
- Have all parts and components on hand, and arrange them for easy access.
- Separate the hardware (bolts, nuts, etc.) and lay them out into groups for easier identification during assembly.
- Ensure there is adequate space to remove the assembled conveyor from the assembly area.

3.5. Hydraulic Fittings and Bolt Tightening

Remember the following basic considerations when tightening hydraulic fittings and bolts:

- Tighten all fasteners to the torque specified in Section 5.1 – Bolt Torque on page 80. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.
- All hydraulic fittings should be torqued to the recommended specifications. See Section 5.2 – Fittings Torque Values on page 81.

NOTICE Do not over-tighten fittings. Over-tightening hose fittings can crack the fittings or motor body and will void the warranty.

3.6. Component Locations

Layout Drawing

Be sure to select the proper layout drawing. The dimensions change for each machine depending on the drive option selected. Incorrect placement of the components affects machine balance and can cause a heavy or light intake. The layout drawing is attached to the packing list.

Mark the Tube

Always ensure that the hopper remains level during the attachment of all components that bolt to the conveyor tubing. Use a tape measure to mark out component locations that bolt to the tube. Mark locations on the top side of the tube. Refer to the tube drawing attached to the packing list for layout measurements and component locations.

Tightening Brackets

For all bolt-on brackets and u-clamps, tighten nuts part-way on one side of bracket, then tighten part-way on opposite side. Do this until bracket is fully tightened and ensure it remains level during this procedure.

3.7. Assemble the Tube Sections

CRUCIAL INFORMATION

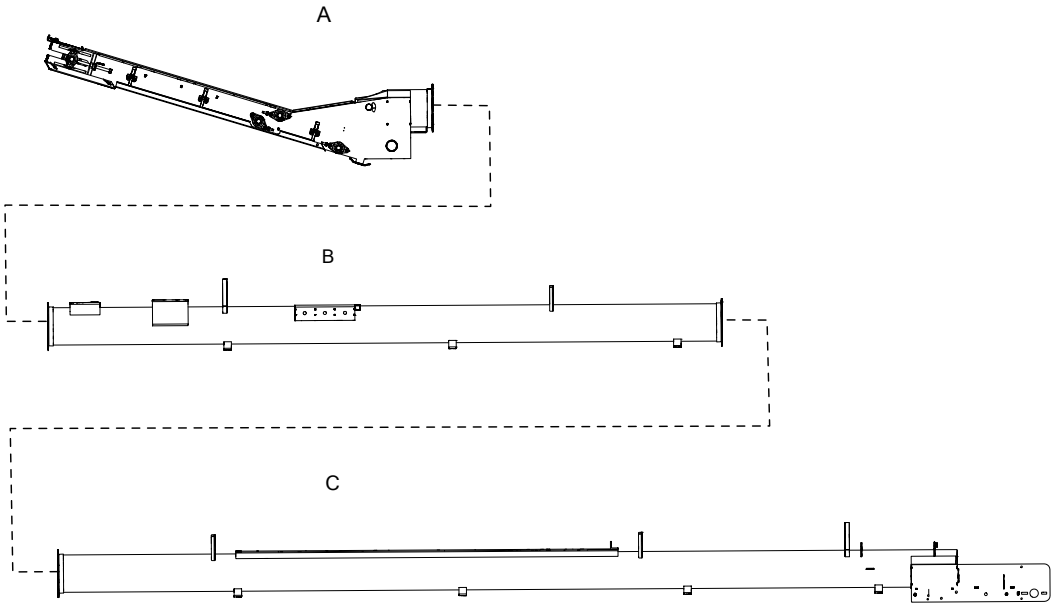
⚠ CAUTION Crushing hazard.

Secure all tube sections to support stands to ensure they do not roll.

Level. Ensure the tube sections are level while assembling.

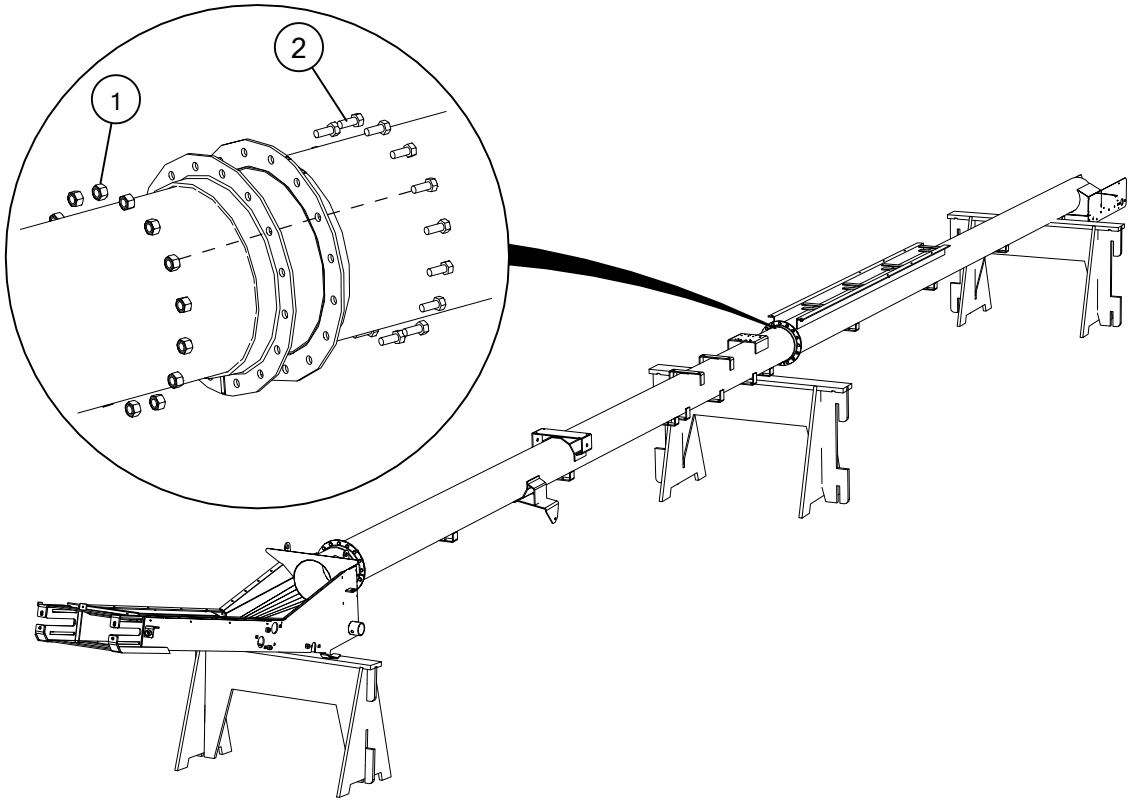
Aligning the Flanges. Use a punch to align the flanges of the tube sections.

Figure 3. Conveyor Tube Layout for CX² 1544 Model (PTO)



A	15555547
B	15020161
C	15020032

Figure 4. Attaching Tube Sections Together



Item	Description
1	7/16" Locknut
2	7/16" x 1" Bolt (GR8)

3.8. Brand and Model Decal Placement

Important

Do not cover any existing safety or instruction decals with the brand and model decals. Also make sure the decals do not interfere with any welded-on brackets or tube flanges.

- The decals should be placed as follows (see Figure 5):
  - Brand (B): as near as possible to the conveyor spout
  - Model (M): as near as possible to the bottom end of the track

  Examples of the appearance of brand and model decals are in Figure 6 and Figure 7.

Figure 5. Brand (B) and Model (M) Decal Placement

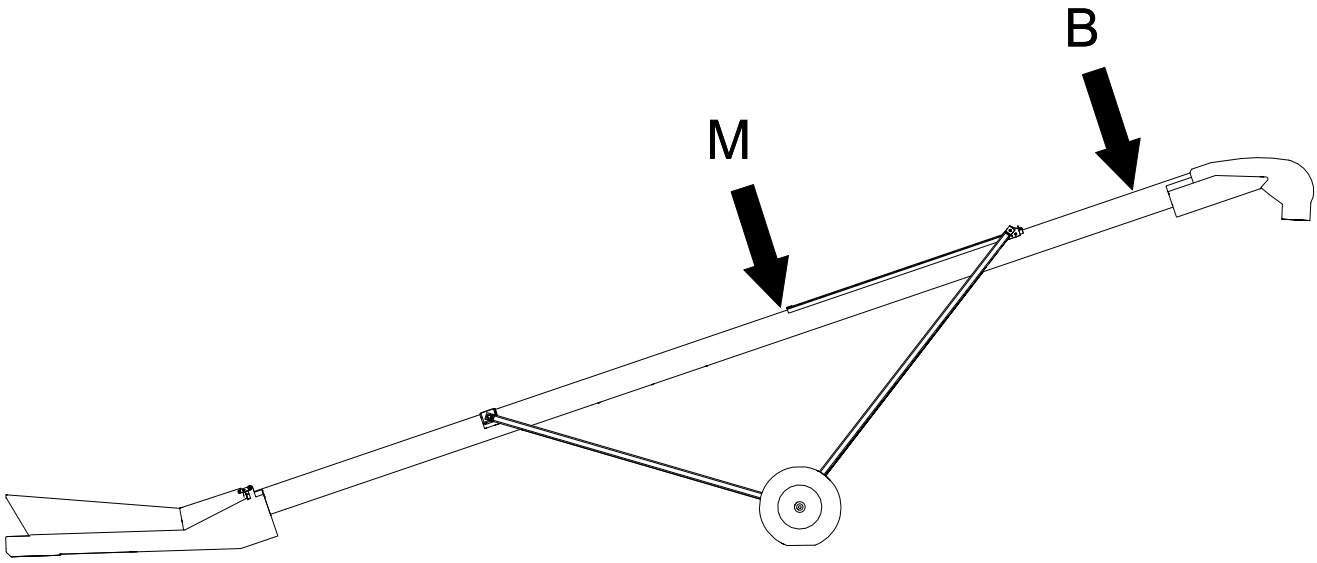


Figure 6. Brand Decal (example)

AGI BATCO

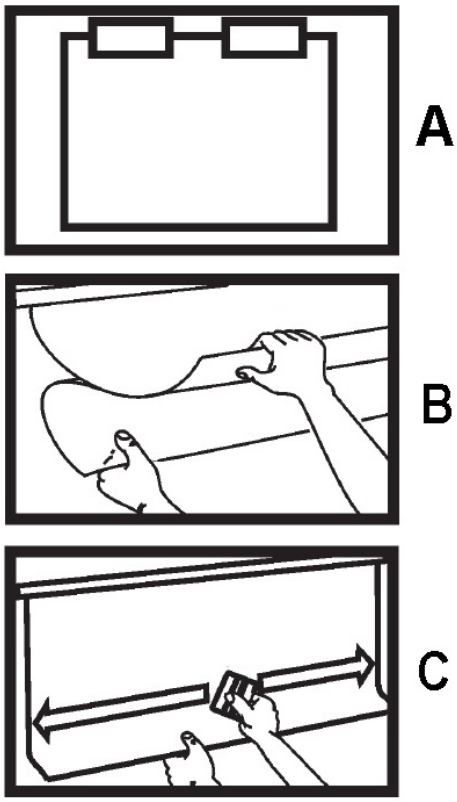
Figure 7. Model Decal (example)

BCX² 1549

- Apply decals to both sides of conveyor tube.
- For each decal:
  1. Prepare surface by cleaning thoroughly with soap and water. Surface must be clean and free of dirt, grime, rust and oil. To clean oily surface, wipe with clean cloth and solvent cleaner or isopropyl alcohol.
  2. Position the decal by centering it vertically on the tube and apply masking tape along the top, creating a gate hinge (see Detail A in Figure 8).
  3. Remove backing paper from decal 6” from the top and use the squeegee to adhere decal to the tube (see Detail B). Start at the top center of the decal and work your way outward both left and right using overlapping strokes.

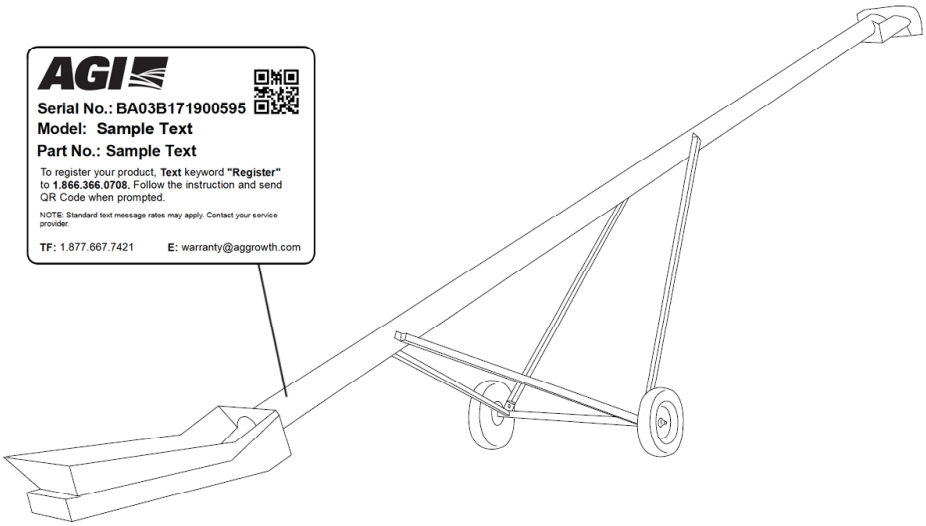
4. As you work your way down the decal, peel back the backing paper 6” at a time. Repeat Step 3 until the entire decal has been applied to the tube (see Detail C as an example).
5. Once the entire decal has been properly adhered to the tube, remove tape hinge from front of decal. Remove the front application tape at a sharp 180° angle.
6. Inspect the entire decal for air pockets; if found, remove them by punching a tiny hole with a pin and then squeegee the surface flat.
7. Squeegee the corners and edges of the decal to ensure proper adhesion and to prevent premature peeling.

Figure 8. Decal Placement Technique



3.9. Serial Number Decal Placement

Place the serial number decal on the conveyor as shown below.



3.10. Install the Spout Roller

1. Insert the roller (2) into the spout (1) (see Figure 9).

   Important

   Make sure the keyway in the spout roller is installed on the same side of the conveyor as the gearbox (see appropriate drive assembly section).

2. Slide a bearing (5) on each end of the roller and secure to the spout using 1/2" x 1–1/2" carriage bolts (3), square flat washers (4), and 1/2" locknuts (6).

   Important

   If the square shoulder of the carriage bolt still sticks through the spout side plates, you must either add a 2nd square washer or tighten up the nut slowly as to not crack the bearing body.

3. Center the roller (2) in the spout.
4. Make sure the roller (2) is positioned straight by measuring the distance (d) from the end of the roller to the end of the spout weldment sidewall on both sides (it should be the same distance).
5. For each bearing, use a hammer and punch to rotate the lock collar so that it seats onto the inner race of the bearing. Tighten the lock collar securely to the shaft with its hex set screw.
6. Insert the 7/16" x 2-1/2" square-head set screws (7) in the spout.

   Note

   The square-head set screws are used to set the alignment of the belt, after the belt is installed.

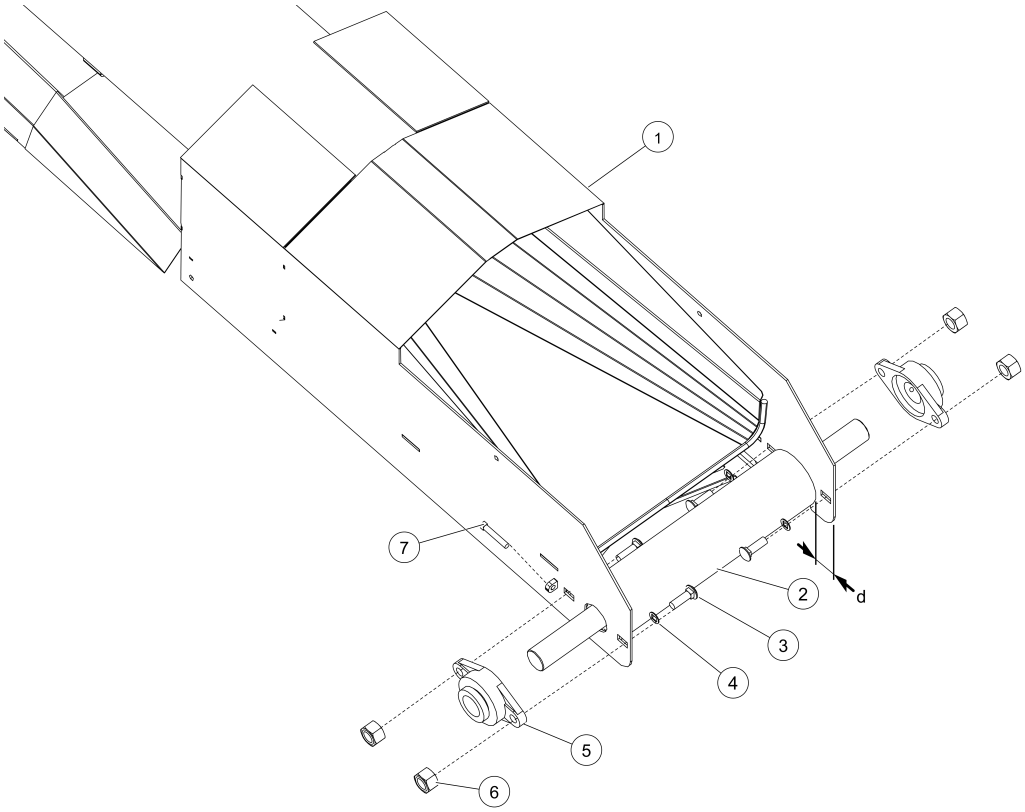
Table 3. Spout Roller Components

Item	Description	Quantity
1	Spout	1
2	Vulcanized Spout Roller	1

Table 3 Spout Roller Components (continued)

3	1/2" x 1–1/2" Carriage Bolt	4
4	Square Flat Washer (0.531"-1.00"-0.060")	4
5	1-1/2" Bearing Flange Unit (SAFL208–24)	2
6	1/2" Nylon Locknut	4
7	7/16" x 2-1/2" Square-Head Set Screw	2

Figure 9. Installing Spout Roller



3.11. Install the Hand Winch

Depending on your conveyor model, it may be equipped with either a hand winch or a hydraulic winch.

1. Attach the winch (7) to the winch mount bracket (2) with 3/8" x 1" bolts (5), 3/8" flat washers (6), and 3/8" locknuts (8) (see Figure 10).

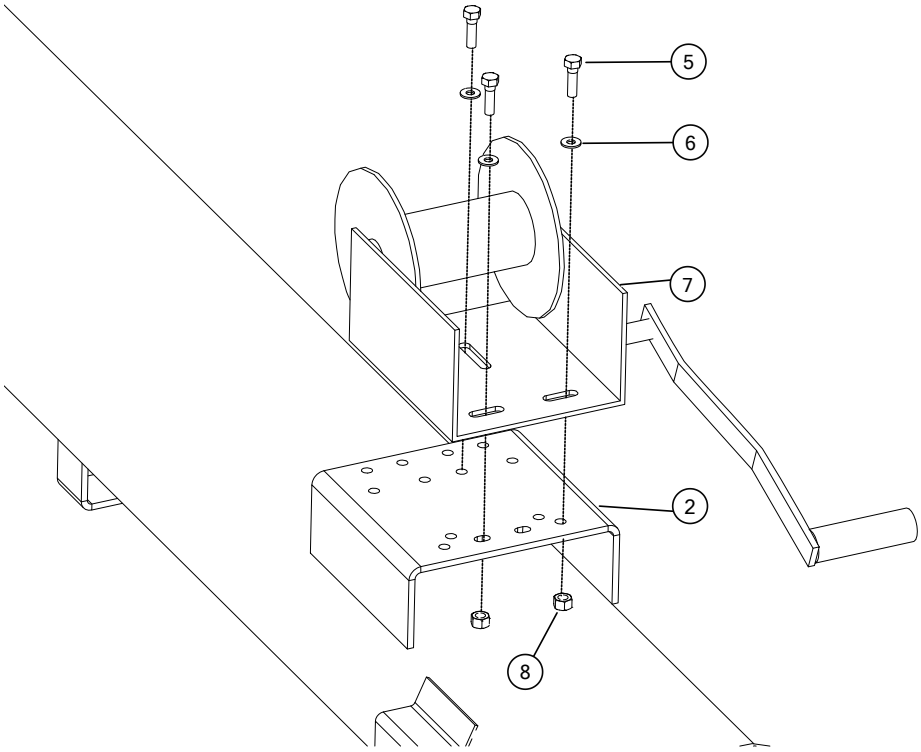
Table 4. Hand Winch Components

Item	Description
2	Winch Mount Bracket
5	3/8" x 1" Hex Bolt (GR 8)
6	3/8" Flat Washer

Table 4 Hand Winch Components (continued)

Item	Description
7	Hand Winch
8	3/8" Nylock Nut

Figure 10. Installing the Hand Winch



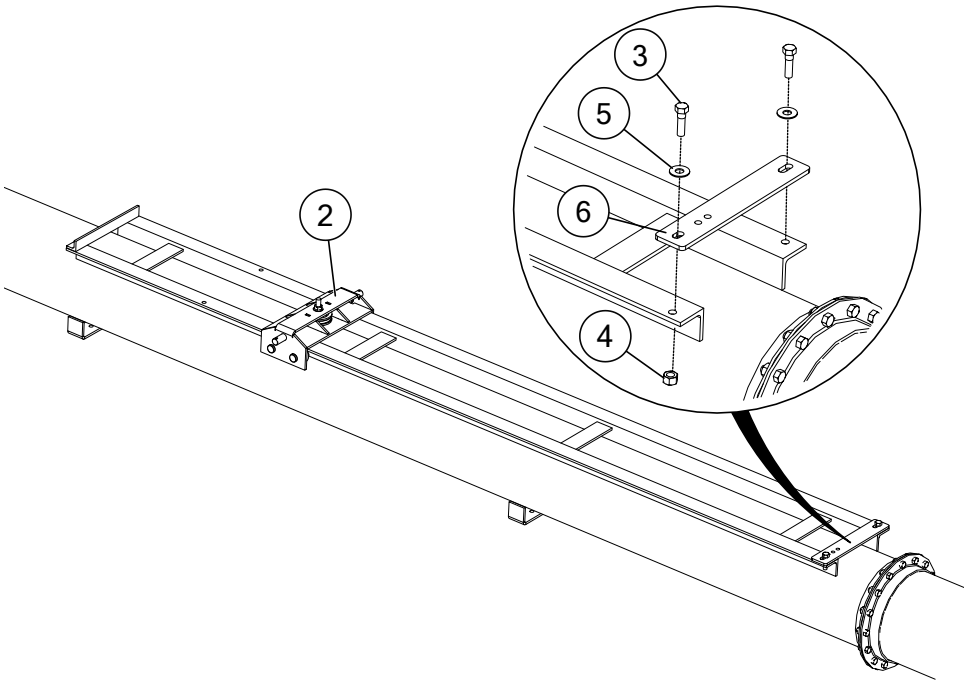
3.12. Install the Frame Slider

1. Slide the slider (2) onto the track (see Figure 11).
2. Install the cable attach (6) on the track with 7/16" x 1-1/2" bolts (3), 7/16" locknuts (4), and flat washers (5).

