Field Loader S-Drive

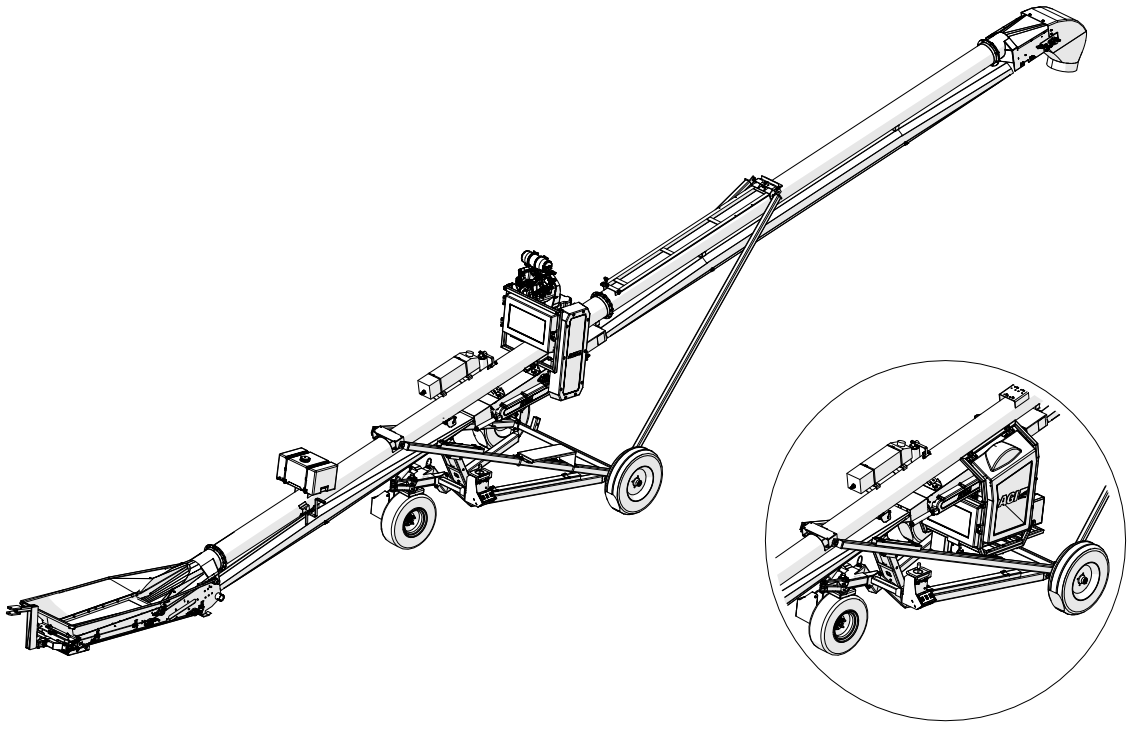
Portable Grain Belt Conveyor
Assembly Manual

This manual applies to:

Brands: AGI Batco, AGI Westfield, AGI Hutchinson, AGI GrainMaxx

Models: BCX³ 1549, GCX³ 1549, HCX³ 1549, WCX³ 1549

Gas Drive with Mover Kit



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: 8210-00020 R1

Revised: March 2022

Original Instructions

New in this Manual

The following changes have been made in this revision of the manual:

Description	Section
Added hydraulic steel pump plate.	Section – Install the Hydraulic Pump on page 52, Section 3.20.3 – Install the Hydraulic Pump and Clutch on page 71
Updated the following assembly sections:	
• spout assembly	• Section 3.10 – Install the Spout Roller on page 28
• motor mount frame and torsion idler assembly	• Section 3.19 – Install Top-Mount Drive Overview on page 47, Section 3.20 – Install the Under-Mount Drive on page 66
• urethane flashing positioning	• Section 3.23.4 – Straighten the Seals and Position the Flashing on page 102
• spout brush assembly	• Section 3.30 – Attach the Spout Brush on page 122
• throttle actuator	• Section 3.39 – Gas Drive Control Box Wiring on page 142

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 Safety Information

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 for intended purposes only.
- Do not modify the conveyor in any way without written permission from the manufacturer and is not covered by the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.
- Follow applicable local codes and regulations.

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

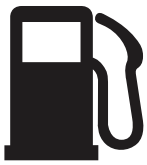
- Keep body, hair, and clothing away from rotating pulleys, belts, chains, and sprockets.
- Do not operate with any guard removed or modified. Keep guards in good working order.
- Shut off and lock out power source before inspecting or servicing machine.

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 follow lockout and tagout procedures 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 only 1 key exists for each assigned lock, and that you are the only one that holds that key. Ensure that all personnel are clear before turning on power to equipment.

1.5.1 Gas Engine Safety

⚠ WARNING **Power Source**



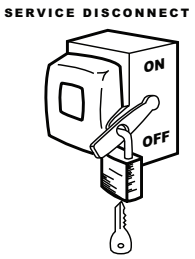
- Keep guards in place and secure.
- Properly ventilate surrounding area.
- Never fill the fuel tank with the engine running, while smoking, or near an open flame. Always shut down and allow engine to cool before filling with fuel.
- Never overfill the tank or spill fuel. If fuel is spilled, clean it up immediately.
- Be sure to use the correct type and grade of fuel. Ground the fuel funnel or nozzle against the filler neck to prevent sparks that could ignite fuel vapors.
- Be sure to replace the fuel fill cap when you are done.

Lockout

- For engines with an electric start, remove the ignition key, the spark plug wire, or the spark plug.
- For engines with a rope or crank start, remove the spark plug wire or the spark plug.

1.5.2 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.
- Use a magnetic starter to protect the electric 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.
- Ensure electrical wiring and cords remain in good condition; replace if necessary.

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.

1.5.3 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. Battery Safety

⚠ WARNING

- Wear safety glasses and protective gloves when working near batteries.
- Make certain the battery or terminal covers are in place and in good working order.
- Keep all sparks and flames away from batteries; gas given off by electrolyte is explosive.
- Avoid contact with battery electrolyte. Wash off any spilled electrolyte immediately.
- Do not tip batteries more than 45° to avoid electrolyte loss.
- To avoid injury from sparks or short circuits, disconnect battery ground cable before servicing any part of an electrical system.

1.8. Hand Winch Safety

⚠ WARNING **When Equipped:**

- Inspect lift cable before using. Replace if frayed or damaged. Make sure lift cable is seated and tracking properly 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.

1.9. Hydraulic Winch Safety

⚠ WARNING **When Equipped:**

- Keep away from rotating cable drum and winch cable. Do not touch or grab cable while winch is being operated or use hands to guide the cable.
- Inspect cable and cable clamps before using hydraulic winch. Replace cable if frayed or damaged. Tighten cable clamps if necessary.
- Check the cable anchor on the winch drum is tight.
- Confirm hydraulic hoses are in good condition.
- Do not continue to supply power to hydraulic winch after the conveyor has reached full up position.
- Do not disconnect hydraulic quick couplers when lines are pressurized.
- Make sure lift cable is seated properly.
- Always keep a minimum of 3 cable wraps on the cable drum.

1.10. 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.

1.11. 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.

1.12. 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.

1.12.1 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 decal backing paper.

1.12.2 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. Safety Decal Locations

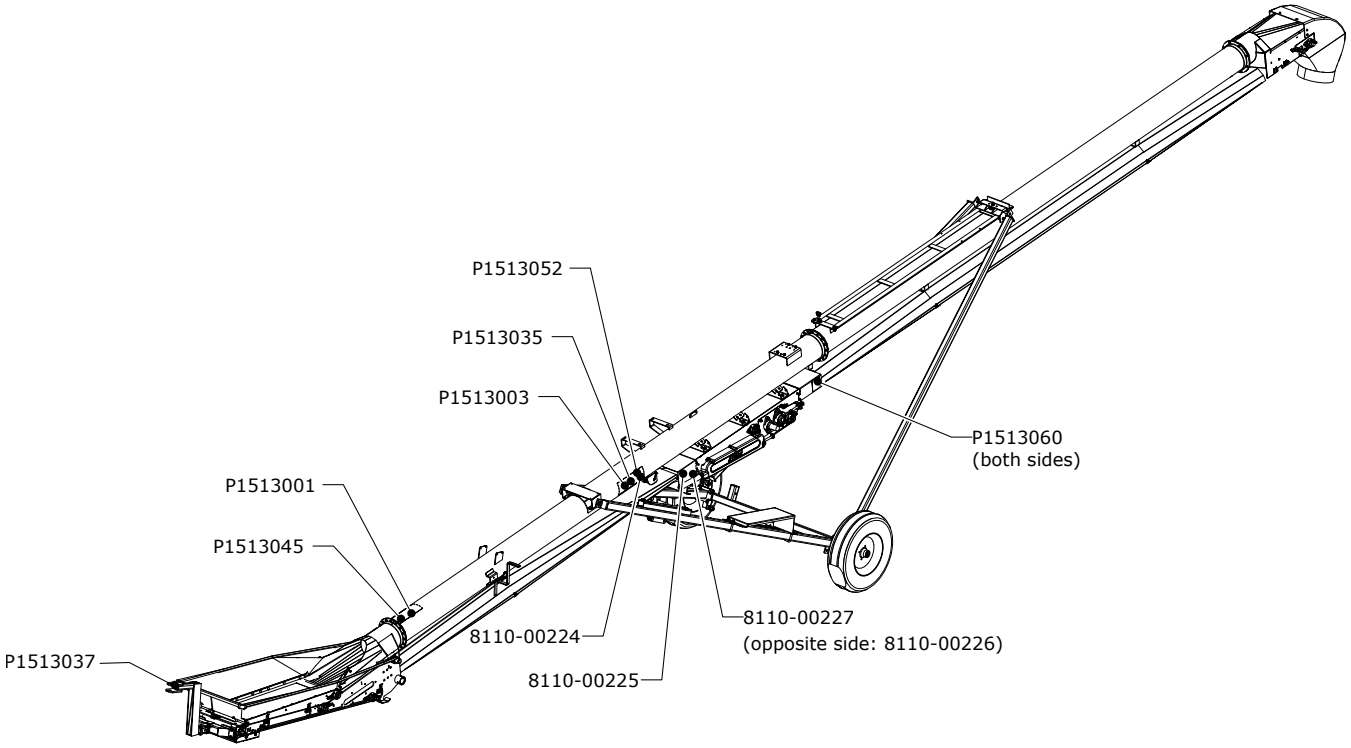


Figure 2. S-Drive Bottom Guard Decal Location

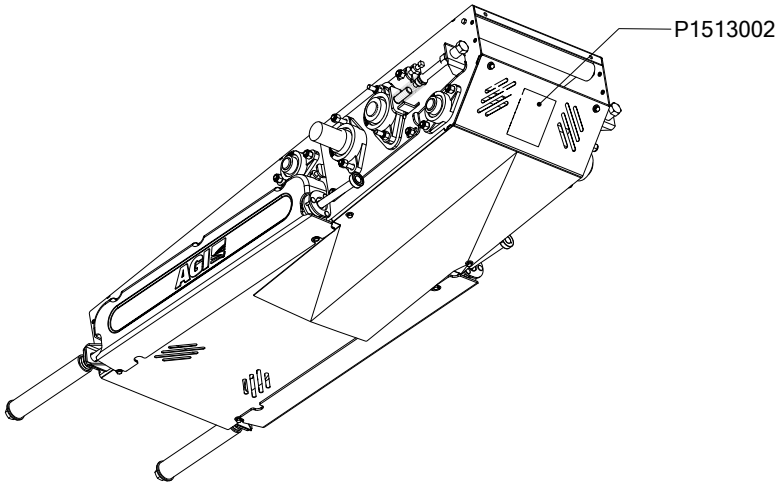


Figure 3. Hydraulic Tank Decal Location

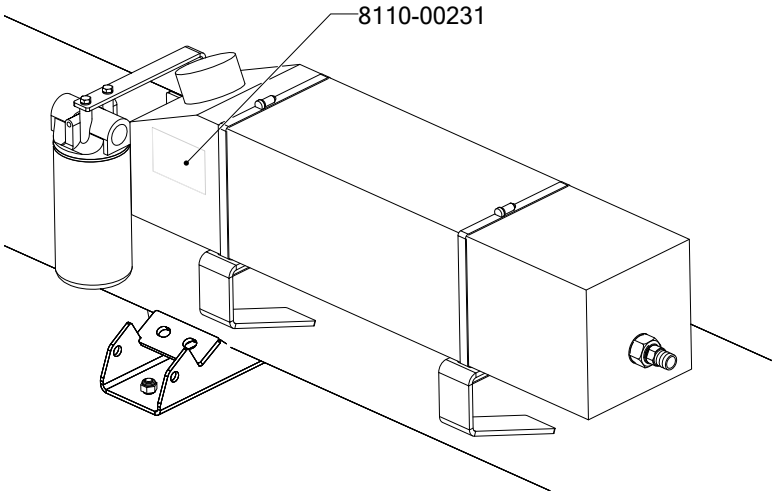


Figure 4. Hydraulic Winch Decal Locations (If Equipped)

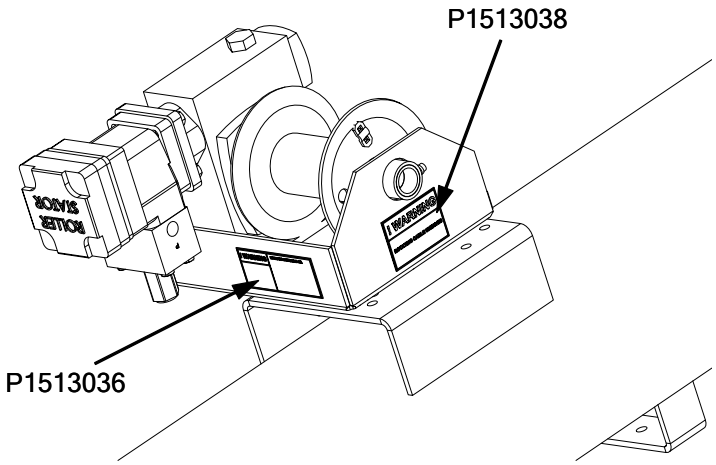
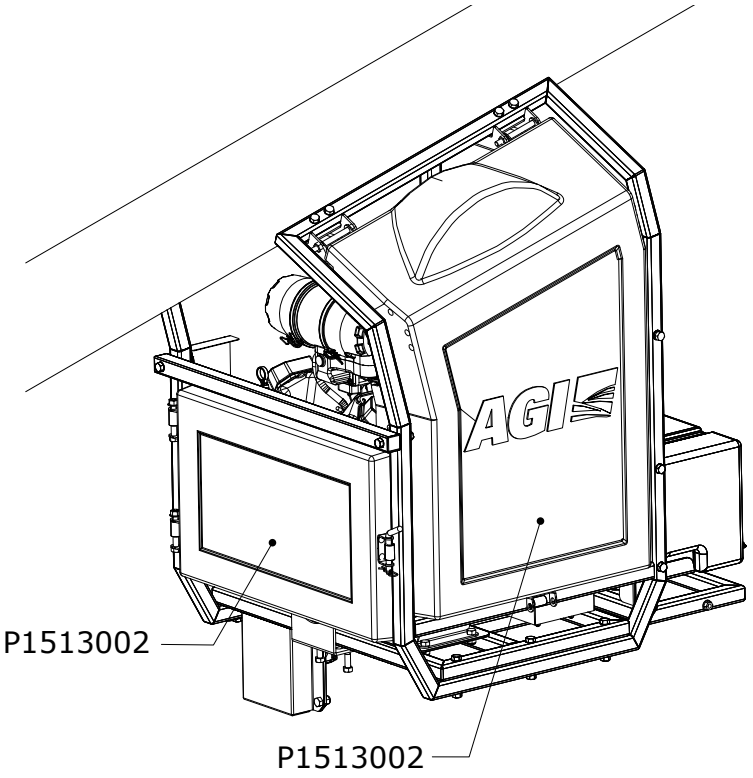
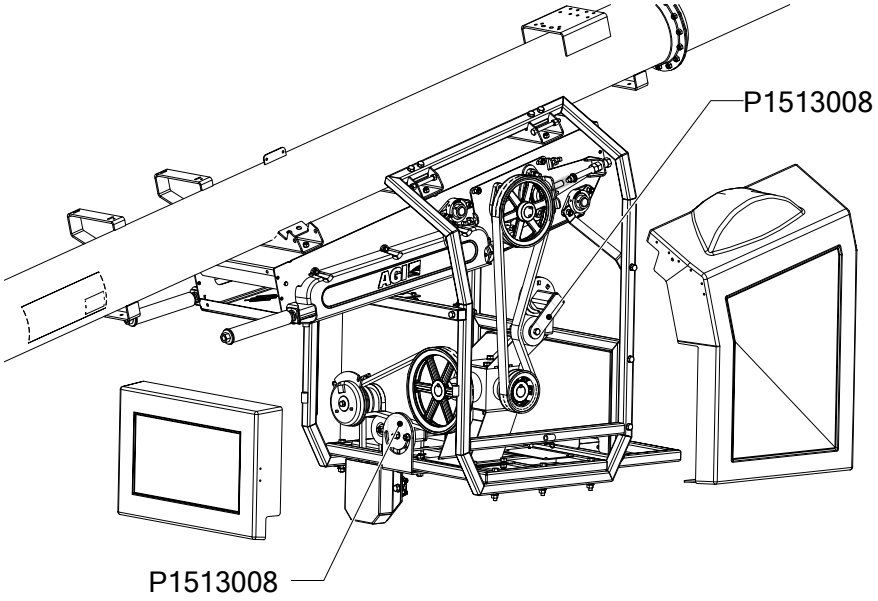


Figure 5. Gas Drive Safety Decal Locations (Undermount)

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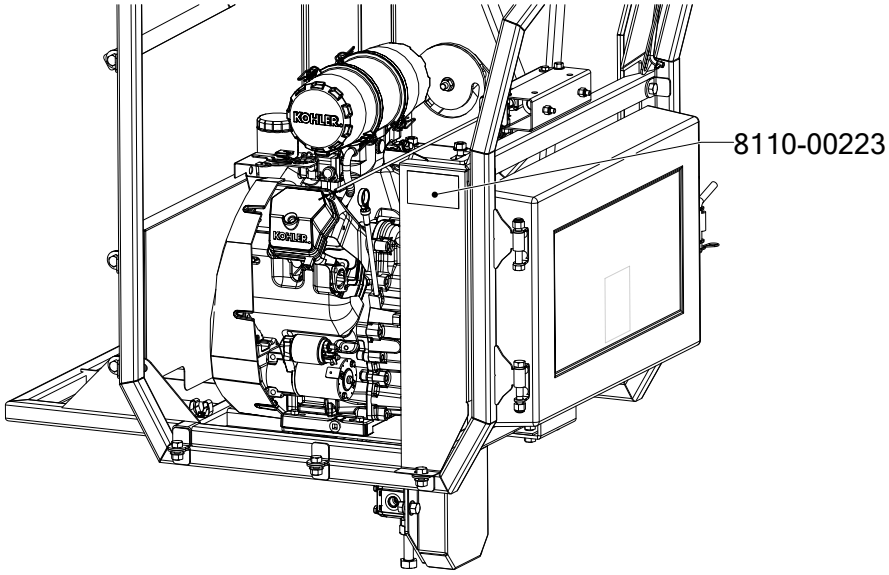
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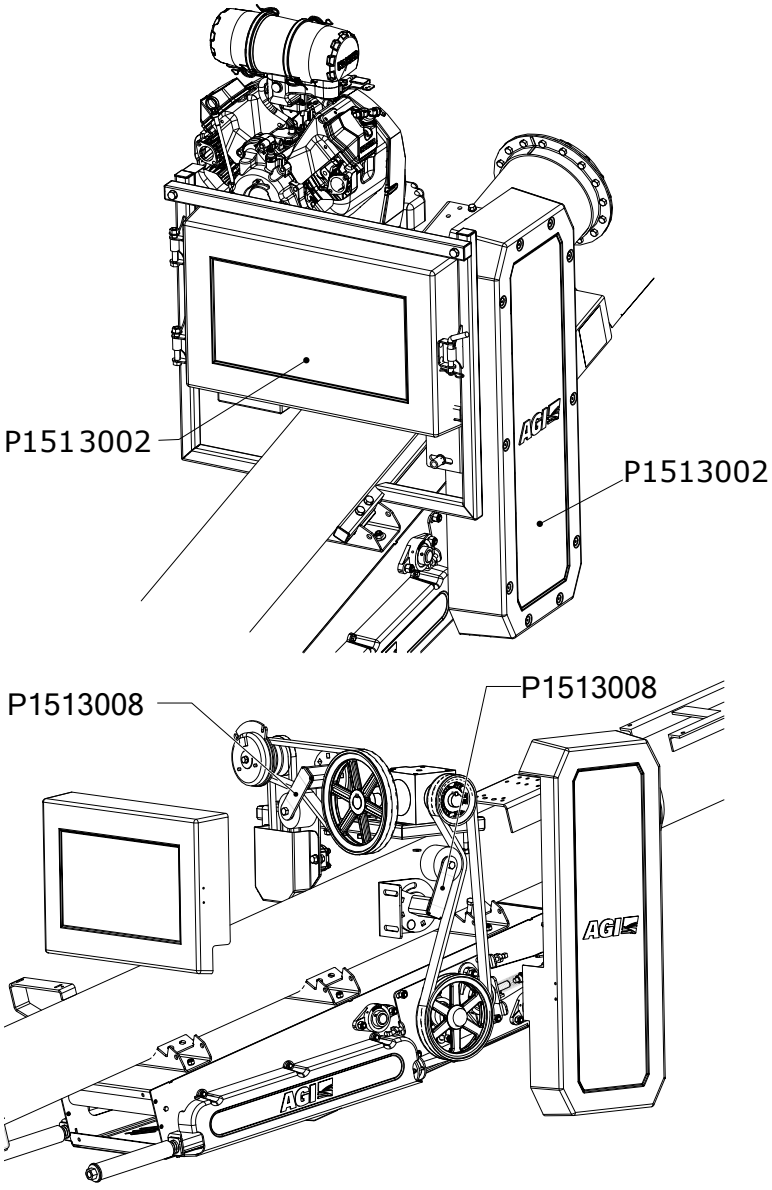
Figure 6. Gas Drive Safety Decal Locations (Top Mount)



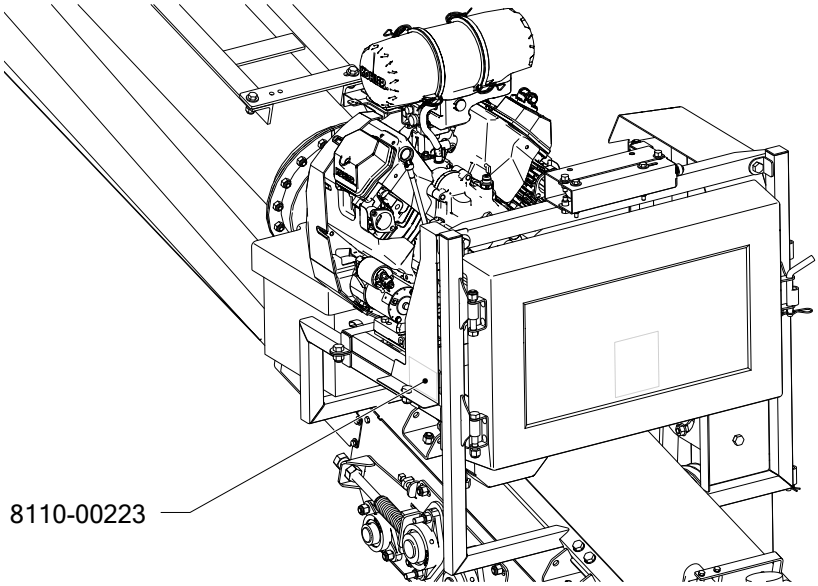


Table 1. Safety Decal Details

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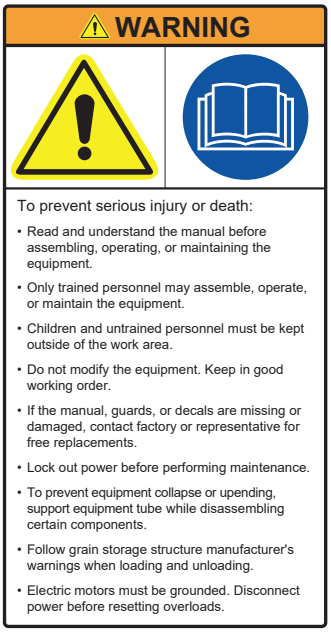

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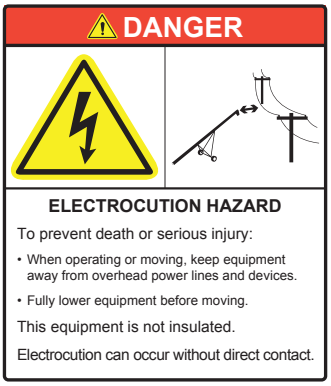

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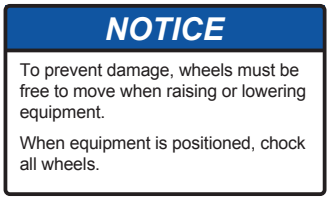

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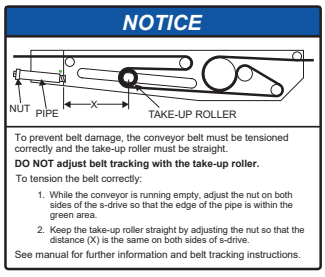

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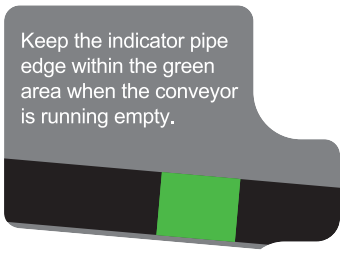

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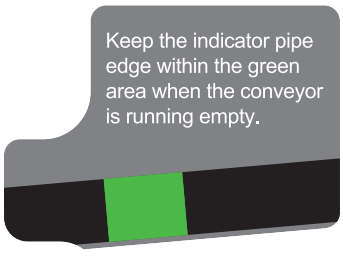

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Table 1 Safety Decal Details (continued)

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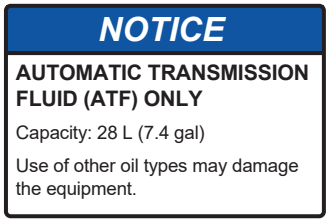
<td> 

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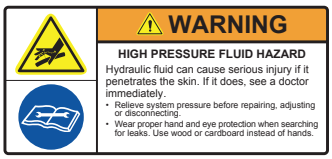
<td> 

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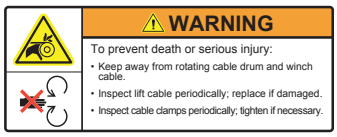
<td> 

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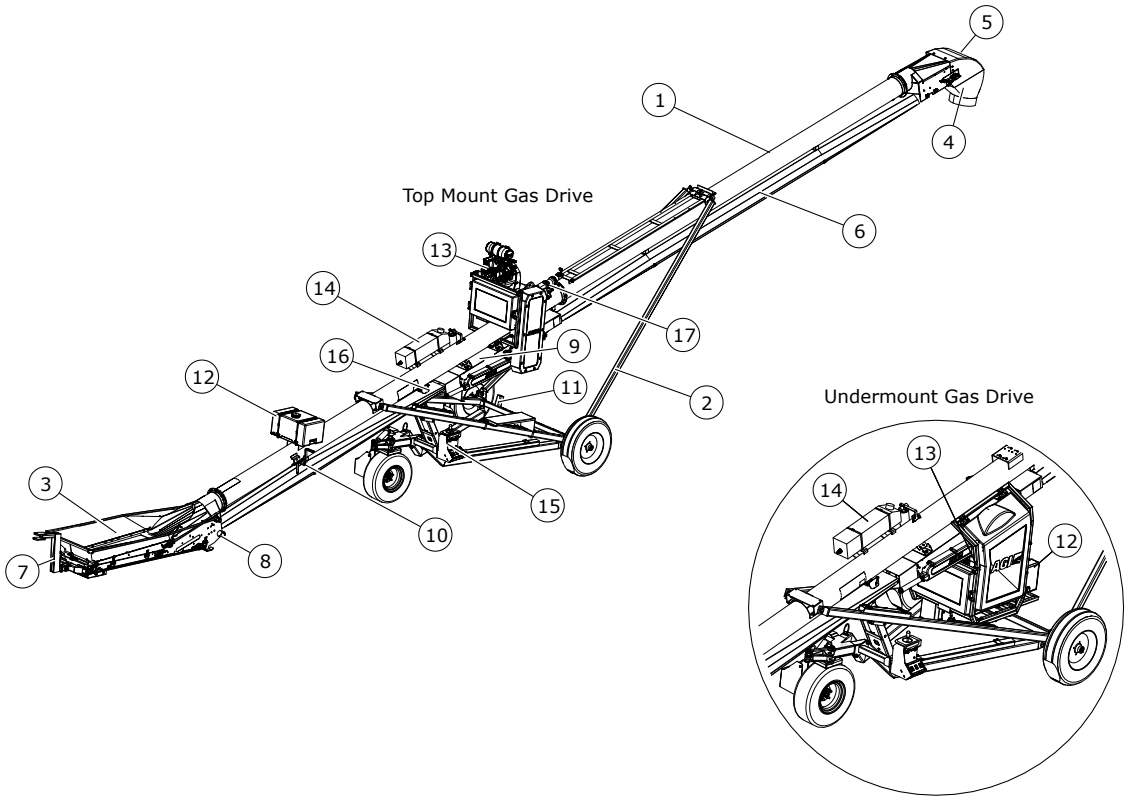
2. Features

Read this section to familiarize yourself with the basic component names and functions of the conveyor.



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Tube	11	Hitch Tongue Holder
2	A-Frame	12	Gas Tank
3	Hopper	13	Gas Drive
4	Hood	14	Hydraulic Oil Tank
5	Spout Assembly	15	Mover Kit
6	Belt Return and Weather Guard	16	Angle Indicator
7	Hitch	17	Hydraulic Winch
8	Jack Mount Collar	18	Hopper and Spout Scrapers (not shown)
9	S-Drive	19	Jack (not shown)
10	Collapsible Hopper Control		

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. Take pictures of shipments prior to or just after unloading if there are any damaged parts.

Report missing or damaged parts immediately to ensure that proper credit is received from AGI or your representative, 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 small engine throttle wire Z bender
- 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 4.1 – Bolt Torque on page 154. 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 4.2 – Fittings Torque Values on page 155.

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

3.6. Assemble the Remainder of the S-Drive

Note

The s-drive normally comes mostly pre-assembled when delivered from the factory. The steps below are the remaining assembly which must be performed.

For each side of the s-drive:

1. Remove the lock collar (2) and hex nuts (6) from the pretensioner assembly.

   Note

   The pretensioner assembly (1) is comprised of the threaded rod weldment, pretensioner pipe, spring, lock collar, and two hex nuts. This is factory pre-assembled.

2. Position a hex nut (6) on each side of the slider weldment.
3. Thread the pretensioner assembly (1) through the spring capture plate (3), hex nuts in the slider weldment (4), and roller in the bolt on pretensioner tab (5).
4. Re-fasten the lock collar (2).

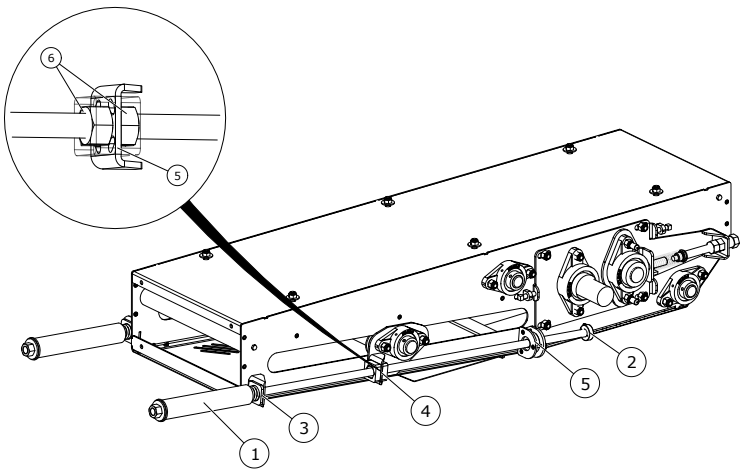
   Note

   The s-drive bottom guard and take-up bolt guard will be assembled onto the conveyor later, after belt tensioning and alignment. See Section 3.25 – Attach the S-Drive Bottom and Take-up Side Guards on page 113.

Table 2. Installing the Take-up Roller Bolt Assembly

Item	Description
1	Pretensioner Assembly
2	Lock Collar
3	Spring Capture Plate
4	Slider Weldment
5	Pretensioner Tab
6	3/4" Hex Nut UNC GR8 ZN

Figure 7. Installing the Take-up Roller Bolt Assembly



3.7. Assemble the Conveyor Tube

1. Review the tube layout figure below for your specific conveyor model to determine the order in which the tubes must be connected together. Part numbers are shown for tube identification.
2. Place the tubes on two support stands to support each tube section. The support stands must be set at equal height (see Figure 8). Anchor the tubes to the stands if necessary to prevent rolling.

   ⚠ CAUTION Failure to secure the tubes may result in personal injury.

3. Confirm that all tubes are set level and oriented correctly.
4. Fasten tube flanges together with 7/16" x 1" bolts (1) and 7/16" locknuts (2) as each tube section is placed, starting at the hopper end and working toward the spout end. Ensure the tubes are aligned and the bolts are straight.

   Note

   A punch can be used to assist alignment. If you are not careful, it is possible to bolt the flanges together non-concentrically with the bolts crooked through the holes.