Table 5. Frame Slider Components

Item	Description
2	Slider
3	7/16" x 1-1/2" Hex Bolt (GR8)
4	7/16" Nylock Nut
5	7/16" Flat Washer
6	Cable Attach

Figure 11. Installing the Frame Slider



3.13. Drive Assemblies

3.13.1 Assemble the Top Drive

Install the Gearbox and Mount

Figure 12. Gearbox and Mount Installation

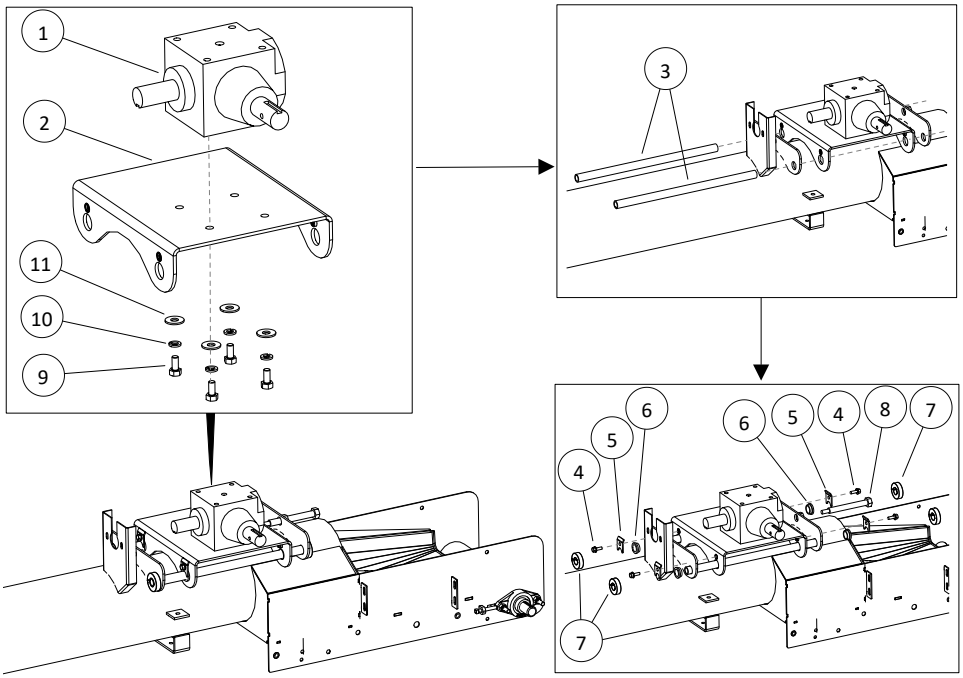


Table 6. Install the Gearbox and Mount

Item No.	Description
1	GEARBOX 90 1.5:1 CW/CCW 1_1/2" 4190
2	PTO TOP DRIVE GBOX MOUNT PAINT
3	MOTOR RAIL
4	IGUS BUSHING 1" ID X 1/2" WIDE
5	BUSHING RETAINER (PNT)
6	FLANGE BOLT 3/8 X 1" PLATED
7	CSC SHAFT COLLER 1"
8	SPRING TENSION BOLT
9	BOLT 1/2" X 1" GR8 BARE
10	LOCK WASHER 1/2"PLATED
11	FLAT WASHER 1/2"PLATED USS

Install the Belt Drive

Figure 13. Belt Drive Installation

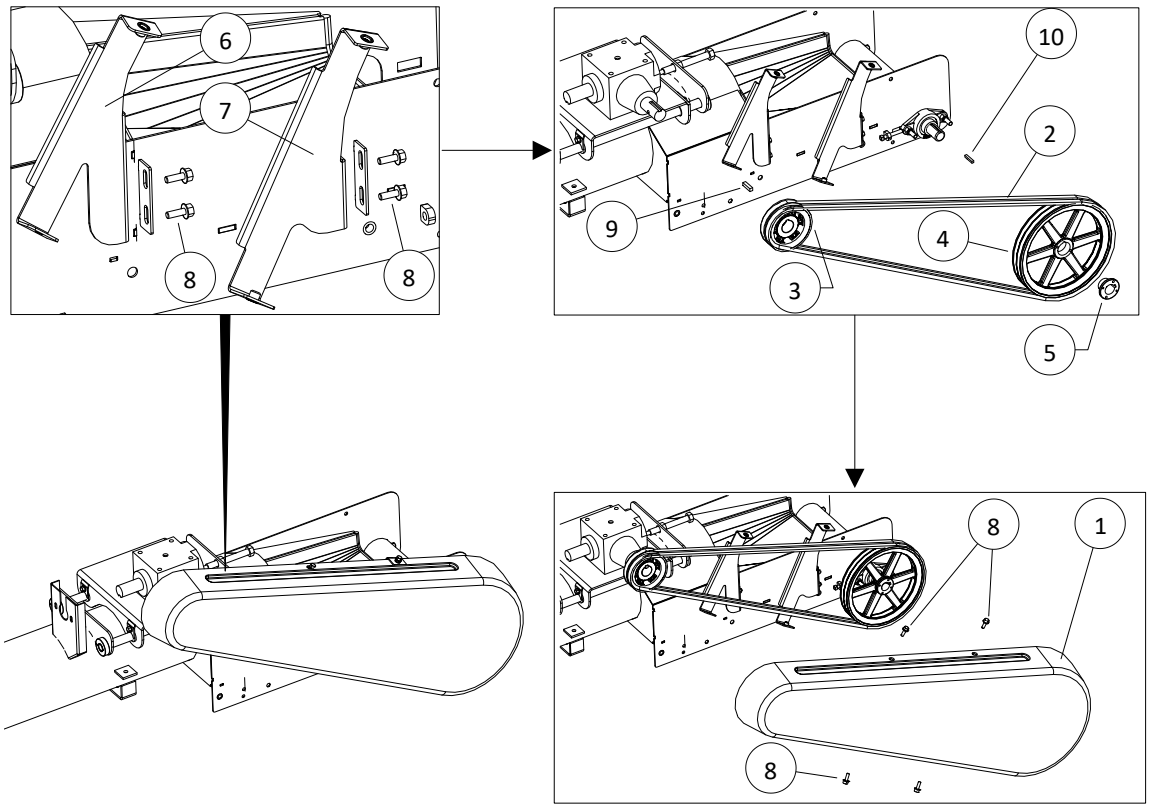


Table 7. Belt Drive Installation

Item No.	Description
1	PIT GUARD (SLOTTED)
2	BELT B103
3	PULLEY-DBL-6" W/1-1/2"BORE
4	PULLEY-DOUBLE-12"
5	HUB-H 1-1/4"
6	PULLEY GUARD HOLDER PTDFL
7	HOOD SIDE GUARD MOUNT
8	FLANGE BOLT 3/8 X 1" PLATED
9	KEY 3/8" X 3/8" X 1-1/2"
10	KEY 1/4" X 1-1/2" LONG

3.13.2 Assemble and Install the Shaft

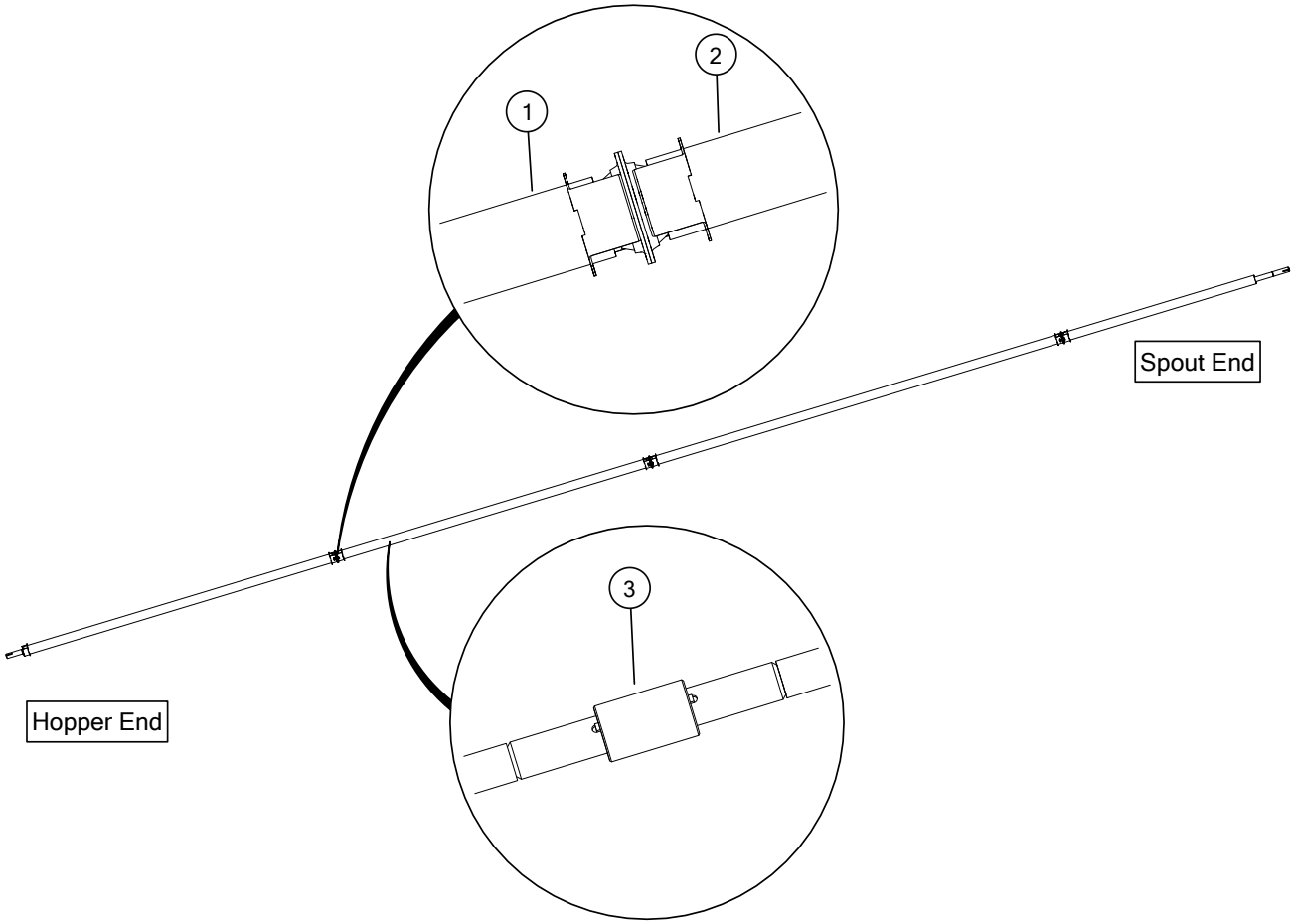
This procedure provides instructions to assemble the shaft.

To assemble and install the shaft, the following procedures must be completed:

- Assemble the shaft, bearings, and guards.
- Install the shaft.

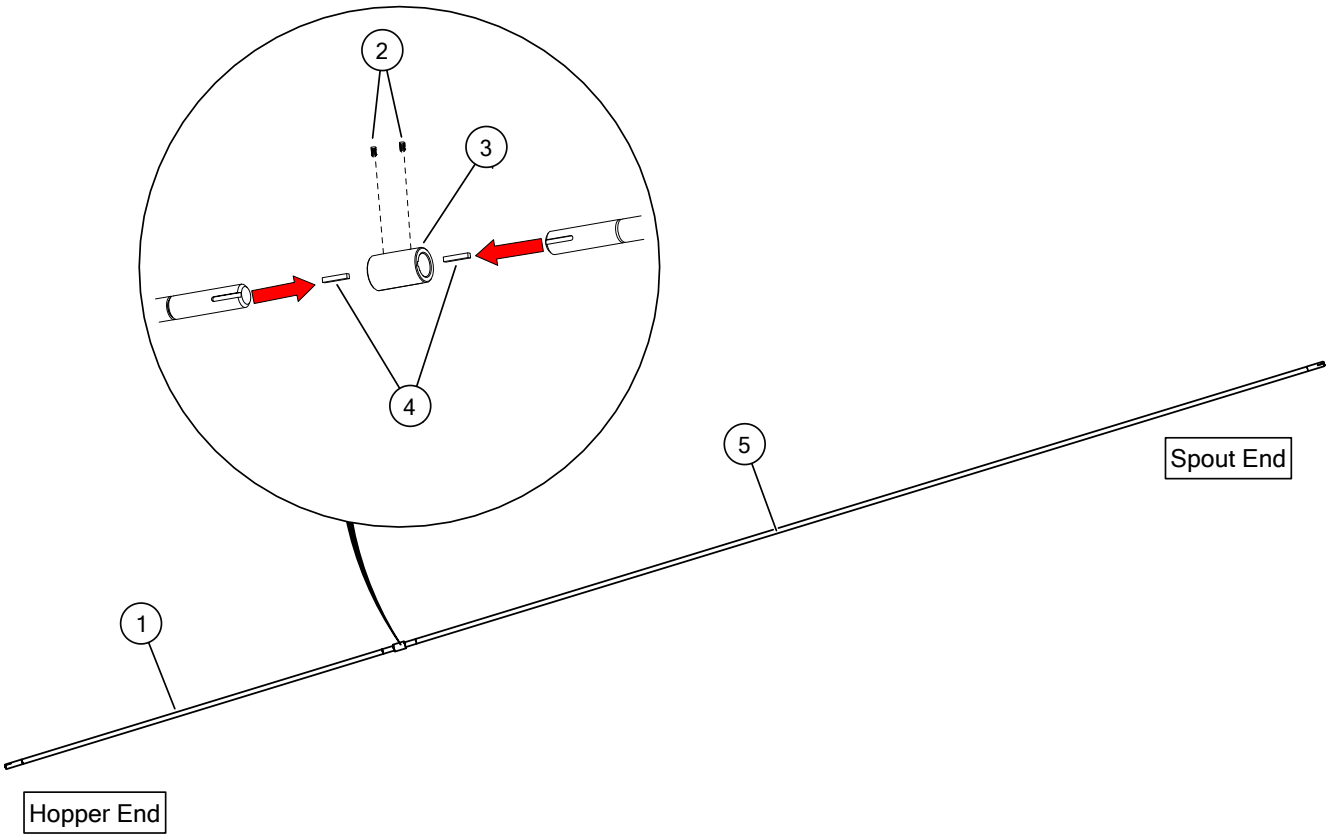
Assemble the Driveshaft

Figure 14. Fully Assembled Driveshaft



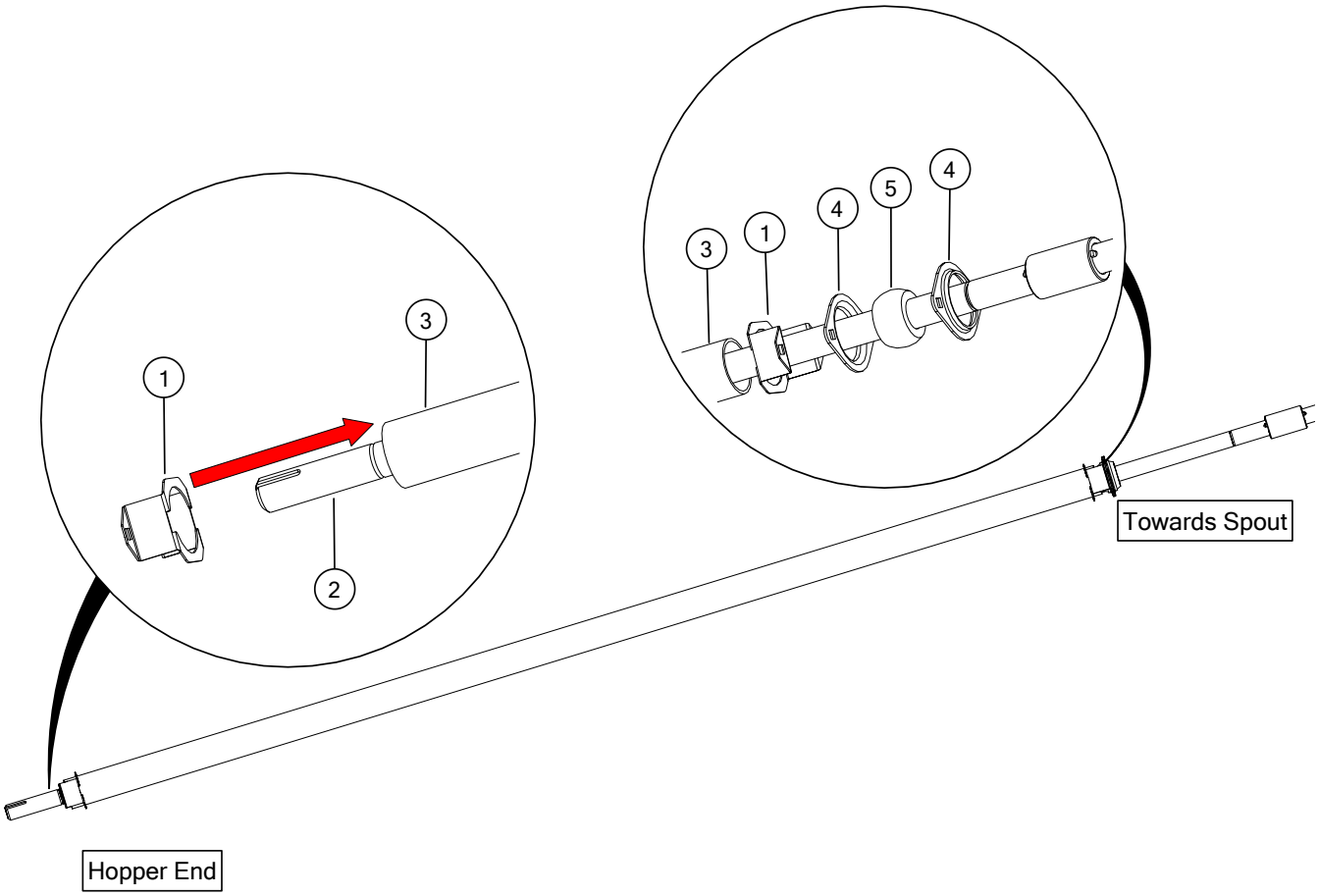
Item	Description
1	Driveshaft Guard
2	Bearing and Bracket Assembly
3	Driveshaft Joining Collar (guard missing)

Figure 15. Joining the Shaft Segments



Item	Description
1	Driveshaft Segment (medium)
2	Set Screw
3	Driveshaft Collar Joint
4	1/4" X 1–1/2" Shaft Key
5	Driveshaft Segment (long)

Figure 16. Installing the Bearing and Bracket Assemblies and the Shaft Guards

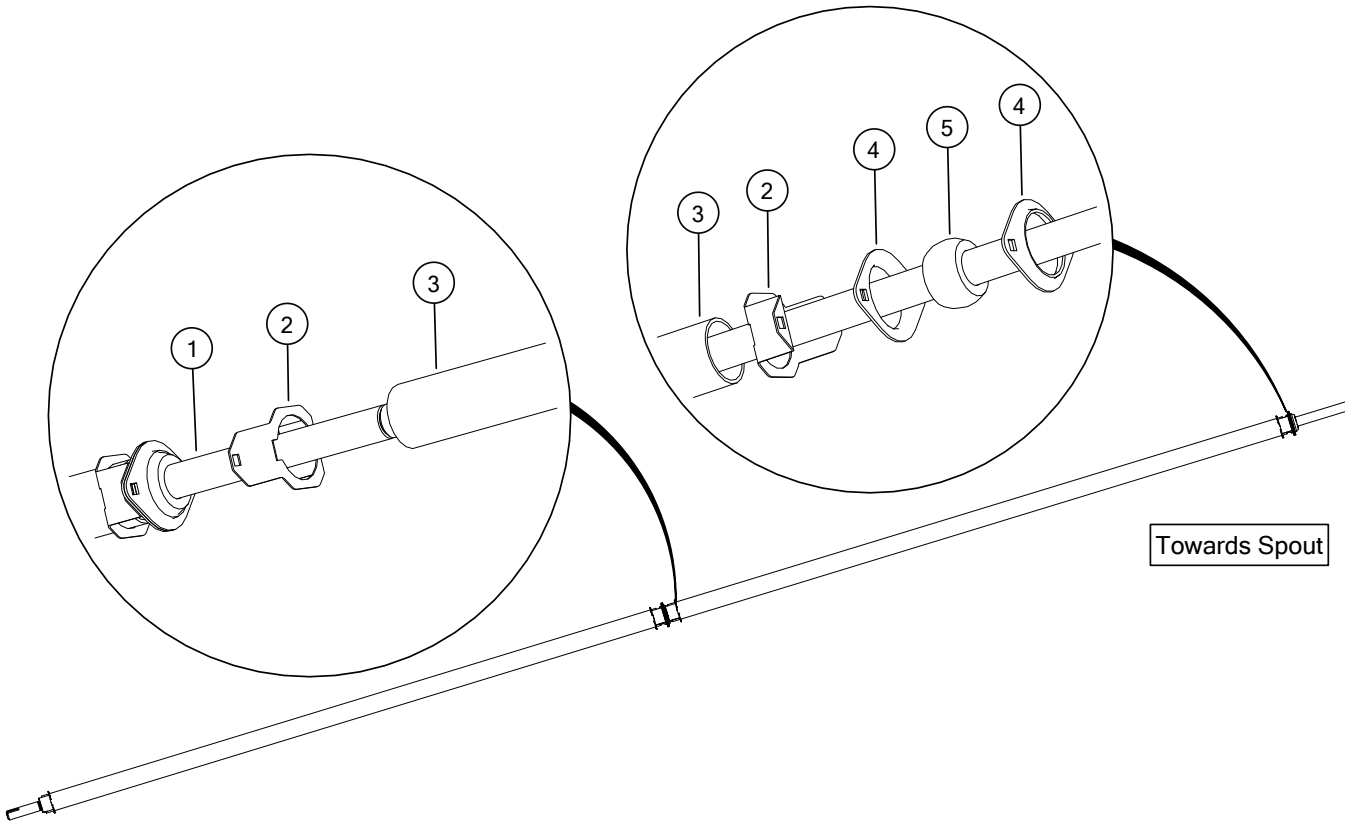


Item	Description
1	Driveshaft Guard Bracket
2	Driveshaft Segment (short)
3	85-3/8" Driveshaft Guard
4	1-1/4" Bearing Flange
5	1-1/4" Bearing