Table 3. Tube Connection Components

Item	Description
1	7/16" x 1" Hex Bolt UNC GR8 ZN
2	7/16" Locknut UNC GR8 ZN

Hardware Kit: HRDW-15-07

Figure 8. Typical Tube Connection

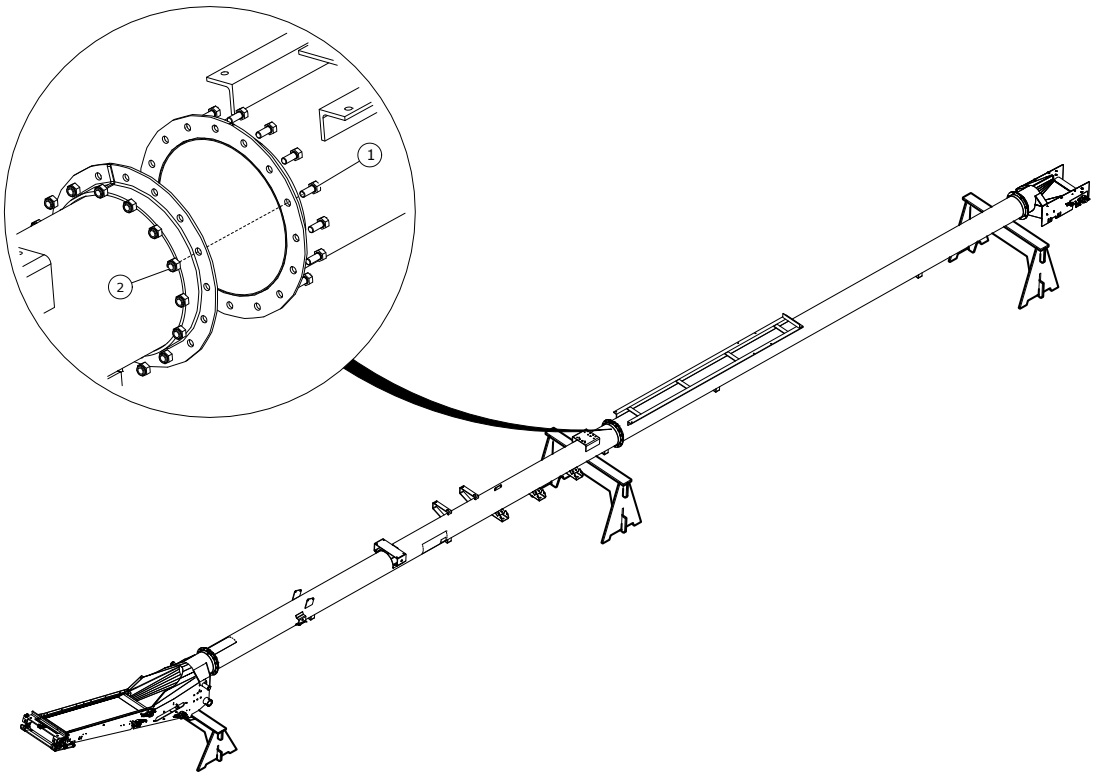
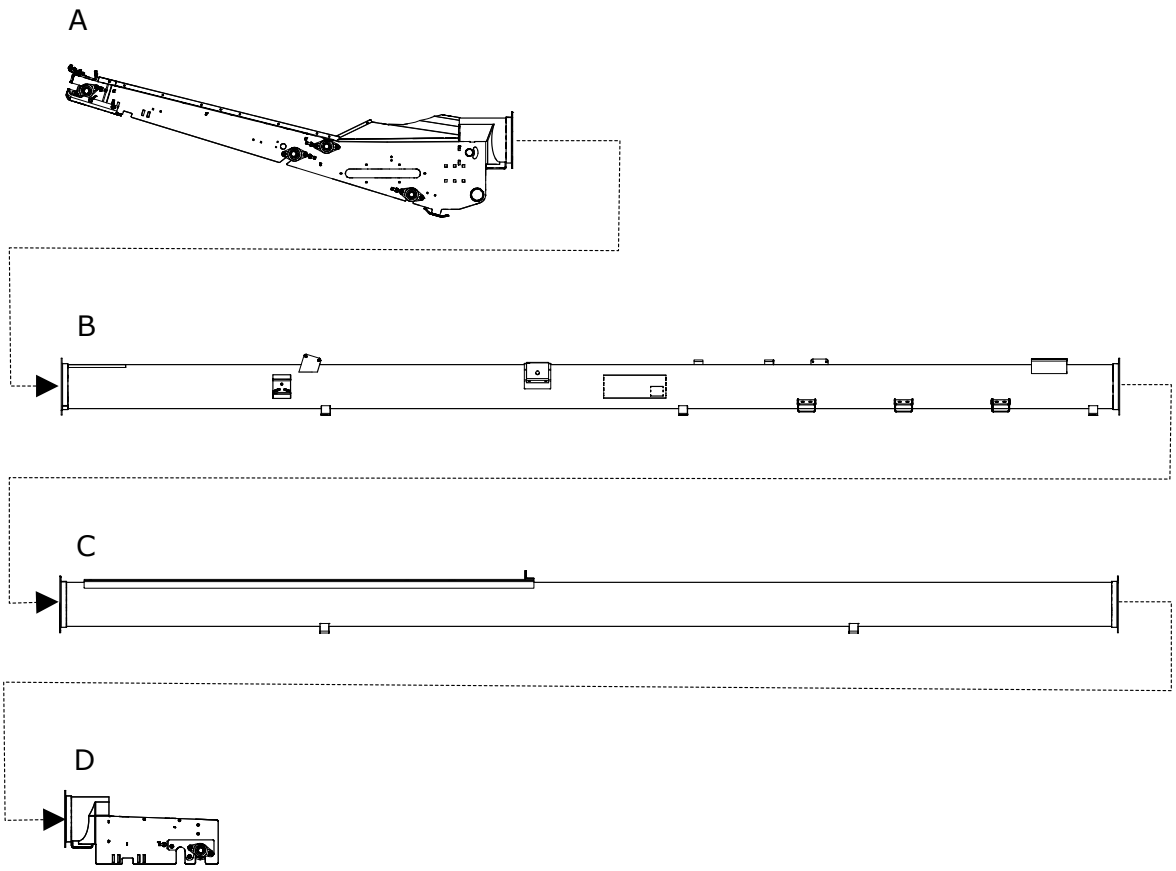


Figure 9. Conveyor Tube Layout for CX³ 1549 Model



A	15100008
B	15020170 (FMD units)
C	15020171 (FMD units)
D	15080010

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 10):
  - AGI Decal (both sides of the tube): place at the top of the tube, next to the spout.
  - Brand Decal (both sides of the tube): place mid to low tube, where it is visible and not covered by frame arms/trussing/brackets.
  - Model Decal (both sides of the tube): place mid tube, between the “AGI” and the brand. Ensure it is not covered by frame arms/trussing/brackets.

  Examples of the appearance of brand and model decals are in Figure 12, Figure 13 and Figure 11.

Figure 10. Brand and Model Decal Placement

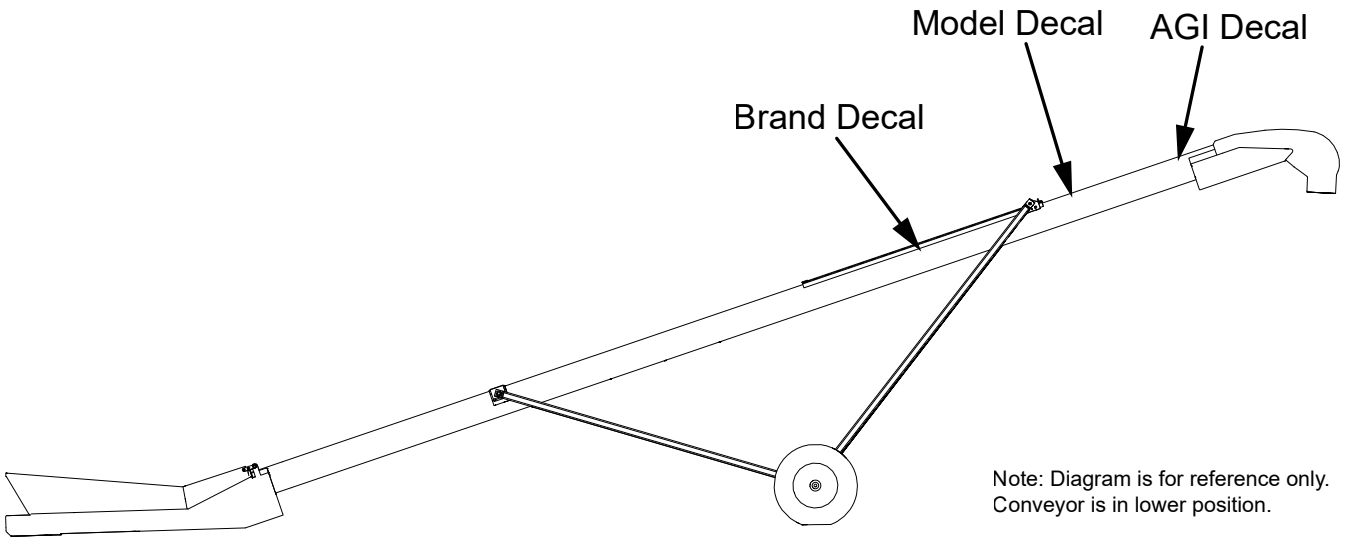


Figure 11. AGI Decal

Figure 12. Brand Decal (example)

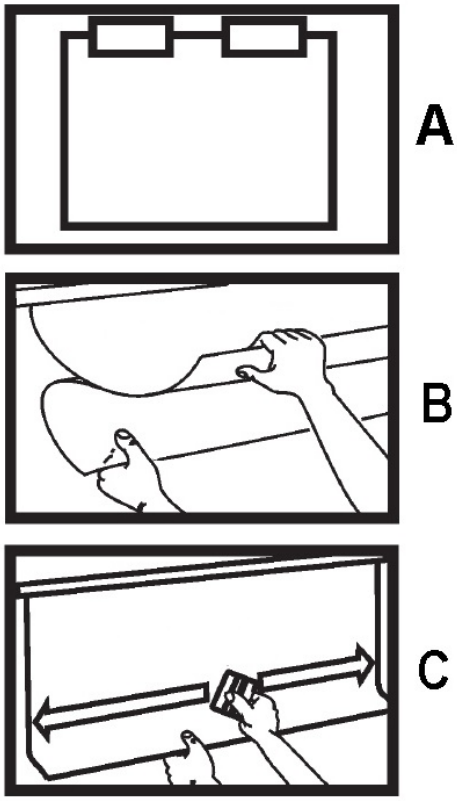
Figure 13. Model Decal (example)

BCX³ 1549

- Apply decals to both sides of conveyor tube.
- For each decal:

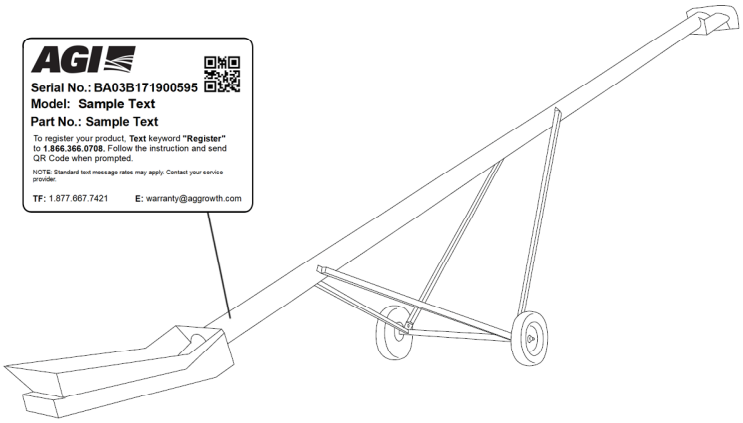
1. Prepare surface by cleaning thoroughly with soap and water. Surface must be clean and free of dirt, grime, rust and oil. To clean oily surface, wipe with clean cloth and solvent cleaner or isopropyl alcohol.
2. Position the decal by centering it vertically on the tube and apply masking tape along the top, creating a gate hinge (see Detail A in Figure 14).
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 14. 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 15).
2. Slide a bearing (3) and a tracking plate (4) on each end of the roller . Secure bearing and plate to the spout using 1/2" x 1-1/2" and 1/2" x 2" carriage bolts (5, 7) and 1/2" locknuts (6).
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 tracking plate 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 1-1/2" square-head set screws (8) in the spout.

Note

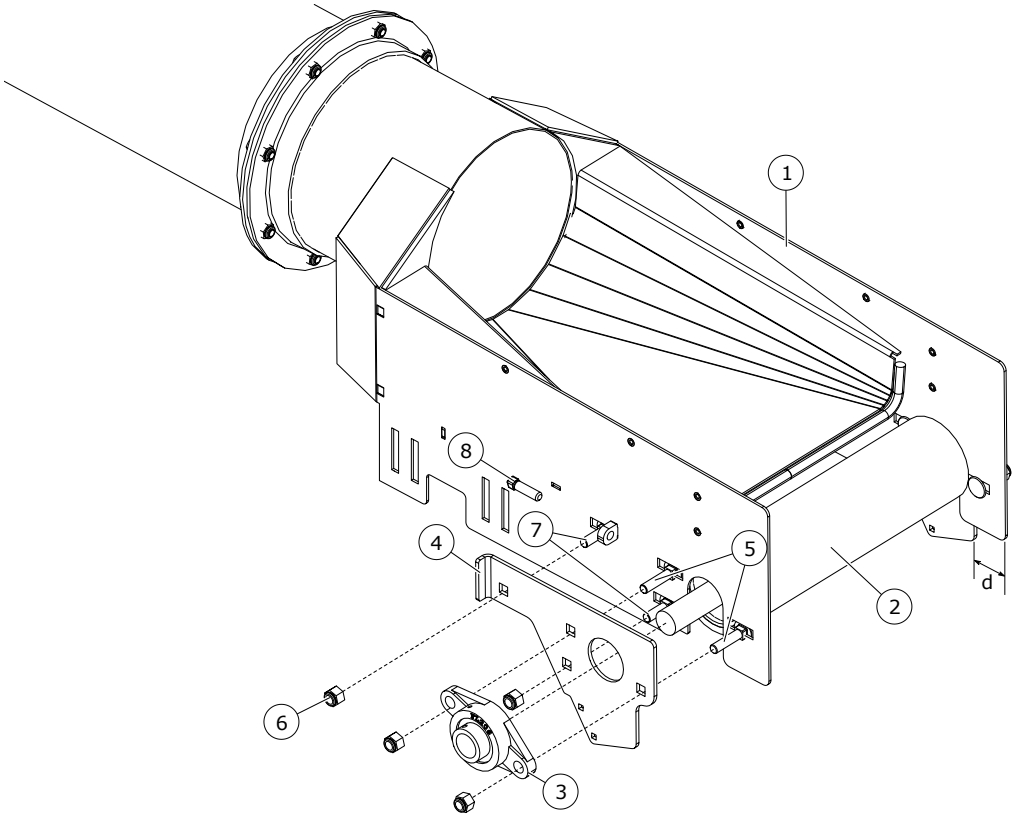
The square-head set screws are used to set the alignment of the belt, after the belt is installed.

Table 4. Spout Roller Components

Item	Description	Quantity
1	Spout	1
2	Spout Roller	1
3	1-1/4" Bearing Flange Unit (SAFL206–20)	2
4	Tracking Plate (RHS and LHS)	2
5	1/2" x 2" Carriage Bolt (GR5)	4
6	1/2" Nylon Locknut (GR8)	8
7	1/2" x 1-1/2" Carriage Bolt (GR5)	4
8	7/16" x 1-1/2" Square-Head Set Screw	2

Hardware Kit: HRDW-15-96

Figure 15. Installing Spout Roller



3.11. Attach the Spout Scraper

1. Attach the urethaned scraper (1b) to the scraper mount (1a) with 3/8" x 1-1/4" bolts (2), 3/8" flat washers (3), and 3/8" locknuts (4), see Figure 16.
2. Insert the spout scraper assembly (1) into the spout weldment. Position at the top section of the slot and secure in place with 3/8" x 1-1/4" bolts (2), 3/8" flat washers (3), and 3/8" locknuts (4), see Figure 17.

Note

Final position of the spout scraper assembly will be adjusted after the belt is installed. See Section 3.32 – Adjusting the Hopper and Spout Scraper on page 125.

Table 5. Spout Scraper Components

Item	Description	Quantity
1	Spout Scraper Assembly	1
1a	Scraper Mount	1
1b	Urethaned Scraper	1
2	3/8" x 1-1/4" Carriage Bolt (GR5)	7
3	3/8" Flat Washer	7
4	3/8" Nylon Locknut (GR8)	7

Hardware Kit: HRDW-15-98

Figure 16. Spout Scraper Assembly

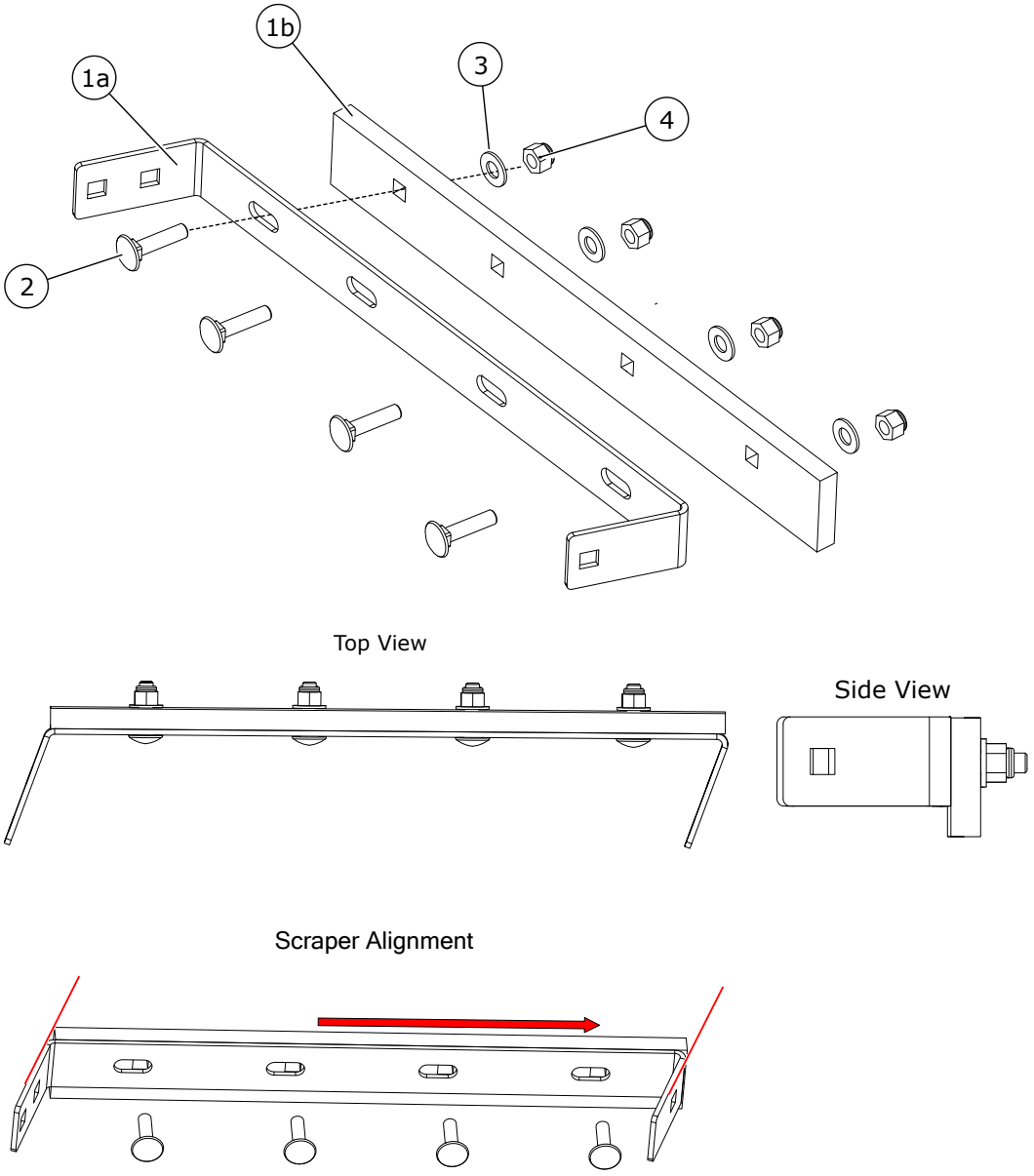


Figure 17. Attaching the Spout Scraper

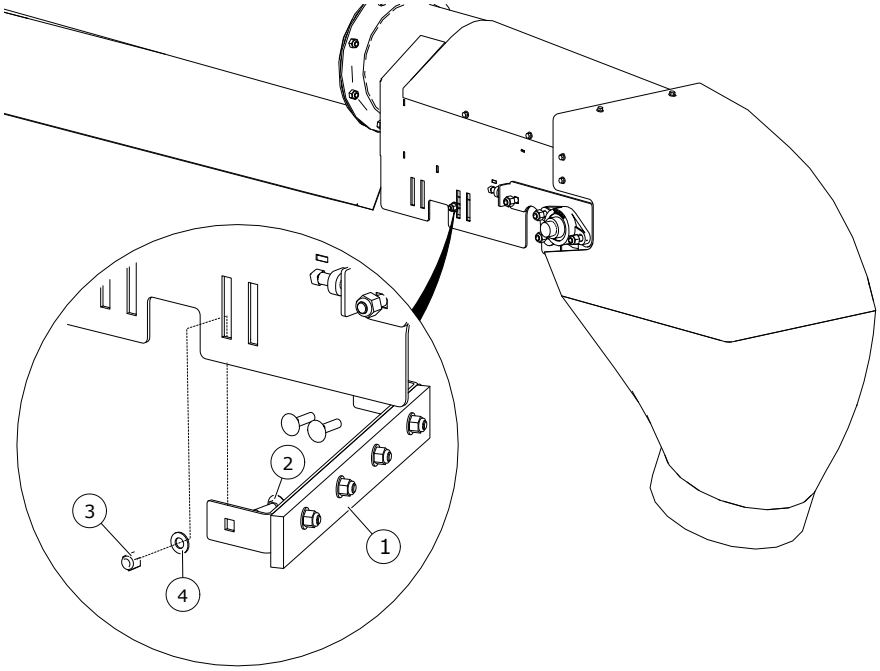
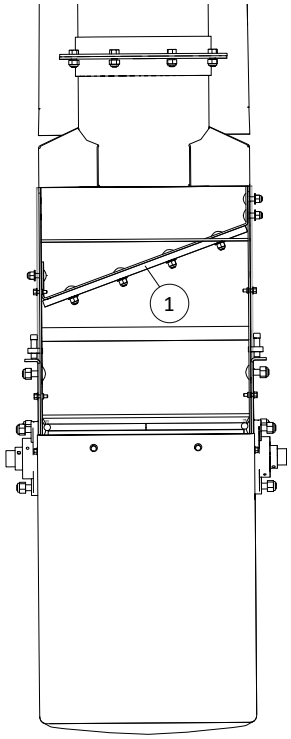


Figure 18. Spout Scraper Installed



3.12. Install the Track Slider

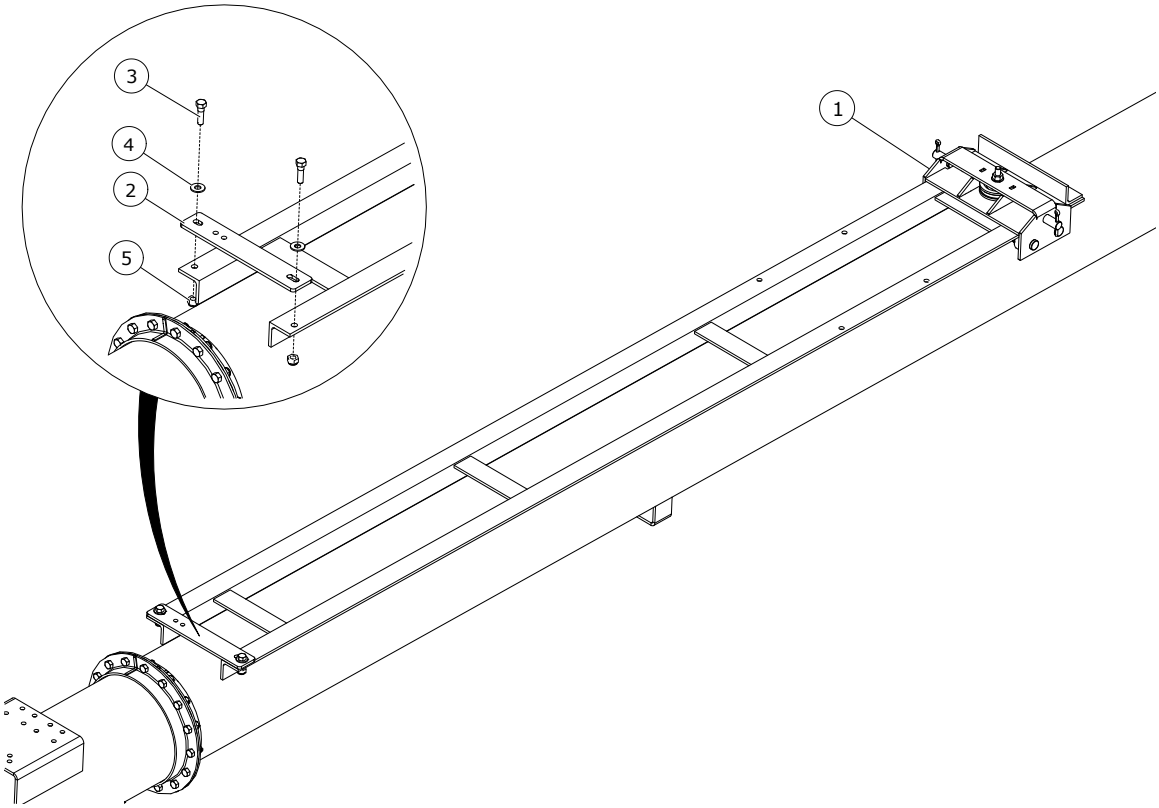
1. Slide the track slider (1) onto the track (see Figure 19).
2. Install the cable attach (2) on the track with 7/16" x 1-1/2" bolts (3), 7/16" locknuts (4), and flat washers (5).

Table 6. Track Slider Components

Item	Description
1	Track Slider
2	Cable Attach
3	7/16" x 1-1/2" Hex Bolt (GR8)
4	3/8" Flat Washer
5	7/16" Nylock Nut (GR8)

Hardware Kit: HRDW-15-124

Figure 19. Installing the Track Slider



3.13. Install the Hydraulic Winch

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

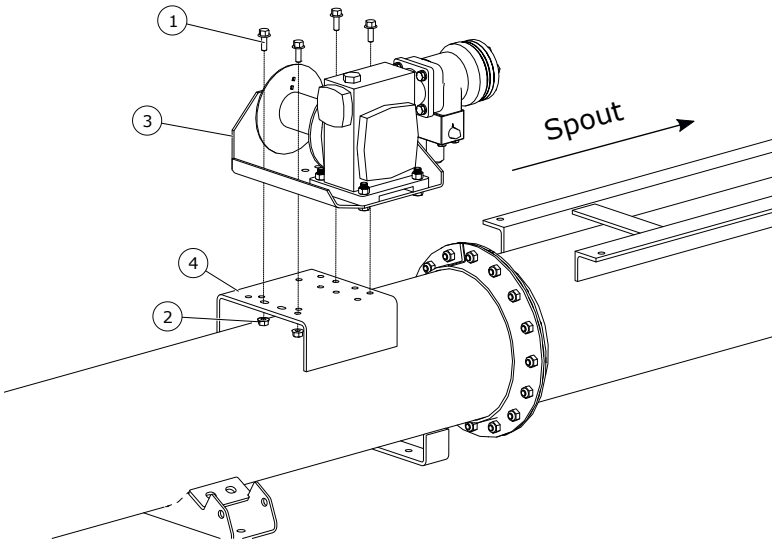
1. Attach the winch (3) to the winch mount bracket (4) with 3/8" x 1" bolts (1) and 3/8" nuts (2) (see Figure 20).

Table 7. Hydraulic Winch Components

Item	Description
1	3/8" x 1" Hex Flange Bolt (GR5)
2	3/8" Hex Flange Nut
3	Winch
4	Winch Mount Bracket

Hardware Kit: HRDW-13-01

Figure 20. Attaching the Winch to the Tube Bracket



Attach the Hydraulic Hose

1. Wrap threaded seal tape around the exposed thread of the hydraulic fittings.
2. Attach the hydraulic fittings (1, 2, 3) and hoses (4) (see Figure 21).

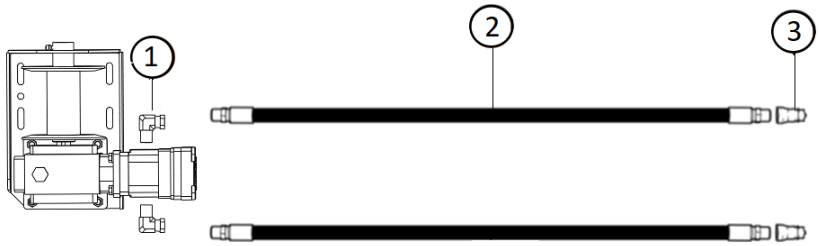
Note

Protect hose ends from dirt.

Table 8. Hydraulic Winch Fittings and Hoses

Item	Description	Quantity
1	Swivel 3/8" PT/90D	2
2	Hose 3/8" x 32-1/2'	2
3	Quick Coupling Nipple 1/2" FPT	2

Figure 21. Attaching the Hydraulic Hoses



3.14. Attach the S-Drive

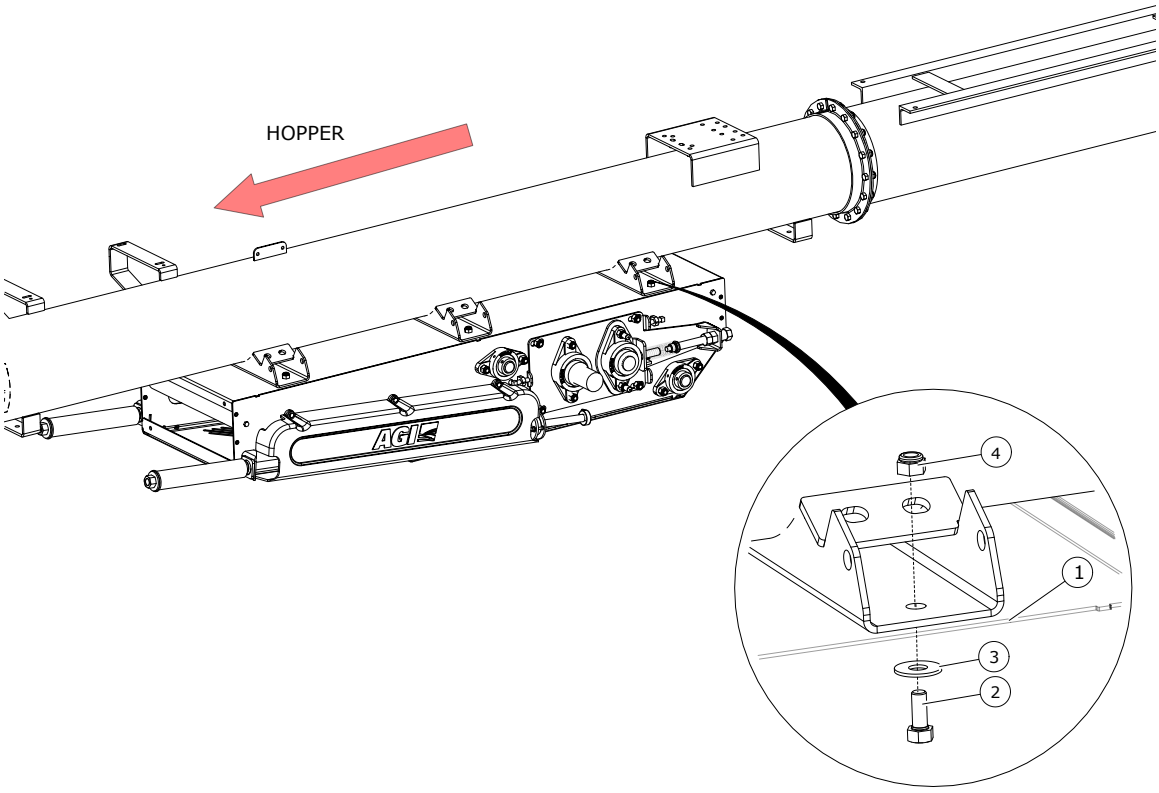
1. Attach the s-drive (1) to the brackets with 7/16" x 1" bolts (2), 7/16" flat washers (3), and 7/16" locknuts (4) (see Figure 22).

Table 9. Components to Install S-Drive

Item	Description	Quantity
1	S-Drive	1
2	1/2" x 1–1/4" Hex Bolt (GR8)	6
3	1/2" Flat Washer	6
4	1/2" Nylock Nut (GR8)	6

Hardware Kit: HRDW-15-40

Figure 22. Attaching the S-Drive



3.15. Attach the Pinch Drive Front Guard

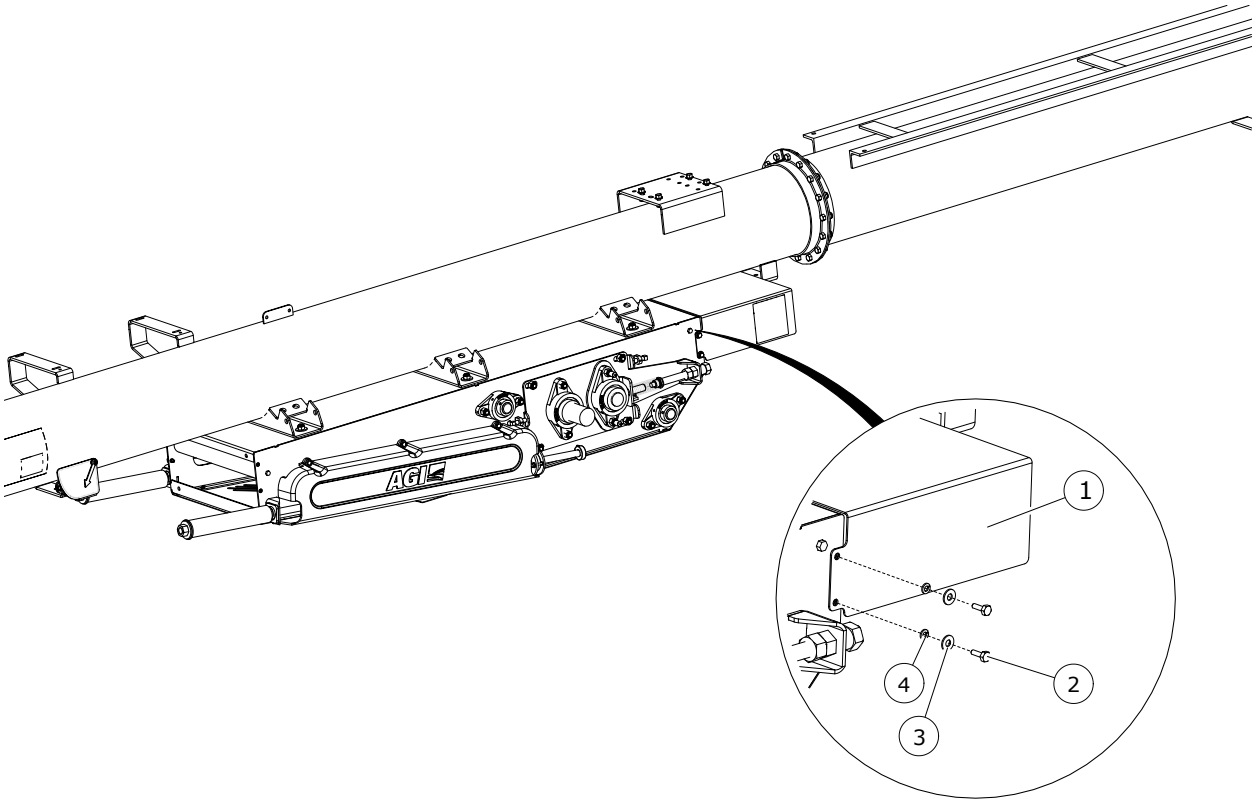
1. Attach the pinch drive front guard (1) to the s-drive with 1/4" x 3/4" bolts (2), 1/4" flat washers (3), and 1/4" lock washers (4) (see Figure 23).