Important

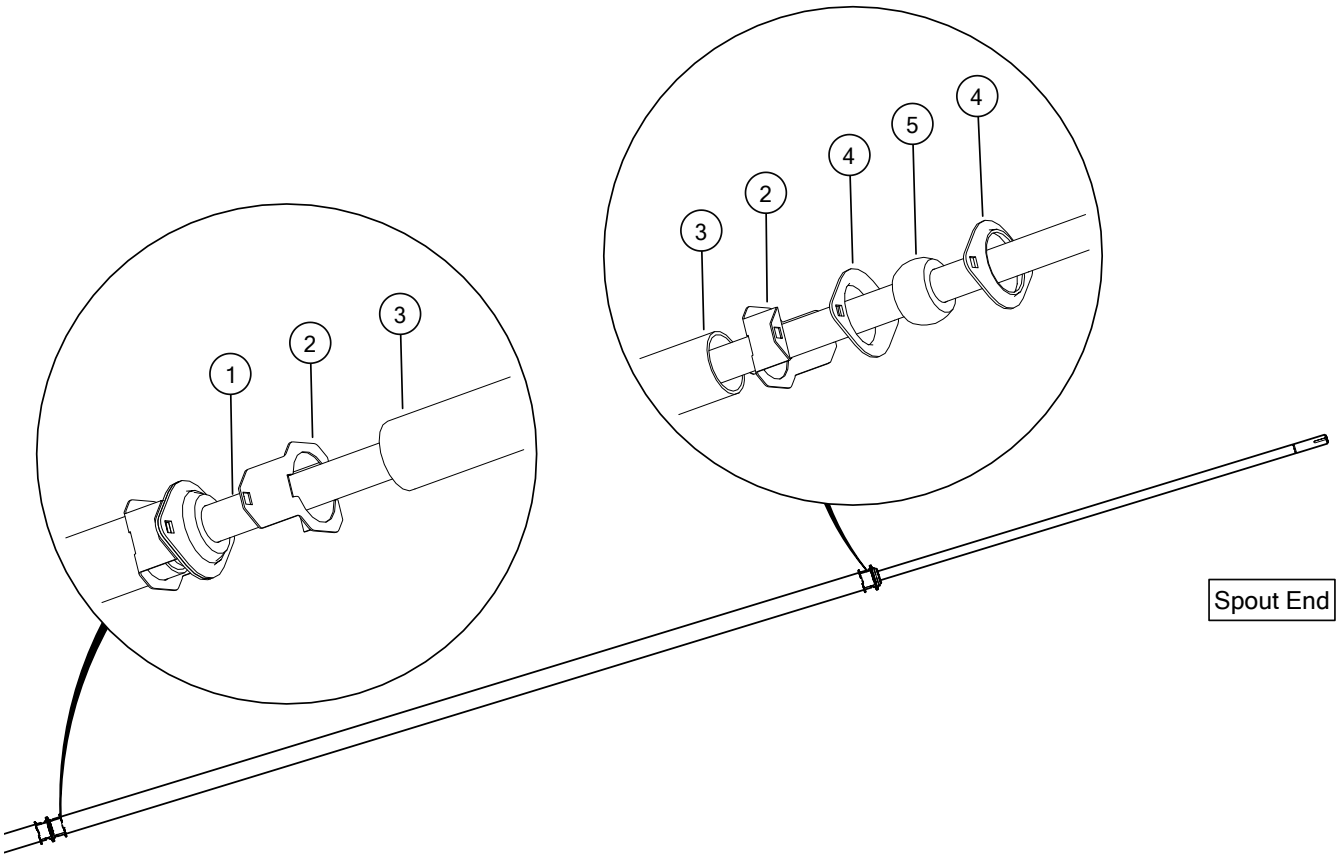
Install the driveshaft guard bracket onto the spout end of the shaft. The bearing and bearing flanges are installed when the shaft is installed onto the tube.

Figure 17. Installing the Bearing and Bracket Assemblies and the Shaft Guards



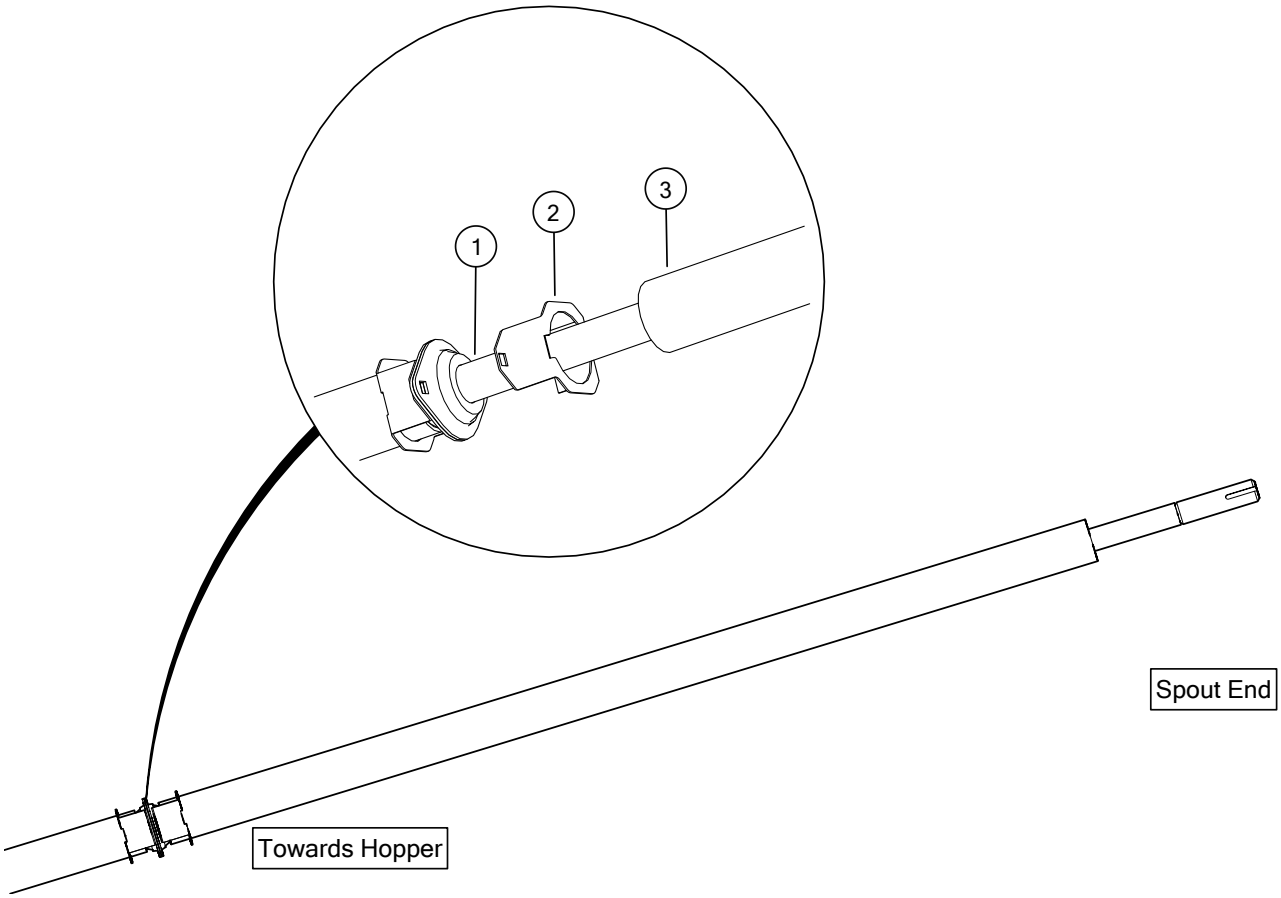
Item	Description
1	Driveshaft Segment (long)
2	Driveshaft Guard Bracket
3	112-5/8" Driveshaft Guard
4	1-1/4" Bearing Flange
5	1-1/4" Bearing

Figure 18. Installing the Bearing and Bracket Assemblies and the Shaft Guards



Item	Description
1	Driveshaft Segment (long)
2	Driveshaft Guard Bracket
3	52 5/8" Driveshaft Guard
4	1-1/4" Bearing Flange
5	1-1/4" Bearing

Figure 19. Installing the Bearing and Bracket Assemblies and the Shaft Guards (spout end)



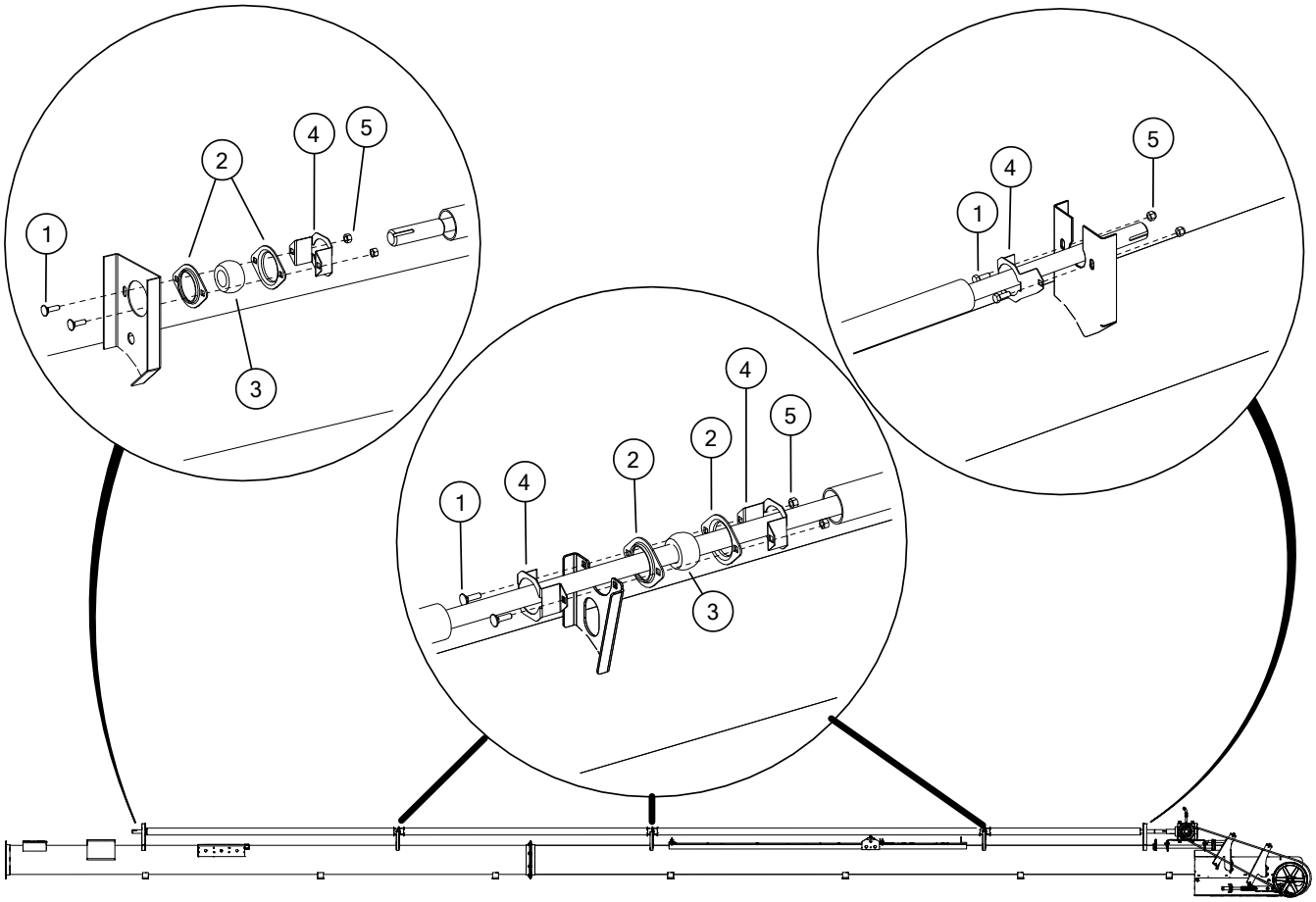
Important

Do not install the bearing, bearing flanges, and associated supports and hardware on either end of the shaft. Those items are installed when the driveshaft is placed onto the tube.

Item	Description
1	Driveshaft Segment (long)
2	Driveshaft Guard Bracket
3	Driveshaft Guard

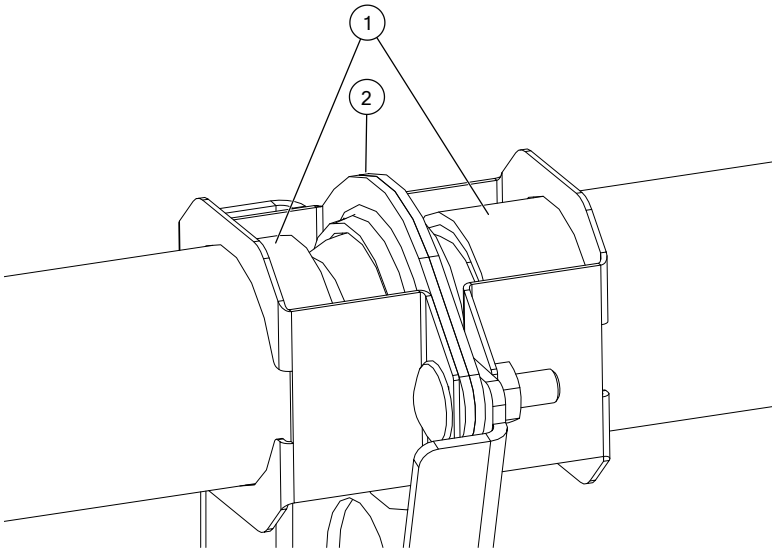
Install the Driveshaft onto the Tube

Figure 20. Installing the Driveshaft onto the Tube



Item	Description
1	3/8" X 1–1/4" Carriage Bolt (GR 5)
2	1–1/4" Bearing Flange
3	1–1/4" Bearing
4	Driveshaft Guard Bracket
5	3/8" Hex Nut (GR 8)

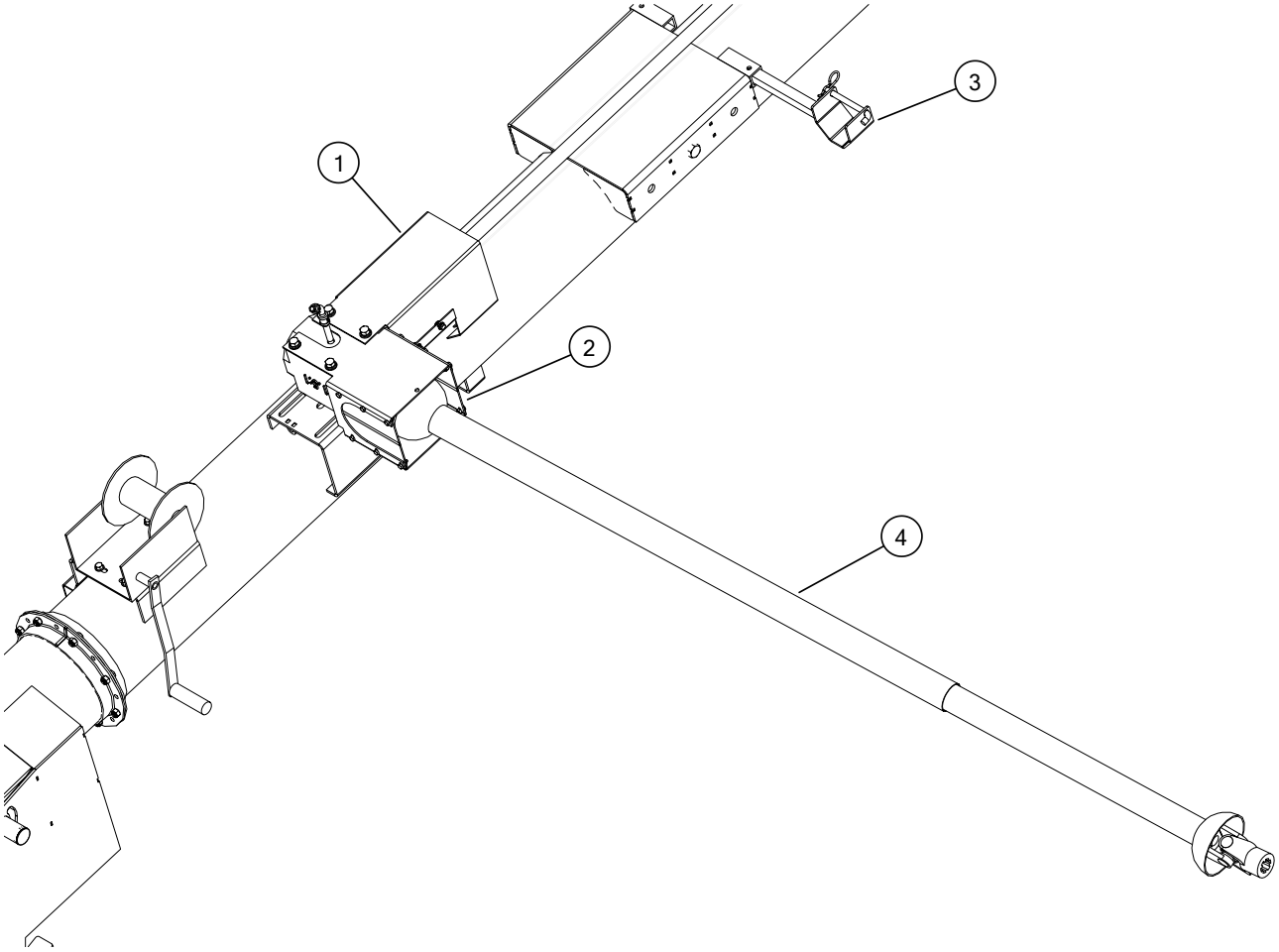
Figure 21. Visual Check



Item	Description
1	Driveshaft guards held by driveshaft guard brackets.
2	Bearing flanges fitted together at center of bearing.

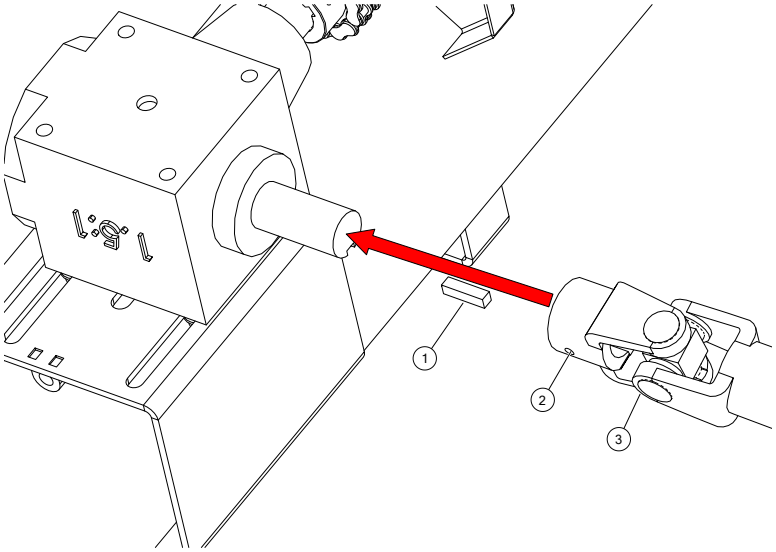
3.13.3 Install the PTO and Lower Gearbox Guards

Figure 22. Fully Installed PTO and Lower Gearbox Guards



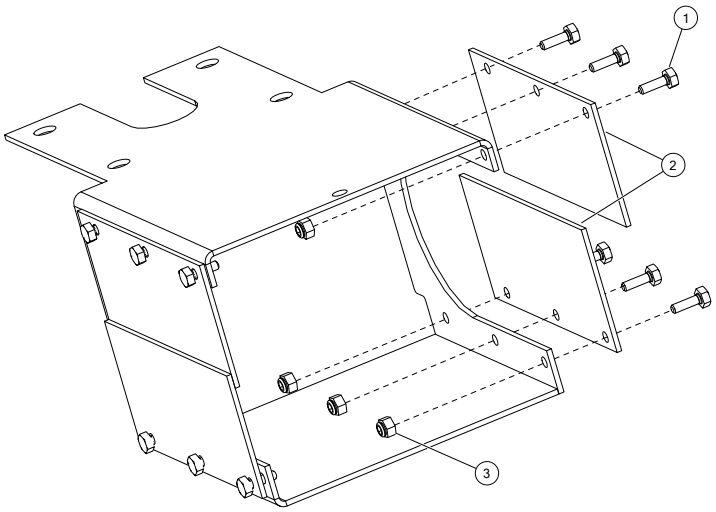
Item	Description
1	Lower Gearbox Guard
2	U-Joint Guard
3	PTO Holder
4	PTO

Figure 23. Attaching the PTO Shaft to Lower Gearbox



Item	Description
1	3/8" X 1-1/2" Key
2	U-Joint Set Screw (tighten during installation)
3	U-Joint

Figure 24. Assembling the U-Joint Guard



Item	Description
1	1/4" X 3/4" Hex Bolt (GR 5)
2	Rubber Side Guards
3	1/4" Hex Nut

Figure 25. Sliding on the U-Joint Guard

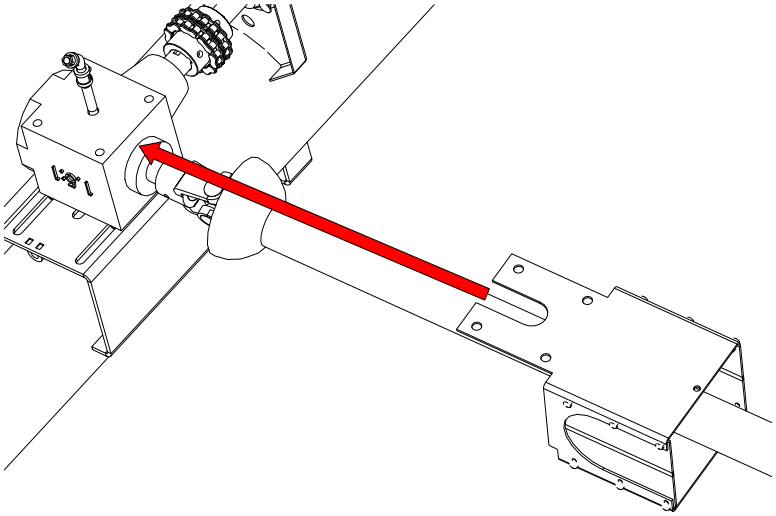
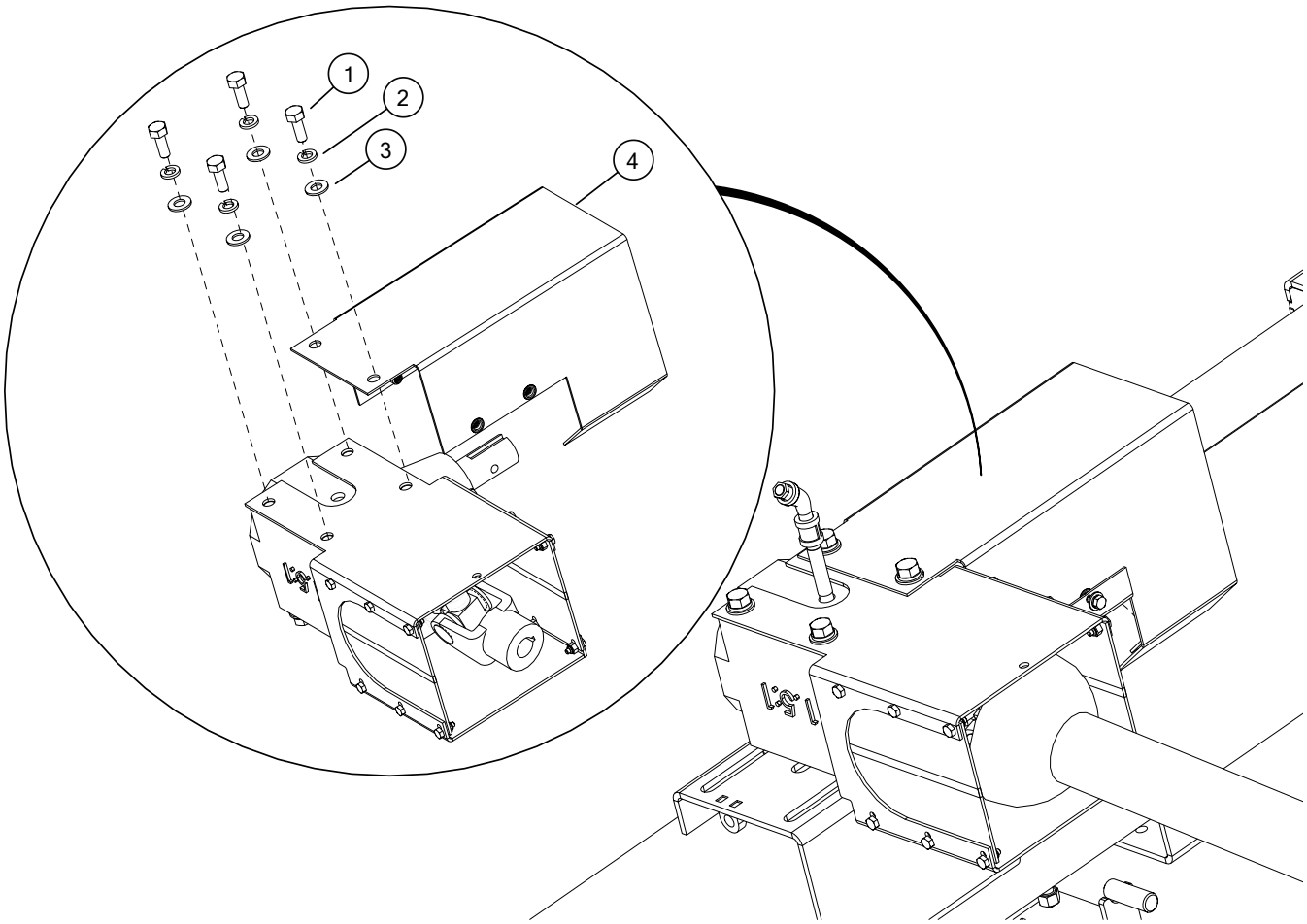
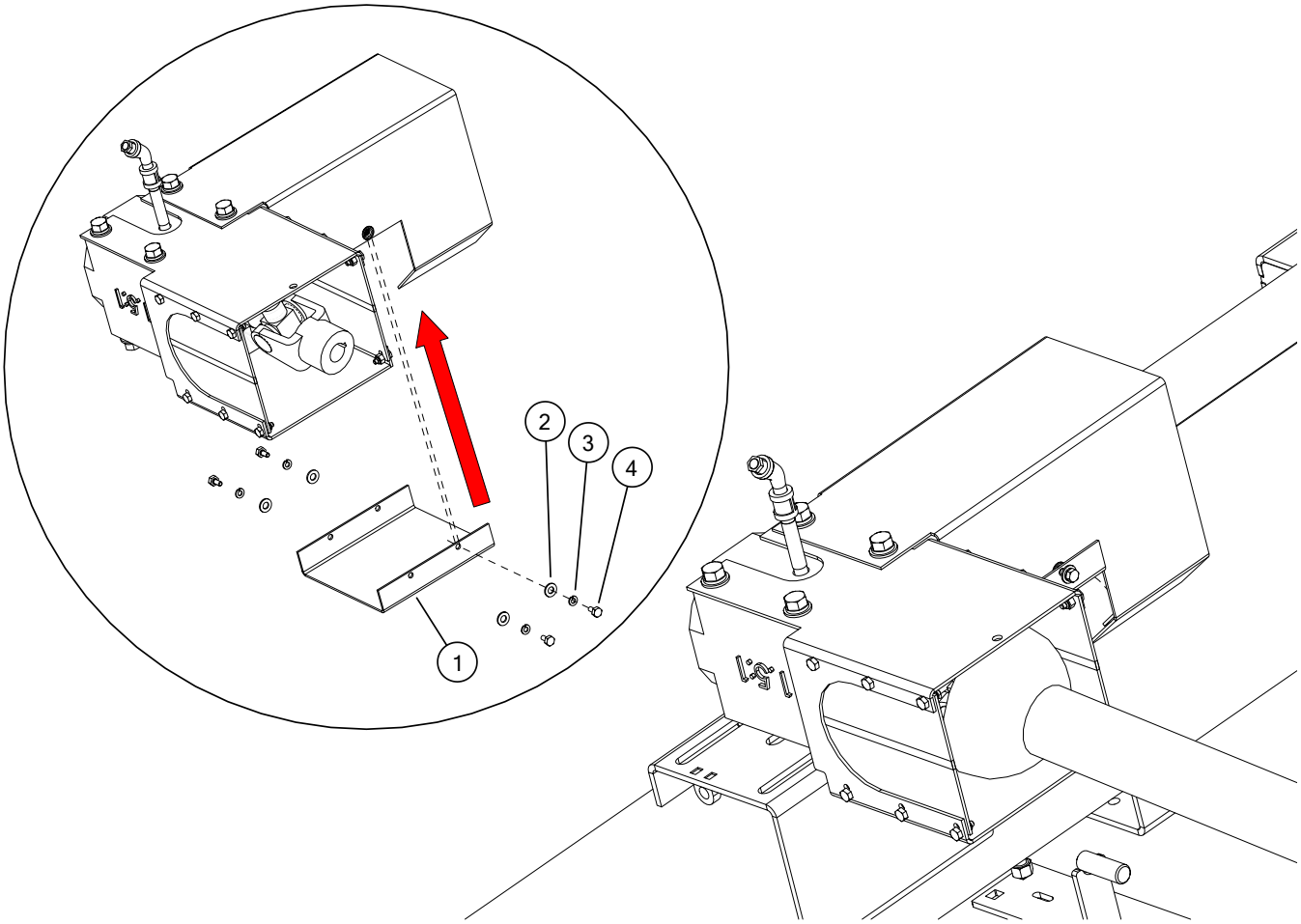


Figure 26. Installing the Lower PTO Guard (top portion)



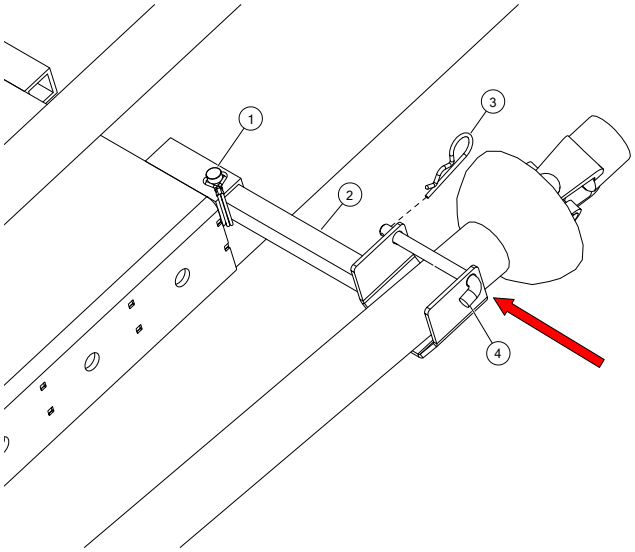
Item	Description
1	1/2" X 1–1/4" Hex Bolt (GR 8)
2	1/2" Lock Washer
3	1/2" Flat Washer
4	Lower PTO Guard (top portion)

Figure 27. Installing the Lower PTO Guard (bottom portion)



Item	Description
1	Lower PTO Guard (bottom portion)
2	1/4" Flat Washer
3	1/4" Lock Washer
4	1/4" X 1–1/2" Hex Bolt (GR 5)

Figure 28. Installing the PTO Cradle



Item	Description
1	3/8" X 1-3/8" Locking Pin
2	PTO Cradle
3	3/16" X 3–1/4" Hairpin
4	5" X 1/2" Hitch Pin

3.14. Assemble the Weather Guard

1. Install the types of weather guard sections in Table 8 which are indicated by the identifier letters as shown on your particular conveyor model schematic that follows.
2. Connect each weather guard section to the tube brackets as indicated by the position arrows on your particular conveyor model schematic that follows. Use a uni-mount cast plate (1), 3/8" x 1-1/4" capscrew (2), and 3/8" locknut (3). Leave the 3/8" locknuts loose (see Figure 29).

   NOTICE Overlap of the weather guard sections must be as shown to prevent belt damage.
3. Confirm all weather guard mount bar holes are aligned.
4. Tighten the 3/8" locknuts (3) after all of the weather guards have been installed.

Table 8. Identifiers for Types of Weather Guard Sections

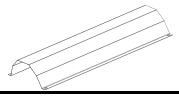
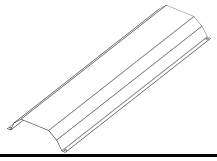
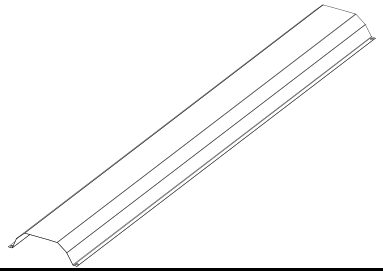
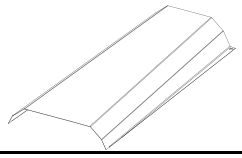
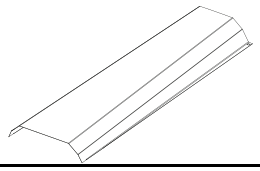
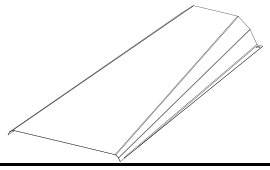
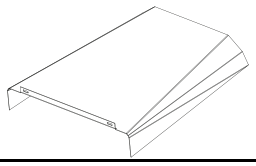
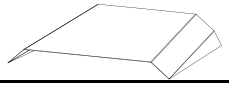
Identifier	Type of Weather Guard Section	
A	3' (0.91 m) Standard	
B	5' (1.52 m) Standard	
C	10' (3.05 m) Standard	
D	4' (1.22 m) Flared	
E	5' (1.52 m) Flared	
F	5' (1.52 m) Flat	
G	Guard -Above S-Drive	
H	Upper Transition	

Table 8 Identifiers for Types of Weather Guard Sections (continued)

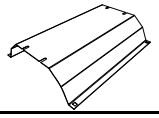
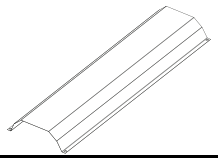
Identifier	Type of Weather Guard Section	
J	2' (0.61 m) Standard	
K	6' (1.83 m) Standard	

Table 9. Components to Install Weather Guard onto the Tube Bracket

Item	Description	Quantity
1	Uni-Mount Plate Cast	1
2	Capscrew 3/8" x 1-1/4" Flat Head Socket	1
3	Nylon Locknut 3/8"	1

Figure 29. Installing a Weather Guard Section

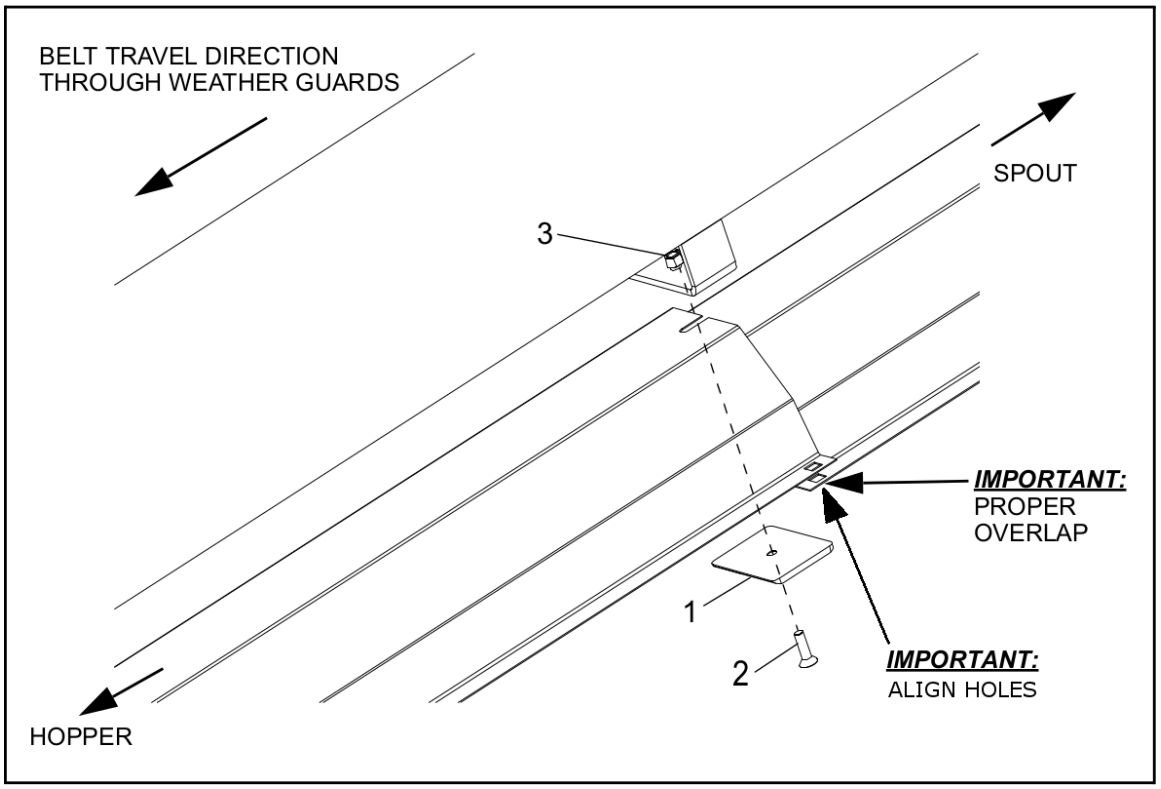
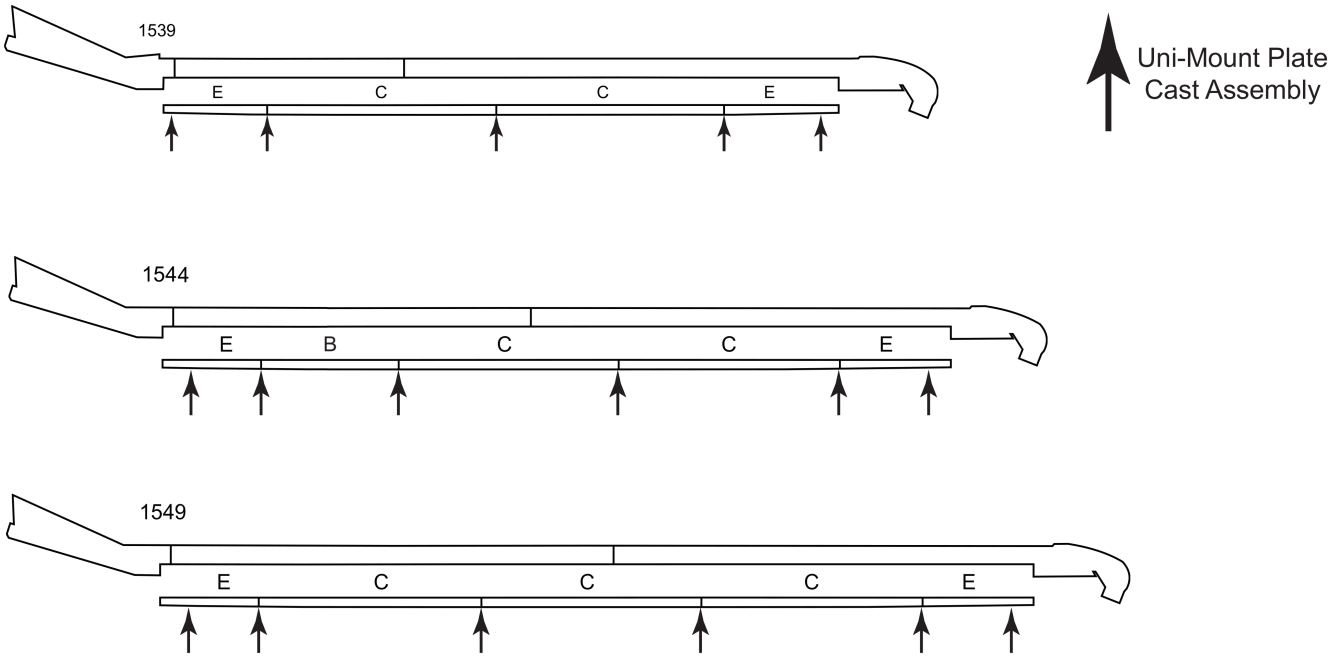


Figure 30. Weather Guard Section Locations

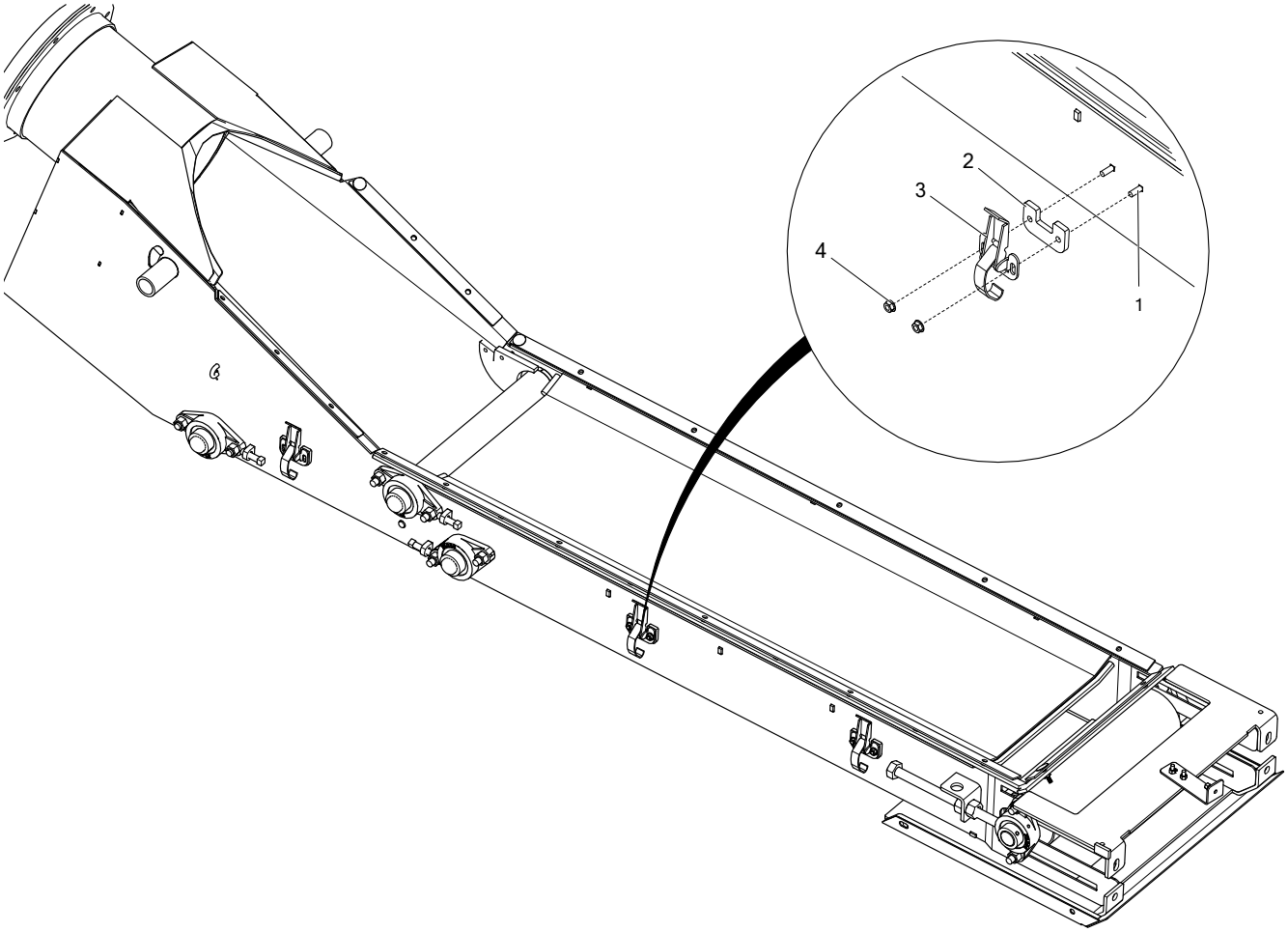


3.15. Install the Hopper Latch Hardware

Table 10. Latch Hardware

Item	Description
1	1/4" x 3/4" Carriage Bolt
2	Spacer
3	Tension Latch Clamp
4	1/4” Flanged Nut

Figure 31. Installing the Latch Hardware



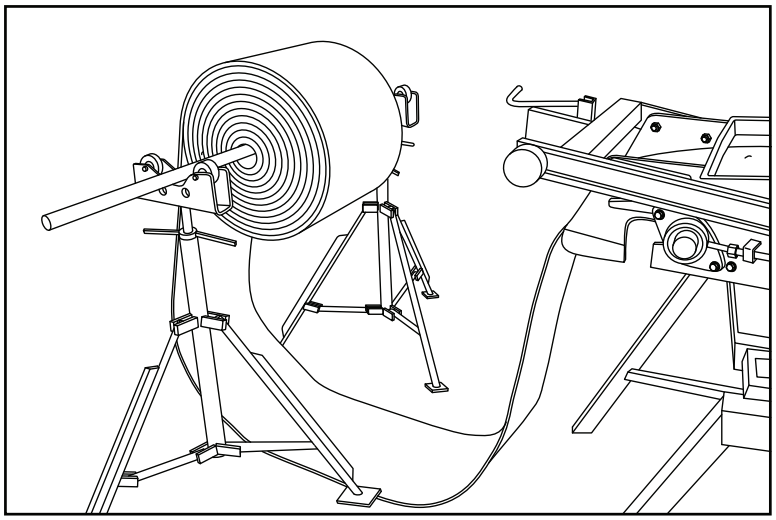
3.16. Install the Belt

This section describes how to install the conveyor belt in the tube. Refer to the packing slip for the length of the conveyor belt used in the installation.