Table 10. Parts Required to Attach Pinch Drive Front Guard

Item	Description	Quantity
1	Pinch Drive Front Guard	1
2	1/4" x 3/4" Hex Bolt (GR5)	4
3	1/4" Flat Washer	4
4	1/4" Lock Washer	4

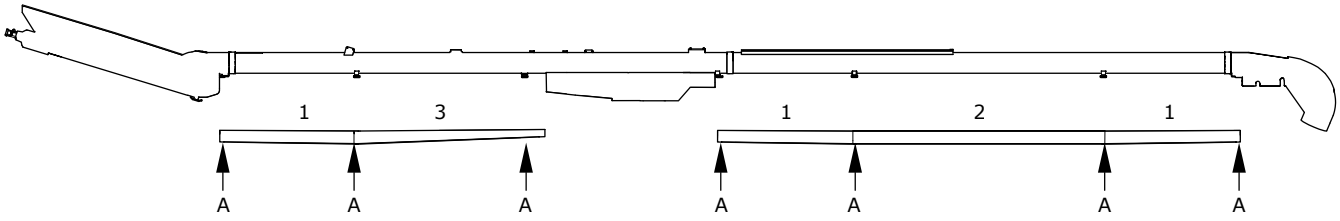
Hardware Kit: HRDW-15-44

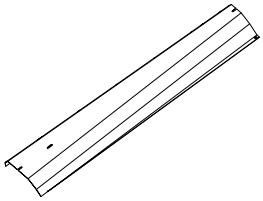
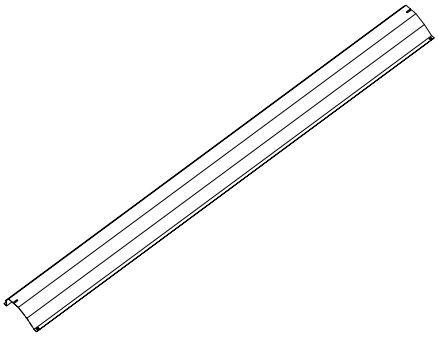
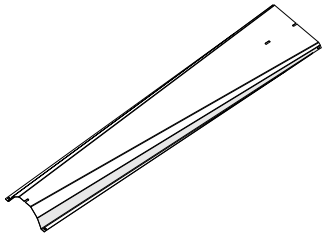
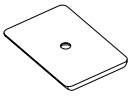
Figure 23. Attaching the Pinch Drive Front Guard



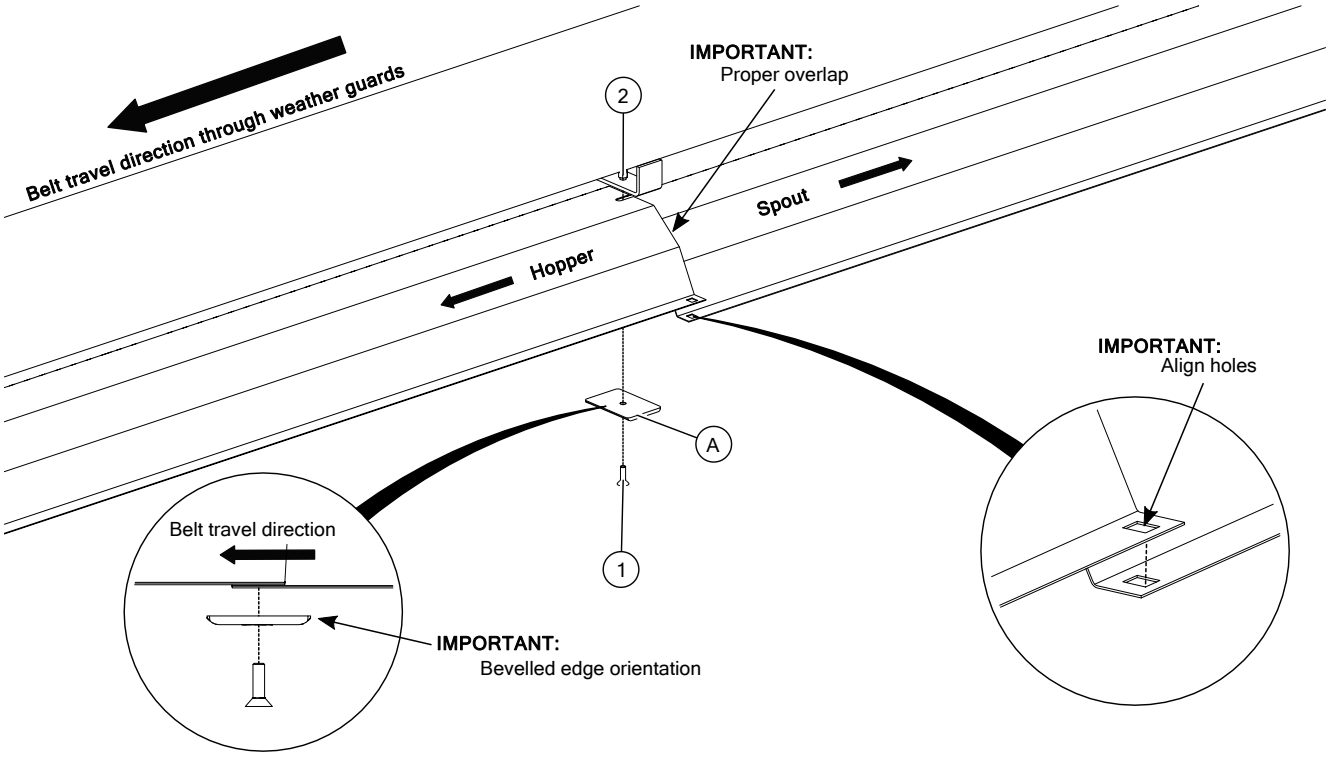
3.16. Install the Weather Guards

Weather Guard Section Locations



1	5.5' (1.68 m) Flared	
2	10' (3.05 m) Weather Guard, Standard	
3	7' (2.13 m) Weather Guard, Flat	
A	Uni-Mount Plate Cast	

Install the Weather Guards on the Tube Brackets



Assembly Notes:

- Install the types of weather guard sections as shown on your particular conveyor model.

  Important

  Overlap the adjacent weather guard sections and align the holes as shown in the figure.

- Connect each weather guard section to the tube brackets using a uni-mount plate cast, 3/8" x 1-1/4" cap screw, and 3/8" lock nut. Leave the 3/8" lock nuts loose. (See Install the Weather Guards on the Tube Brackets on page 38.)
- Confirm all weather guard mount bar holes are aligned.
- Tighten the 3/8" lock nuts after all of the weather guards have been installed.

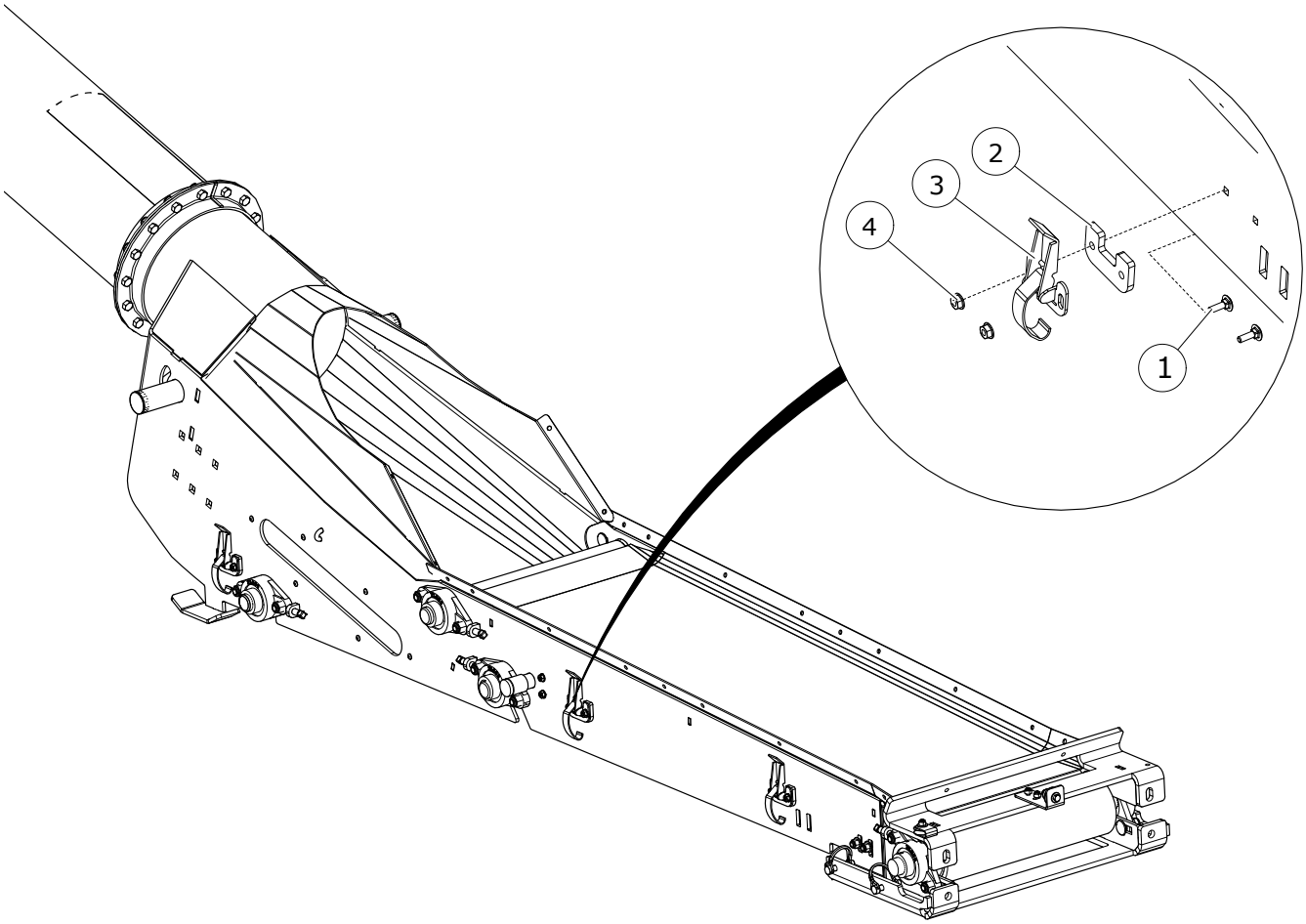
A	Uni-Mount Plate Cast	2	3/8" Nylon Lock Nut (GR8)
1	3/8" x 1-1/4" Flat Head Socket Cap Screw		

3.17. Install the Hopper Latch Hardware

Table 11. Latch Hardware

Item	Description
1	1/4" x 3/4" Carriage Bolt (GR2)
2	Spacer
3	Tension Latch Clamp
4	1/4” Serrated Hex Flanged Nut (GR5)

Figure 24. Installing the Latch Hardware



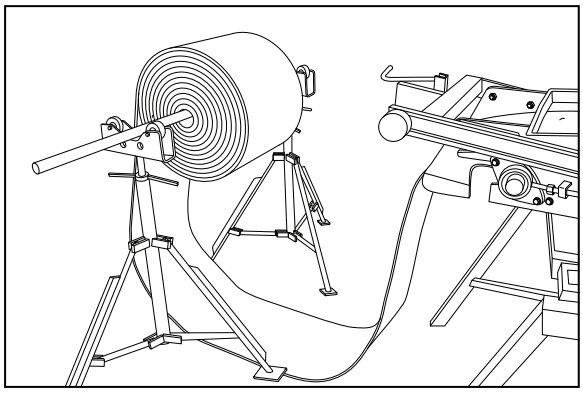
3.18. Install the Belt

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 25. Rolled Belt Behind a Typical Hopper

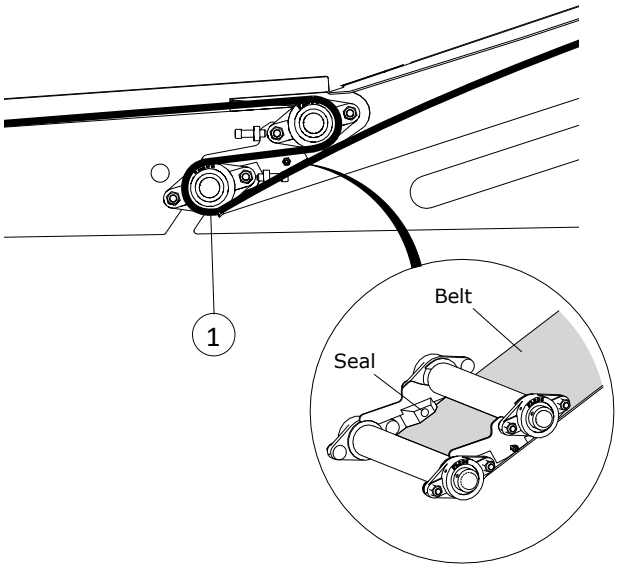


3. Feed a fish tape in at the spout, through the tube, and into the hopper.
4. Manually thread the belt around the transition rollers (1) in the hopper.

Important

Pass the belt underneath the protruding edge of the seal to prevent grain leakage. Refer to Figure 26.

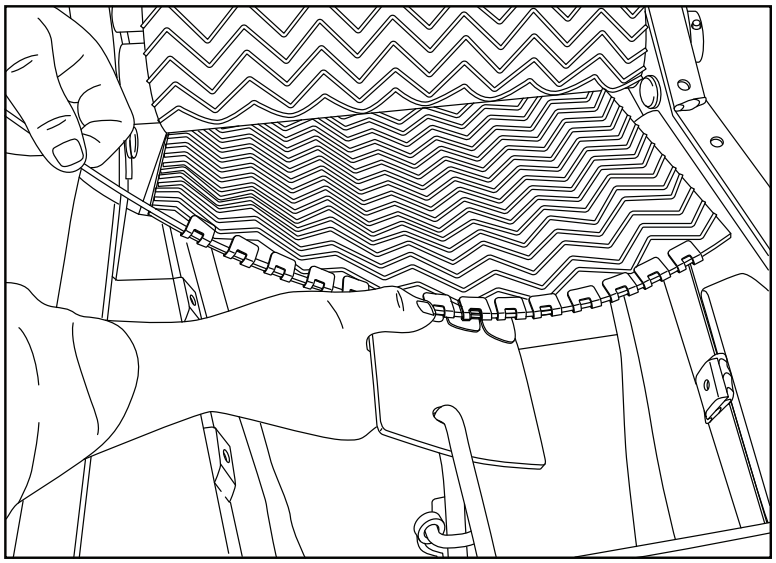
Figure 26. Belt Through Transition Rollers



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.

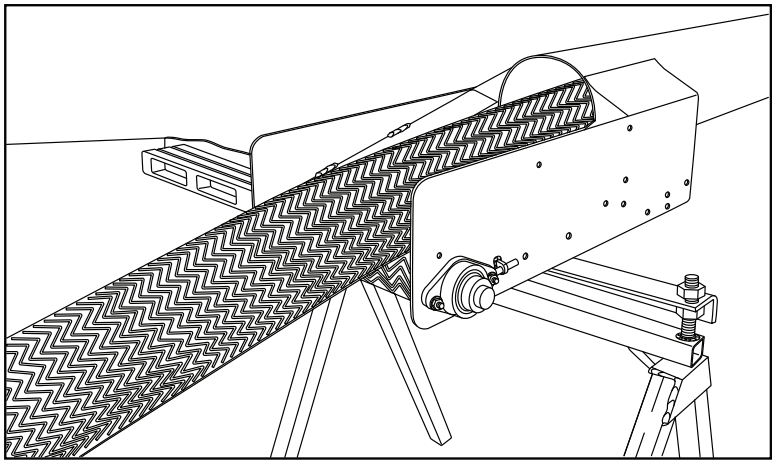
Figure 27. Attaching the Short Belt Piece to the Belt



Thread the Conveyor Belt

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

Figure 28. Conveyor Belt Pulled Through the Spout



2. Wrap the belt around the spout roller and pull it back under the conveyor tube up to the s-drive.
3. Remove the s-drive bottom guard.
4. Loosen the s-drive pinch roller bolts and take-up roller bolts (on both sides of s-drive) to the end of their threads.

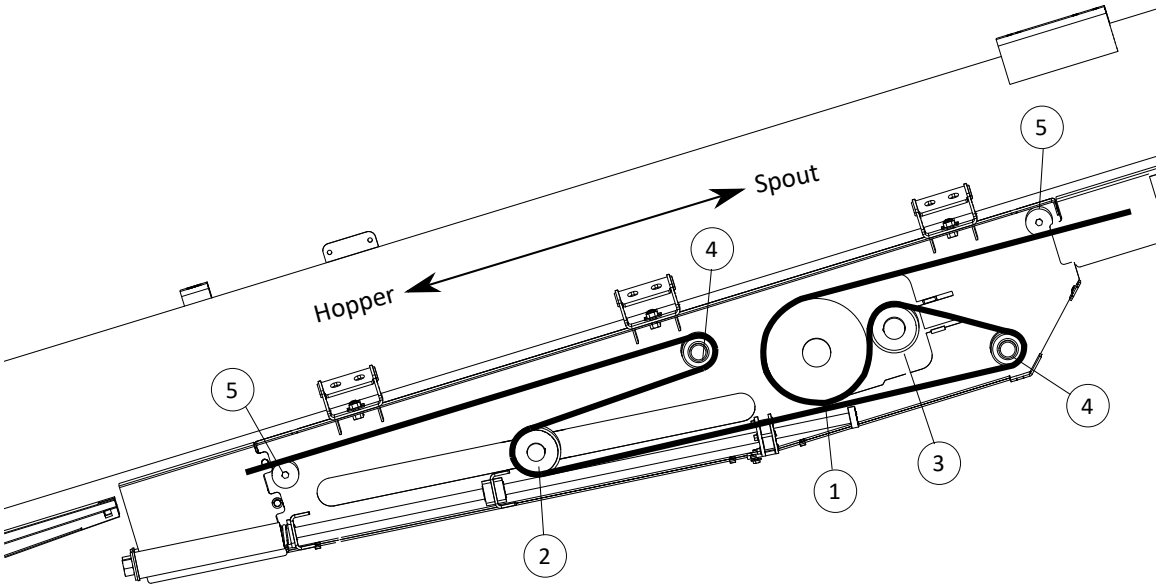
   Note

   Do not tighten the nuts on the pinch roller bolts and take-up roller bolts on the s-drive until the belt is fully installed.

5. Guide the belt through the s-drive as shown in the figure below.

6. Pull the conveyor belt out from the back of the s-drive until approximately 6' (1.8 m) of excess belt remains on the stand behind the hopper.

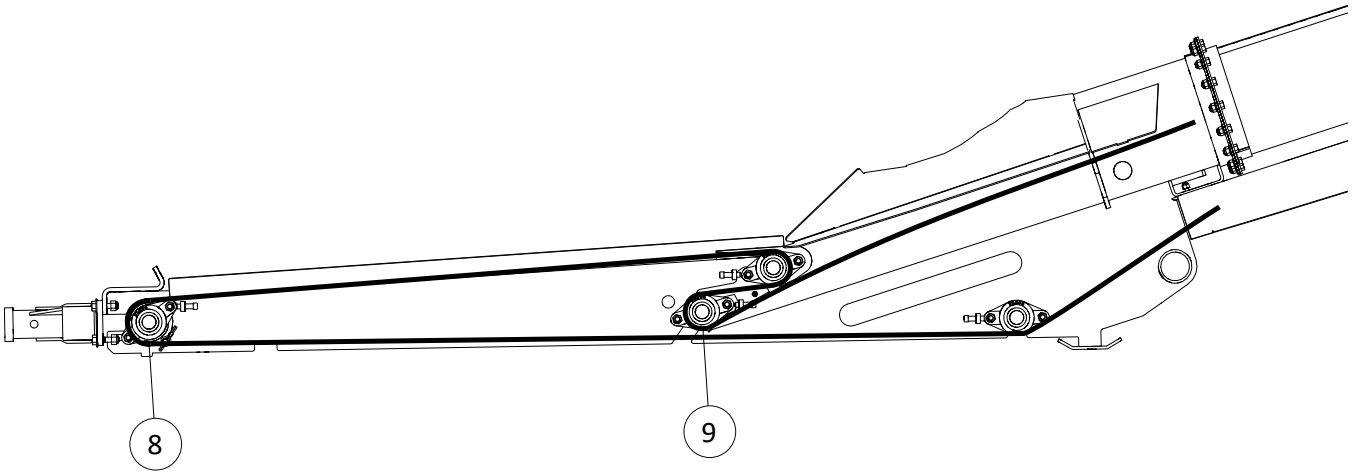
Figure 29. S-Drive Conveyor Belt Path



Item	Description
1	Drive Roller
2	Take-up Roller
3	Pinch Roller
4	Return Roller
5	Hex Roller

7. Wrap the belt around the spout roller and back under the conveyor tube to the hopper.
8. Wrap the remaining conveyor belt around the hopper roller and under the tube.

Figure 30. Conveyor Belt Bottom Path



Item	Description
8	Hopper Roller
9	Transition Roller

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 31. Using a Strap Puller

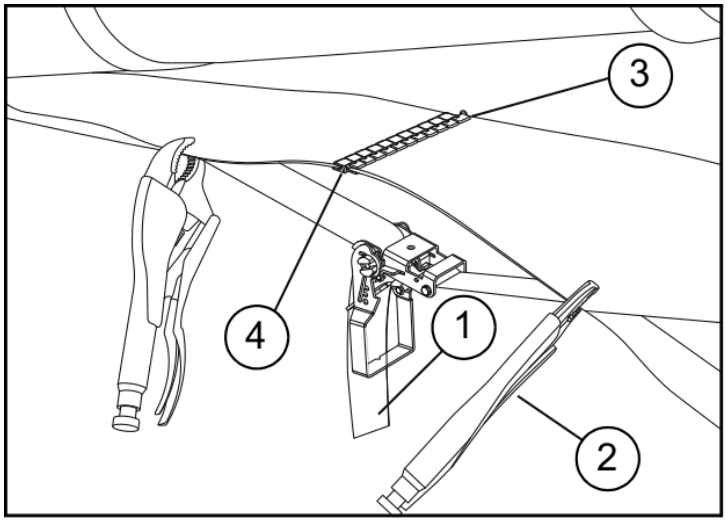
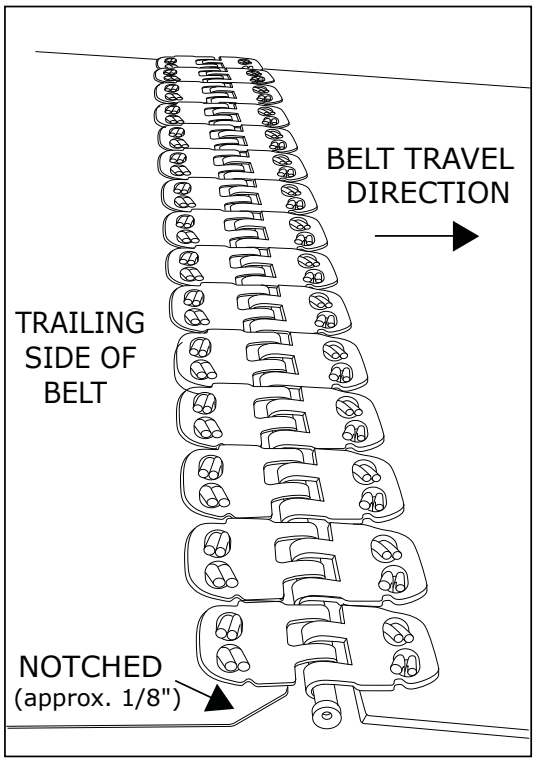


Figure 31 Using a Strap Puller (continued)

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 1/8” off the tip of the corner to prevent fraying.

Figure 32. Tapering the Trailing Edge of the Belt



Sealing the Belt Lacing

This section describes how to seal the belt lacing when handling oilseeds to prevent leakage.

1. Apply a thin layer of flexible industrial strength adhesive to the belt lacing while the belt is under tension.

   Note

   Eclectic E6000 Industrial Strength Adhesive or equivalent is recommended. This adhesive remains flexible once cured.

2. Spread the adhesive into all gaps between the teeth of the belt lacing.
3. Allow adhesive to cure.

   Important

   Do not install urethane seals and flashing or attempt to run the conveyor until the adhesive coating is allowed to dry or partially cure.

Note

When using Eclectic E6000, pass a heat gun over the belt lacing for a minimum of 2 minutes to speed up the curing process. If the adhesive begins to bubble, decrease heat intensity.

Tighten the Conveyor Belt

Use the s-drive pretensioner assembly (1) to set the belt tension.

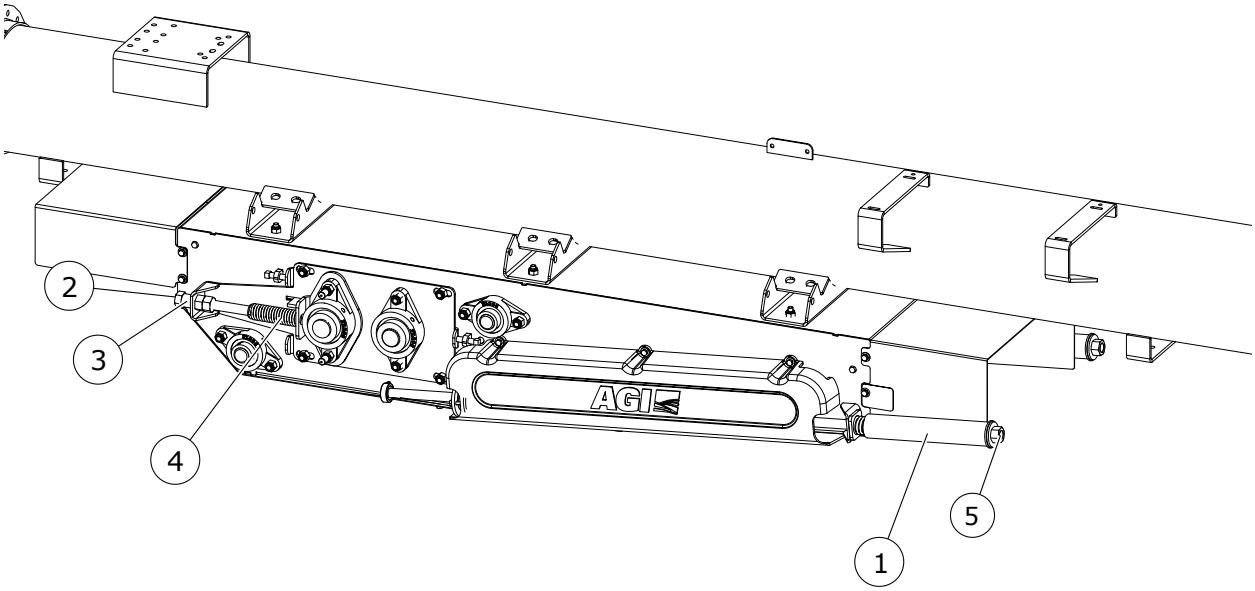
1. Tighten the welded nut (5) on the end of the threaded rod until the edge of the pretensioner pipe is within the green area on the pretensioner decal, see Figure 34.

   Important

   Alternate sides when adjusting the pretensioner for distances of more than 5”. If one side is more than 5” behind or ahead of the other, damage to the threaded rod may occur.

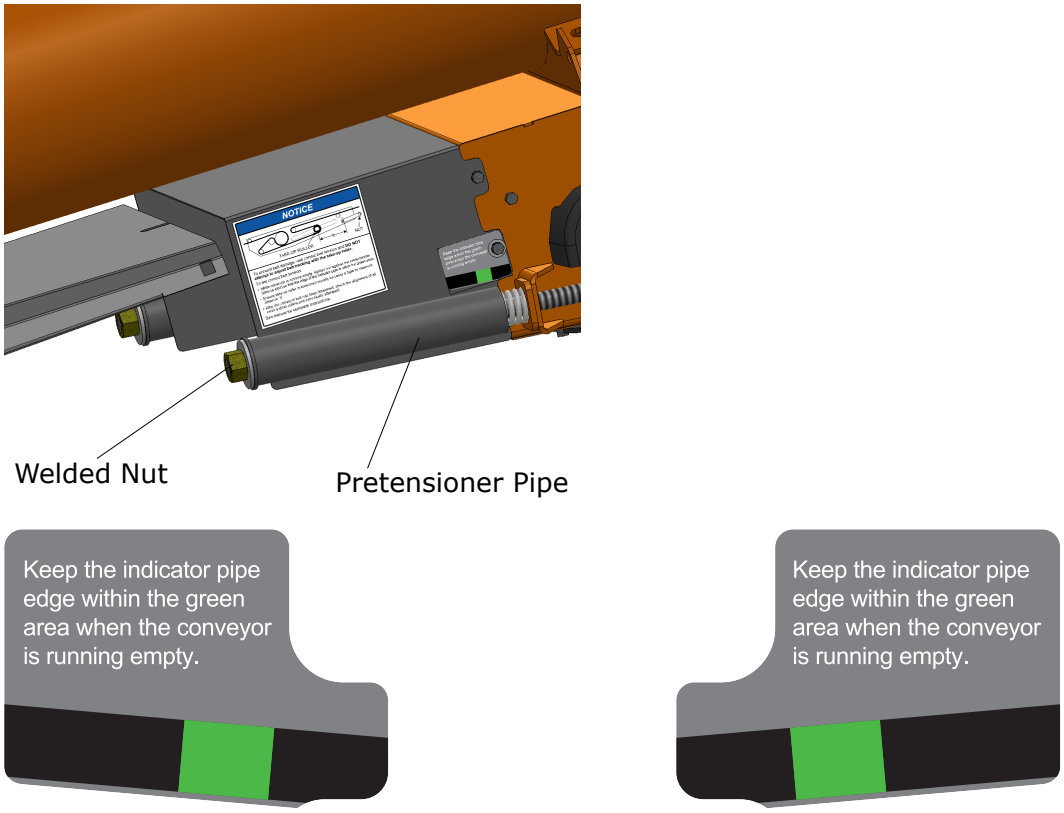
2. Measure to be sure both sides are set at the same position.
3. Tighten the pinch roller bolts (2, both sides of s-drive) until the head of bolt contacts the pinch pipe (3).
4. Check to make sure the bolts on the pinch roller bearings are just loose enough to allow the pinch roller to kick back 1/4" during operation (when the belt seam passes through).
5. Re-attach the s-drive bottom guards.

Figure 33. S-Drive Pretensioner and Pinch Roller Bolts



Item	Description
1	Pretensioner Assembly
2	Pinch Roller Bolt
3	Pinch Pipe
4	Spring
5	Welded Nut

Figure 34. Setting the Belt Tension



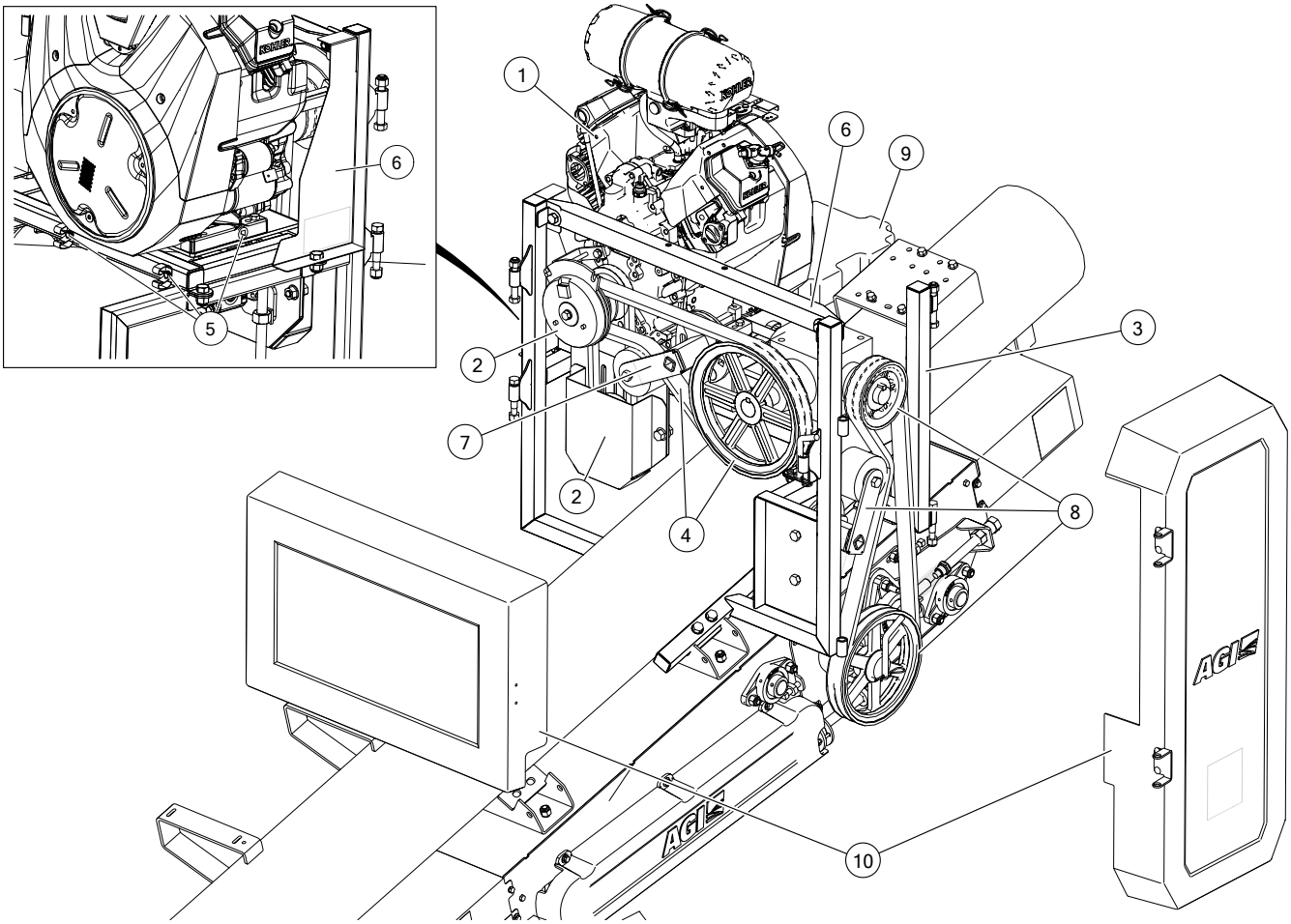
The belt will require final tension and alignment after the conveyor is fully assembled. Refer to the conveyor operation manual for complete instructions.

3.19. Install Top-Mount Drive Overview

Important

Do not tighten frame bolts until Step 5 is complete.

Step	Procedure
1	Install the Motor and Gearbox to Bottom Frame
2	Install the Hydraulic Pump and Clutch to Bottom Frame
3	Assemble the Frame
4	Install Motor Pulley, Motor Pulley Belt, and Clutch Stop
5	Install the Drain Hose Clamps, Drain Hose, and Muffler
6	Install the Crossbrace and Motor Guard
7	Install the Torsion Idler
8	Install the Drive Pulleys, Drive Belt, and Torsion Idler
9	Install the Battery
10	Install the Guards



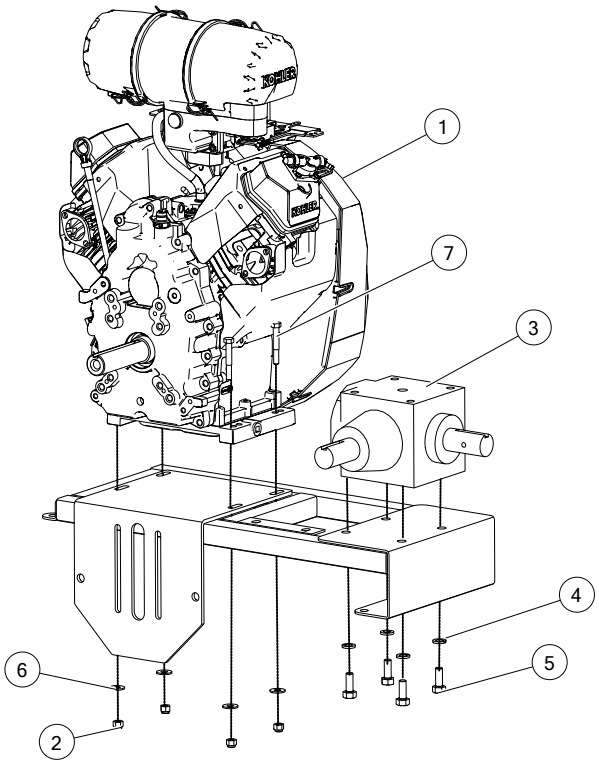
3.19.1 Install the Motor and Gearbox to Bottom Frame

Important

Do not tighten the motor or gearbox bolts until the drive belts have been installed and aligned.