Thread a Fish Tape through the Conveyor Tube

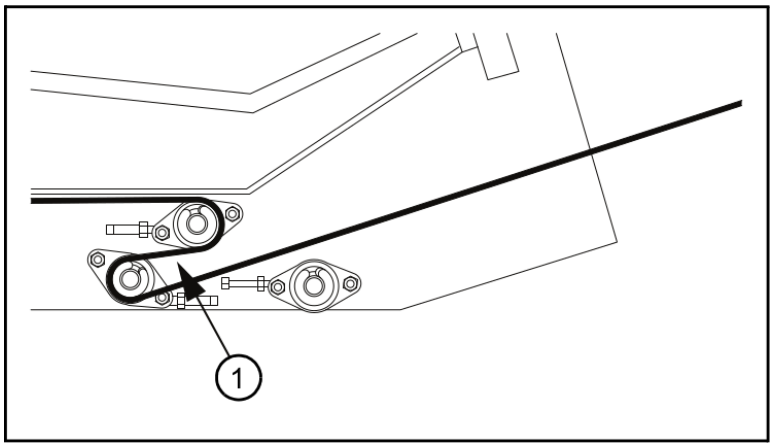
1. Place the rolled belt on a stand behind the hopper.
2. Pull the conveyor belt over the top of the hopper roller, until just inside the hopper, as shown below.

Figure 32. Rolled Belt Behind a Typical Hopper



3. Feed a fish tape in at the spout, through the tube, and into the hopper.
4. Manually thread the belt around the transition rollers (1) in the hopper.

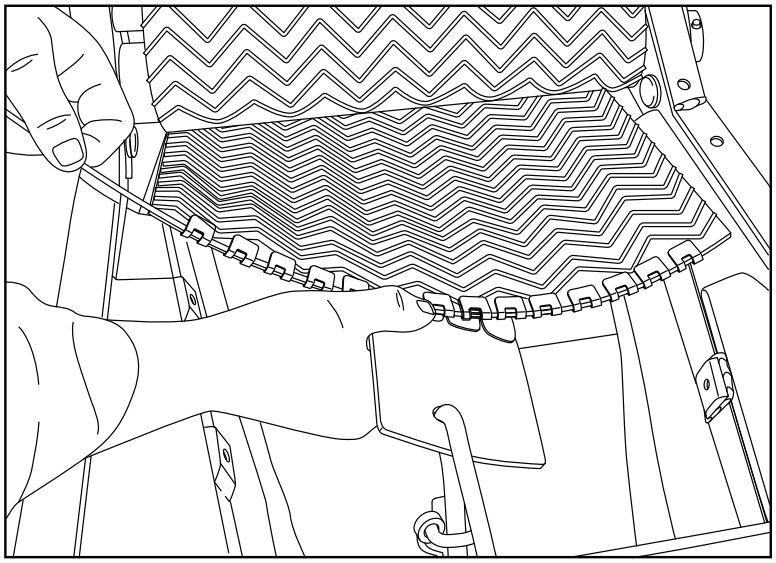
Figure 33. Belt Through Transition Rollers



Item	Description
1	Transition Roller

5. Attach the end of the belt to the fish tape using a clamp, or use a short piece of belt and thread the connector wire through the lacing clips to connect.

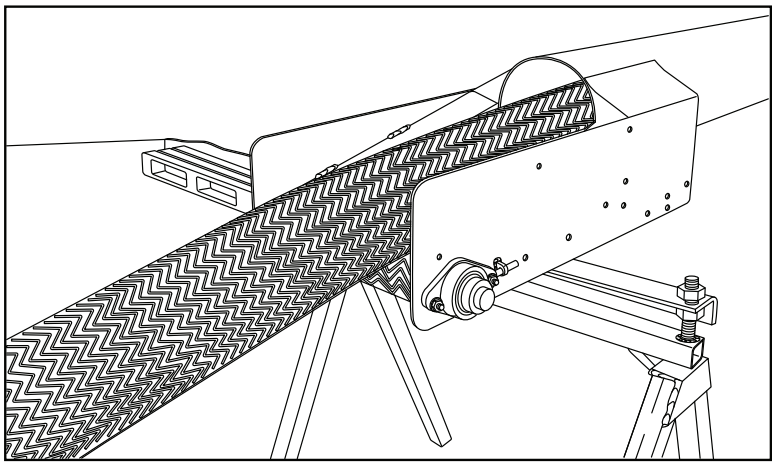
Figure 34. Attaching the Short Belt Piece to the Belt



Thread the Conveyor Belt

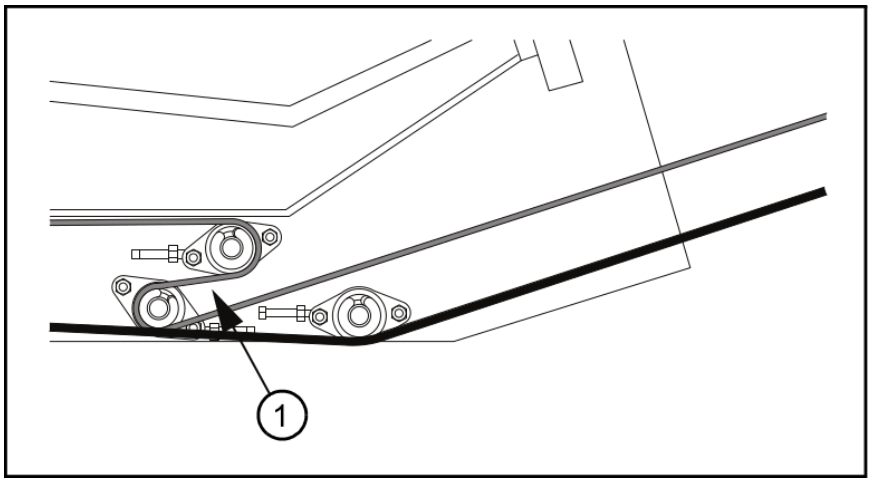
1. From the spout end, pull the fish tape until the belt emerges from the spout.

Figure 35. Conveyor Belt Pulled Through the Spout



2. Wrap the belt around the spout roller and pull it back under the conveyor tube to the hopper until approximately 6' (1.8 m) of excess belt remains on the stand behind the hopper.

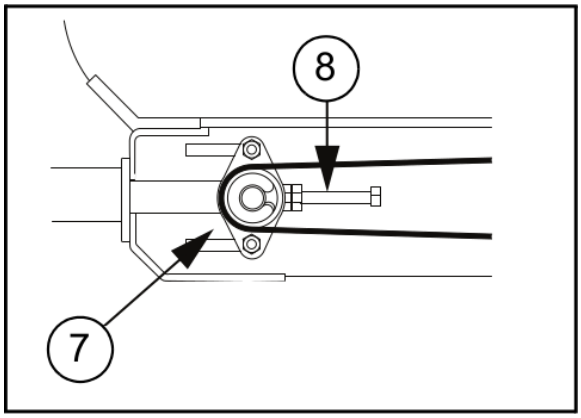
Figure 36. Conveyor Belt Bottom Path



Item	Description
1	Transition Roller

3. Wrap the remaining conveyor belt around the hopper roller (7) and under the tube.

Figure 37. Conveyor Belt Around Hopper Roller



Item	Description
7	Hopper Roller
8	Take-up Bolt

The conveyor belt is now ready to be connected.

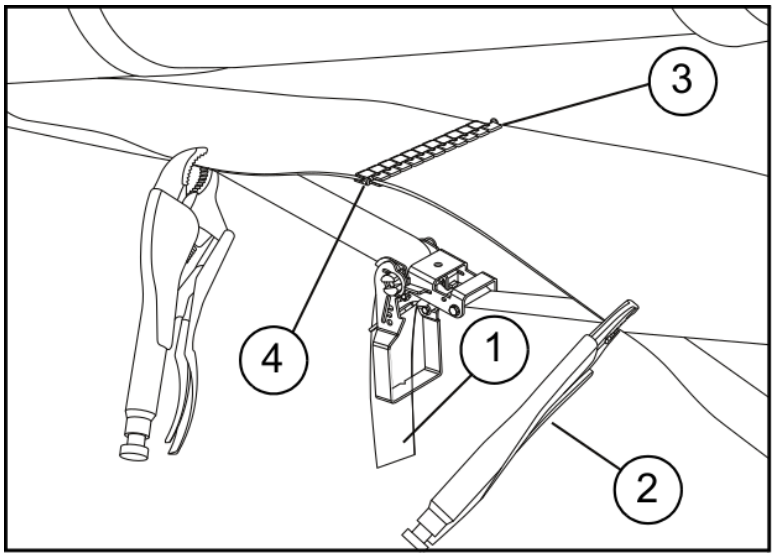
Connect the Conveyor Belt

1. Attach a strap puller (1) to each end of the belt and secure with vise-grips (2).

   NOTICE Do not attach the vise grips too tightly, this can damage the belt.

2. Pull the ends of the belt together.
3. Install connector wire through the belt lacing (3).

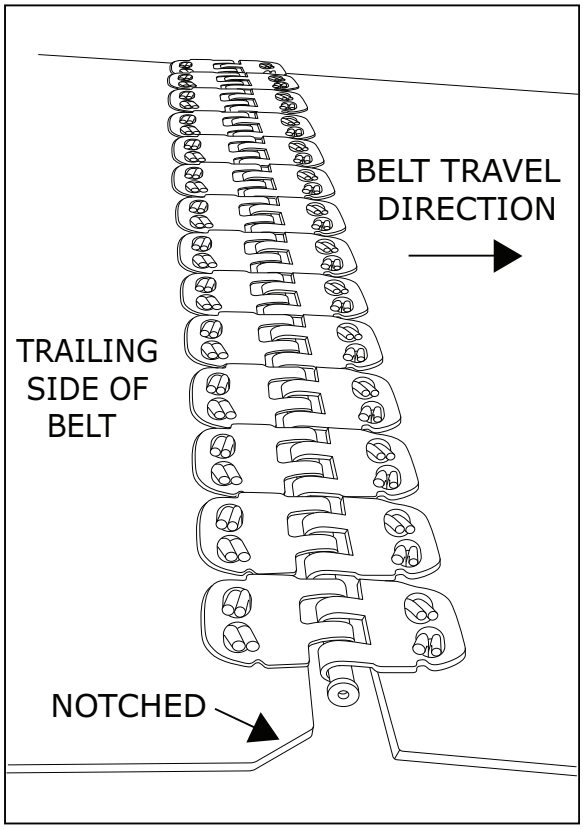
Figure 38. Using a Strap Puller



Item	Description
1	Strap Puller
2	Vise Grip
3	Belt Lacing
4	Lacing Pin

4. On both corners of the trailing edge of the belt, trim a tapered notch to prevent fraying.

Figure 39. Tapering the Trailing Edge of the Belt



Tighten the Conveyor Belt

Use the hopper roller bolts to set the belt tension.

1. Tighten the hopper roller bolts until the conveyor belt deflects 1–2” when pushed down with a 5 lb force.
2. Measure to be sure both sides are set at the same position.

The belt will require final tension and alignment after the conveyor is fully assembled. Refer to the conveyor operation manual for complete instructions.

3.17. Attach the Hopper Underside Covers

Table 11. Underside Covers

Item	Description
1	Underside Cover, Front
2	Pin Spring
3	Underside Cover, Main

Figure 40. Installing the Underside Front Cover

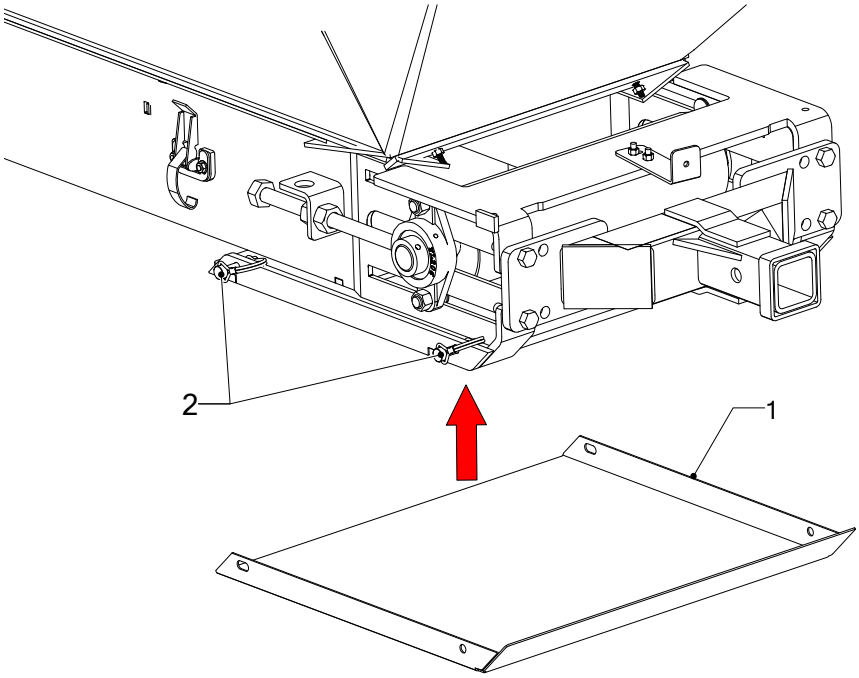
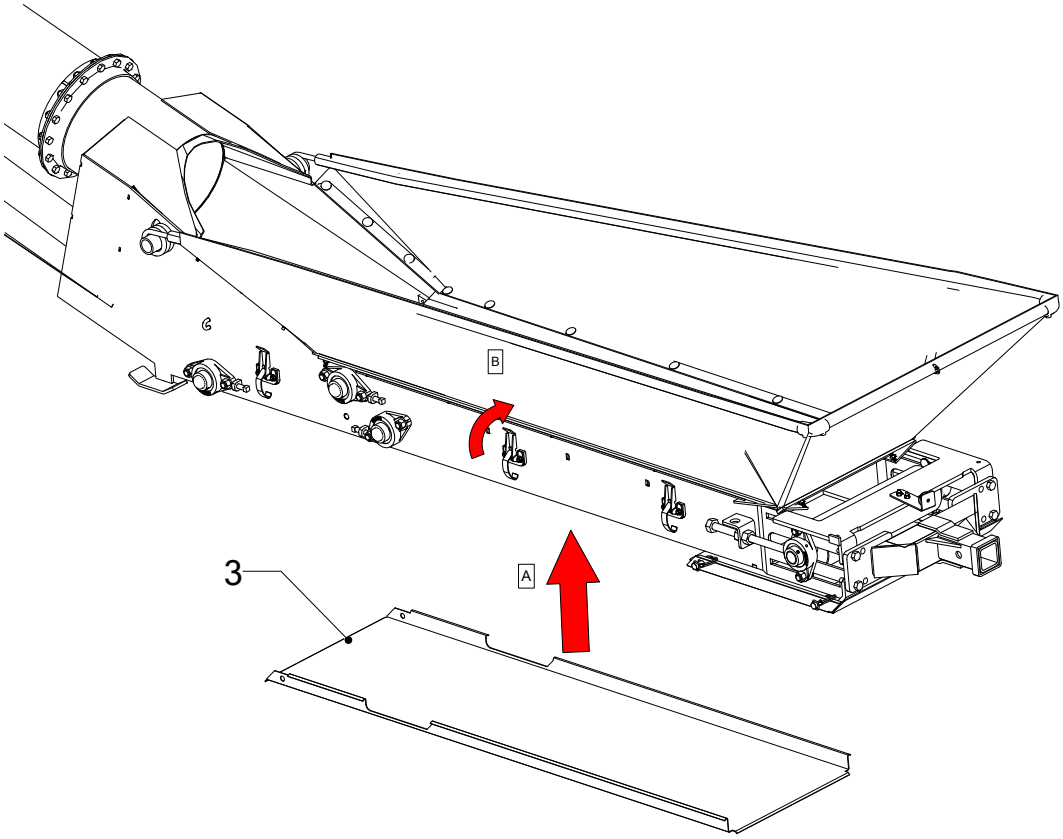


Figure 41. Installing the Underside Main Cover



3.18. Install the Top Drive Pinch Mount

1. Loosen the pinch roller bolts (6) to the end of their threads (see Figure 42).
2. Install the pinch mount (2) onto the spout assembly (1) using 1/2" x 1-1/4" bolts (3) and 1/2" nuts (4).
3. Tighten the pinch roller bolts (6) on both sides of the pinch mount until the head of the bolt contacts the pinch pipe.

Note

Ensure the bolts on the pinch roller bearings are just loose enough to allow the pinch roller the freedom to kick back 1/4" during operation when the belt seam passes through.

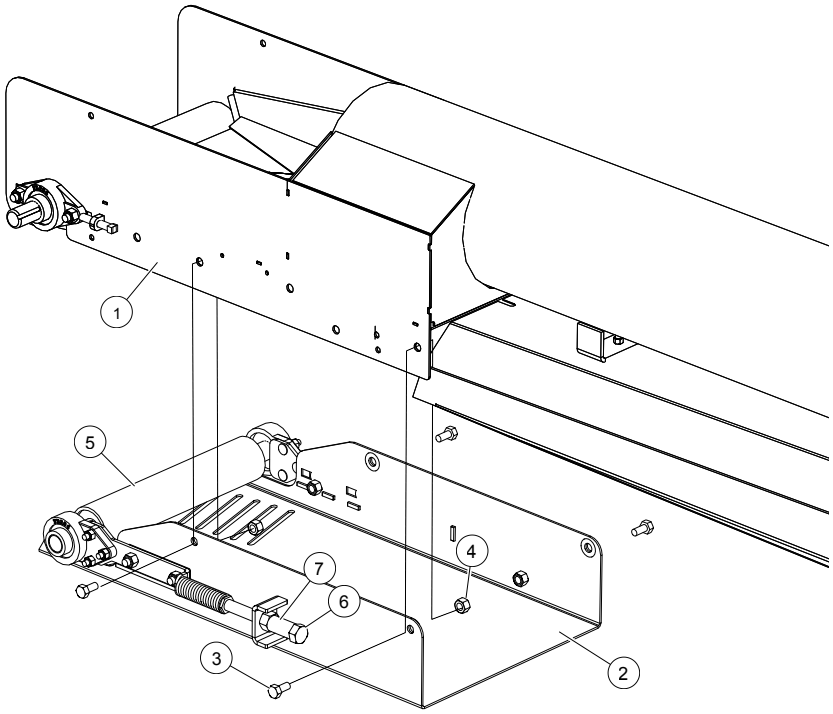
Table 12. TD Pinch Mount Components

Item	Description	Quantity
1	Spout Assembly	1
2	Top Drive Pinch Mount	1
3	Bolt 1/2" x 1-1/4"	4
4	Nut Nylock 1/2"	4
5	Pinch Roller	1

Table 12 TD Pinch Mount Components (continued)

Item	Description	Quantity
6	Pinch Roller Bolt	2
7	Pinch Pipe	2

Figure 42. Installing the TD Pinch Mount



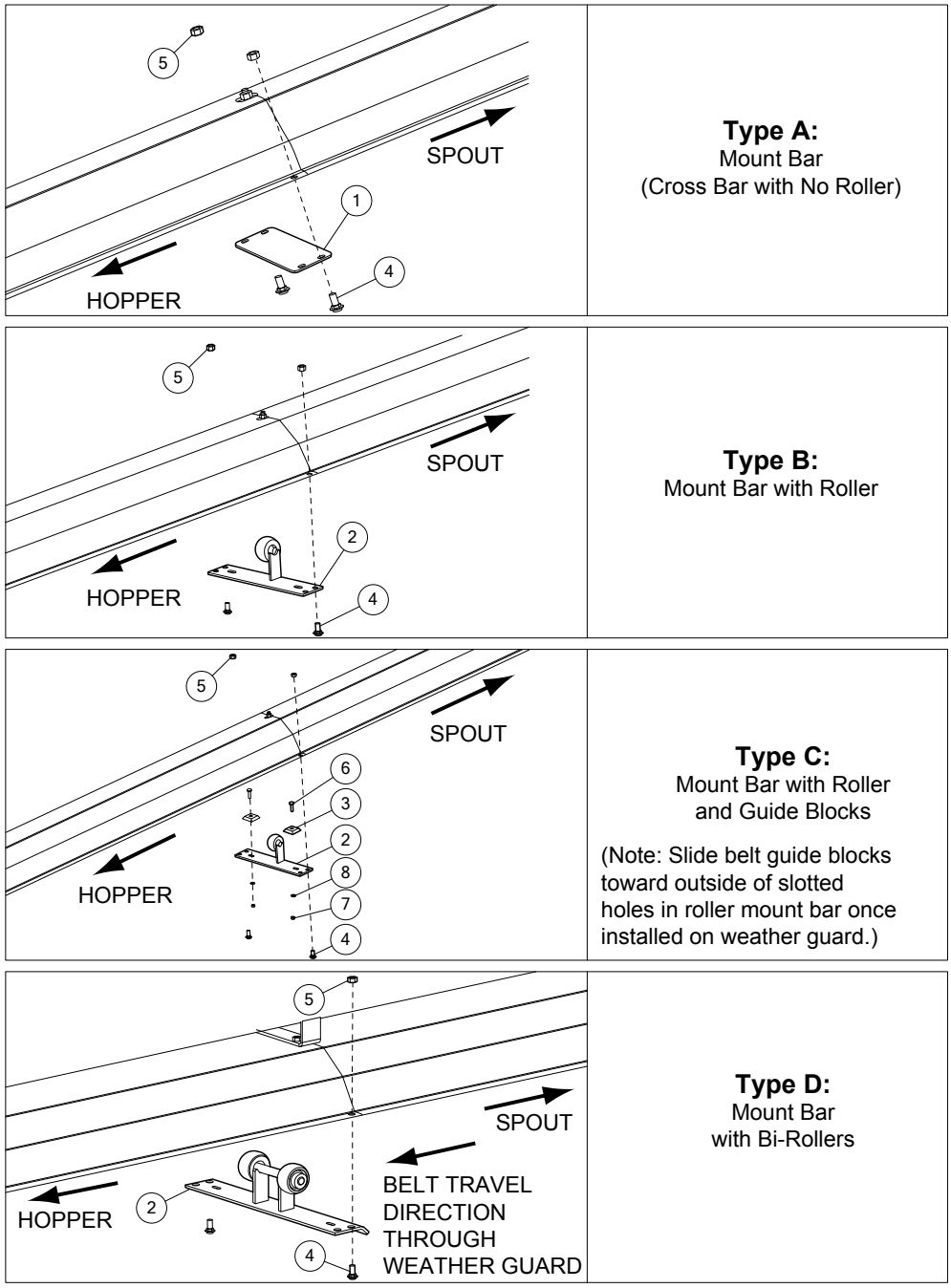
3.19. Install the Weather Guard Mount Bars

1. Install the types of mount bar assemblies in Figure 43 which are indicated by the position arrows and identifier letters as shown on your particular conveyor model schematic that follows.
2. Adjust the position on all weather guards and mount bars to achieve the best fit.
3. Tighten all nuts.