Important

Fasten the gearbox to the frame with two bolts, the remaining two bolts are used in Section 3.19.3 – Install the Bottom Frame on page 50



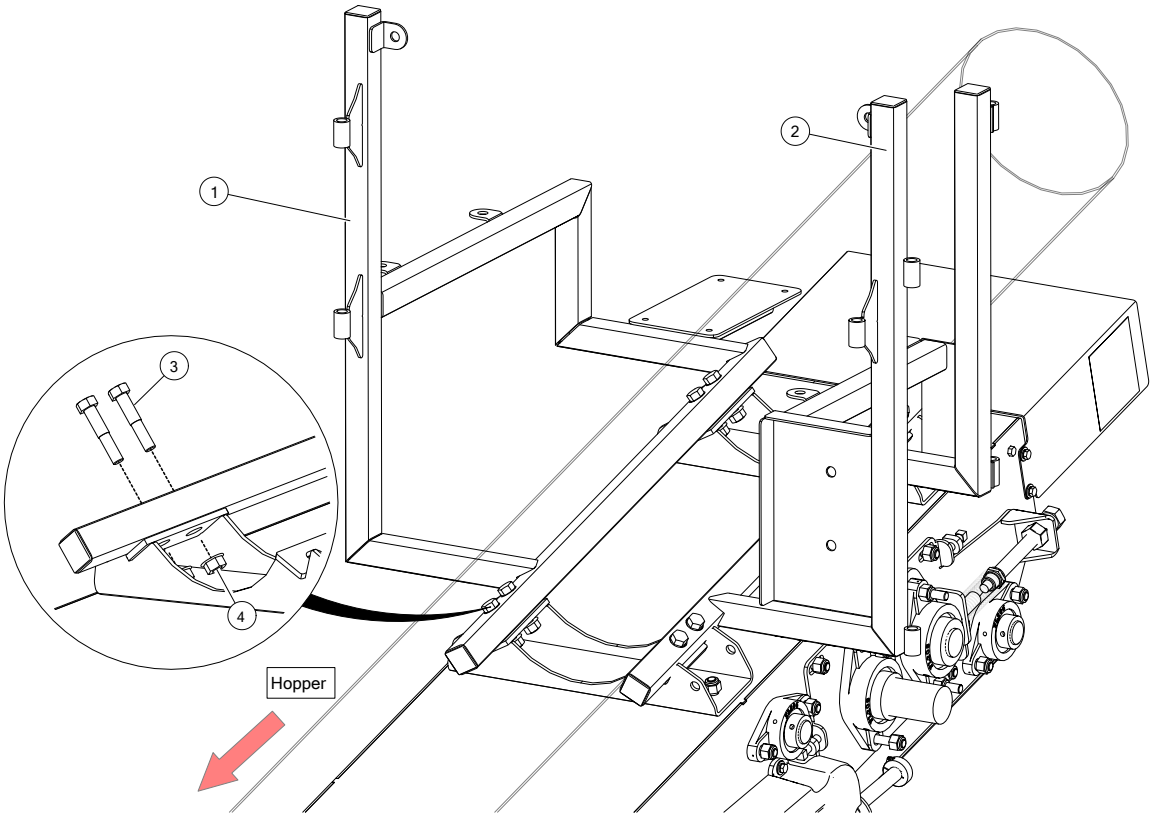
Note

Both sizes of hardware are included in the hardware kit. Use the size of hardware indicated in the motor installation manual.

Item	Description	
1	Motor	
2	3/8" Lock Nut	5/16" Lock Nut
3	Gearbox	
4	1/2" Lock Washer	
5	1/2" X 1–1/4" Hex Bolt (GR 8)	
6	3/8" Flat Washer	5/16" Flat Washer
7	3/8" X 2" Hex Bolt	5/16" X 2" Hex Bolt

Hardware: HRDW-15–100, HRDW-15–134

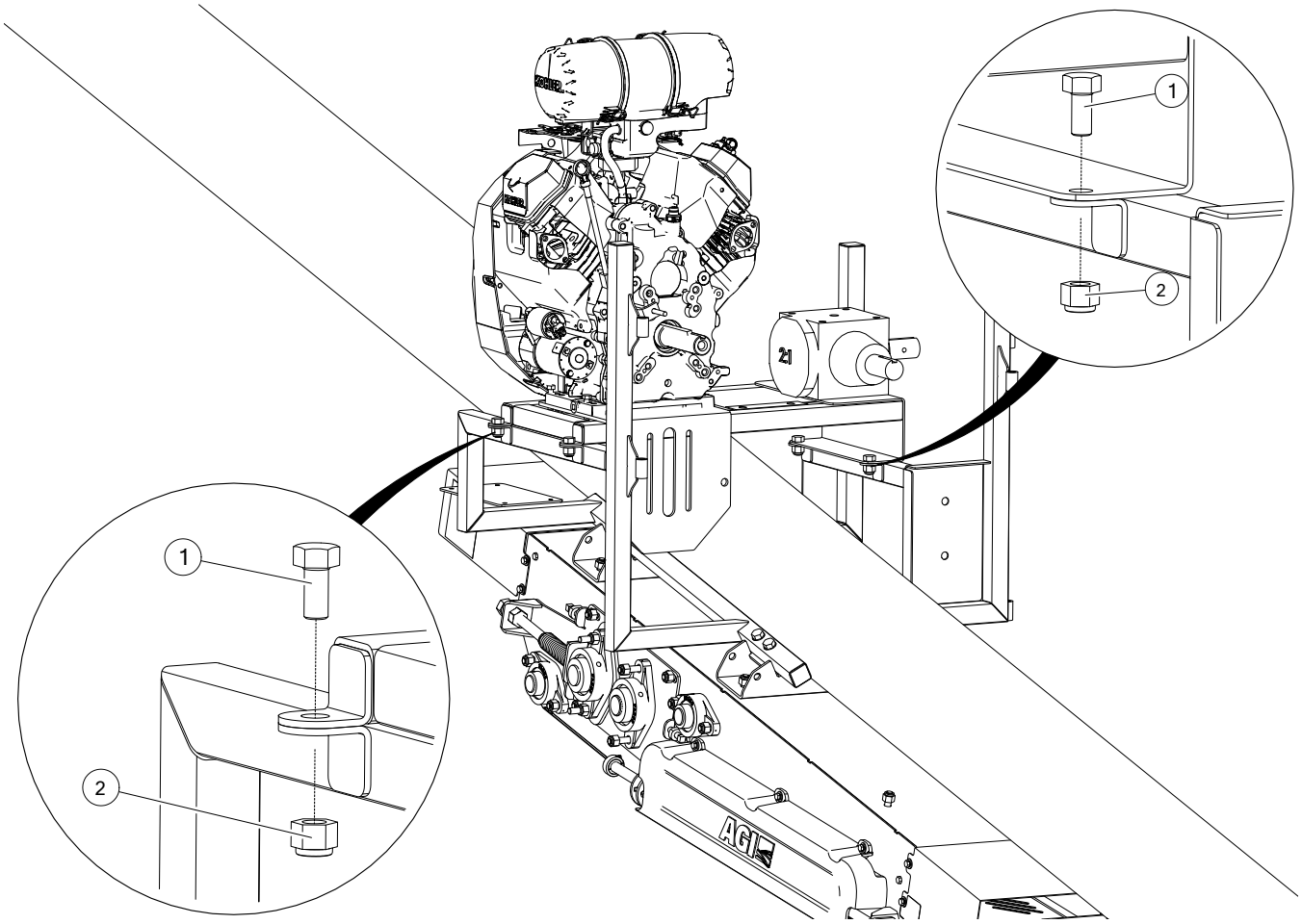
3.19.2 Install the Side Frames



Item	Description
1	Left Side Frame
2	Right Side Frame
3	1/2" X 2–1/2" Hex Bolt (GR 8)
4	1/2" Hex Flange Nut

Hardware: HRDW-15–102

3.19.3 Install the Bottom Frame

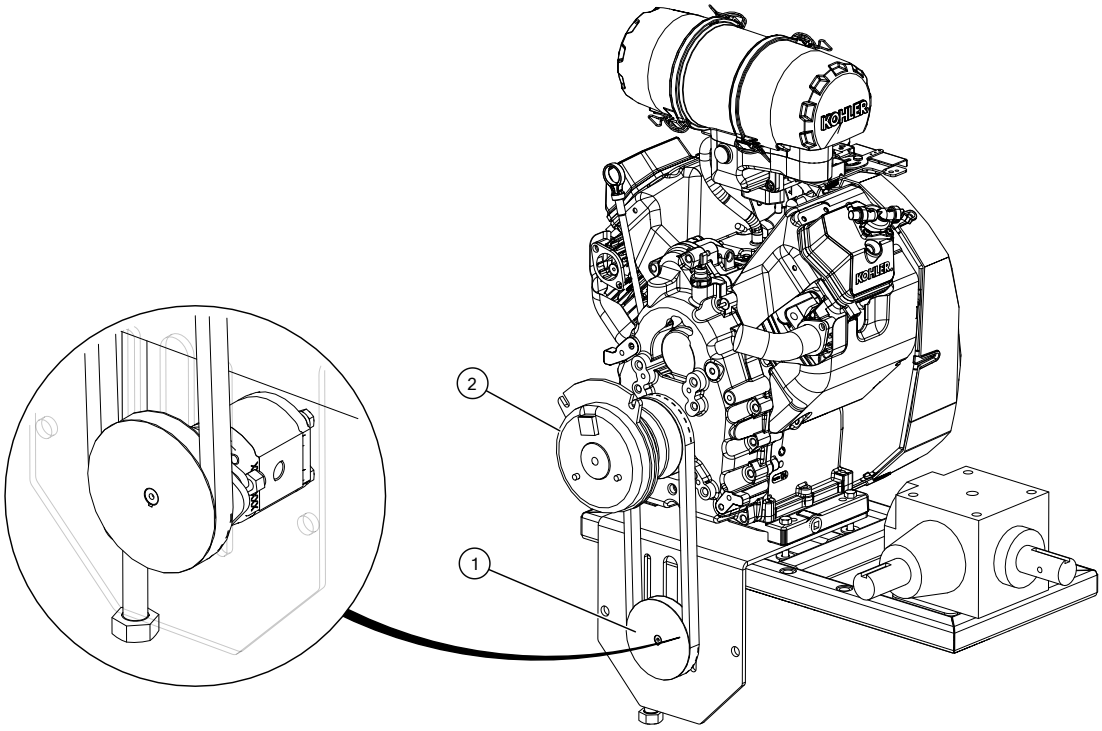


Item	Description
1	1/2" X 1" Hex Bolt (GR 8)
2	1/2" Lock Nut
3	1/2" X 1–1/4" Hex Bolt (GR 8)

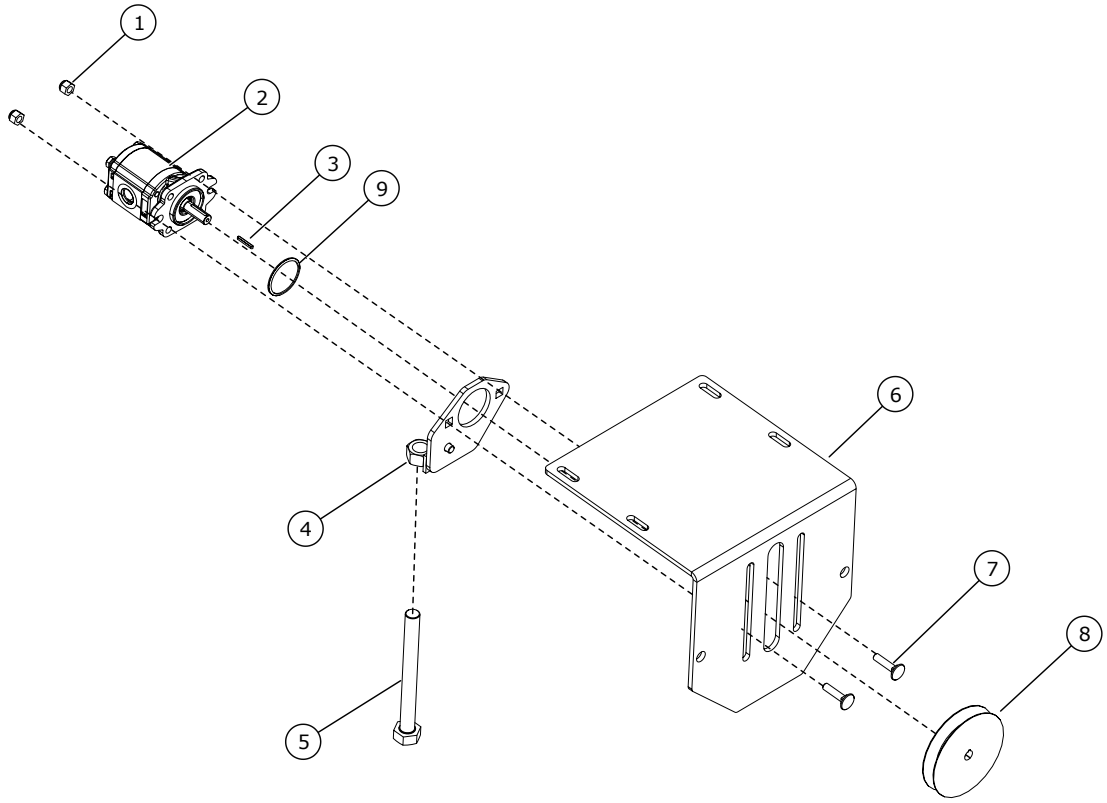
Hardware: HRDW-15–132, HRDW-15–134

3.19.4 Install the Hydraulic Pump and Clutch to the Bottom Frame Overview

Step	Procedure
1	Install the Hydraulic Pump
2	Install the Clutch



Install the Hydraulic Pump



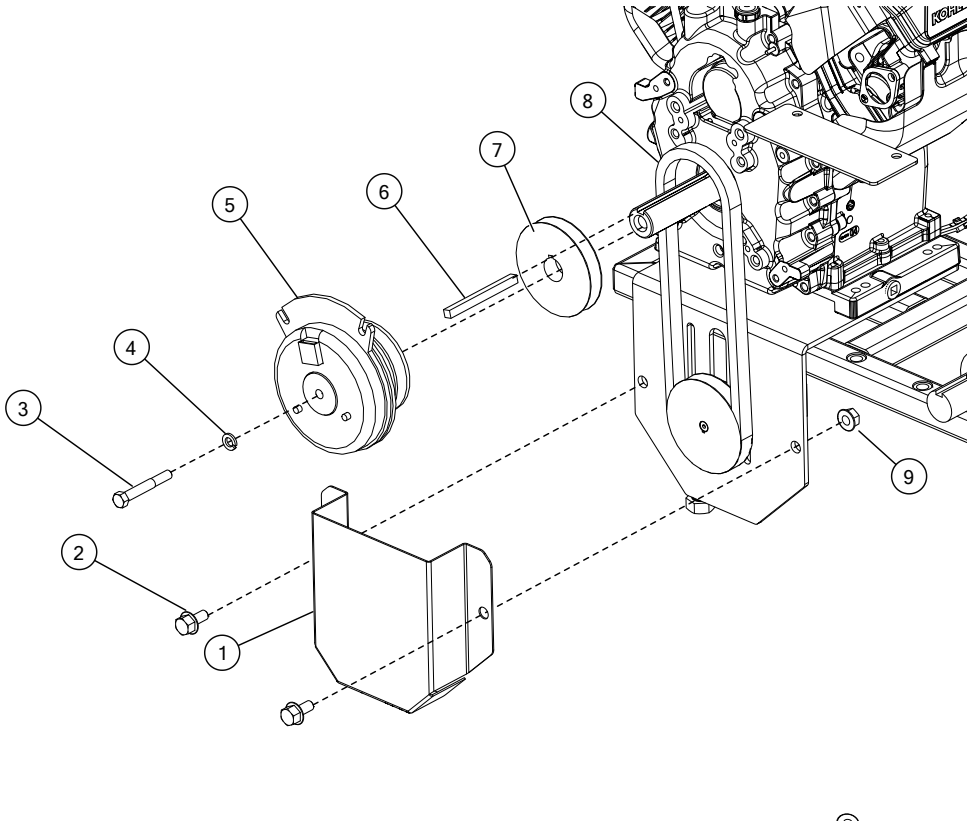
Item	Description
1	3/8" Locknut
2	Hydraulic Pump
3	Hydraulic Pump Key (comes with pump)
4	Hydraulic Pump Mount Plate
5	3/4" X 7" Tap Bolt (GR 5)
6	Hydraulic Pump Base Plate
7	3/8" X 1–1/2" Carriage Bolt (GR 5)
8	4–1/2" X 1/2" Pulley
9	Hydraulic Pump Steel Plate (comes with pump)*
*attach to the plastic shaft holder	

Hardware Kit: HRDW-15–101

Note

- The tap bolt (5) is used to tension the hydraulic pump belt after the clutch assembly is installed.
- The hydraulic pump steel plate (9) keeps the hydraulic pump centered in the mount.

Install the Clutch and Hydraulic Pump Guard



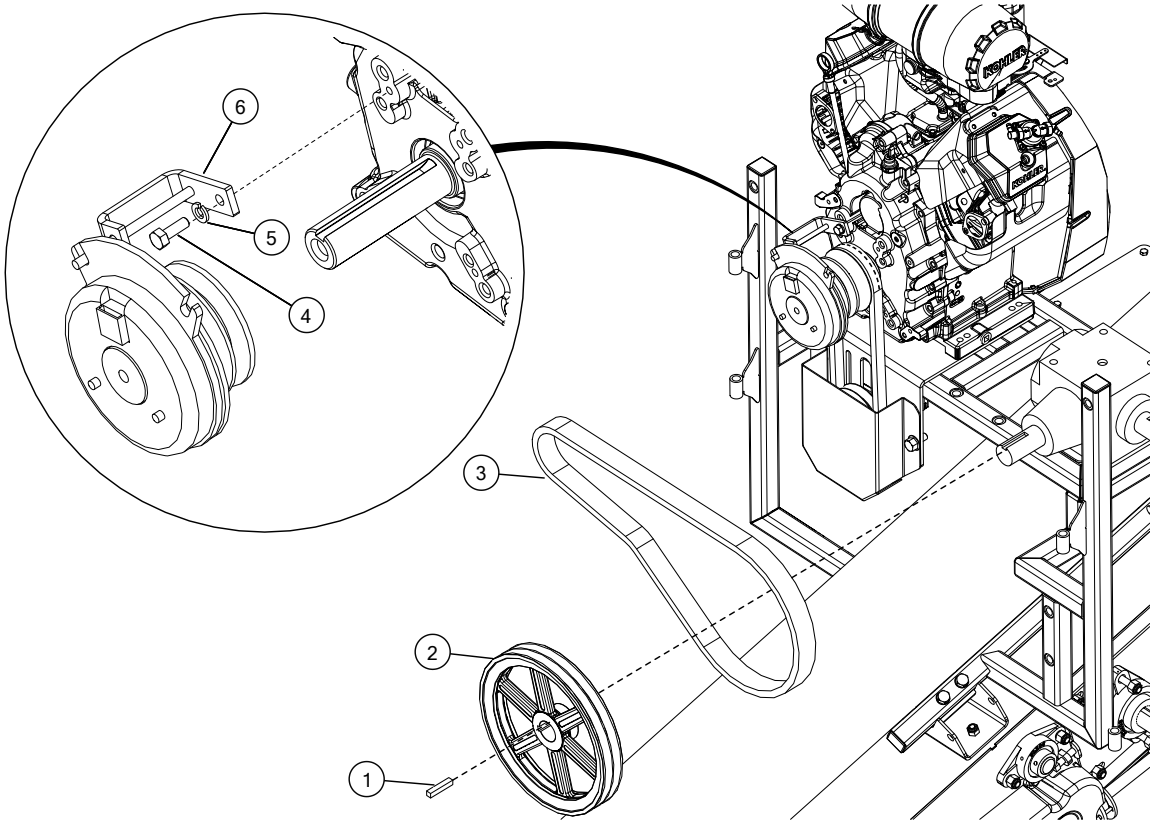
Item	Description
1	Hydraulic Pump Guard
2	1/2" X 1" Hex Flange Bolt
3	7/16" X 3" Hex Bolt
4	7/16" Lock Washer
5	Clutch Assembly
6	3/8" X 4-3/8" Key
7	4-1/2" X 1-1/8" Pulley
8	Hydraulic Pump Belt (BX31)
9	1/2" Flange Nut

Hardware: PARTK-15-44

Note

Align the pulleys using a straight edge before installing the belt. Tighten the set screws after the pulleys are aligned.. Use the tap bolt from the Section – Install the Hydraulic Pump on page 52to adjust the distance between the pulleys for correct belt tension.

3.19.5 Install the Motor Pulley, Motor Pulley Belt, and Clutch Stop



Item	Description
1	3/8" X 2" Gearbox Key
2	12" DBL Pulley 1-1/2" Bore
3	2B59 Banded Belt
4	3/8" X 1" Hex Bolt
5	3/8" Lock Washer
6	Clutch Stop

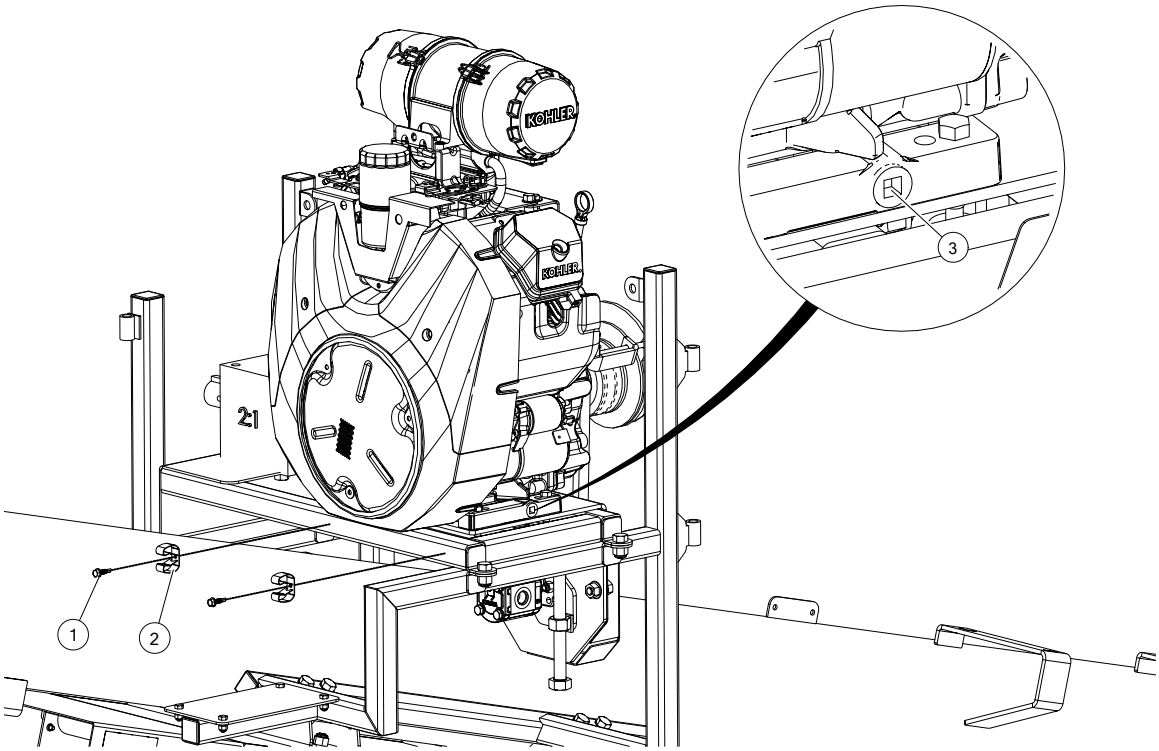
Note

Align the pulleys using a straight edge before installing the belt. Tighten the set screws after the pulleys are aligned.

3.19.6 Install the Drain Hose Clamps, Drain Hose, and Muffler

1. Attach the drain hose clamps to the bottom frame with tek screws.
2. Remove the plug insert on the engine.
3. Attach the oil drain hose to the engine.
4. Secure the oil drain hose with the clamps.
5. Install the muffler according to the instructions that arrived with the motor.

Install the Drain Hose Clamps and Drain Hose



Item	Description
1	Tek Screw
2	Drain Hose Clamp
3	Engine Plug

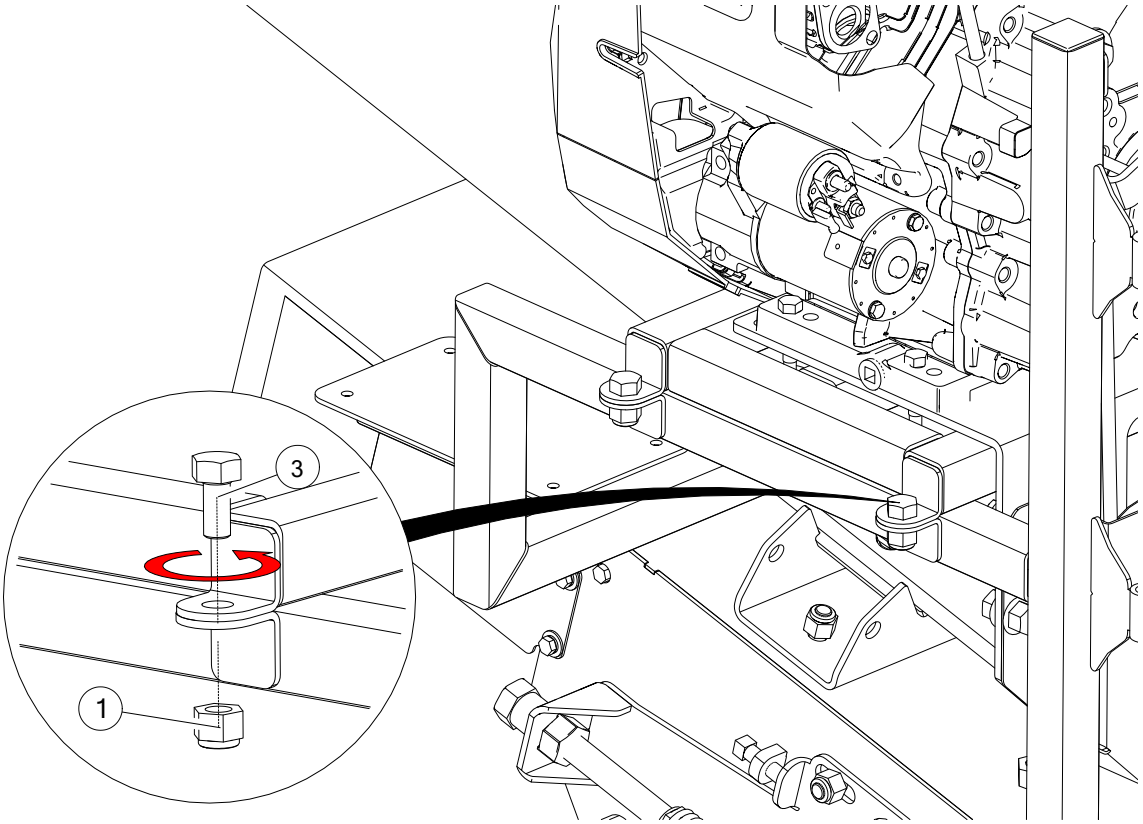
Hardware: HRDW-15–121

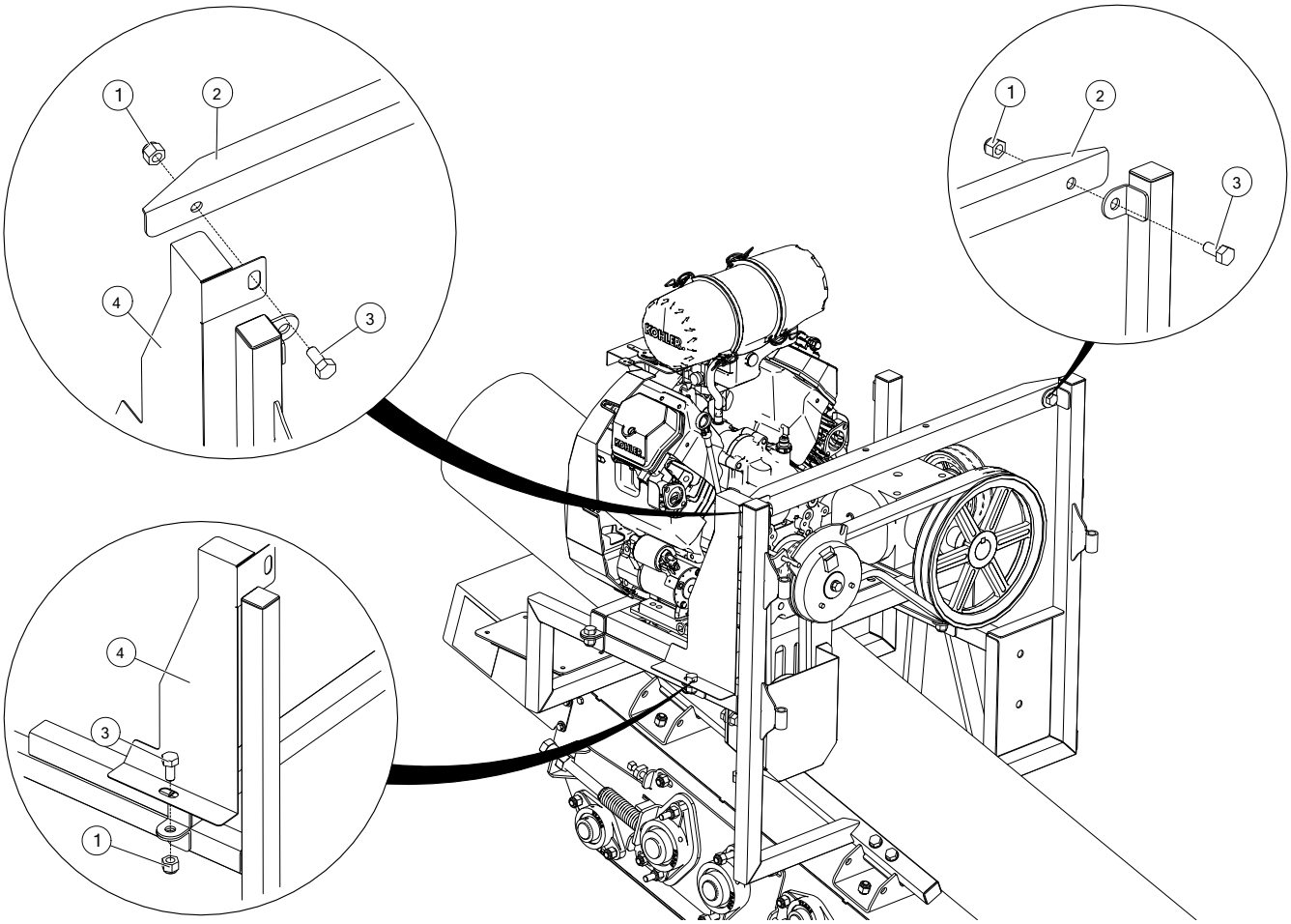
3.19.7 Install the Crossbrace and Motor Guard

Install the Crossbrace and Motor Guard

Note

Remove the bolt and nut adjacent to the left frame vertical arm.





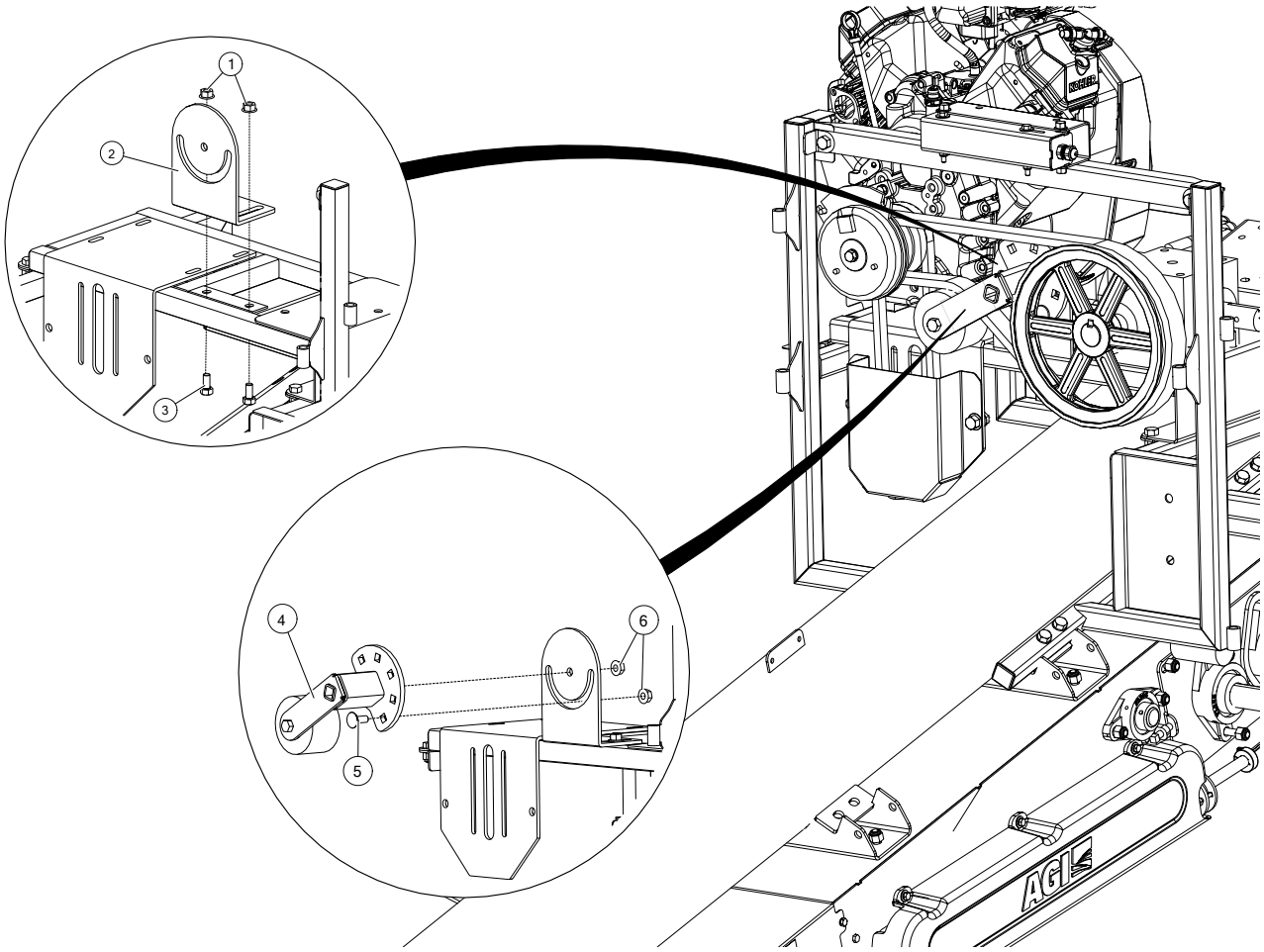
Item	Description
1	1/2" Lock Nut
2	Crossbrace
3	1/2" X 1" Hex Bolt (GR 8)
4	Motor Guard

Important

Tighten all frame bolts installed up to this point.

Hardware Kit: HRDW-15–132

3.19.8 Install the Torsion Idler



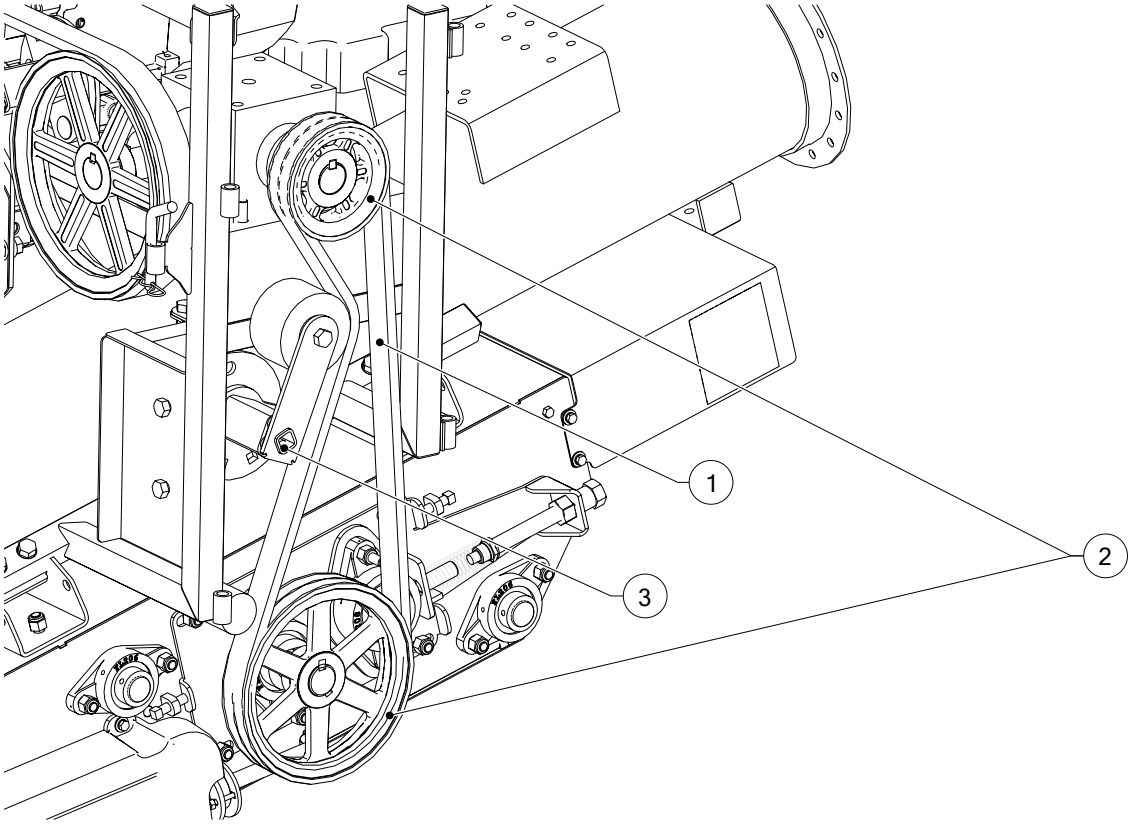
Item	Description
1	1/2" Hex Flange Nut
2	Torsion Idler Mount Plate
3	1/2" X 1" Hex Bolt (GR 8)
4	Torsion Idler Arm
5	1/2" X 1–1/4" Carriage Bolt
6	1/2" Hex Flange Nut

Hardware: HRDW-15–133

Note

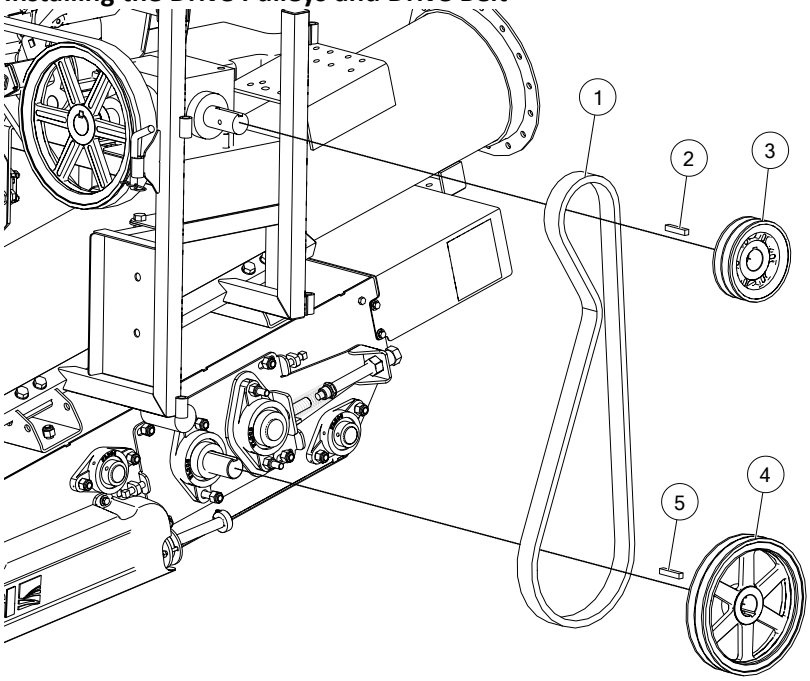
Do not tension the drive belt with the torsion idler until both drive belts are installed and aligned, and the frame, motor, and gearbox hardware are all fully tightened.

3.19.9 Install the Drive Pulleys, Drive Belt, and Torsion Idler



Item	Description
1	Drive Belt
2	Drive Pulleys
3	Torsion Idler

Installing the Drive Pulleys and Drive Belt

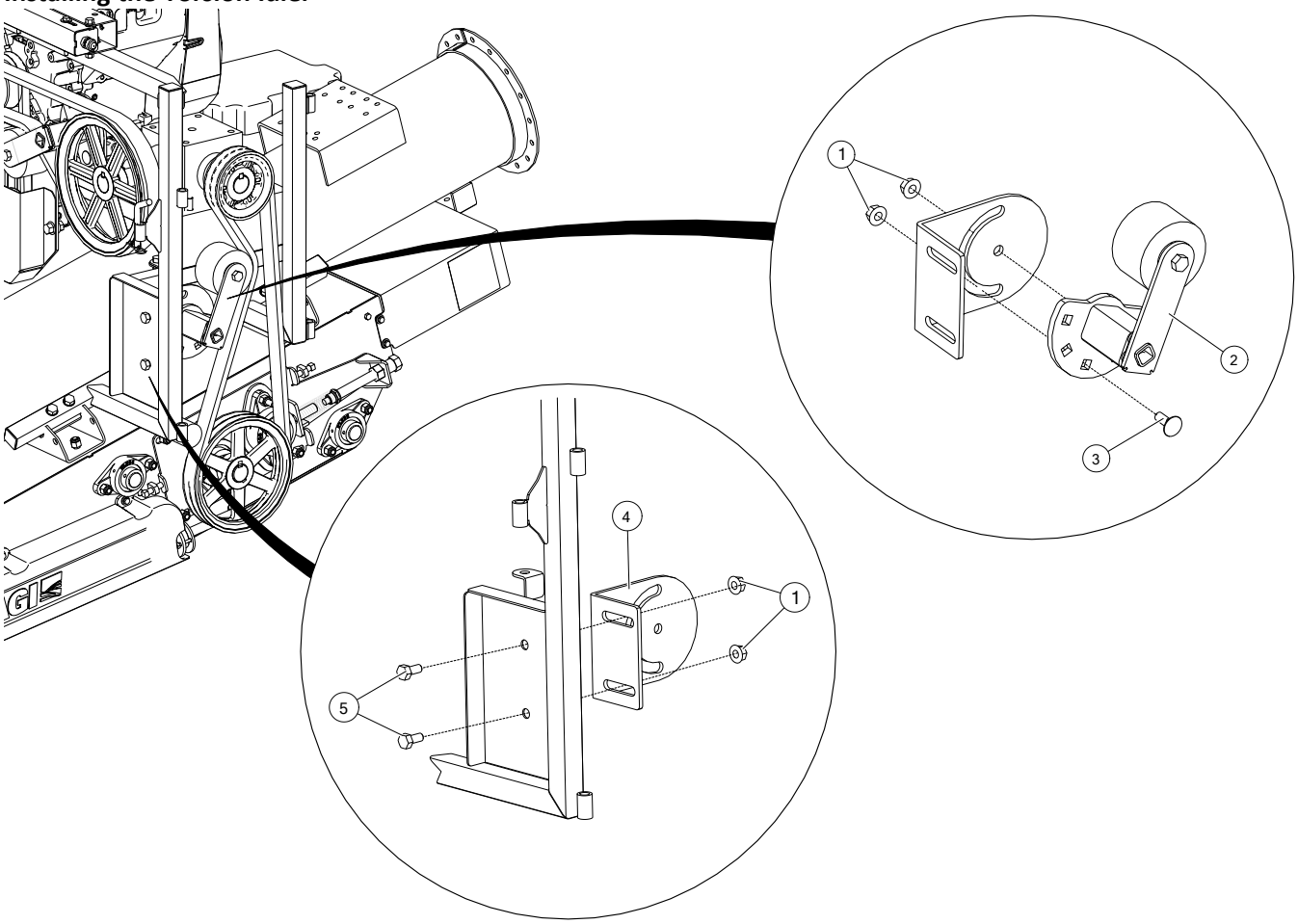


Item	Description
1	2B72 Drive Belt
2	6" DBL Pulley (1-1/2"Bore)
3	3/8" x 2" Gearbox Key
4	10" DBL Pulley (1-1/2"Bore)
5	3/8" x 2" Drive Key

Note

Align the pulleys using a straight edge before installing the belt. Tighten the set screws after the pulleys are aligned.

Installing the Torsion Idler



Item	Description
1	1/2" Hex Flange Nut
2	Torsion Idler Arm
3	1/2" X 1–1/4" Carriage Bolt (GR 5)
4	Torsion Idler Mount Plate
5	1/2" X 1" Hex Bolt (GR 8)

Hardware: 15–133

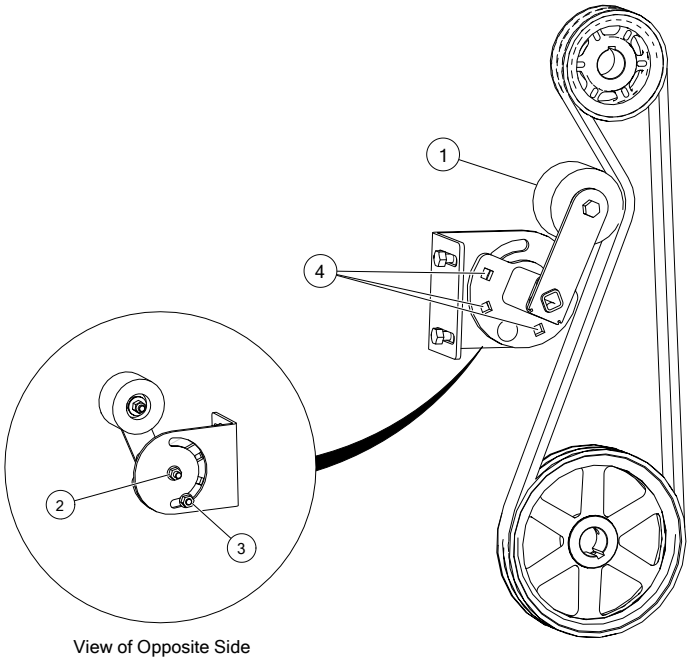
Note

Tighten the gearbox and motor bolts before using the torsion idlers to tension the drive belts.

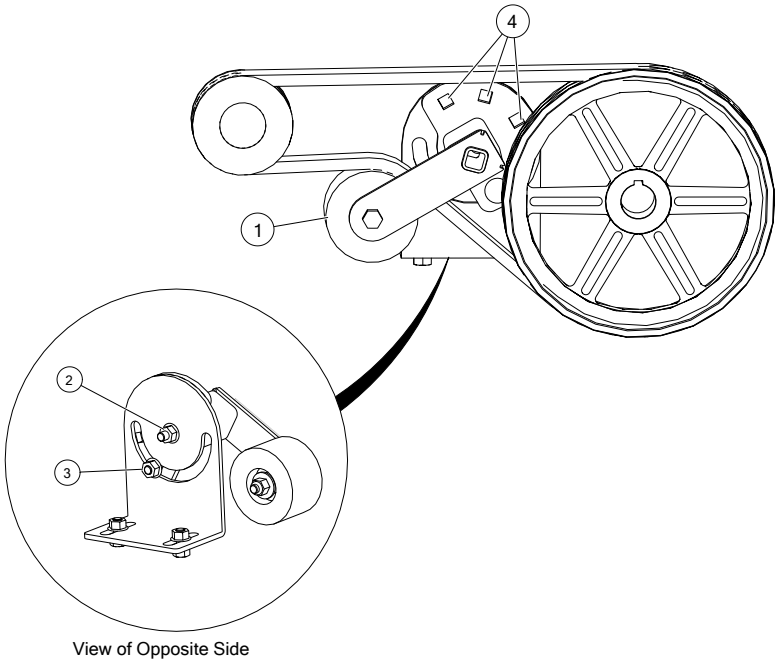
Tensioning the Belt

1. Loosen the nuts (2, 3). This will allow the idler pulley (1) to pivot.
2. Place the square end of a ratchet into one of the square holes (4) in the idler pulley (1). Then rotate the idler pulley with the ratchet handle to a torque of 35 ft-lb to tighten the belt.
3. Hold the ratchet in position with the belt tight and tighten the nuts (2, 3).
4. Reattach and secure the guard. Start the system to ensure proper operation.

Pulley/Idler Configurations

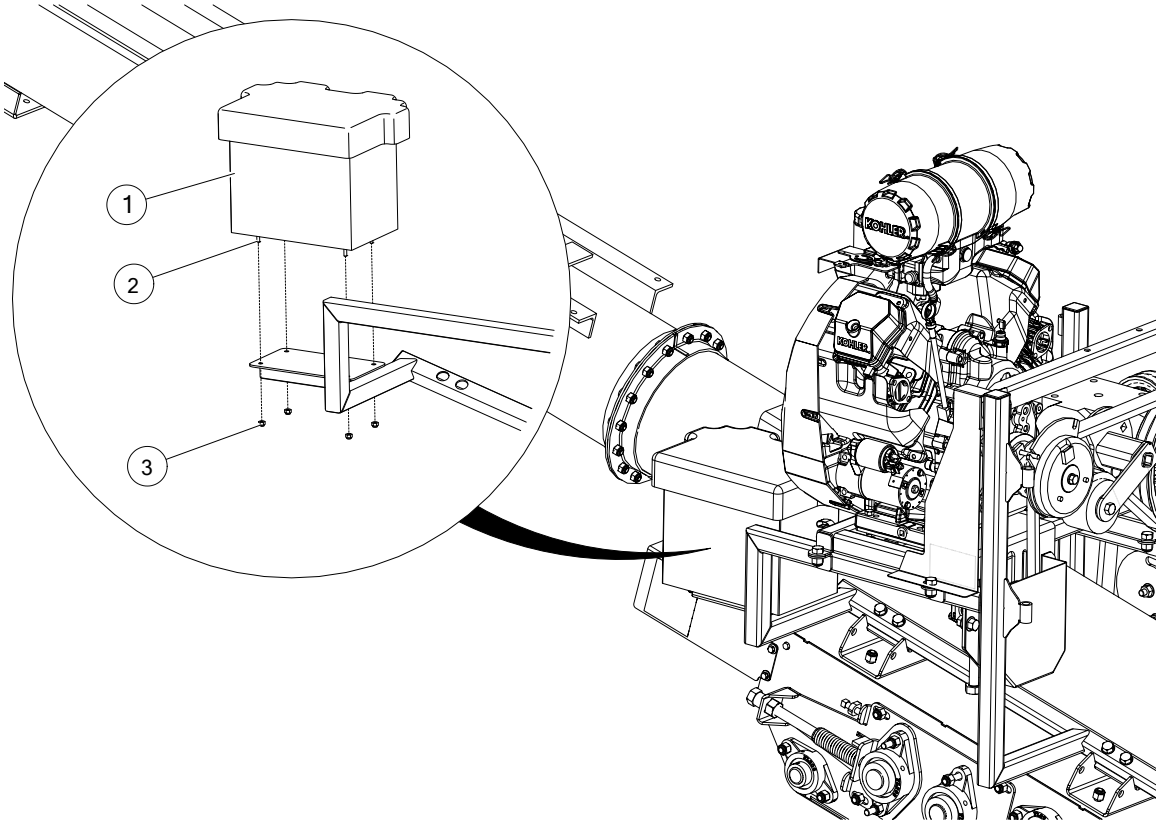


View of Opposite Side



View of Opposite Side

3.19.10 Install the Battery



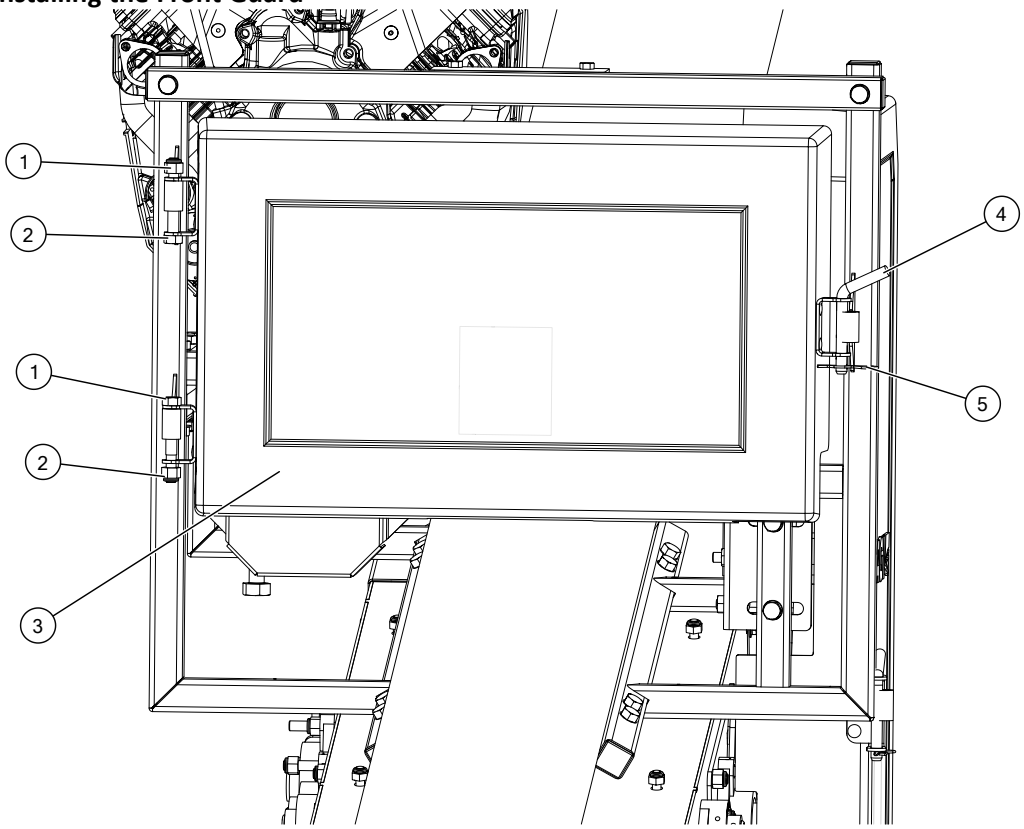
Item	Description
1	Battery Box
2	1/4" X 3/4" Hex Bolt (GR 5)
3	1/4" Lock Nut

Hardware: PARTK-15–39

1. Place the 12V (min 420 CCA) battery in the battery box (1)
2. Connect the ground cable to a motor mount bolt using washers from hardware bag HRDW-15-100.
3. Connect the positive cable to the starter on the motor.

3.19.11 Install the Guards

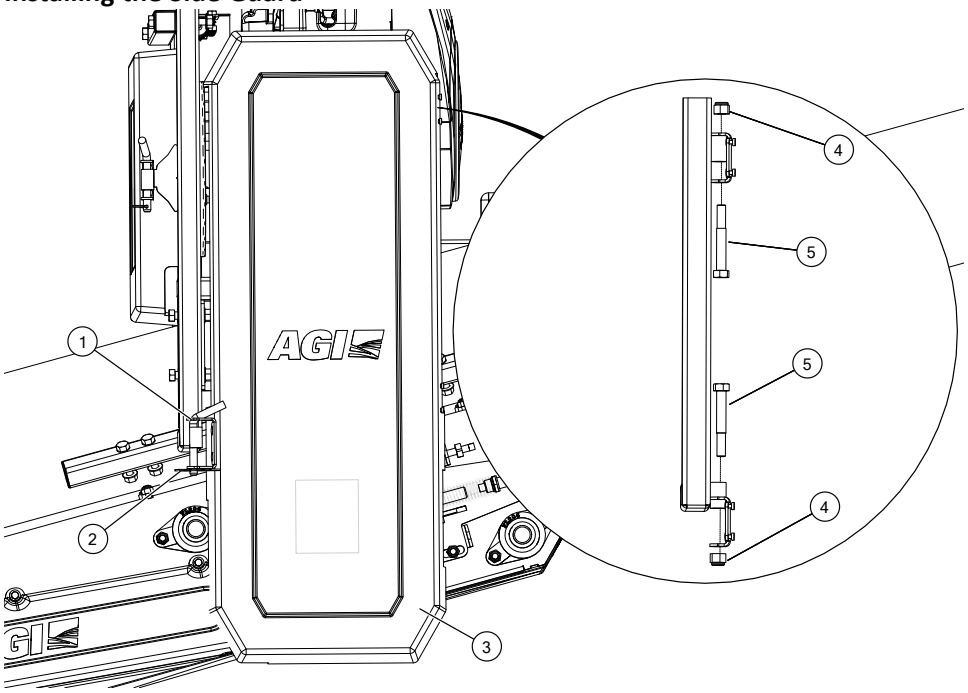
Installing the Front Guard



Item	Description
1	1/2" Lock Nut
2	1/2" X 3–1/2" Hex Bolt (GR 8)
3	Front Guard
4	1/2" X 3" Pin
5	Hair Pin

Hardware: HRDW-15–103

Installing the Side Guard



Item	Description
1	1/2" X 3" Pin
2	Hair Pin
3	Side Guard
4	1/2" Lock Nut
5	1/2" X 3–1/2" Hex Bolt (GR 8)

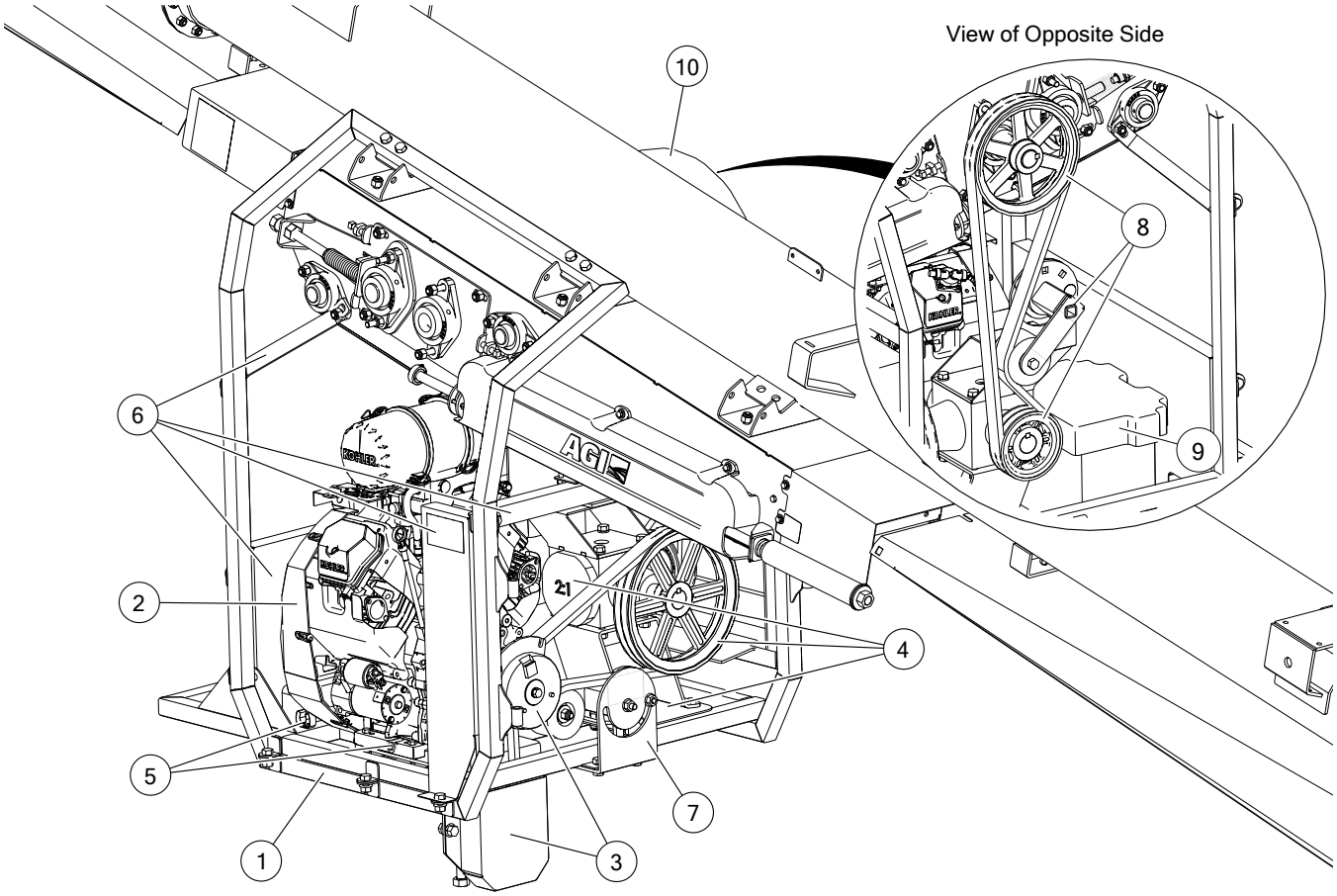
Hardware: HRDW-15–103

3.20. Install the Under-Mount Drive

Important

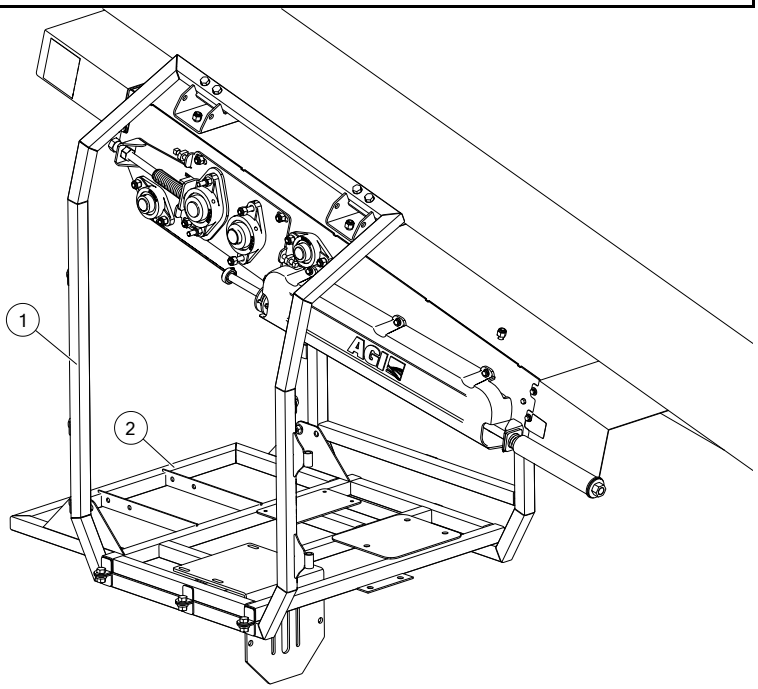
Do not tighten the frame bolts until Step 5 is complete.

Step	Procedure
1	Assemble the Frame
2	Install the Motor
3	Install the Hydraulic Pump and Clutch
4	Install the Gearbox, Motor Pulley, Motor Pulley Belt, and Clutch Stop
5	Install the Drain Hose Clamps, Drain Hose, and Muffler
6	Install the Crossbrace, Motor Guard, Fuel Tank Mount, and Stabilizers
7	Install the Torsion Idler
8	Install the Drive Pulleys, Drive Belt, and Torsion Idler
9	Install the Battery
10	Install the Guards

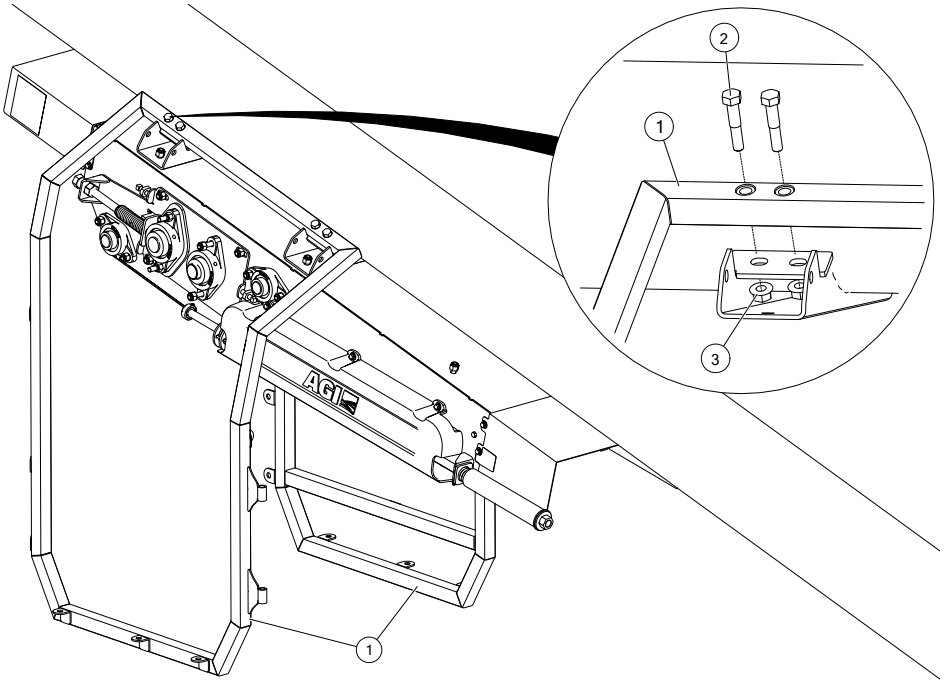


3.20.1 Install the Frame

Step	Task
1	Install the Sides
2	Install the Bottom



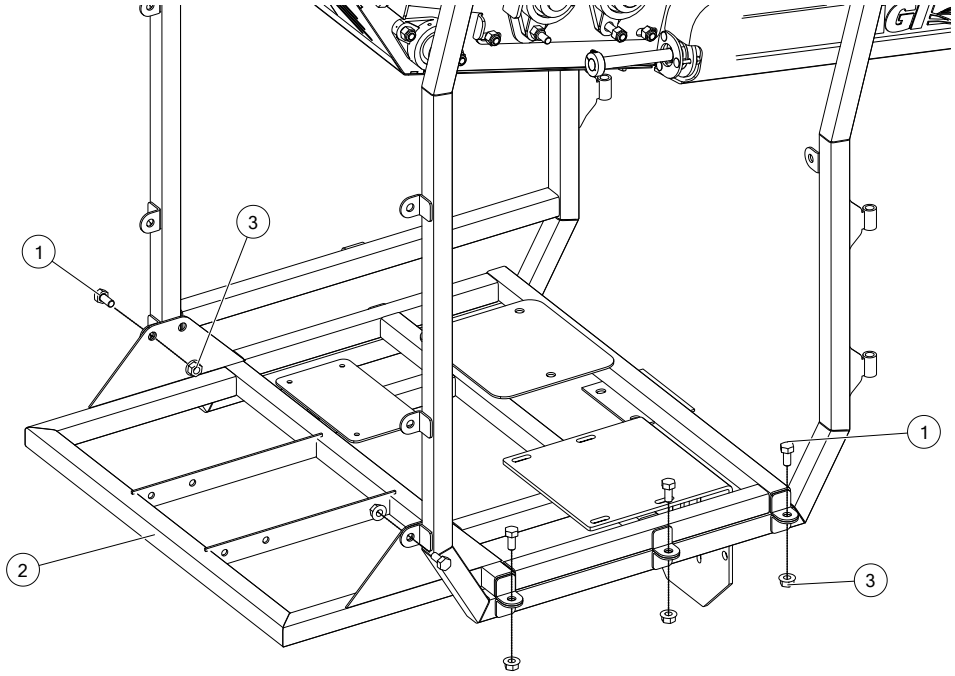
Install the Sides (x2)



Item	Description
1	Side Frame
2	1/2" X 2-1/2" Hex Bolt (GR 8)
3	1/2" Lock Nut

Hardware Kit: HRDW-15–102

Install the Bottom



Item	Description
1	1/2" X 1" Hex Bolt (GR 8)
2	Bottom Frame
3	1/2" Locknut

Hardware Kit: HRDW-15–131

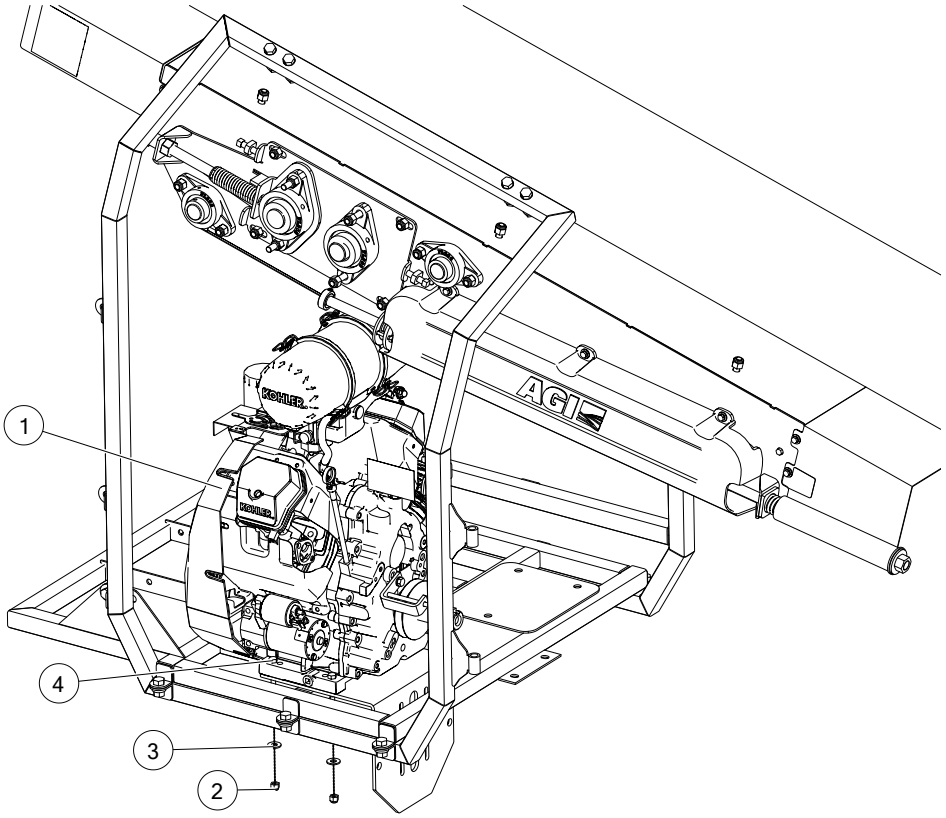
Note

Leftover hardware from this bag is used to install the crossbrace and fuel tank mount.

3.20.2 Install the Motor

Important

Do not tighten the motor bolts until the drive belts have been installed and aligned.



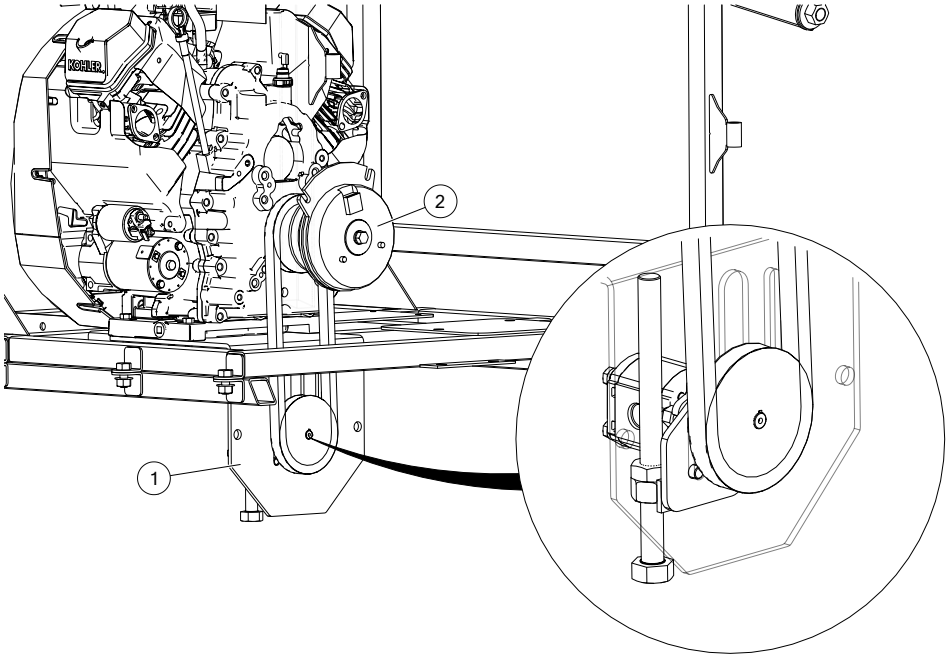
Item	Description	
1	Motor	
2	5/16" Lock Nut	3/8" Lock Nut
3	5/16" Flat Washer	3/8" Flat Washer
4	5/16" X 2" Hex Bolt	3/8" X 2" Hex Bolt

Note

Both sizes of hardware are included in the hardware kit. Use the size of hardware indicated in the motor installation manual.