Table 13. Weather Guard Mount Bar Components

Item	Description
1	Mount Bar (Cross Bar with No Roller)
2	Mount Bar with Roller
3	Belt Guide Nylon Blocks
4	7/16" x 1" Carriage Bolt
5	7/16" Nylon Locknut
6	5/16" x 1-1/2" Carriage Bolt
7	5/16" Hex Nut
8	5/16" Lock Washer

Figure 43. Types of Mount Bar Assemblies



Type A:
Mount Bar
(Cross Bar with No Roller)

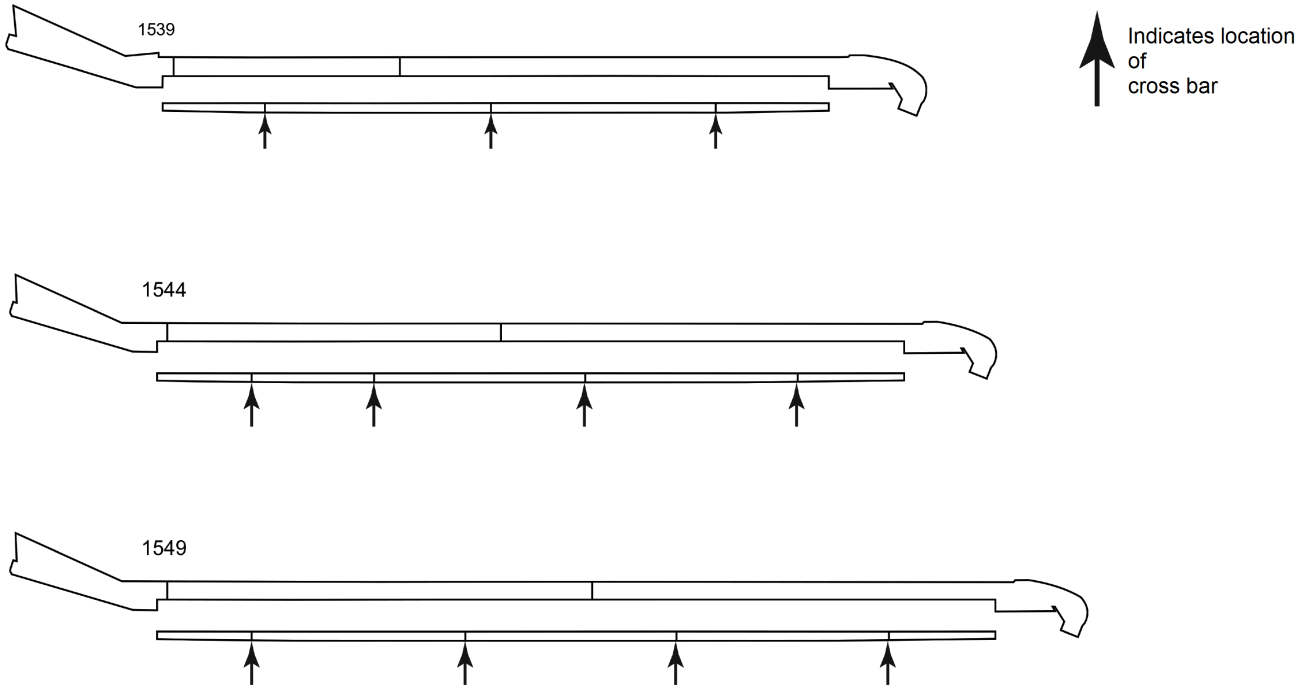
Type B:
Mount Bar with Roller

Type C:
Mount Bar with Roller
and Guide Blocks

(Note: Slide belt guide blocks toward outside of slotted holes in roller mount bar once installed on weather guard.)

Type D:
Mount Bar
with Bi-Rollers

Figure 44. Mount Bar Schematic Diagram



3.20. Install the Collapsible Hopper Cloth

Install the Flashing

1. Lay the front flashing (1) on the hopper while ensuring it is flush with the edge of the main hopper frame (see Figure 45).

   Note

   The textured side of the flashings should be facing down.

2. Install transition flashing (3) using 1/4" x 1" self-tapping screws (4), 1/4" flat washers (5), 1/4" x 1-1/4" flange bolts (6), and 1/4" hex nuts (7).
3. Lay the side flashings (2) on the hopper while ensuring they are flush with the edge of the main hopper frame and overlapping the front flashing.

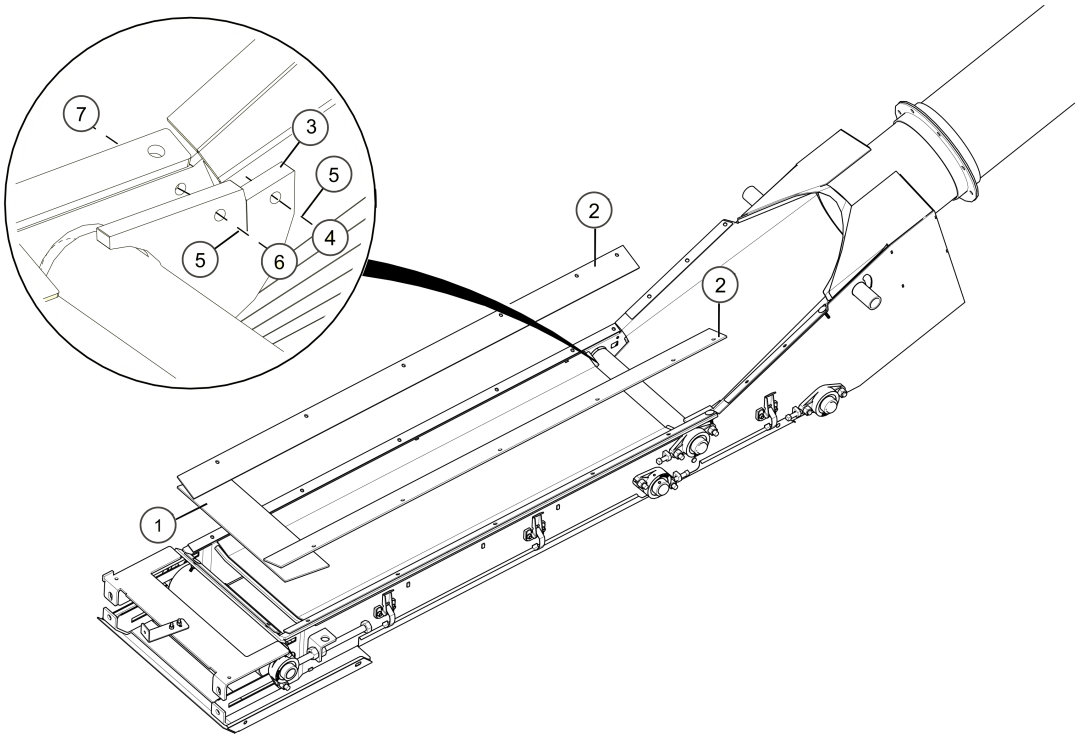
Table 14. Flashings

Item	Description
1	Front Flashing
2	Side Flashing
3	Transition Flashing
4	1/4" x 1" Self Tapping Screw
5	1/4" Flat Washer

Table 14 Flashings (continued)

6	1/4" x 1-1/4" Flange Bolt
7	1/4" Hex Nut

Figure 45. Flashings



Install the Hopper Spring

1. Slide hopper spring over tubes on the sides of the hopper. See Figure 46 for correct spring orientation.
2. Rotate the spring so that the loop of the spring coil is locked in place by the slot. See Figure 47.

Figure 46. Installing the Hopper Springs

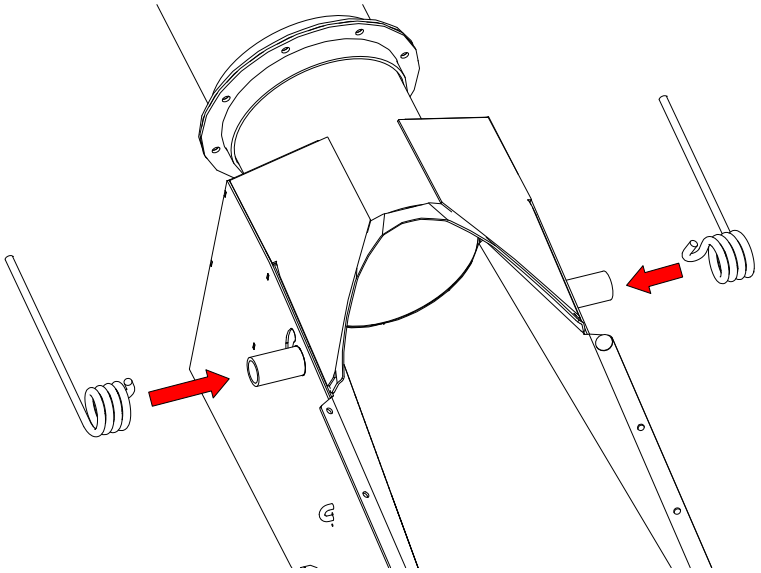
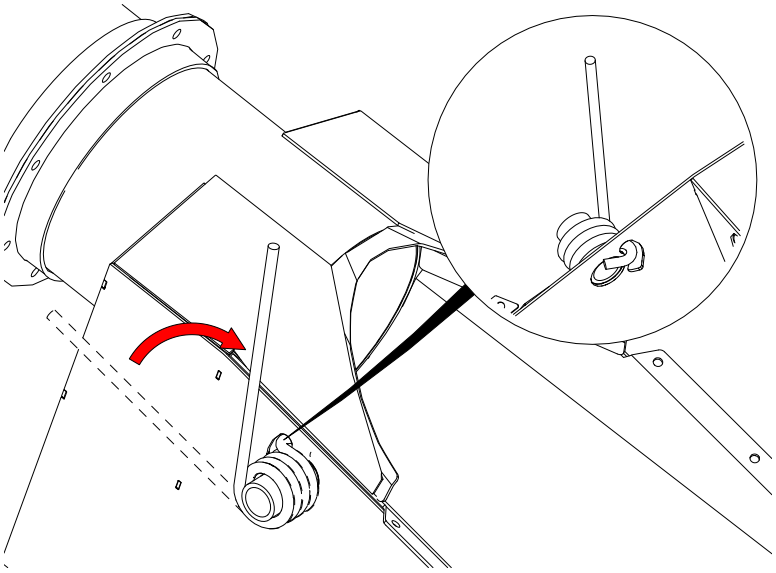


Figure 47. Lock the Hopper Spring



Install the Hopper Cloth

1. Slide the tubes (1, 2) into the hopper cloth (4).
2. Connect the front corners with the slip-on rail fittings (3). Orient the fittings so that the Allen screws are facing down. See Figure 48.

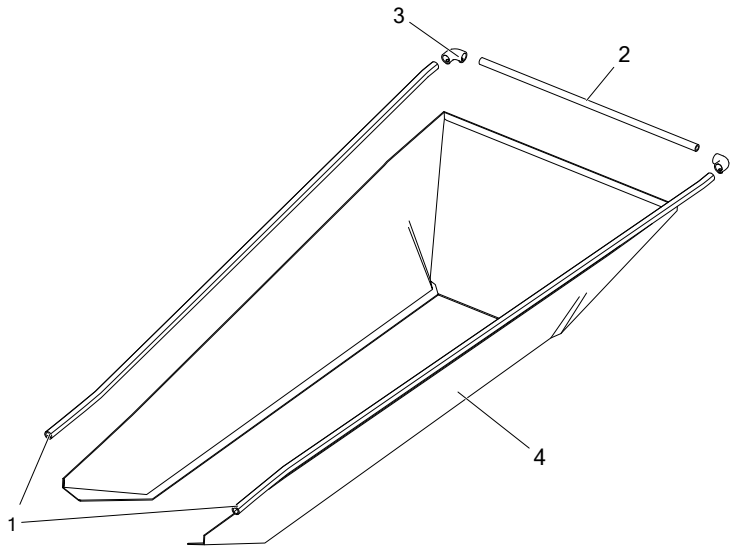
Table 15. Components for Installing the Hopper Cloth onto the Conveyor

Item	Description	Quantity
1	1/2" Pipe Sch 80 (Side)	2
2	1/2" Pipe Sch 80 (Front)	1
3	1/2" Slip-on Rail Fittings	2

Table 15 Components for Installing the Hopper Cloth onto the Conveyor (continued)

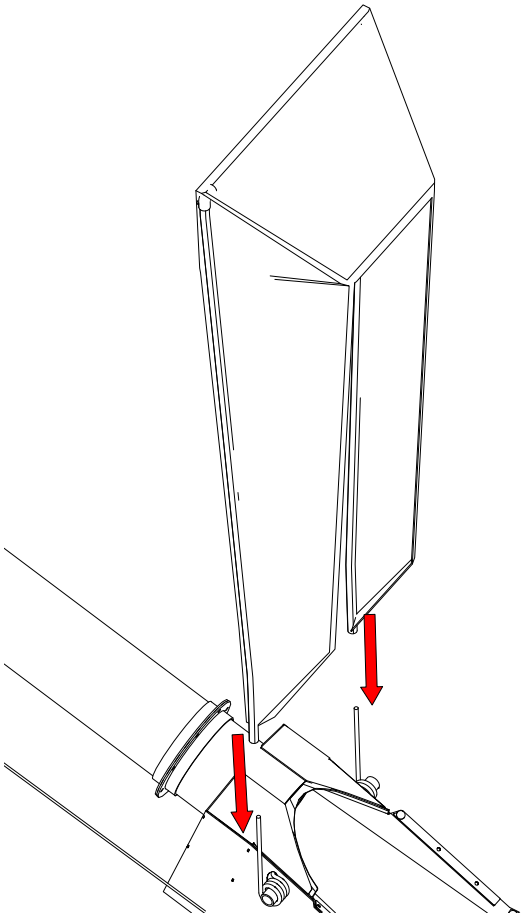
Item	Description	Quantity
4	Hopper Cloth	1
5	1/4" x 1-1/4" Elevator Bolt	20
6	1/4" Nut	20
7	Split Loom (length in feet)	19

Figure 48. Installing the Hopper Cloth Tubes



3. Tighten the Allen screws to secure the tubes in place.
4. Slide the open end of the tubes (1) over the hopper springs. See Figure 49.

Figure 49. Installing the Hopper Cloth

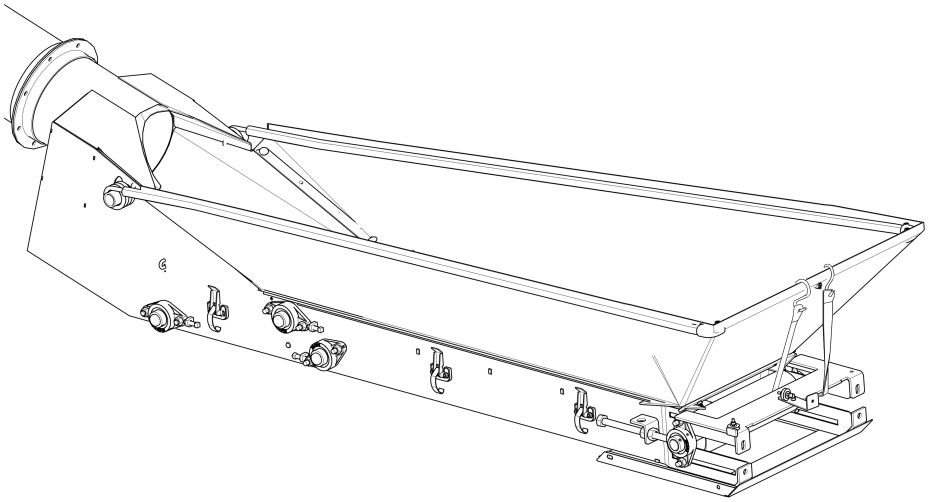


5. Pull the upper front frame down until the bottom of the cloth touches the front flashing, and hold it in place with a bungee cord around the front frame of the hopper weldment (see Figure 50).

   Note

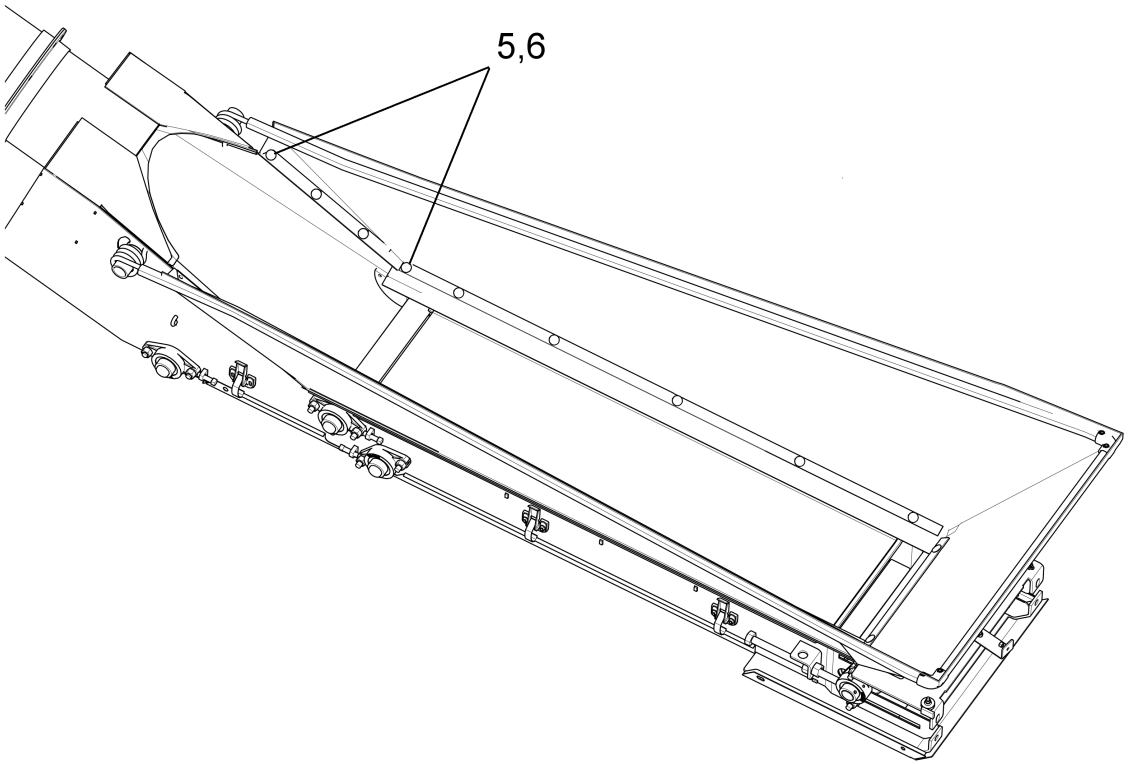
   The length of the upper side frames provides leverage to pull the upper front frame down against the opposing torque of the springs.

Figure 50. Holding Upper Frame with Bungee Cord



6. Attach the hopper cloth to the conveyor (see Figure 51):
   - First, attach the front of the hopper cloth to the front flashing. Afterward, attach the sides.
   - Drill through the hopper cloth and use the existing holes as a guide through the lower frames, flashings, and hopper weldment.
   - Fasten using 1/4" x 1-1/4" elevator bolts (5) and 1/4" nuts (6).