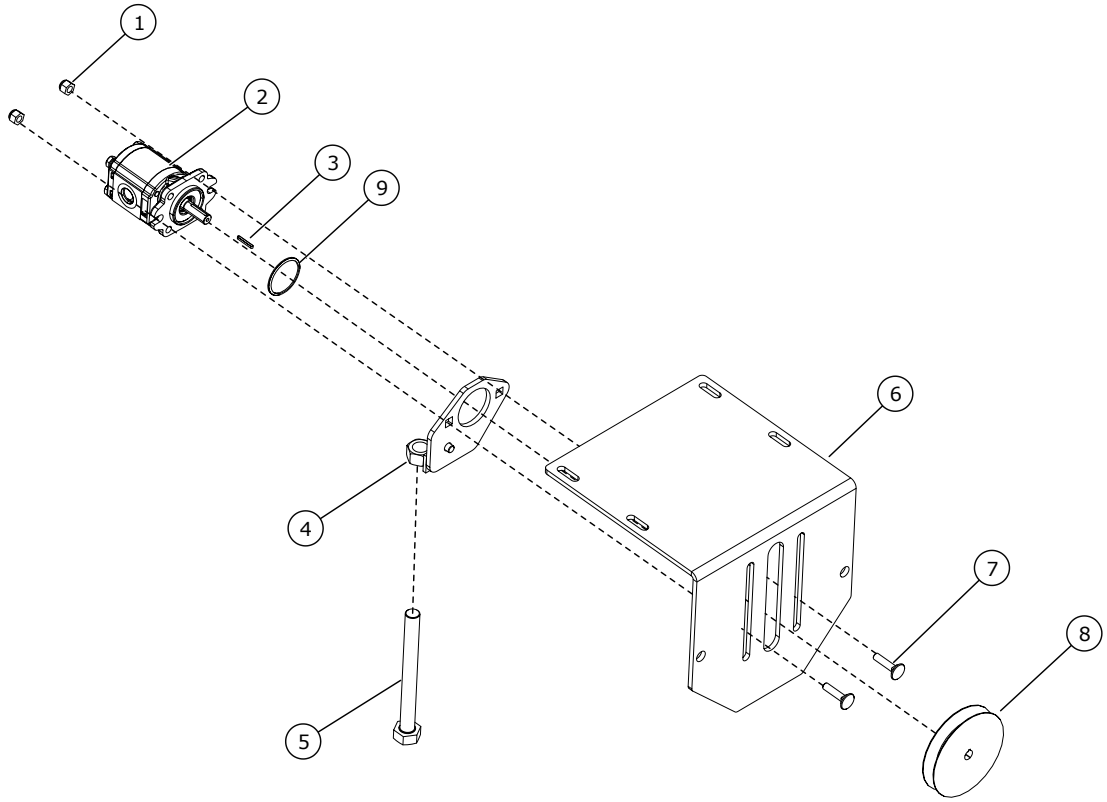
Hardware Kit: HRDW-15-100

3.20.3 Install the Hydraulic Pump and Clutch



Item	Description
1	Hydraulic Pump Assembly
2	Clutch Assembly

Installing the Hydraulic Pump



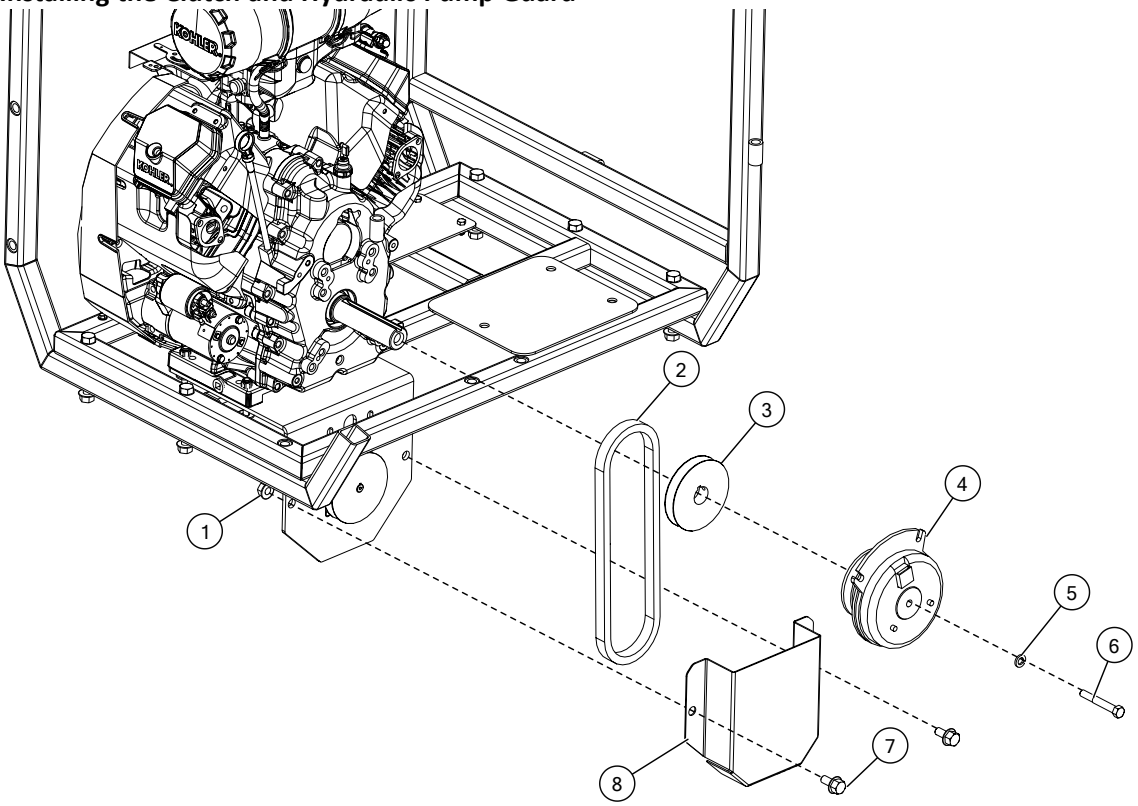
Item	Description
1	3/8" Locknut
2	Hydraulic Pump
3	Hydraulic Pump Key (comes with pump)
4	Hydraulic Pump Mount Plate
5	3/4" X 7" Tap Bolt (GR 5)
6	Hydraulic Pump Base Plate
7	3/8" X 1–1/2" Carriage Bolt (GR 5)
8	4–1/2" X 1/2" Pulley
9	Hydraulic Pump Steel Plate (comes with pump)*
*attach to the plastic shaft holder	

Hardware Kit: HRDW-15–101

Note

- The tap bolt (5) is used to tension the hydraulic pump belt after the clutch assembly is installed.
- The hydraulic pump steel plate (9) keeps the hydraulic pump centered in the mount.

Installing the Clutch and Hydraulic Pump Guard



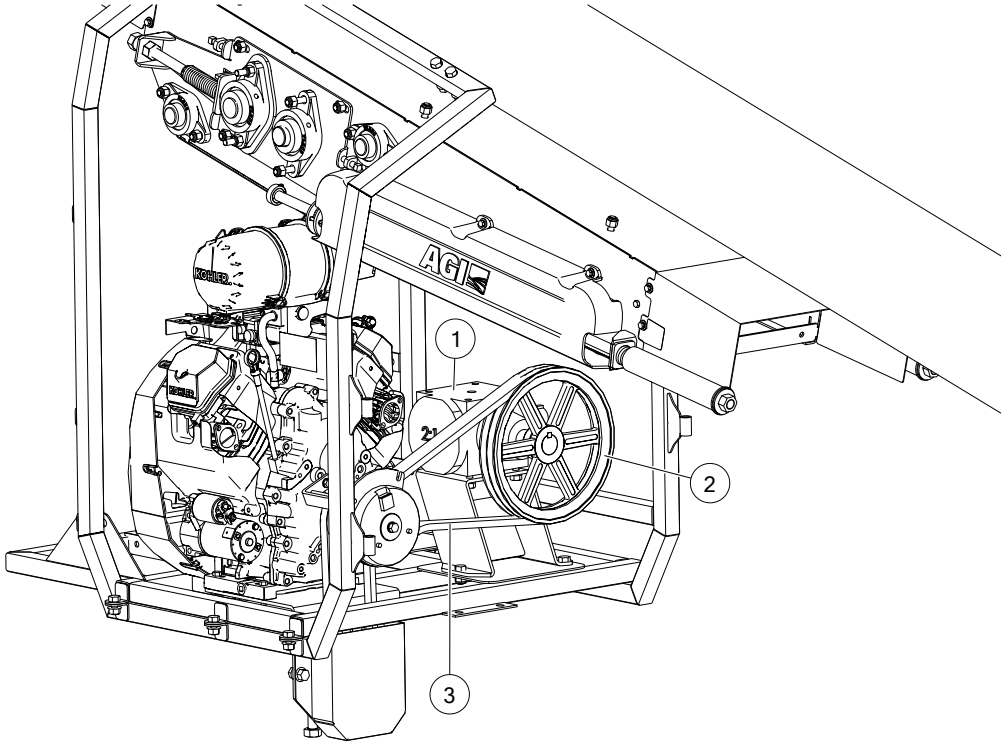
Item	Description
1	1/2" Flange Nut
2	Hydraulic Pump Belt (BX31)
3	4-1/2" x 1-1/8" PulleyPulley
4	Clutch
5	7/16" Lock Washer
6	7/16" X 3" Hex Bolt
7	1/2" X 1" Hex Flange Bolt
8	Hydraulic Pump Guard

Hardware Kit: PARTK-15-44

Note

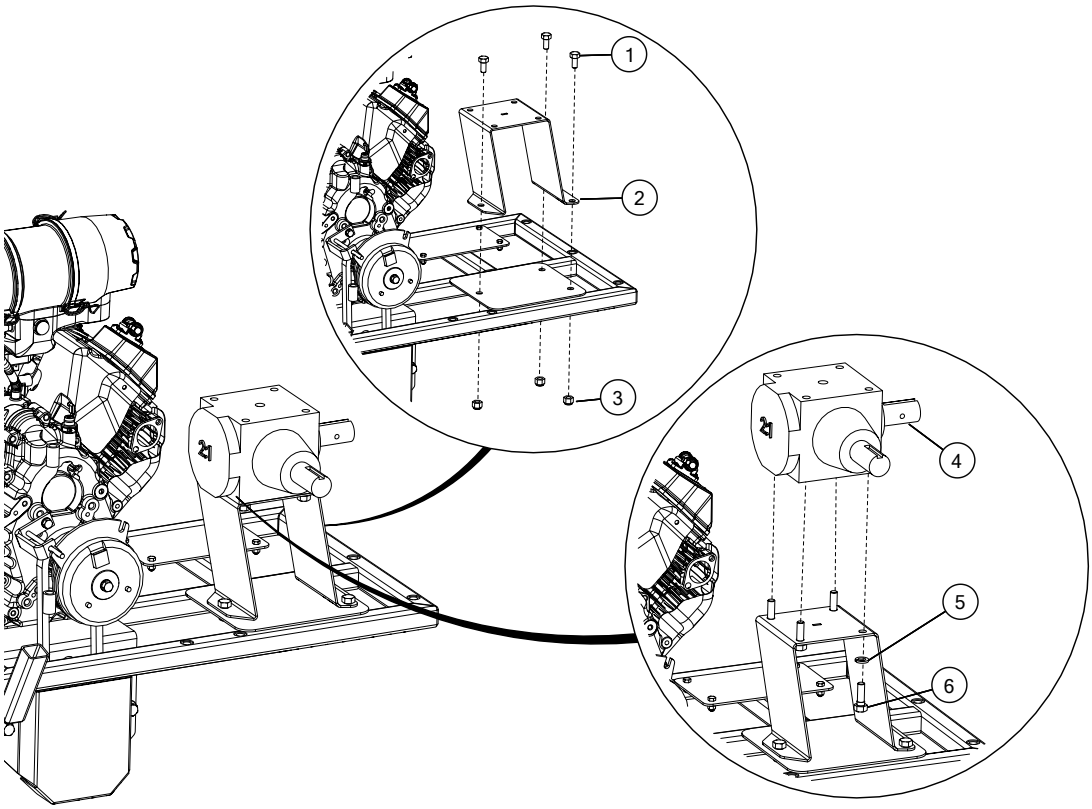
Align the pulleys using a straight edge before installing the belt. Tighten the set screws after the pulleys are aligned.

3.20.4 Install the Gearbox, Motor Pulley, Motor Pulley Belt, and Clutch Stop



Item	Description
1	Gearbox
2	Motor Pulley
3	Motor Pulley Belt

Installing the Gearbox



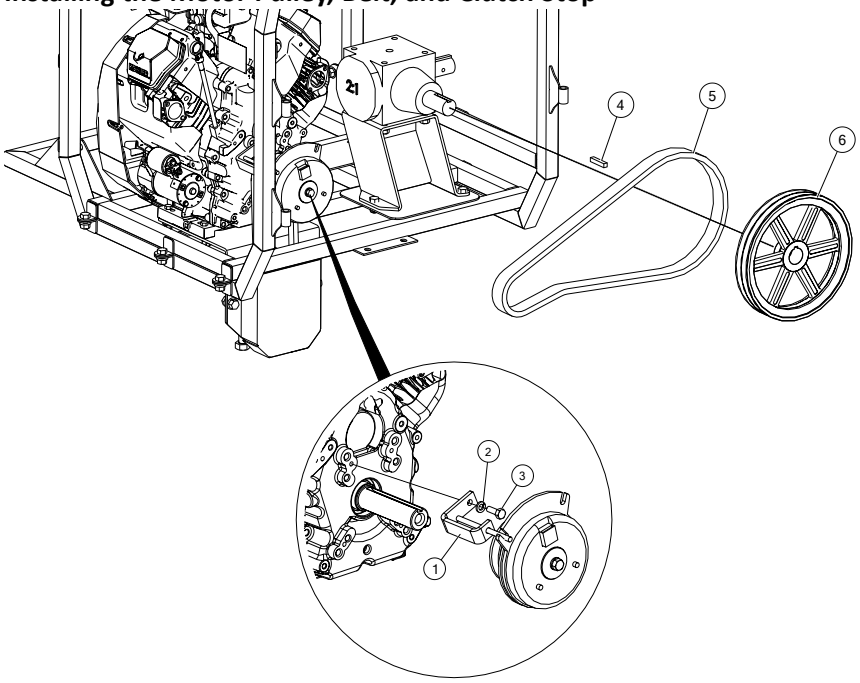
Item	Description
1	1/2" X 1" Hex Bolt (GR 8)
2	Gearbox Mount Plate
3	1/2" Lock Nut
4	Gearbox
5	1/2" Lock Washer
6	1/2" X 1–1/2" Hex Bolt (GR 8)

Hardware Kit: HRDW-15-112

Note

Leftover hardware from this kit is used to install the torsion idler on top of the torsion idler mount.

Installing the Motor Pulley, Belt, and Clutch Stop



Item	Description
1	Clutch Stop
2	3/8" Lock Washer
3	3/8" X 1" Hex Bolt
4	3/8" X 2" Gearbox Key
5	2B59 Banded Belt
6	12" DBL Pulley 1-1/2" Bore

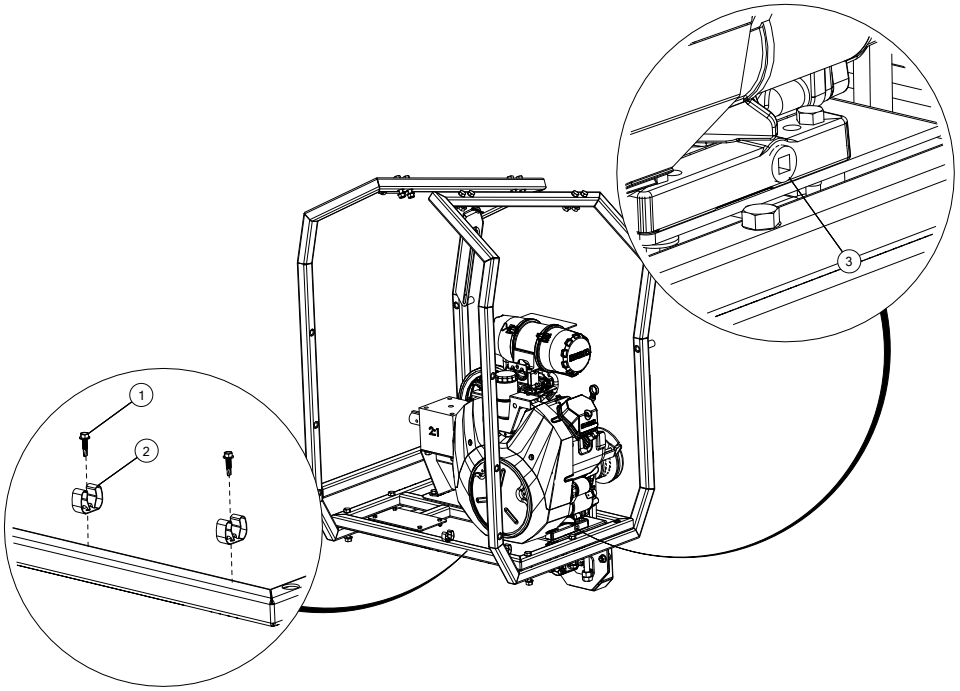
Note

Align the pulleys using a straight edge before installing the belt. Tighten the set screws after the pulleys are aligned.

3.20.5 Install the Drain Hose Clamps, Drain Hose, and Muffler

1. Attach the drain hose clamps to the bottom frame with tek screws.
2. Remove the plug insert on the engine.
3. Attach the oil drain hose to the engine.
4. Secure the oil drain hose with the clamps.
5. Install the muffler according to the instructions that arrived with the motor.

Installing the Drain Hose Clamps and Drain Hose



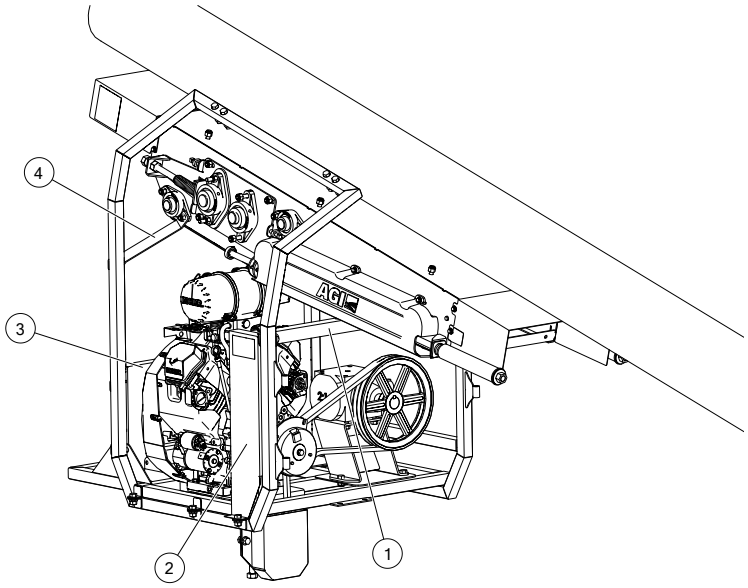
Item	Description
1	Drain Hose Clamp
2	Tek Screw
3	Engine Plug

Hardware Kit: HRDW-15–121

3.20.6 Install the Crossbrace, Motor Guard, Fuel Tank Mount, and Stabilizers

Note

Do not tighten the frame bolts until the stabilizers are installed.

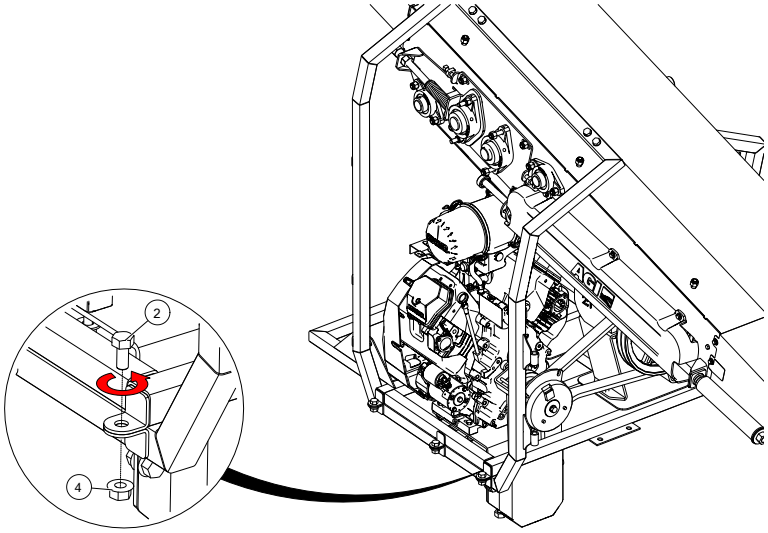


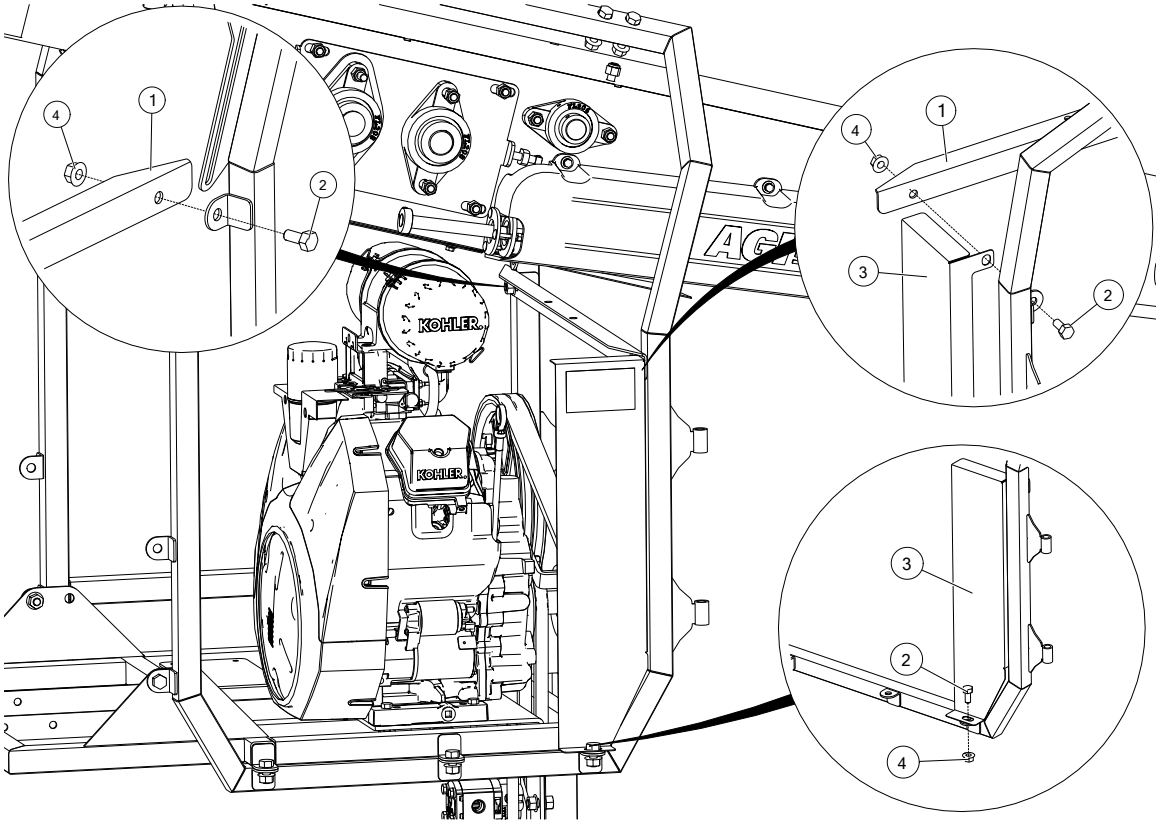
Item	Description
1	Crossbrace
2	Motor Guard
3	Fuel Tank Guard
4	Stabilizers

Installing the Crossbrace and Motor Guard

Note

Remove the bolt and nut securing the bottom frame to the left side frame.

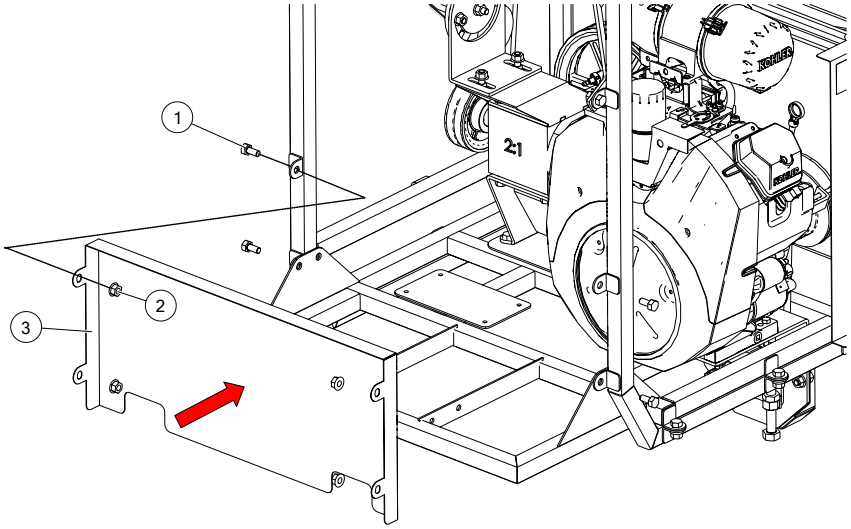


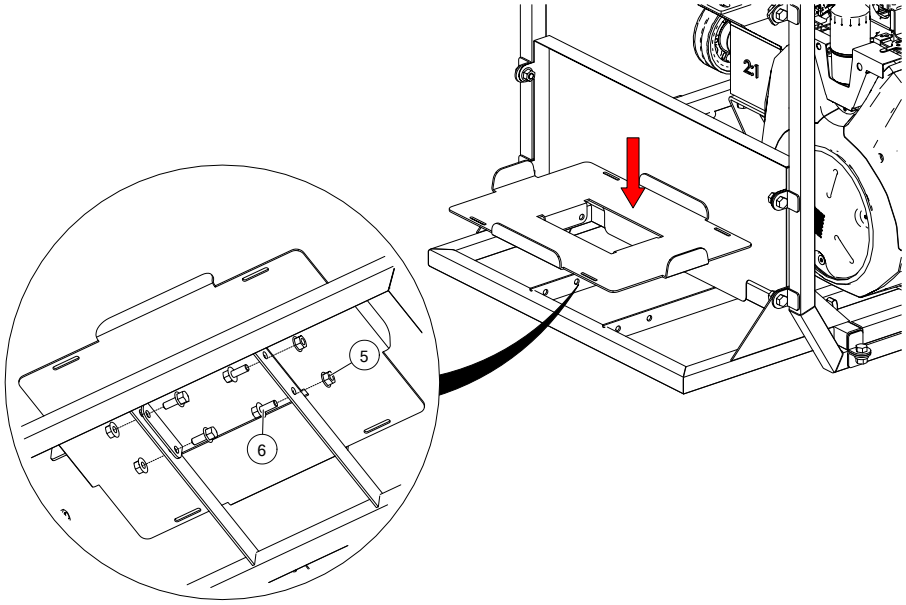


Item	Description
1	Crossbrace
2	1/2" X 1" Hex Bolt (GR 8)
3	Motor Guard
4	1/2" Flange Nut

Hardware Kit: HRDW-15–131

Installing the Fuel Tank Mount



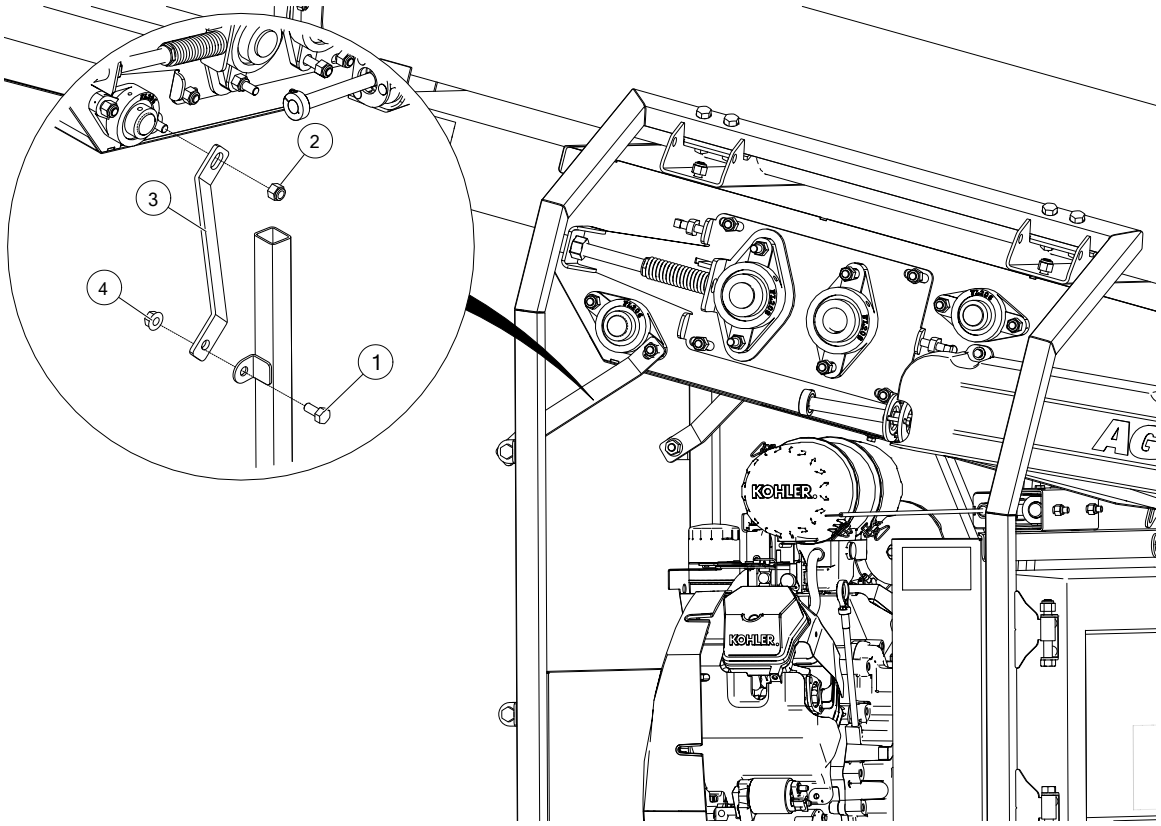


View of Bottom Side

Item	Description
1	1/2" X 1" Hex Bolt (GR 8)
2	1/2" Flange Nut
3	Fuel Tank Guard
4	Fuel Tank Mount
5	7/16" Flange Nut
6	7/16" X 1" Flange Bolt (GR 5)

Hardware Kit: HRDW-15–131, HRDW-15–71

Installing the Stabilizers (x2)



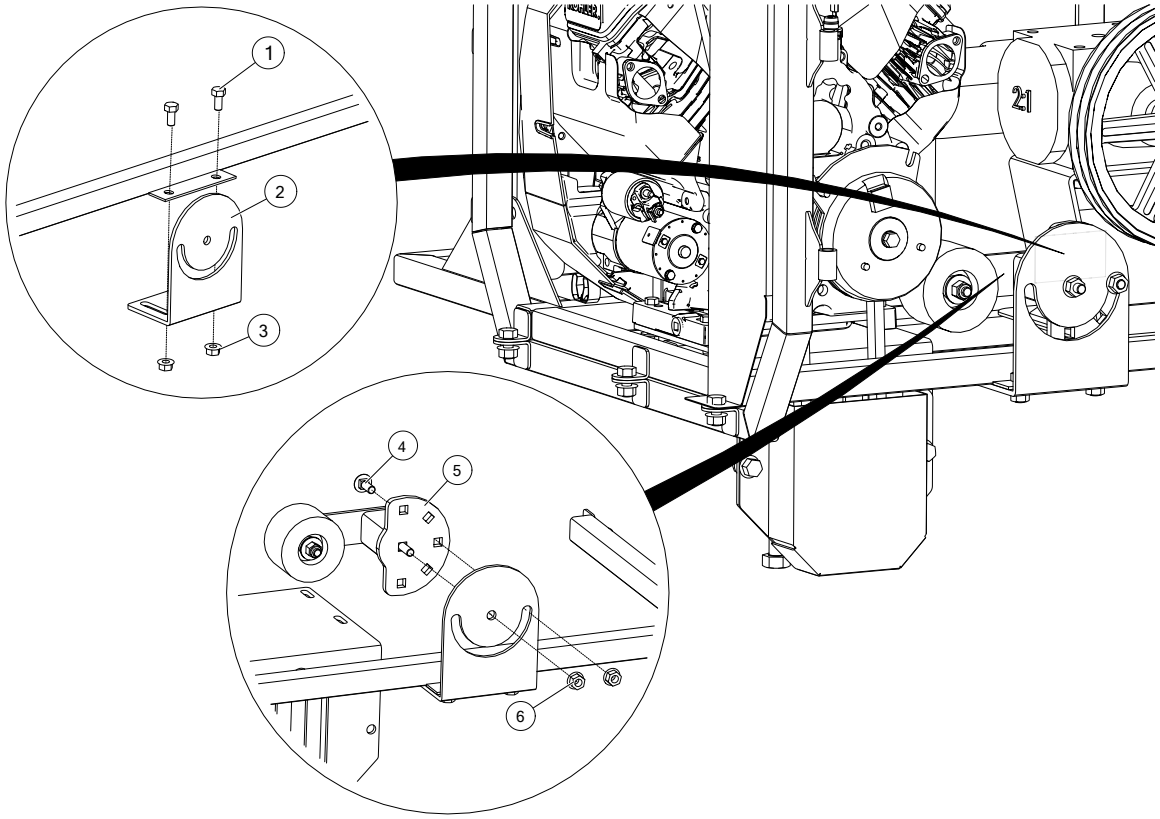
Item	Description
1	1/2" X 1" Hex Bolt (GR 8)
2	1/2" Lock Nut (from S-Drive Bearing)
3	Stabilizer Brace
4	1/2" Lock Nut

Hardware Kit: HRDW-15-131

Note

After the stabilizers are installed, tighten all the frame bolts.

3.20.7 Install the Torsion Idler



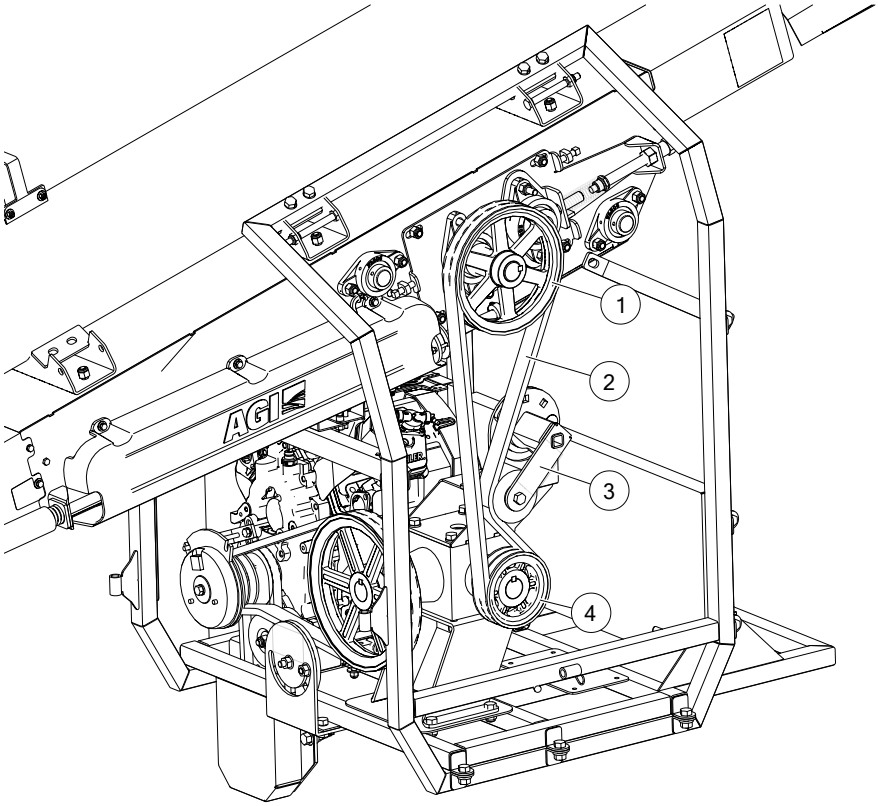
Item	Description
1	1/2" X 1" Hex Bolt (GR 8)
2	Idler Mount Plate
3	1/2" Hex Flange Nut
4	1/2" X 1–1/4" Carriage Bolt
5	Idler Torsion Arm
6	1/2" Hex Flange Nut

Hardware Kit: HRDW-15–133

Note

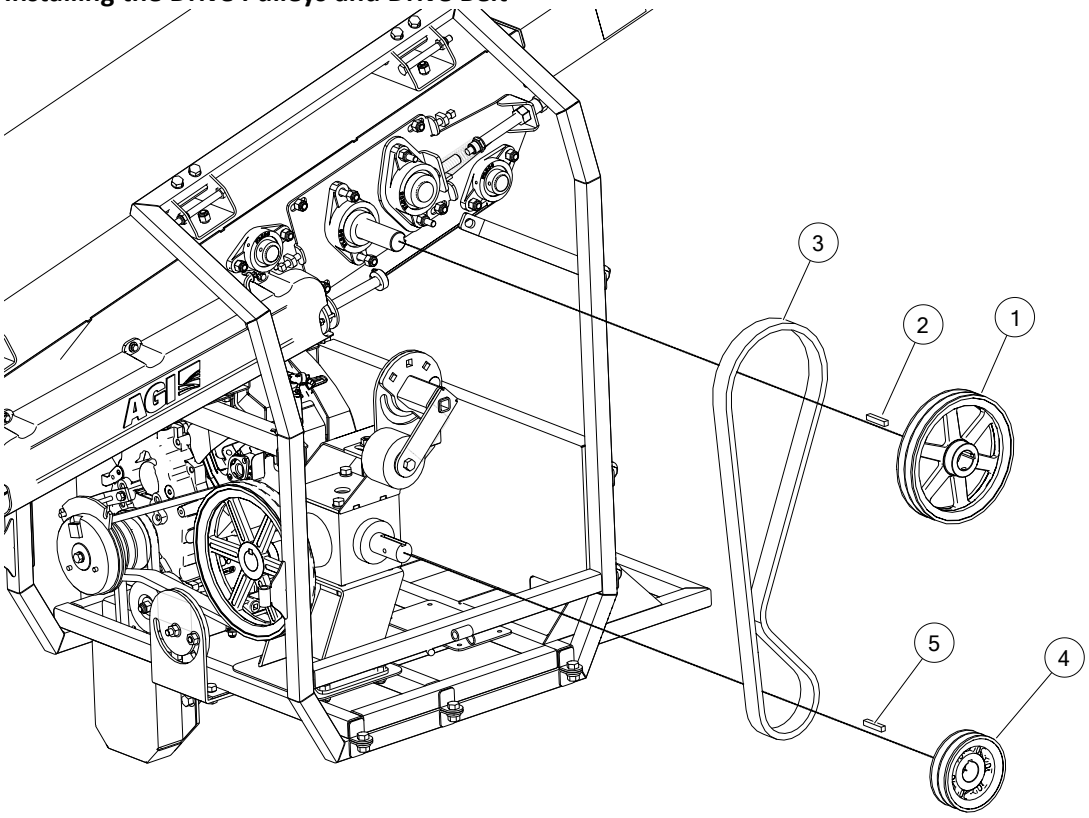
Do not tension the drive belt with the torsion idler until both drive belts are installed and aligned, and the frame, motor, and gearbox hardware are all fully tightened.

3.20.8 Install the Drive Pulleys, Drive Belt, and Torsion Idler



Item	Description
1	Drive Pulley
2	Drive Belt
3	Torsion Idler
4	Drive Pulley

Installing the Drive Pulleys and Drive Belt

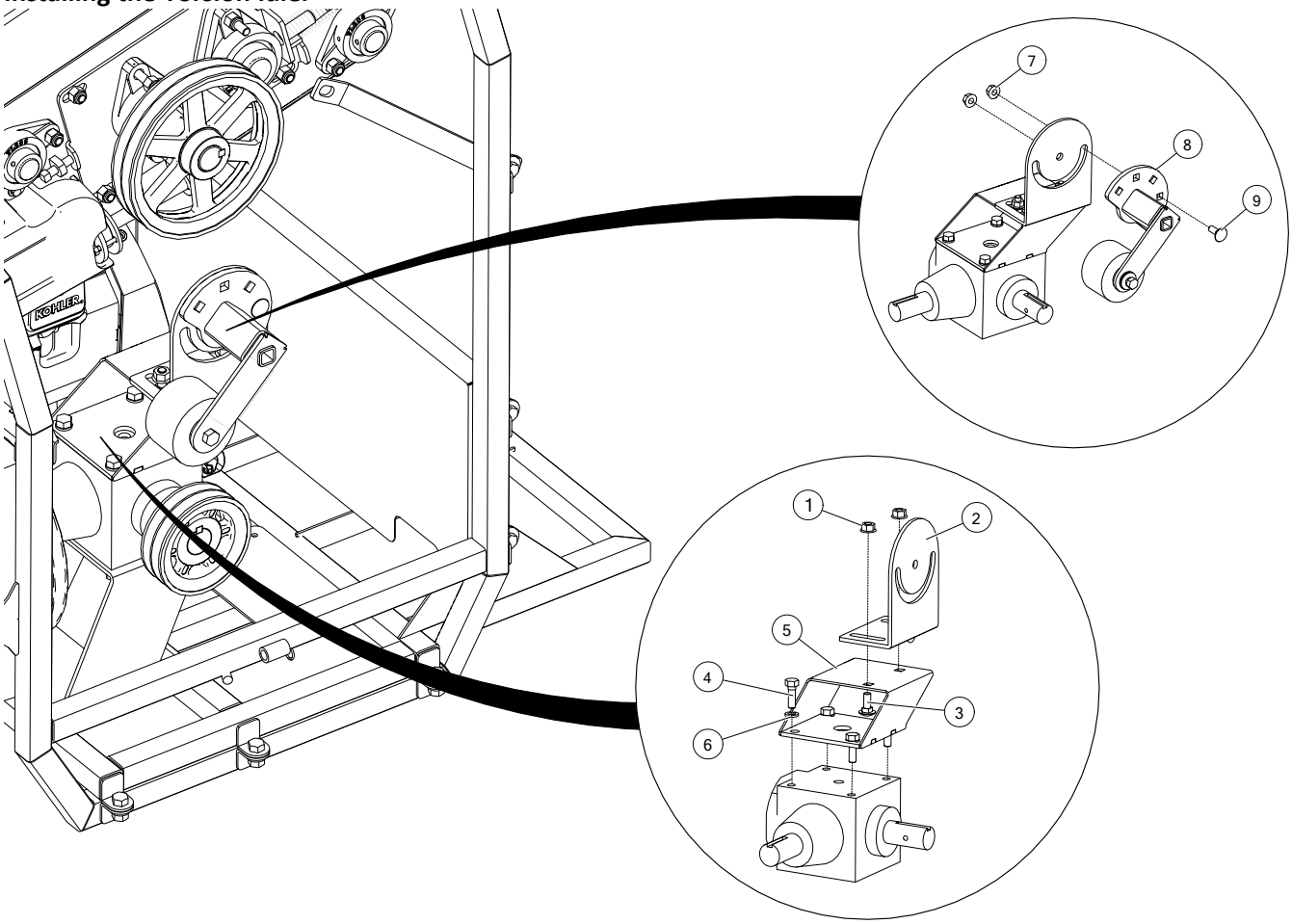


Item	Description
1	10" DBL Pulley (1-1/2"Bore)
2	3/8" x 2" Drive Key
3	2B72 Drive Belt
4	6" DBL Pulley (1-1/2"Bore)
5	3/8" x 2" Gearbox Key

Note

Align the pulleys using a straight edge before installing the belt. Tighten the set screws after the pulleys are aligned.

Installing the Torsion Idler



Item	Description
1	1/2" Hex Flange Nut
2	Idler Mount Plate
3	1/2" X 1–1/4" Carriage Bolt (GR 5)
4	1/2" X 1–1/2" Hex Bolt (GR 8)
5	Gearbox Idler Mount
6	1/2" Lock Washer
7	1/2" Hex Flange Nut
8	Idler Torsion Arm
9	1/2" X 1–1/4" Carriage Bolt

Hardware Kit: HRDW-15–120, HRDW-15–112

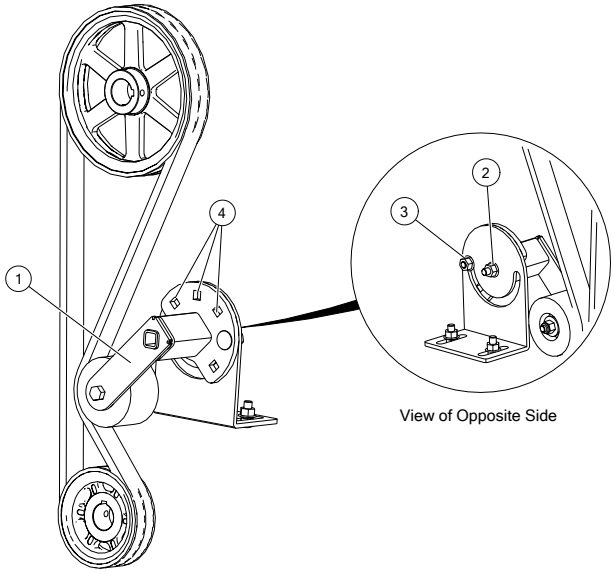
Note

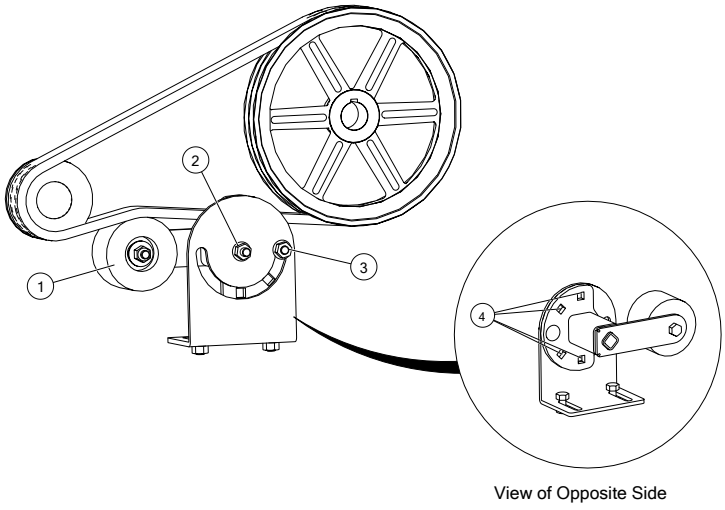
Tighten the gearbox and motor bolts before using the torsion idlers to tension the drive belts.

Tensioning the Belt

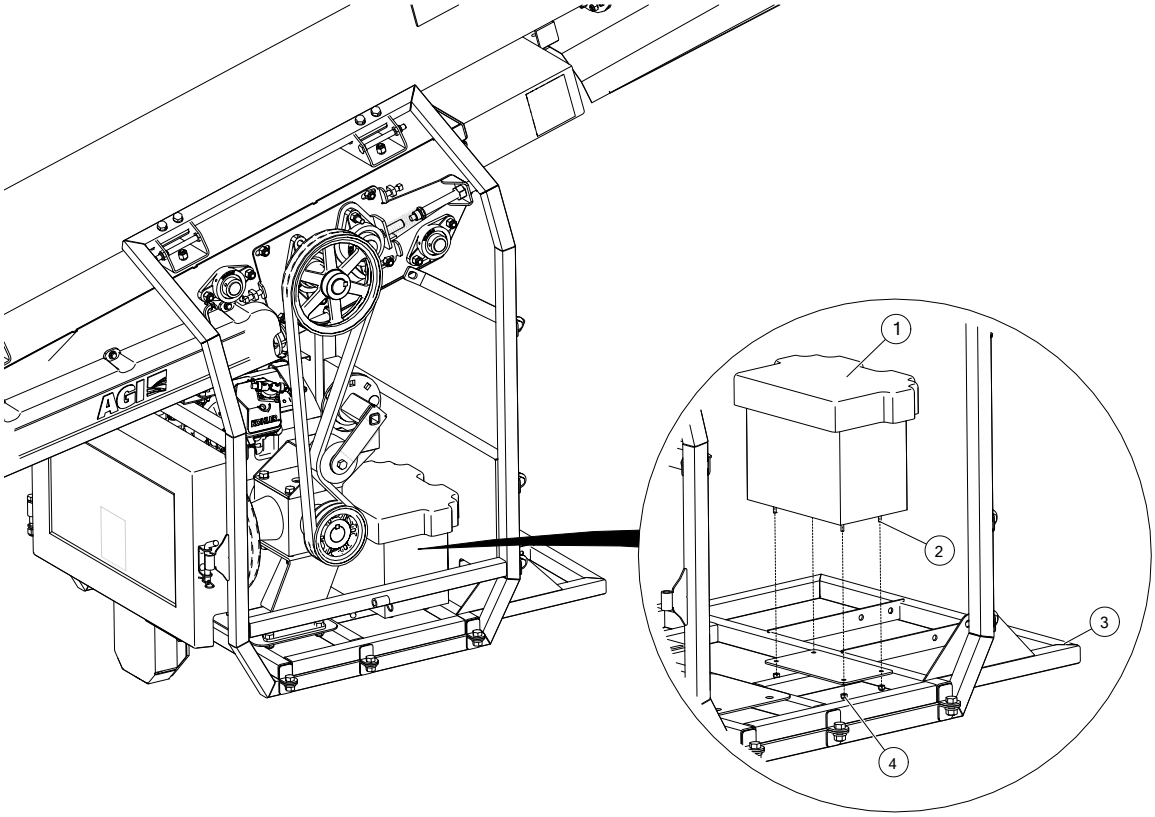
1. Loosen the nuts (2, 3). This will allow the idler pulley (1) to pivot.
2. Place the square end of a ratchet into one of the square holes (4) in the idler pulley (1). Then rotate the idler pulley with the ratchet handle to a torque of 35 ft-lb to tighten the belt.
3. Hold the ratchet in position with the belt tight and tighten the nuts (2, 3).
4. Reattach and secure the guard. Start the system to ensure proper operation.

Pulley/Idler Configurations





3.20.9 Install the Battery

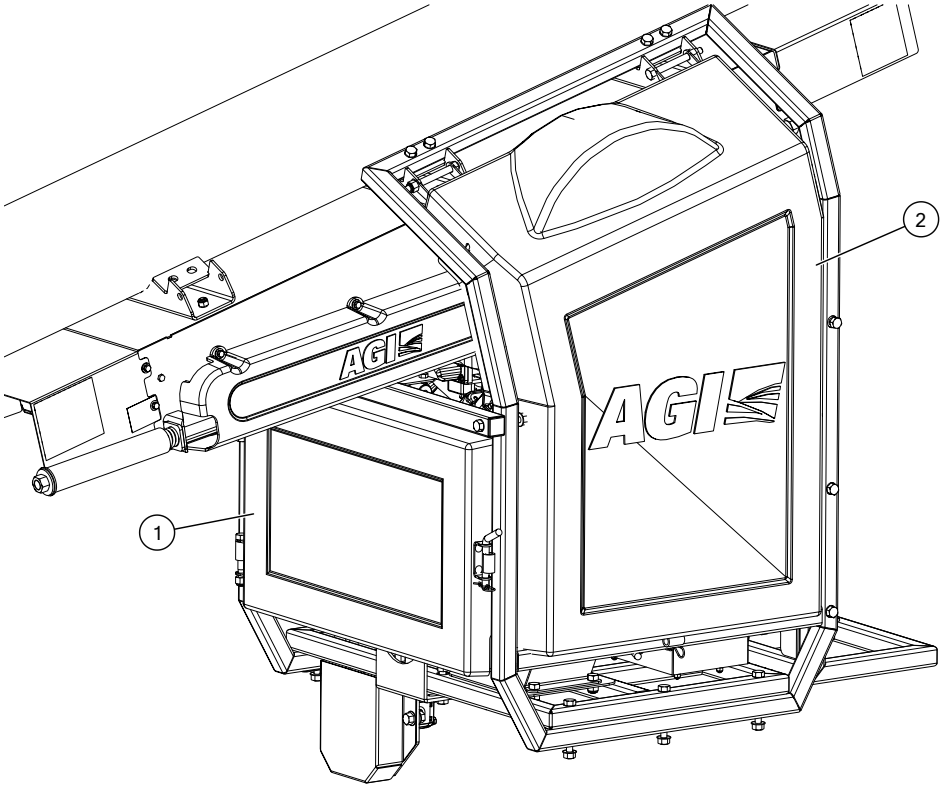


Item	Description
1	Battery Box
2	1/4" X 3/4" Hex Bolt (GR 5)
3	Battery Box Mount Plate (on bottom frame)
4	1/4" Lock Nut

Hardware Kit: PARTK-15–39

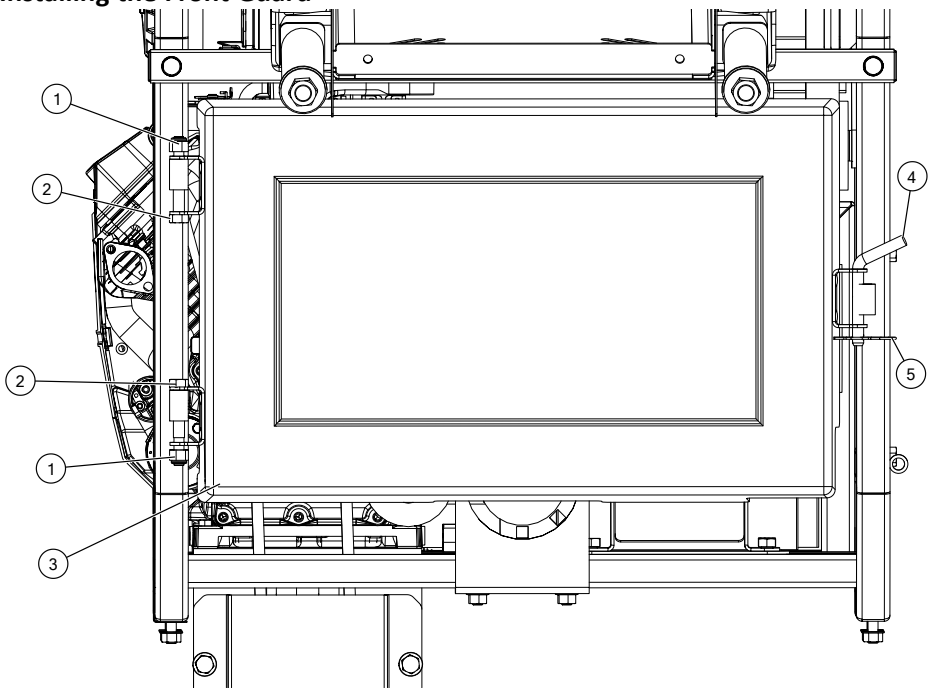
1. Place the 12V (min 420 CCA) battery in the battery box (1)
2. Connect the ground cable to a motor mount bolt using washers from hardware bag HRDW-15-100.
3. Connect the positive cable to the starter on the motor.

3.20.10 Install the Guards



Item	Description
1	Front Guard
2	Side Guard

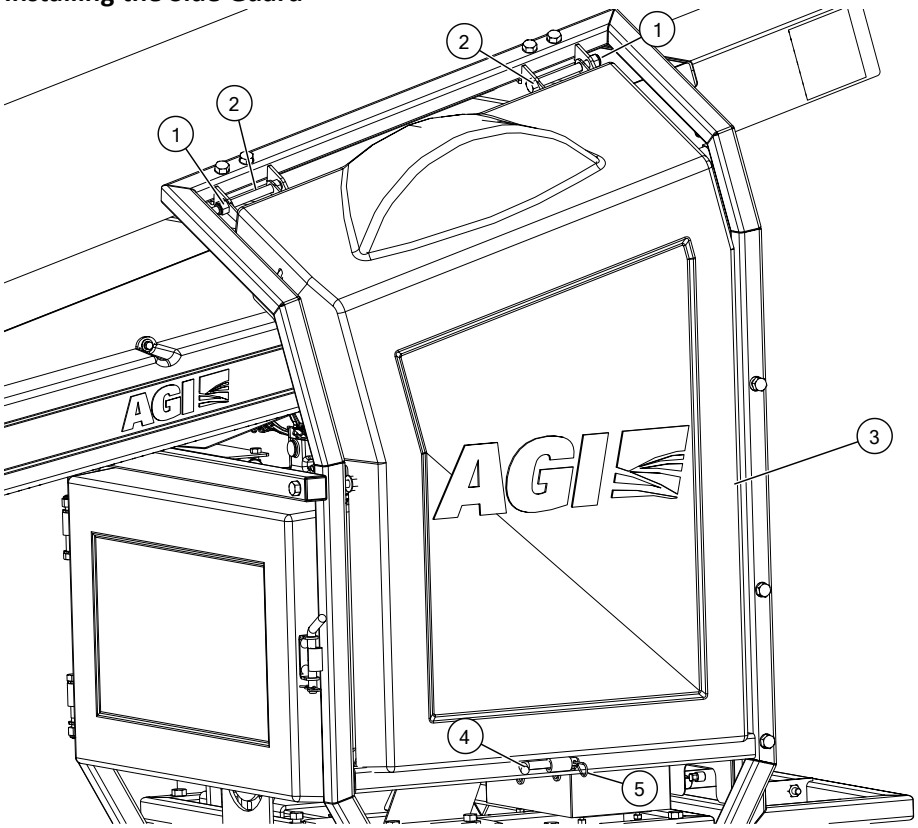
Installing the Front Guard



Item	Description
1	1/2" Lock Nut
2	1/2" X 3–1/2" Hex Bolt (GR 8)
3	Front Guard
4	1/2" X 3" Pin
5	Hair Pin

Hardware Kit: HRDW-15–103

Installing the Side Guard

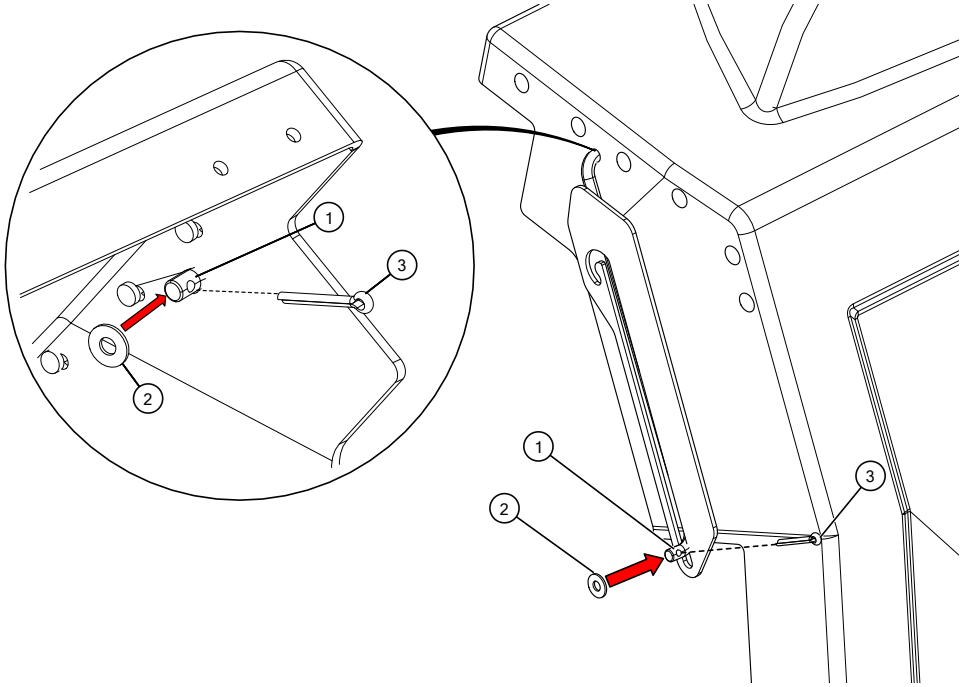


Item	Description
1	1/2" Lock Nut
2	1/2" X 4–1/2" Hex Bolt (GR 8)
3	Drive-Side Guard Panel
4	1/2" X 3" Hitch Pin
5	Hair Pin

Hardware Kit: HRDW-15–104

Installing the Side Guard Support Arm

1. Secure both ends of the support arm using a cotter pin (3) and washer (2).



Item	Description
1	Support Arm
2	1/4" Flat Washer
3	3/16" Cotter Pin

Hardware Kit: HRDW-15–118

3.21. Attach the Hopper Seals

1. Pull the transition roller all the way back towards the hopper.
2. Press the seals as tightly as possible into the gap between the transition roller and the hopper body. Use a rubber mallet if necessary to ensure it goes all the way in. Secure with the bolt from the bearing. See Figure 35.

Figure 35. Hopper Seal

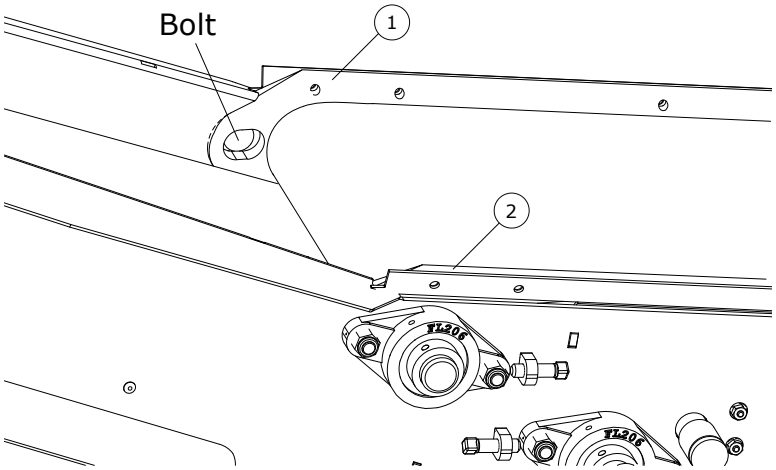
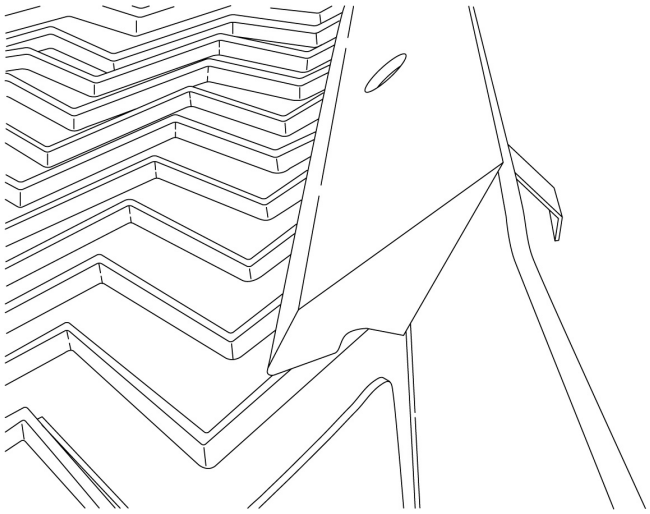


Table 12. Seal

Item	Description
1	Left Urethane Seal
2	Right Urethane Seal

Figure 36. Seal Orientation

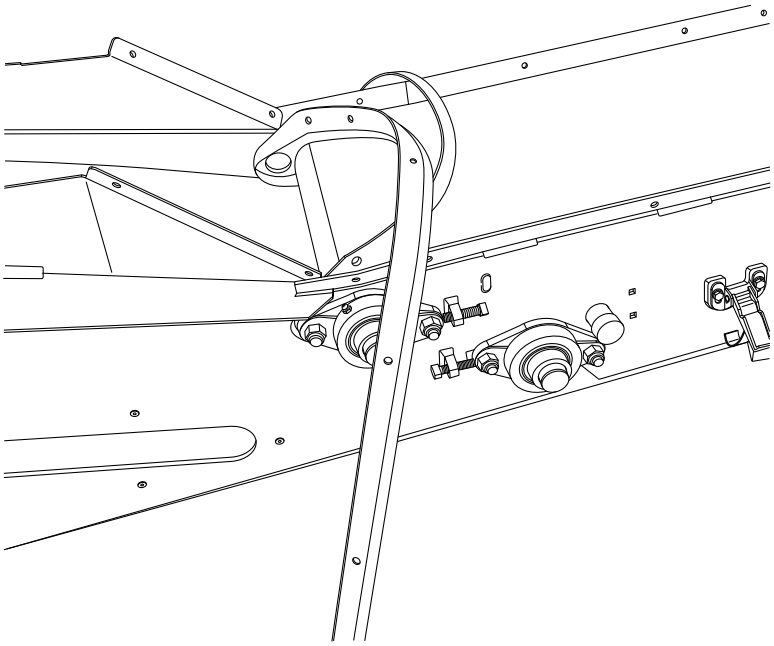


Note

The edge of the belt must fit into the notch on the seal.

3. Cross the seal loose ends over the opposite ends of the hopper frame so that they are not interfering with the belt.

Figure 37. Hopper Seal



4. Adjust the belt tracking. Refer to Section 3.22 – Align the Conveyor Belt on page 94 for belt tracking instructions. Run the belt for 10 minutes to properly wear in the seals. After tracking, remove any rubber shavings.

3.22. Align the Conveyor Belt

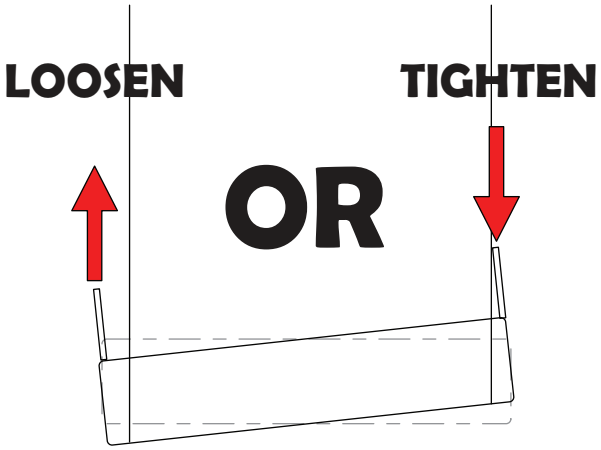
Basic Conveyor Belt Alignment:

The conveyor belt will run straight when all of the rollers are straight.

Loosen or tighten the adjustment bolt(s) to align the conveyor belt. Tighten the side the belt has moved toward, or loosen the side the belt has moved away from.

Belt alignment is done while the belt is running.

Figure 38. Roller out of Alignment



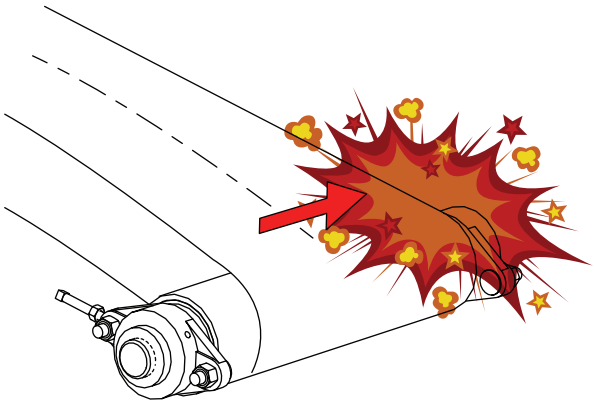
Before Aligning the Belt:

- The conveyor must be empty of all grain.
- Wait until the belt makes a complete revolution before adjusting the rollers. Some belts may have uneven edges, appearing misaligned.

To Align the Belt:

If your belt is tracking off-center, follow the sections and steps in the order following to center it.

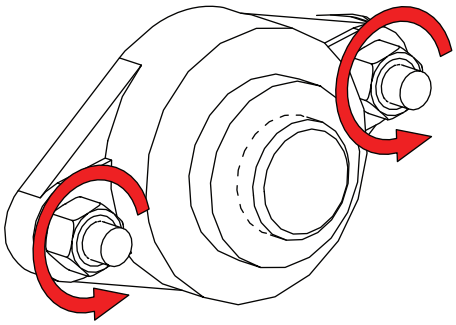
Figure 39. Belt Tracking to One Side



3.22.1 Adjust the Rollers

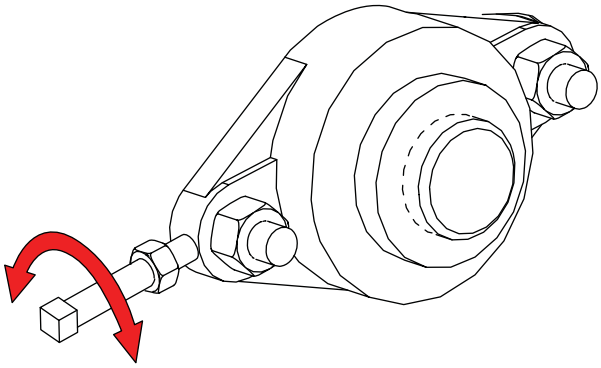
1. Loosen bearing nuts and jam nuts (if equipped).

Figure 40. Loosen the Bearing Nuts



2. Rotate adjustment bolt 1/2 turn.

Figure 41. Rotate the Adjustment Bolt



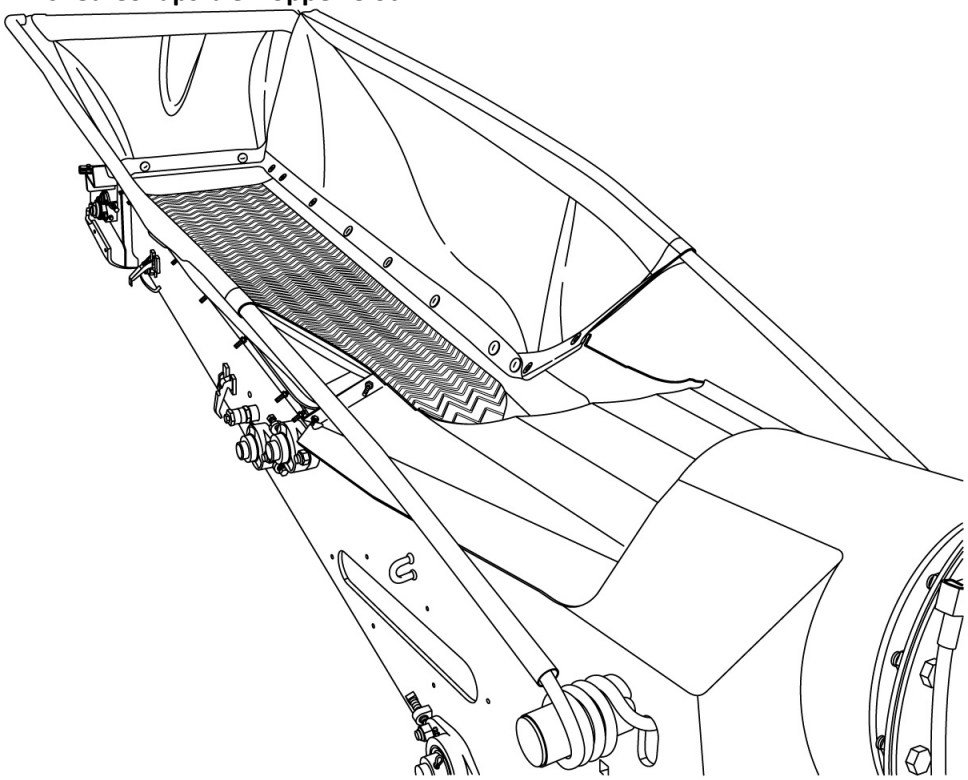
3. Restart conveyor and run empty for 1 minute.
4. Stop the conveyor and remove ignition key or lock out the power source.
5. If the belt has centered, move to next step. If not, repeat Step 2 to Step 4 until the belt is centered.
6. Tighten the bearing bolts and jam nut (if equipped).
7. Replace any guards that were removed.