Figure 51. Installing the Hopper Cloth onto the Conveyor



7. Open split loom (7) along the slit and snap over the upper frame to secure hopper cloth.

3.21. Install the Collapsible Hopper Cloth Controls

Install the Handle

1. Attach the hopper handle (1) to the handle mount using a 3/8" x 1–1/2" bolt (2), 3/8" nylon washer (3), and two 3/8" hex nuts (4) (see Figure 52).

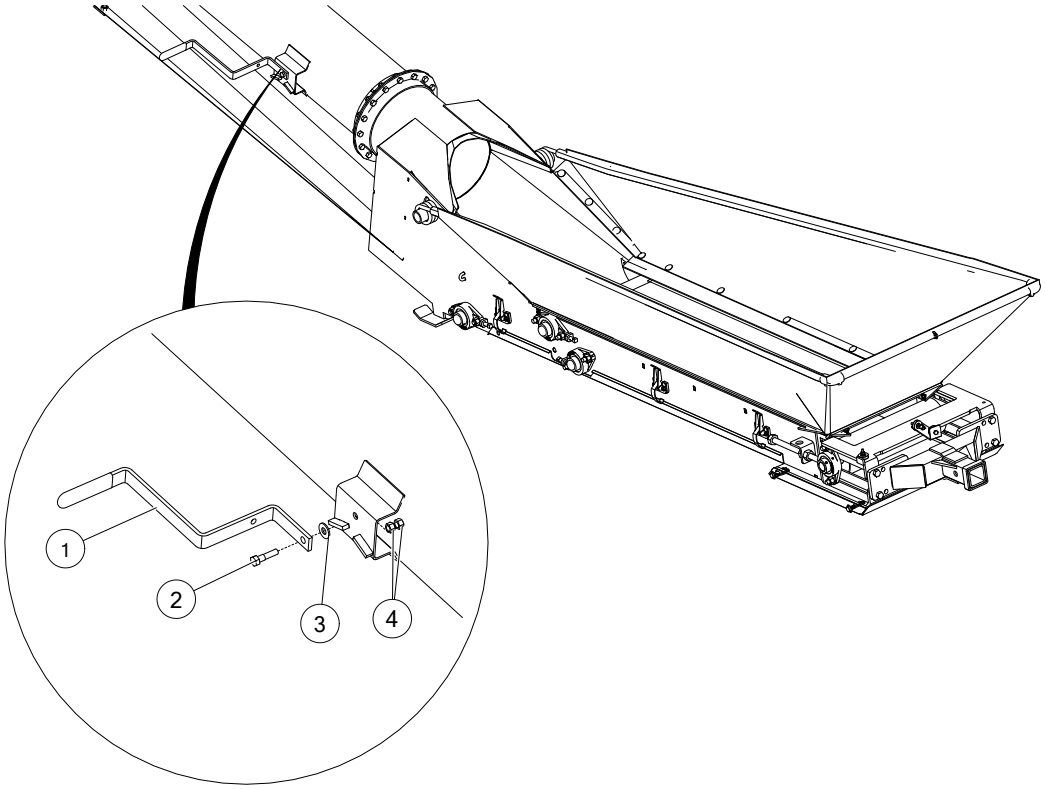
   Note

   Ensure the handle can pivot after tightening the bolt.

Table 16. Handle Components

Item	Description
1	Hopper Handle
2	3/8" x 1–1/2" Hex Bolt
3	3/8" Nylon Washer (USS)
4	3/8" Hex Nut

Figure 52. Installing the Handle



Install the Cable and Clamps

1. Point the hopper handle toward the hopper (see Figure 53).
2. Secure the cable (1) to the handle with a cable clamp (2).
3. Route the cable through the cable rung (3) and around the cable sheaves.

4. Attach a 7/8" cable clamp (4) to the front upper frame using one 5/16" x 1" bolt (5), one 5/16" nut (6) and two 5/16" flat washers (7). See Figure 54.
5. Loop the cable (1) around the 5/16" x 1" bolt (5) and secure with 1/4" cable clamp (2).
6. Test the function of the collapsible hopper cloth controls by raising and lowering the handle. Adjust cable tension as required.

Table 17. Cable and Clamp Components

Item	Description
1	1/8" Cable 13' [4.0 m] or 17' [5.2 m] depending on model
2	1/4" Cable Clamp
3	Cable Rung
4	7/8" Cable Clamp
5	5/16" x 1" Bolt Gr8 Plated
6	5/16" Nylon Locknut Gr8
7	5/16" Flat Washer Plated USS

Figure 53. Installing the Cable and the Clamps

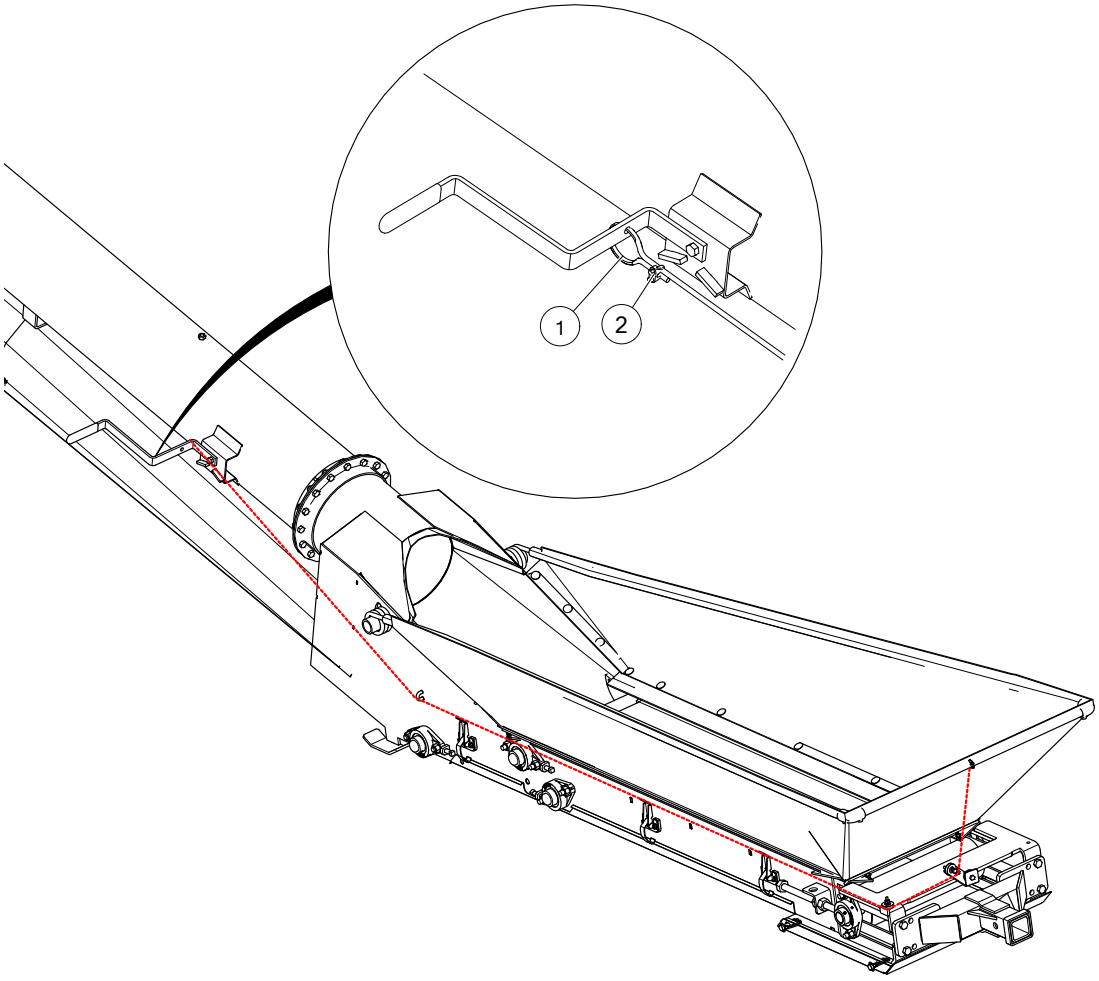
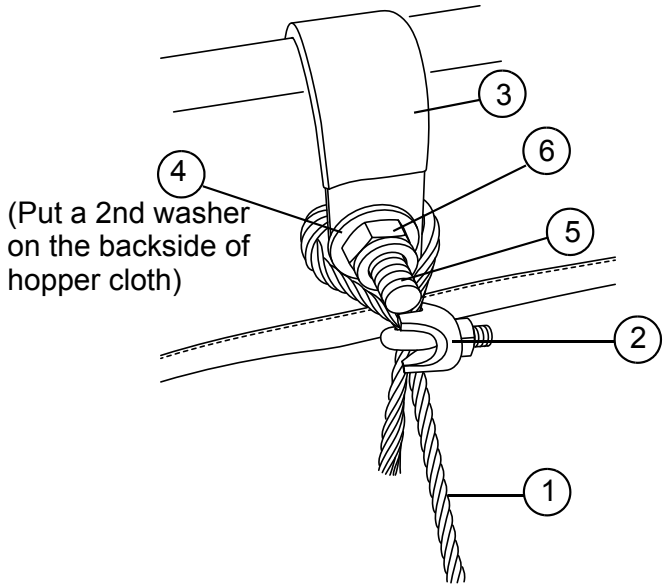


Figure 54. Attaching the Cable to the Hopper Frame



3.22. Attach the Angle Indicator

Attach the angle indicator bracket (1) to the weather guard bracket using plate (2), 1/4" x 3/4" carriage bolts (3) and 1/4 flanged nuts (4). See Figure 55.

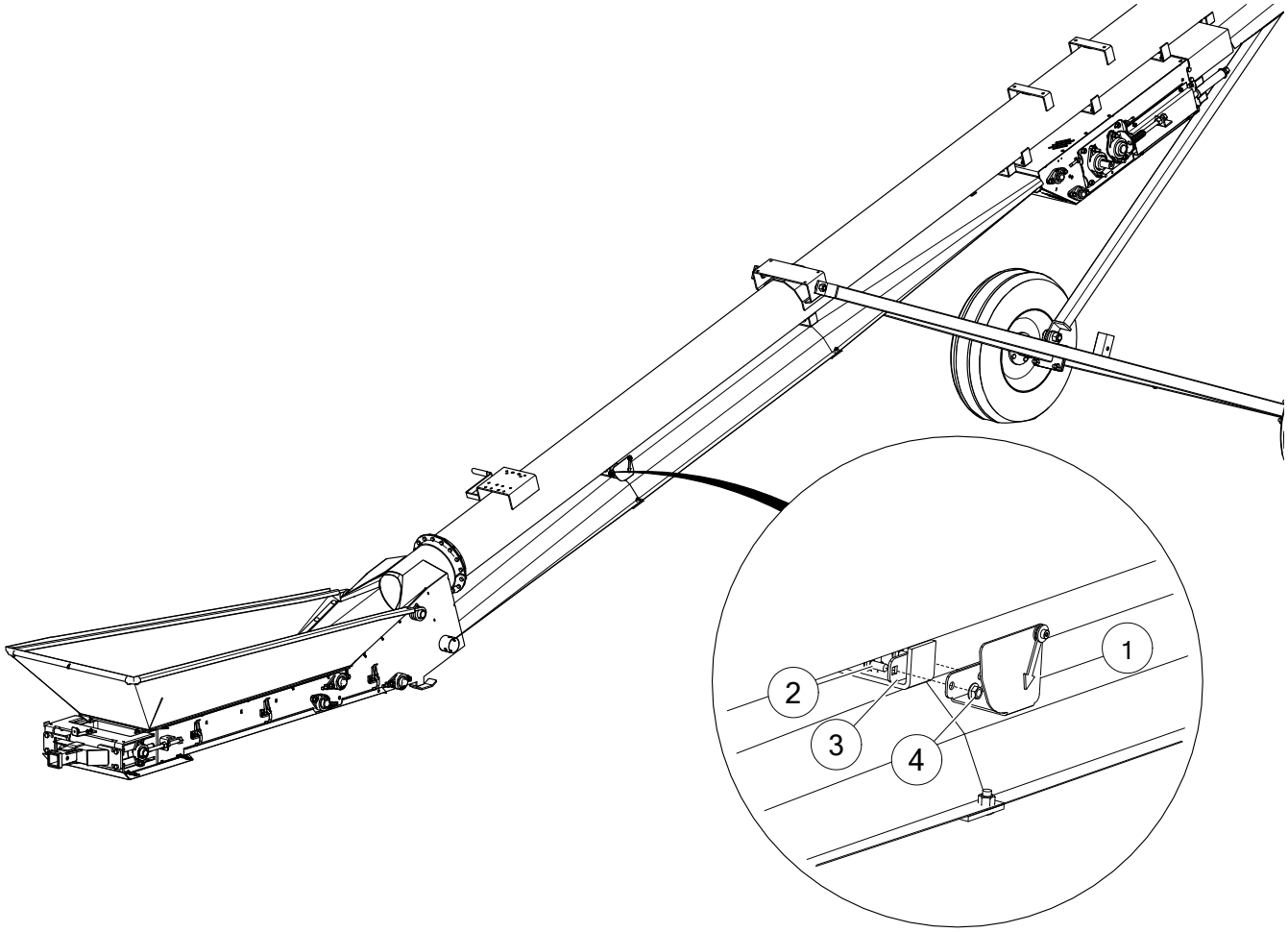
Important

Ensure that the angle indicator base is level with the flat top of the weather guard.

Table 18. Angle Indicator

Item	Description
1	Angle Indicator Bracket
2	Plate
3	1/4" x 3/4" Carriage Bolt
4	1/4” Flanged Nut

Figure 55. Installing the Angle Indicator



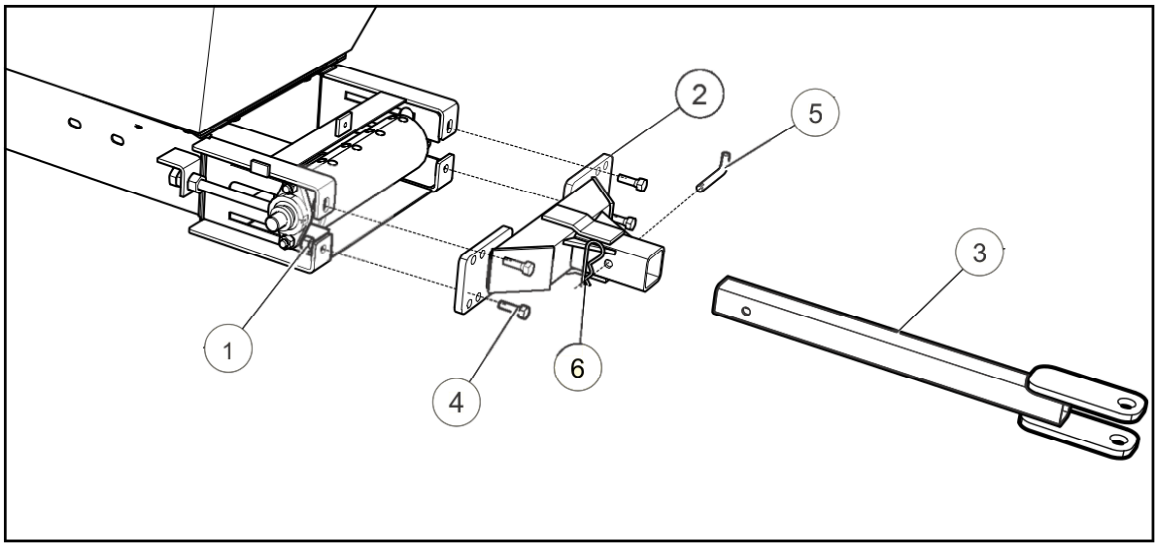
3.23. Attach the Hitch

1. Attach the hitch (2) to the hopper weldment using 1/2" x 1–1/2" bolts (4) and 1/2" nuts (1).
2. Insert the tongue (3) into the tongue stub.
3. Secure the tongue in place using 5/8" x 3" hitch pin (5) and 3/16" x 3–1/4" hairpin (6).

Table 19. Hitch Components

Item	Description	Quantity
1	1/2" Nylock Nut	4
2	Transfer Hitch	1
3	Straight Tongue	1
4	1/2" x 1–1/2" Hex Bolt	4
5	5/8" x 3" Hitch Pin	1
6	3/16" x 3–1/4" Hairpin	1

Figure 56. Hitch Components



3.24. Install the Spout Hood

1. Place the hood (2) around the bearing assembly (see Figure 57).
2. Use 1/4" x 1" self-tapping screws (3) and 1/4" flat washers (4) to tighten the hood (2) to the conveyor spout (1).

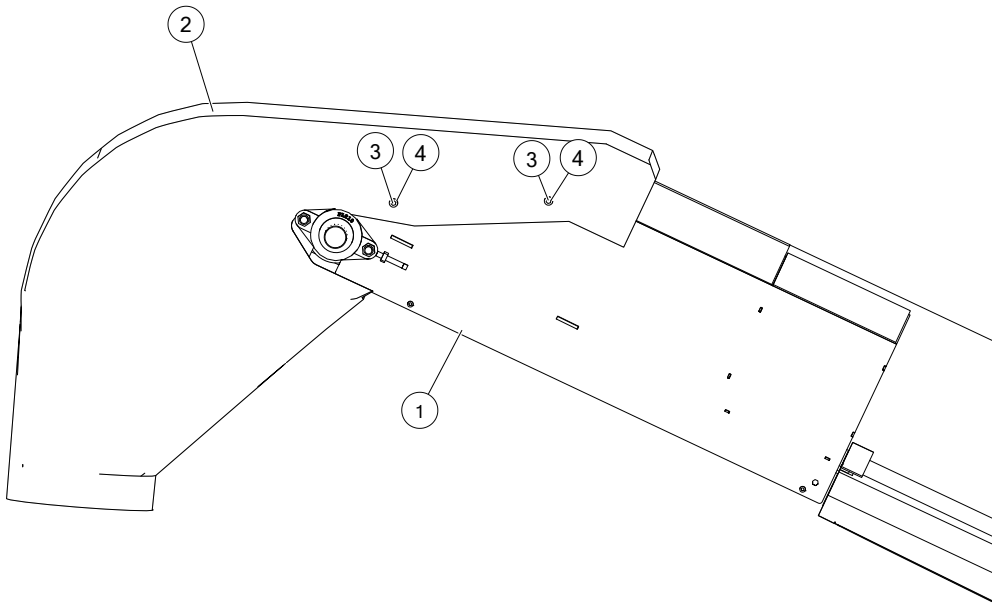
   Note

   Make sure the screws will not interfere with belt operation.

Table 20. Spout Hood Components

Item	Description	Quantity
1	Spout Assembly	1
2	Hood	1
3	1/4" x 1" Self-Tapping Screw	4
4	1/4" Flat Washer	4

Figure 57. Installing Spout Hood



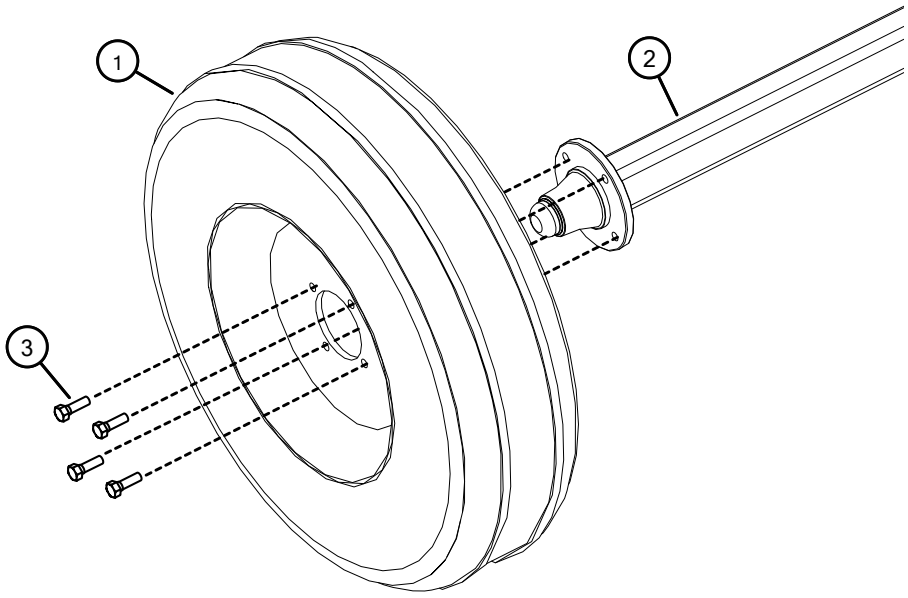
3.25. Install the Wheels

1. Check if the pressure of tires matches the pressure indicated on the tire sidewall.
2. Mount the wheels (1) to the axle (2) with wheel bolts (3) provided (see Figure 58).

Table 21. Components to Attach the Wheels to the Axle

Item	Description
1	Tire Assembly
2	Axle
3	Wheel Bolt

Figure 58. Attaching the Wheels to the Axle



Note

Wheels may have four or six bolts, depending on the model of conveyor.

3.26. Assemble the A-Frame

Ensure the wheels are mounted to the axle before beginning this procedure.

1. Loosely fasten the axle arms (9) to the axle (12) using one 5/8" x 5" bolt (15), three 5/8" x 2" bolts (13), five 5/8" flat washers (14), and four 5/8" nylon locknuts (8).

   Note

   The axle arms will be tightened after the upright arms have been installed.

2. Fasten the axle arms to the suspension bracket in the bolt hole position in Table 23 using 3/4" x 2" hex bolts (11) and 3/4" nylon locknuts (10).

   Note

   If an electric motor is being installed, bolt hole position B or A may be used depending on whether you prefer a lighter or heavier hitch weight, respectively.

3. Secure the slider (4) to the end of the track (towards the spout) using vise-grips.
4. Fasten upright arms (2) to the slider (4) using 3/4" flat washers (1) and 1/4" x 2" cotter pins (3).
5. Lift the spout end of the tube until the loose ends of the upright arms align with their brackets on the axle.
6. Fasten the upright arms to the axle using 1" x 3" hex bolts (6) and 1" nylon locknuts (5).
7. Tighten the bolts that fasten the axle arms to the axle.
8. Lower tube and remove vise grips.

⚠ WARNING Do not remove the tube support(s) until the conveyor is fully assembled.

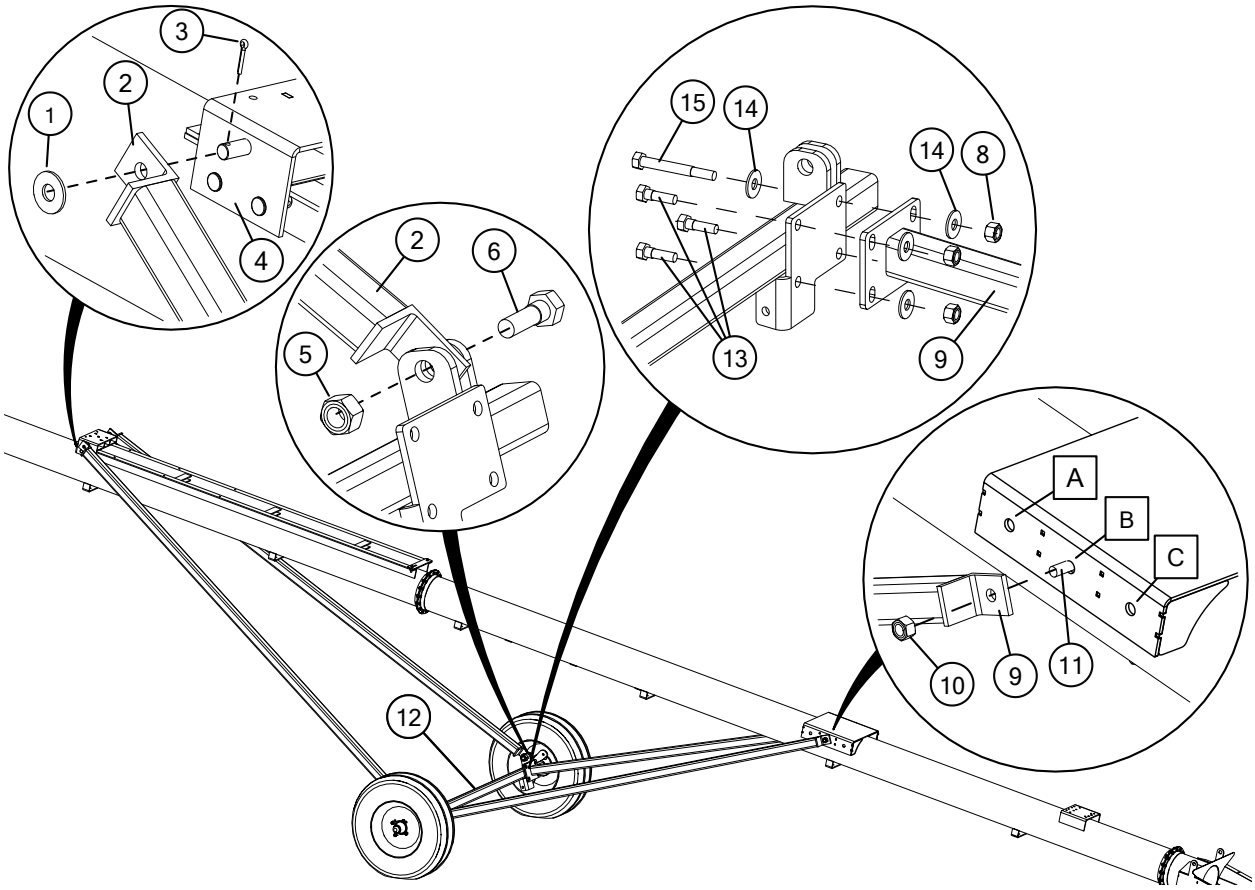
Table 22. Components to Assemble the A-Frame

Item	Description
1	3/4" Flat Washer (plated USS)
2	Upright Arm
3	1/4" x 2" Cotter Pin
4	Slider
5	1" Nylon Locknut
6	1" x 3" Hex Bolt
8	5/8" Nylon Locknut
9	Axle Arm
10	3/4 " Nylon Locknut
11	3/4" x 2" Hex Bolt
12	Axle
13	5/8" x 2" Hex Bolt
14	5/8" Flat Washer (plated USS)
15	5/8" x 5" Bolt

Table 23. Bolt Hole Position for Fastening Axle Arm to Suspension Bracket

Model	Electric Top Drive		Hydraulic Top Drive — Bolt Position
	Motor HP (standard specified)	Bolt Position	
1539	10	B or A	C
1544/ 1549	15	B or A	C

Figure 59. Assembling the A-Frame



3.27. Install the Tube Lift Cable

1. Wrap the cable (1) around the bottom side of the winch drum with three complete wraps around the drum when conveyor is in transport position (see).

   ⚠ WARNING Failure to follow could result in conveyor collapse and cause serious injury.

2. Thread cable onto drum and secure with spool anchor.
3. Run the cable towards the spout and thread it through the slider pulley.
4. Run the cable from the slider pulley towards the hopper and stop at the cable attach (3).
5. Loop the cable under and around the cable attach and secure it with two 5/16" cable clamps (2).
6. Trim excess cable.
7. Test the function of the winch by lifting the conveyor to its raised position.

   ⚠ WARNING Crushing/impact hazard

   Do not stand under the conveyor while testing the winch. The conveyor may drop unexpectedly. Ensure all equipment and personnel are clear of the conveyor while testing the winch.

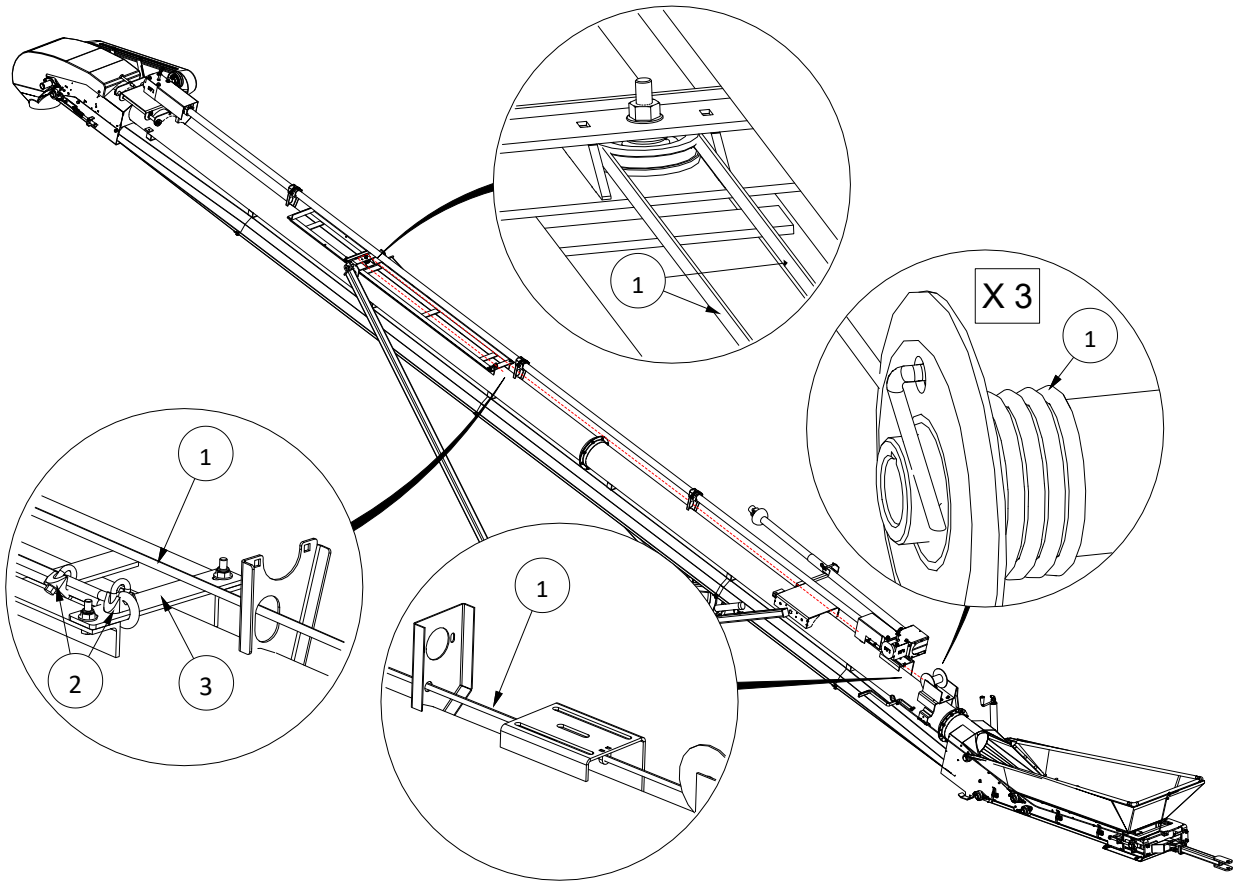
   NOTICE The tube lift components may become damaged.

   Stop the test if anything should slide, slip, or jam. Correct the issue before continuing.

Table 24. Tube Lift Cable Components

Item	Description
1	44' Cable 5/16" 7 x 19 GAC
2	5/16" Cable Clamp
3	Small Cable Attach

Figure 60. Installing the Tube Lift Cable (For 44' Conveyor)



3.28. Align the Winch

This procedure describes the alignment of the winch.

1. Check the alignment of the winch by watching the cable wrapping on the drum as the conveyor is raised. Proper alignment is achieved when the cable indexes, filling each row on the drum evenly and not piling up against one side.
2. Lower the conveyor fully if the cable does not index properly until there is slack in the cable.
3. Loosen the bolts holding the winch, adjust the winch, re-tighten bolts and retest.

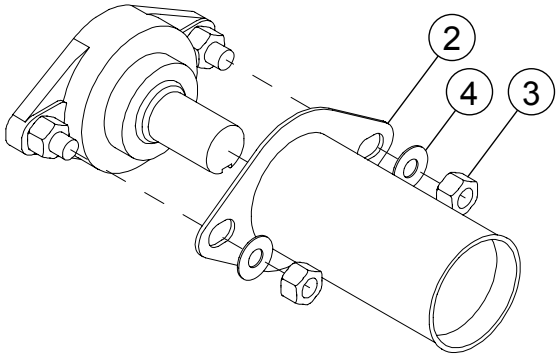
3.29. Install the Shaft Guard

1. Mount the shaft guard (2) over the roller shaft and onto the flange bearing carriage bolts (see Figure 61).
2. Secure the shaft guard in place using two locknuts (3) and two flat washers (4).

Note

When mounting onto a 15/16" bearing (FL210), use 5/8" locknuts and flat washers.
When mounting onto a 1-1/4" bearing (FL206) or 1-1/2" bearing (FL208), use ½" locknuts and flat washers.

Figure 61. Installing Shaft Guard



3.30. Install the Manual Container

1. Position the manual container (1) on the axle arm.
2. Depending on your type of container, either:
   a. secure with two gear clamps (2) (see Figure 62), or
   b. secure with two self-tapping screws (3) (see Figure 63).

Figure 62. Clamp-on Manual Container

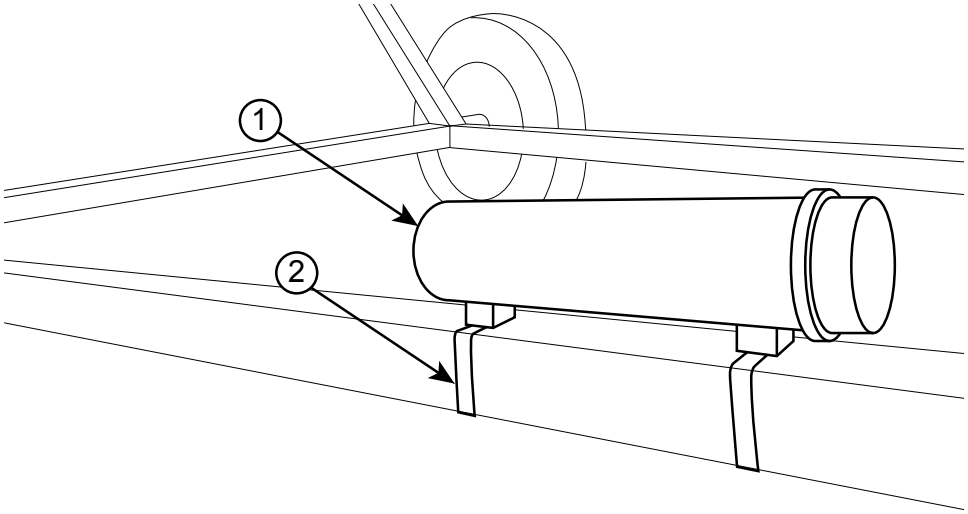
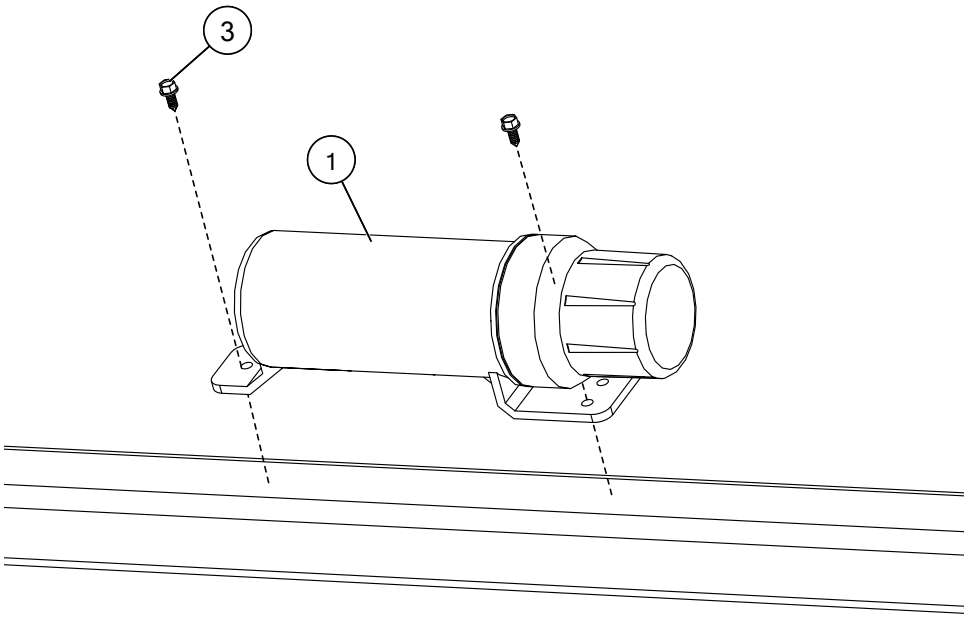


Figure 63. Screw-on Manual Container

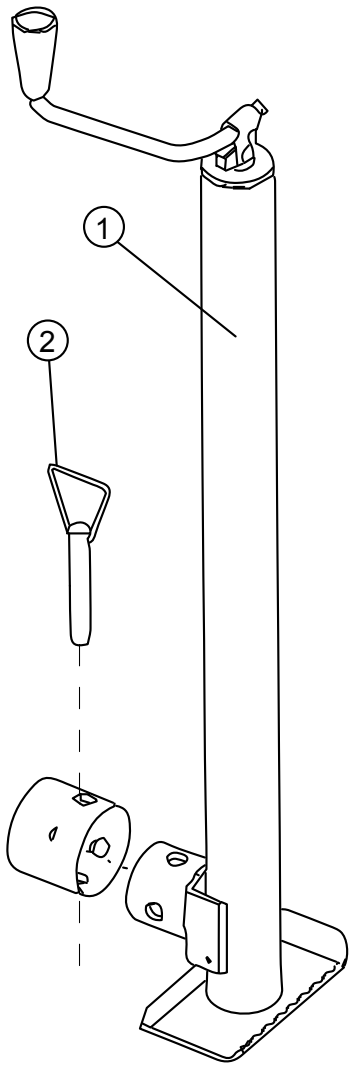


Item	Description
1	Manual Container
2	Gear Clamps
3	Self-Tapping Screw #14 x 5/8"

3.31. Attach the Jack

1. Insert the jack (1) into the jack stub (located on the conveyor hitch) (see Figure 64).
2. Secure the jack in place with the pin (2) provided.

Figure 64. Attaching the Jack



Ref	Description
1	Jack
2	Pin

4. Specifications

Specifications

Table 25. BCX² 1544 PTO Top Drive Specifications

Conveyor Tube Diameter	10"
Belt Length	92'5"
PTO Drive (HP)	30
PTO Speed	540 RPM
PTO Maximum Operating Angle	15°
Gear Box Oil Type	SAE Approved 80–90W or equivalent
Hitch Pin Size (Min. Diameter x Length)	1/2" x 3"

5. Appendix

5.1. Bolt Torque

Table 26 gives the correct torque values for various hardware. Tighten all bolts to the torque specified, unless otherwise noted. Check tightness periodically, using Table 26 as a guide. Replace the hardware with the same strength bolt, contact AGI if you are unsure.

Table 26. Recommended Bolt Torque[1]

Size	Dry or Lubricated	Threads per inch (Course/ Fine)	Area of Bolt (sq in.)		Recommended Torque (ft-lb)							
					Grade 2		Grade 5		Grade 8		8.8 S/S	
			Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine
1/4"	Dry	20/28	0.0318	0.0364	5.5	6.3	8	10	12	14	6.3	7.8
	Lubricated				6.3	4.7	6.3	7.2	9	10	-	-
5/16"	Dry	18/24	0.0524	0.058	11	12	17	19	24	27	11	11.8
	Lubricated				8	9	13	14	18	20	-	-
3/8"	Dry	16/24	0.0775	0.0878	20	23	30	35	45	50	20	22
	Lubricated				15	17	23	25	35	35	-	-
7/16"	Dry	14/20	0.1063	0.1187	32	36	50	55	70	80	31	33
	Lubricated				24	27	35	40	50	80	-	-
1/2"	Dry	13/20	0.1419	0.1599	50	55	75	85	110	120	43	45
	Lubricated				35	40	55	65	80	90	-	-
9/16"	Dry	12/18	0.182	0.203	70	80	110	120	150	170	57	63
	Lubricated				55	60	80	90	110	130	-	-
5/8"	Dry	11/18	0.226	0.256	100	110	150	170	210	240	93	104
	Lubricated				75	85	110	130	160	180	-	-
3/4"	Dry	10/16	0.334	0.373	175	200	260	300	380	420	128	124
	Lubricated				130	140	200	220	280	310	-	-
7/8"	Dry	9/14	0.462	0.508	170	180	430	470	600	670	194	193
	Lubricated				125	140	320	350	180	180	-	-
1"	Dry	8/14	0.606	0.679	250	280	640	720	910	1020	287	289
	Lubricated				190	210	480	540	680	760	-	-
1-1/8"	Dry	7/12	0.763	0.856	350	400	790	890	1290	1440	288	290
	Lubricated				270	300	590	670	970	1080	-	-
1-1/4"	Dry	7/12	0.989	1.073	500	550	1120	1240	1820	2010	289	291
	Lubricated				380	420	840	930	1360	1510	-	-
1-1/2"	Dry	6/12	1.405	1.581	870	960	1950	2200	3160	3560	-	-
	Lubricated				650	730	1460	1640	2370	2670	-	-

1. Torque value for bolts and cap screws are identified by their head markings. Established at 75% of yield strength of bolt given the cross-sectional area.

Note

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

5.2. Fittings Torque Values

These specifications are for carbon steel. With Zinc plating always lubricate threads and seals. For stainless steel, use the high value of the torque range of steel. For brass, use 70% of the torque value of steel. For mixed metals, use the torque of the lower of the two metals. Torque range is normally calculated +/- 10%.

Table 27. Pipe Rigid - Tapered Pipe Threads (NPTF, N/NF) - Carbon Steel

Pipe Size	Turns-from-finger	Max ft-lbs	Max N-m
1/8" (-2)	3/4 - 1 3/4	12	16
1/4" (-4)	3/4 - 1 3/4	25	34
3/8" (-6)	3/4 - 1 3/4	40	54
1/2" (-8)	1/2 - 1 1/2	54	73
3/4" (-12)	1/2 - 1 1/2	78	106
1" (-16)	1/2 - 1 1/2	112	152
1 1/4" (-20)	1/2 - 1 1/2	154	209
1 1/2" (-24)	1/2 - 1 1/2	211	286
2" (-32)	1/2 - 1 1/2	300	407

Table 28. Pipe Swivel - Straight Pipe Threads (NPSM, N/NFS) - Carbon Steel

Pipe Size	Max ft-lbs	Max N-m
1/8" (-2)	12	16
1/4" (-4)	25	3
3/8" (-6)	40	54
1/2" (-8)	54	73
3/4" (-12)	78	106
1" (-16)	112	152
1 1/4" (-20)	154	209
1 1/2" (-24)	211	286
2" (-32)	300	407
Note: seals on an internal male 30° seat		

Table 29. Stud End O-Ring Boss (ORB) SAE (U/UF)

		Carbon Steel	
Tube Size	**Thread UNF-2A**	**Max ft-lbs**	**Max N-m**
-2	5/16" - 24	6-7	8-9
-3	3/8" - 24	8-9	11-12
-4	7/16" - 20	13-15	18-20

Table 29 Stud End O-Ring Boss (ORB) SAE (U/UF) (continued)

		Carbon Steel	
Tube Size	**Thread UNF-2A**	**Max ft-lbs**	**Max N-m**
-5	1/2" - 20	17-19	23-26
-6	9/16" - 18	22-24	29-33
-8	3/4" - 16	40-43	49-53
-10	7/8" - 14	43-48	59-64
-12	1 1'16" - 12	68-75	93-102
-14	1 3/16" - 12	90-99	122-134
-16	1 5/16" - 12	112-123	151-166
-20	1 5/8" - 12	146-161	198-218
-24	1 7/8" - 12	154-170	209-231

Table 30. JIC 37° Flare Tube Fitting (J/JFS)

Tube Size	Thread UNF-2A	Torque ft-lbs	Torque N-m
-2	5/16 - 24	6-7	8-9
-3	3/8 - 24	8-9	11-12
-4	7/16 - 20	11-12	15-16
-5	1/2 - 20	14-15	19-21
-6	9/16 - 18	18-20	24-28
-8	3/4 - 16	36-39	49-53
-10	7/8 - 14	57-63	77-85
-12	1 1/16 - 12	79-88	107-119
-14	1 3/16 - 12	94-103	127-140
-16	1 5/16 - 12	108-113	147-154
-20	1 5/8 - 12	127-133	172-181
-24	1 7/8 - 12	158-167	215-226
-32	2 1/2 - 12	245-258	332-350

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