3.23. Install the Collapsible Hopper Cloth

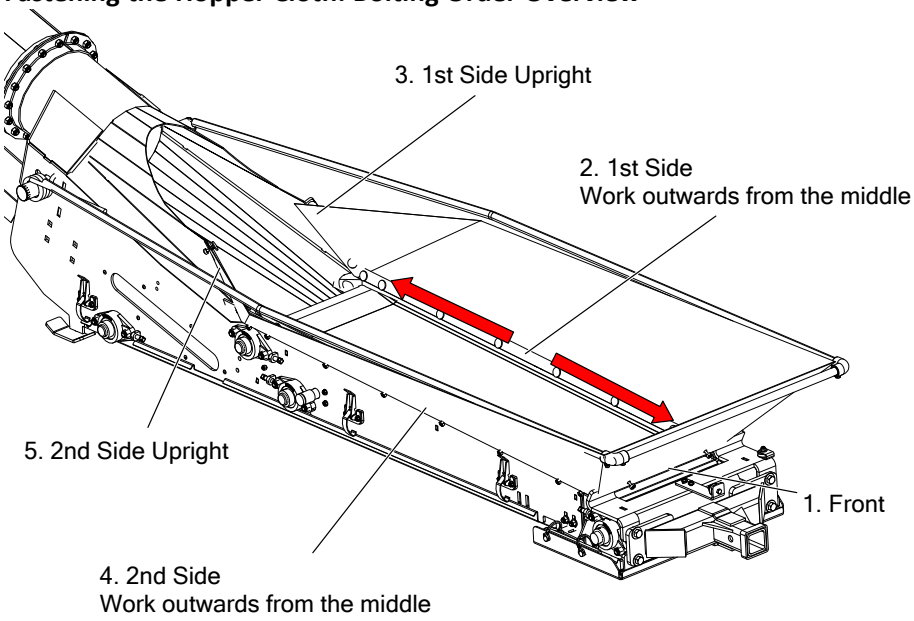
Installing the collapsible hopper cloth requires the completion of the following tasks:

Step	Description
1	Install the Hopper Springs
2	Assemble and Install the Upper Hopper Cloth Frame
3	Secure the Upper Hopper Cloth Frame to the Hopper
4	Straighten the Seals and Position the Flashing
5	Insert the Lower Hopper Cloth Frame into the Hopper Cloth
6	Secure the Front Lower Hopper Cloth Frame to the Hopper
7	Secure the Side Lower Hopper Cloth Frame and Uprights to the Hopper
8	Tighten the Lower Hopper Cloth Frame Bolts
9	Install the Split Loom

Finished Collapsible Hopper Cloth



Fastening the Hopper Cloth: Bolting Order Overview

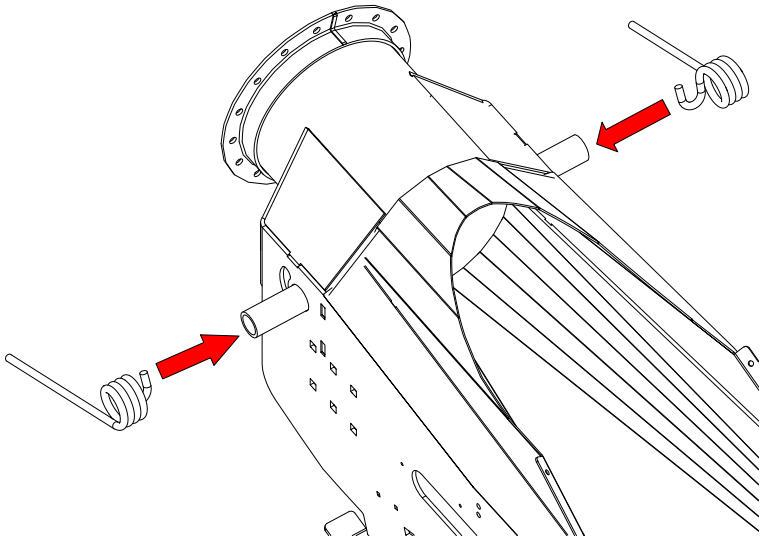


Note

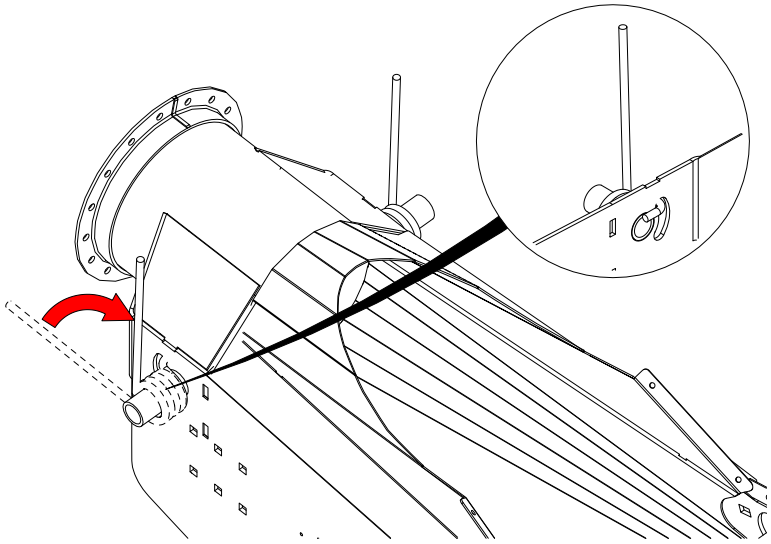
This image is a reference for sections Section 3.23.6 – Secure the Front Lower Hopper Cloth Frame to the Hopper on page 106 to Section 3.23.8 – Tighten the Lower Hopper Cloth Frame Bolts on page 110.

3.23.1 Install the Hopper Springs

Install the Hopper Springs



Lock the Hopper Springs



3.23.2 Assemble and Install the Upper Hopper Cloth Frame

1. Place the cloth flat on the floor.

   Note

   The “AGI” logo must be face up.

2. Slide the frame pieces through the channels in the hopper cloth.

   Note

   The frame pieces must be oriented as shown in **Orientation of Frame Pieces**.

3. Insert the ends of the frame pieces into the elbow fittings.
4. Remove the set screws from the elbow fittings where it connects to the side frame pieces.
5. Secure the side frame pieces into the elbow fittings with tek screws.

   Important

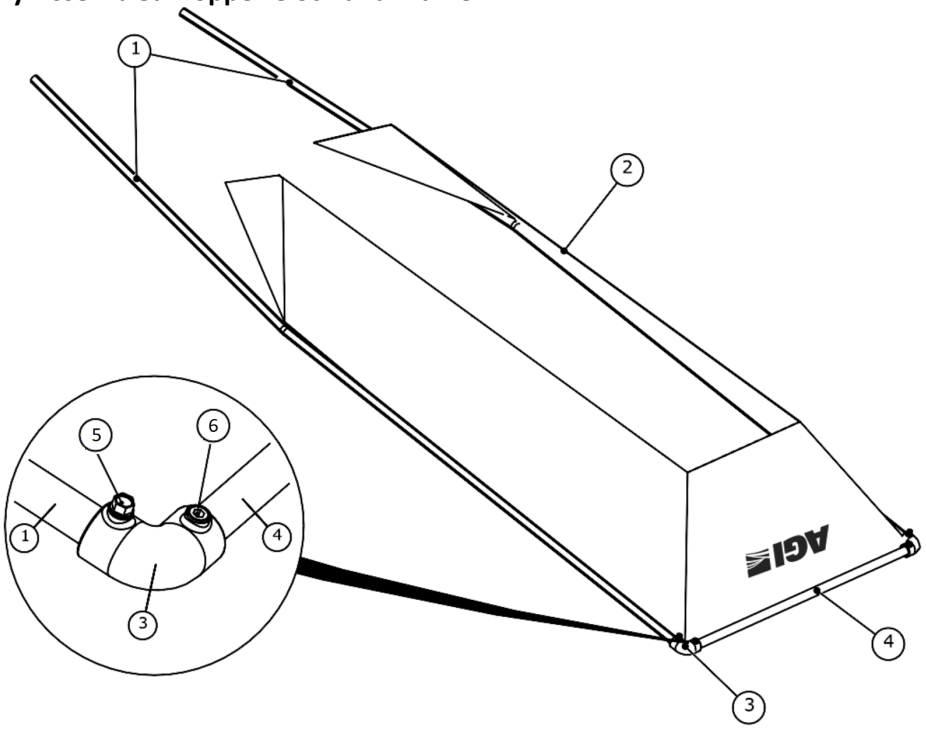
   A tek screw must replace the set screw on the side frame piece to ensure the frame keeps its shape after installation.

6. Secure the front frame piece into the elbow fittings with the set screws already installed in the fitting.
7. Slide the assembled hopper cloth onto the hopper springs.

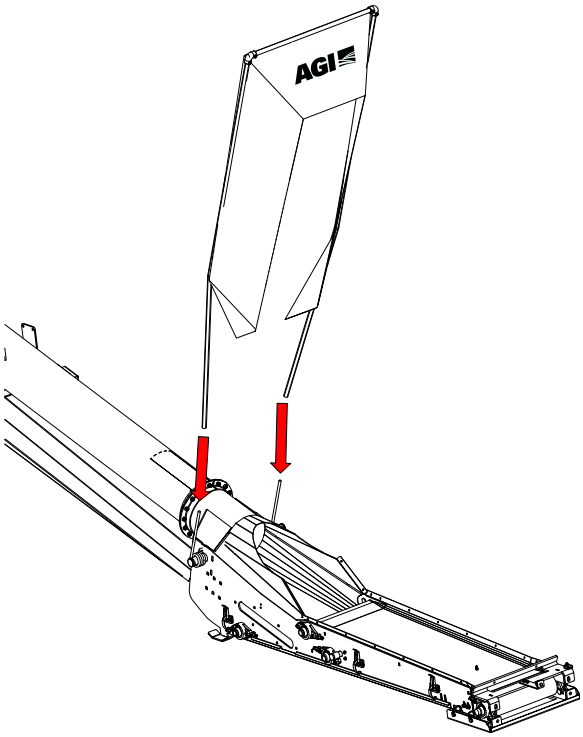
Orientation of Frame Pieces

Item	Description	Quantity
1	CX3 Hopper Frame Side, 1/2" Pipe Sch 80	2
2	Hopper Cloth	1
3	1/2" Elbow Rail Fitting	2
4	CX3 Hopper Frame Front, 1/2" Pipe Sch 80	1
5	Tek Screw	2
6	Set Screw (pre-installed)	2

Fully-Assembled Hopper Cloth and Frame



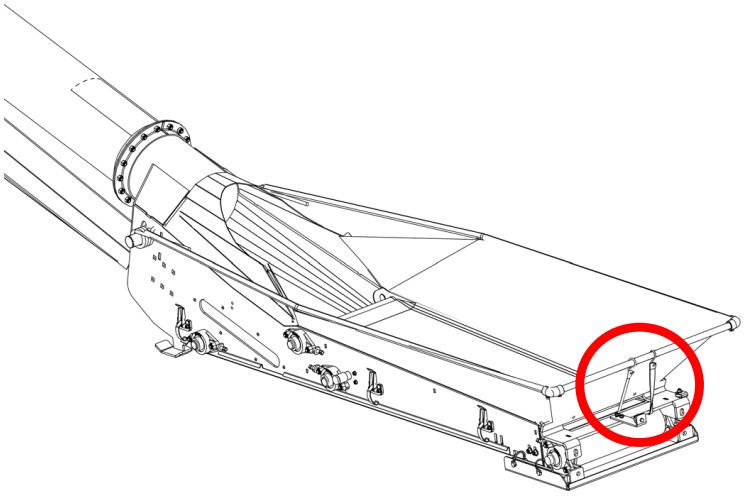
Installing the Hopper Cloth onto the Hopper Springs



3.23.3 Secure the Upper Hopper Cloth Frame to the Hopper

Note

Use a chain or bungee to secure the upper hopper cloth frame to the front of the hopper.

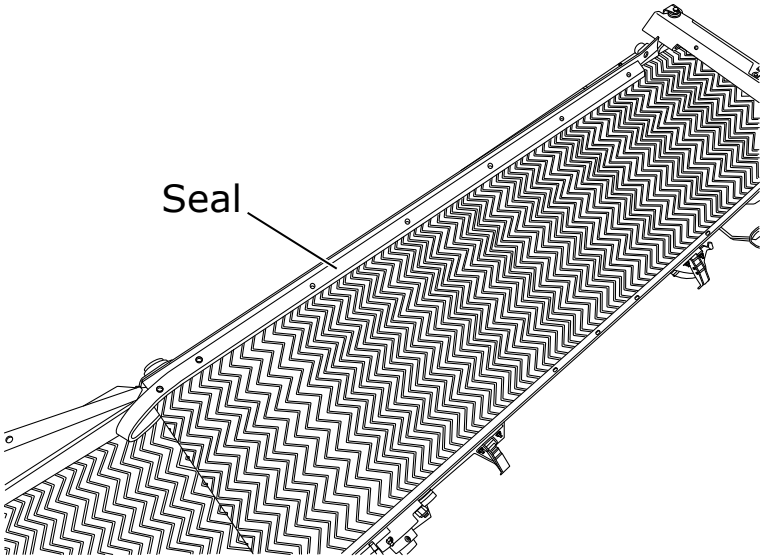


3.23.4 Straighten the Seals and Position the Flashing

Straighten the Seals

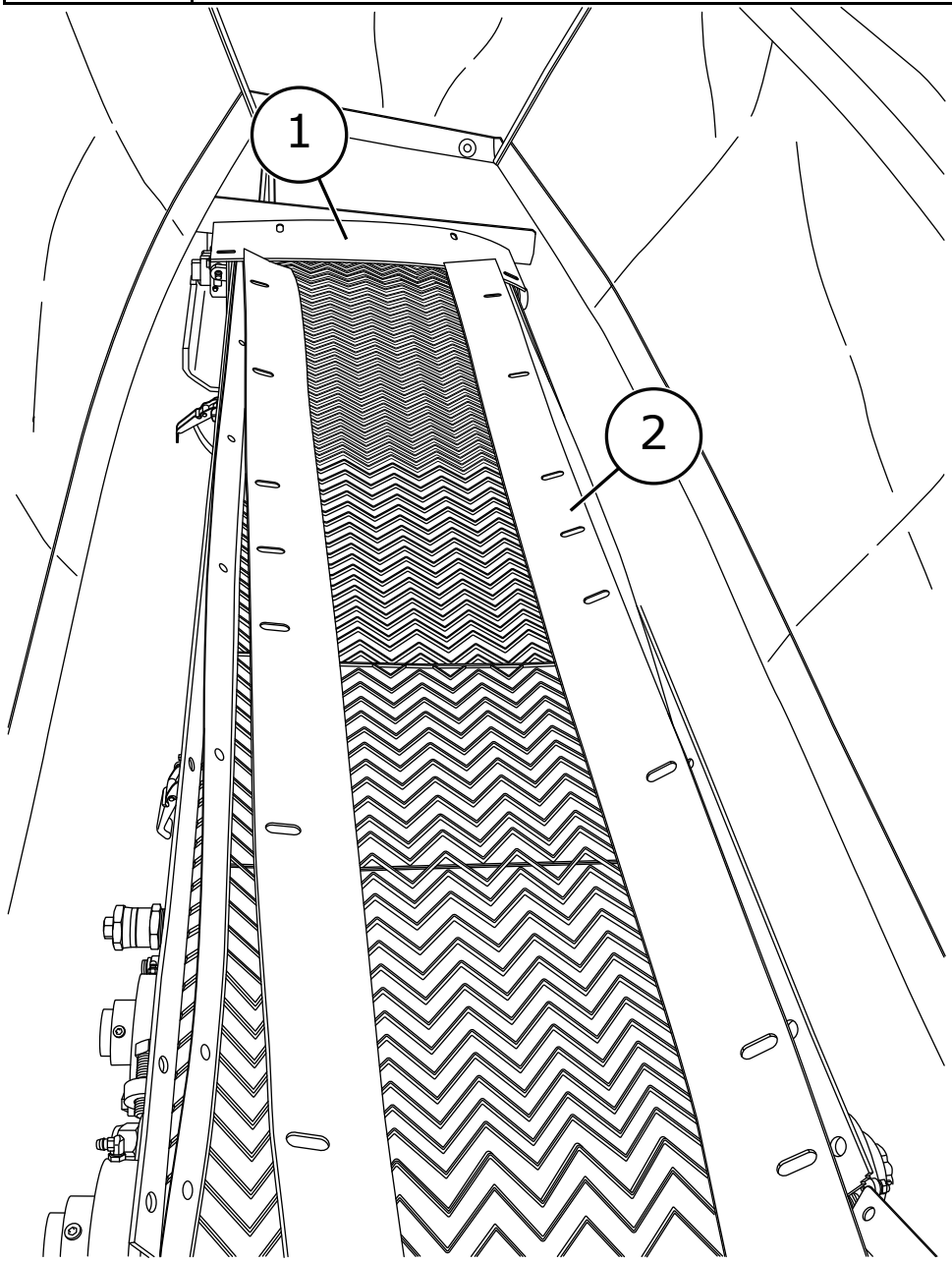
Note

Straighten the seals installed in Section 3.21 – Attach the Hopper Seals on page 92 and position them against the hopper weldment.



Position the Flashing

Item	Description
1	Front Flashing
2	Side Flashing



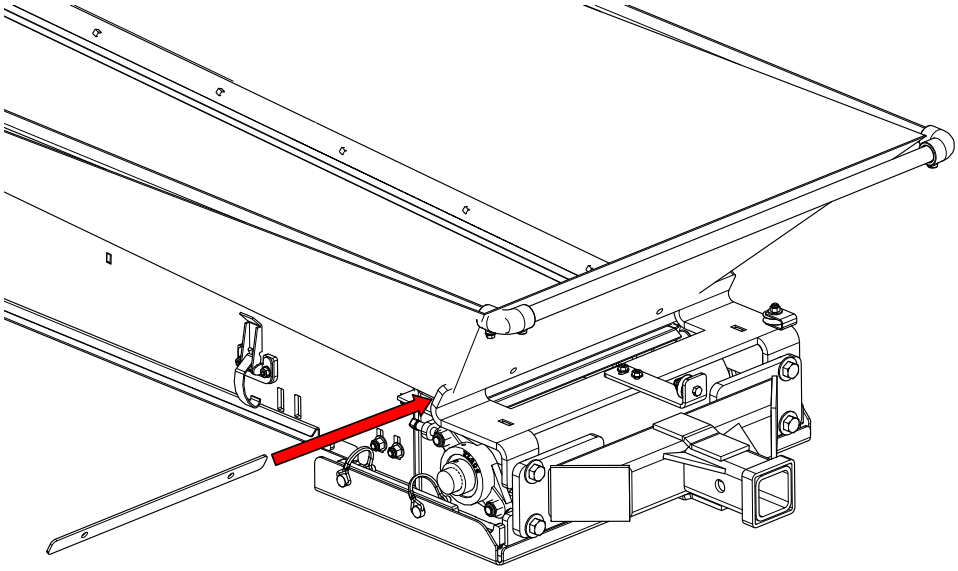
Note

Ensure the side flashing is placed on top of the front flashing.

3.23.5 Insert the Lower Hopper Cloth Frame into the Hopper Cloth

1. Insert the frame pieces into the sewn pockets in the hopper cloth.

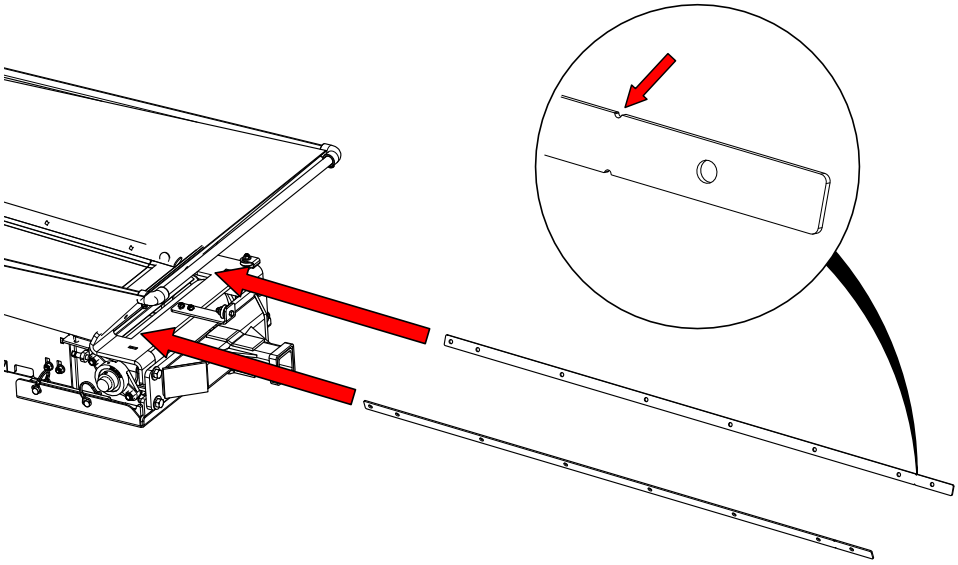
Insert the Front Lower Hopper Cloth Frame



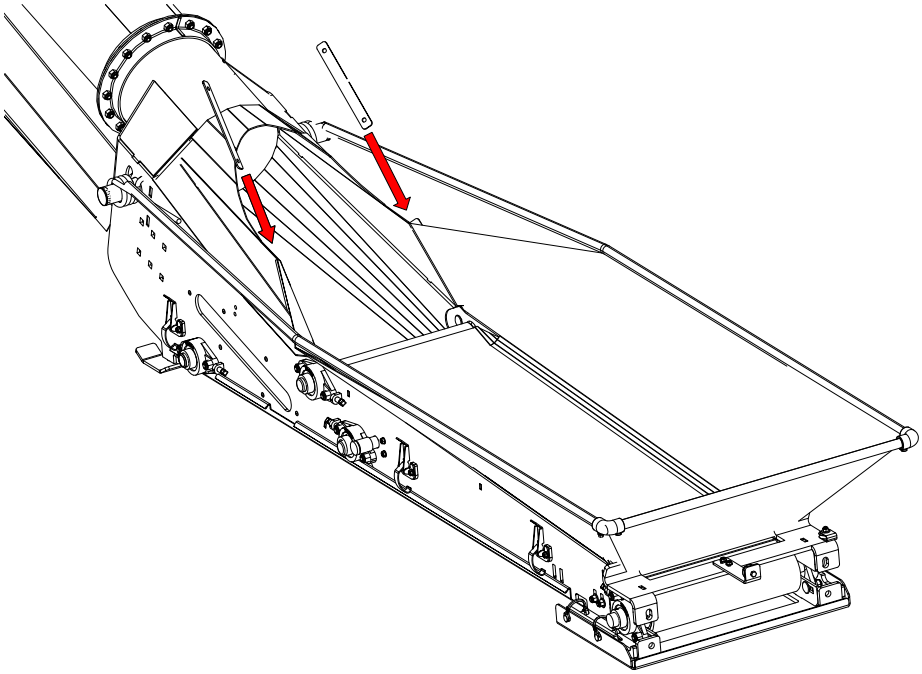
Insert the Side Lower Hopper Cloth Frame

Note

Locate the notch on one end of the side frame.



Insert the Uprights



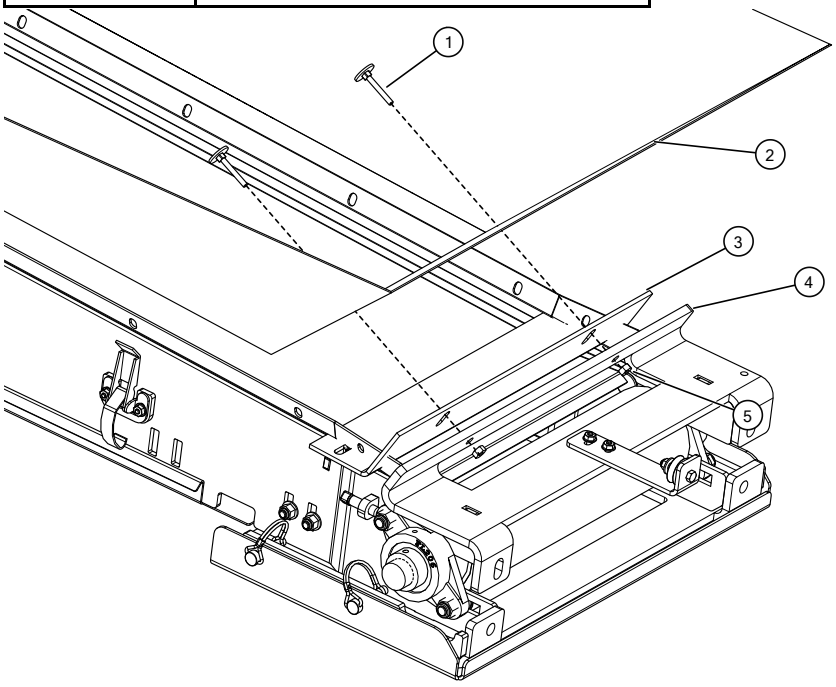
3.23.6 Secure the Front Lower Hopper Cloth Frame to the Hopper

Note

Finger-tighten the bolts only.

1. Drill holes through the cloth to match the frame holes.
2. Position the cloth (2) and frame on top of the flashing (3), aligning the holes of the cloth, flashing, and weldment (5).
3. Drill holes through the cloth, flashing, and weldment
4. Insert and finger-tighten the bolts (1, 6).
5. Remove the chain or bungee used to secure the upper frame to the hopper.
6. Tug on the cloth to ensure it is fully stretched out and has no wrinkles.

Item	Description
1	1/4" x 1-3/4" Elevator Bolt (GR 2)
2	Hopper Cloth (with frame inserted)
3	Flashing
4	Hopper Weldment
5	1/4" Hex Nut



3.23.7 Secure the Side Lower Hopper Cloth Frame and Uprights to the Hopper

Important

Secure the side frame and upright on one side before moving to the other.

Secure the Side Lower Hopper Cloth Frame to the Hopper

Note

Finger-tighten the bolts only.

1. Pull the cloth tight on one side until the cloth (2) lays smoothly and then slide the lower frame along the pocket until the holes in the frame align with the holes in the hopper (5).

   Note

   Ensure the cloth is fully stretched out and the upright frame can also be secured from this position

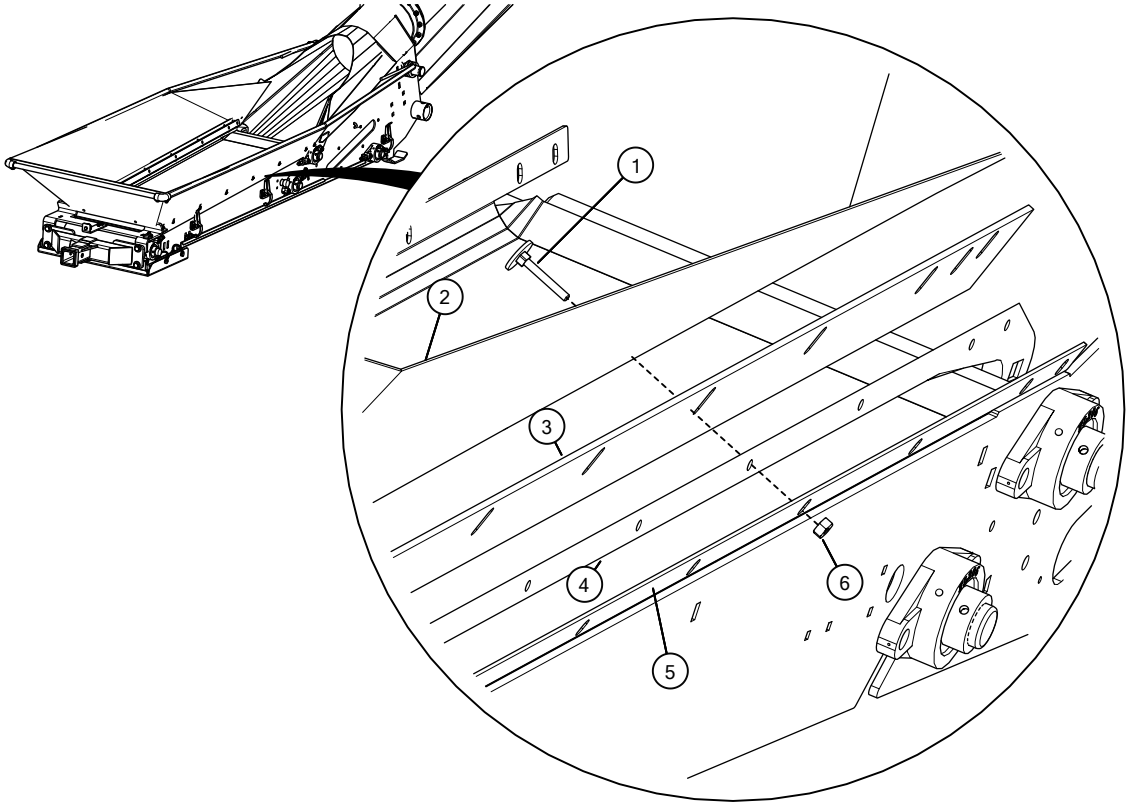
2. Starting in the middle, drill a hole in the cloth through the lower hopper cloth frame, flashing (3) , urethane seal (4), and hopper.

   Note

   Ensure that the urethane seal does not slip below the bolt.

3. Insert and finger-tighten the bolt (1,6).
4. Repeat steps 3 and 4, working out from the middle bolt until the side is secured to the hopper

Item	Description
1	1/4" x 1-3/4" Elevator Bolt (GR 2)
2	Hopper Cloth (with frame inserted)
3	Flashing
4	Seal
5	Hopper Weldment
6	1/4" Hex Bolt


1
2
3
4
5
6

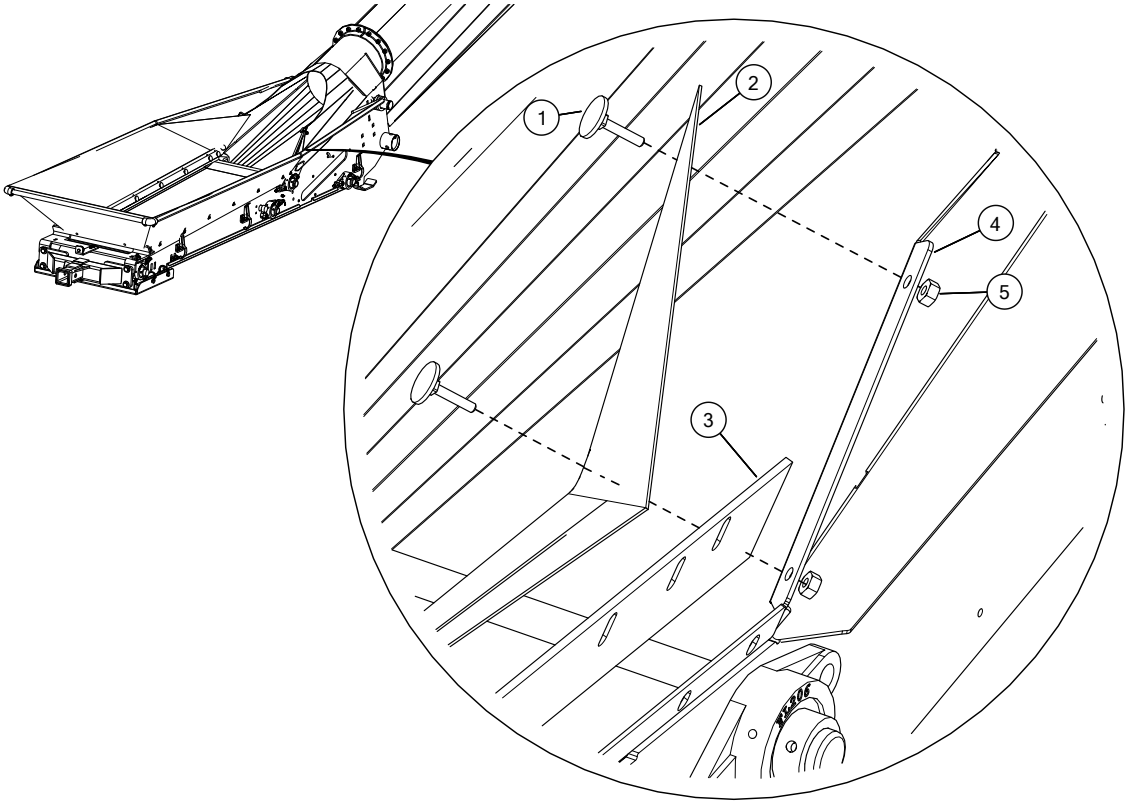
Secure the Uprights to the Hopper

Note

Finger-tighten the bolts only.

1. Align the upright frame holes:
   a. The top hole is aligned with hopper (4).
   b. The bottom hole is aligned with the flashing (3) and hopper.
2. Drill holes through the cloth to match the frame holes.
3. Insert and finger-tighten the bolts.

Item	Description
1	1/4" x 1-1/4" Elevator Bolt (GR 2)
2	Hopper Cloth (with frame inserted)
3	Flashing
4	Hopper Weldment
5	1/4" Hex Bolt



3.23.8 Tighten the Lower Hopper Cloth Frame Bolts

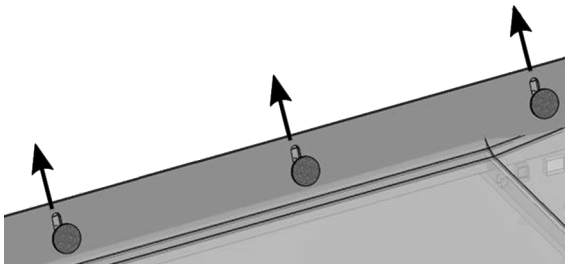
1. Tug the flashing upwards and away from the belt while tightening the bolts.
2. Gently tighten the bolts on the front and the uprights.
3. Run the conveyor belt.
4. While the belt is running, gently tighten the bolts along the sides until just past finger tight, so that the nut is locked by contact with the weldment.

NOTICE If the cloth frame is bolted down too tight, it is possible to crush the frame, seals, and belt together in a way that restricts belt movement or deforms the seals and frame. This can result in difficulty starting the belt, damage to the drive belts, leakage, and poor equipment performance.

Note

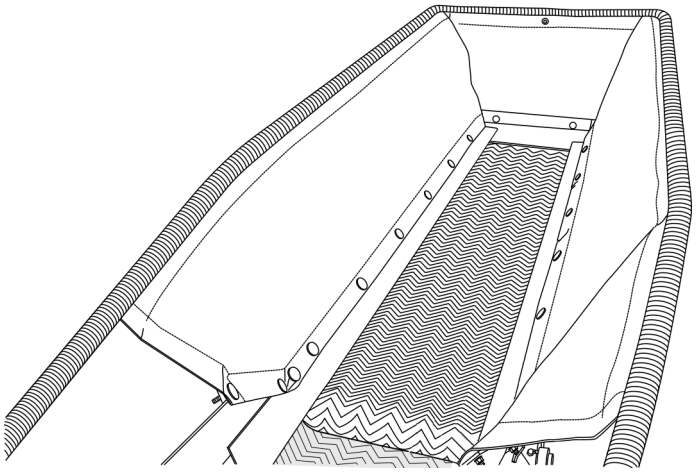
Some smoke is expected as the seals are heated and broken-in.

Tugging the Flashing Upwards



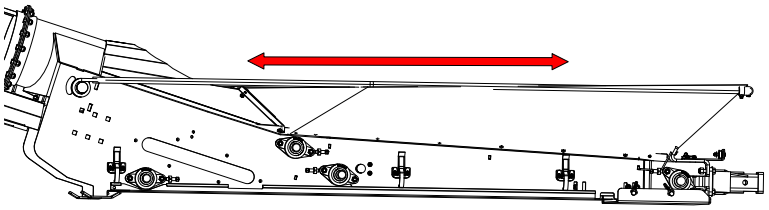
3.23.9 Install the Split Loom

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

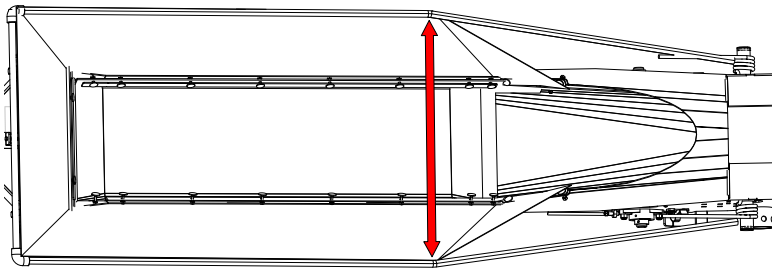


3.23.10 Final Check

1. Ensure the top frame pieces are flat and do not rise at an angle.

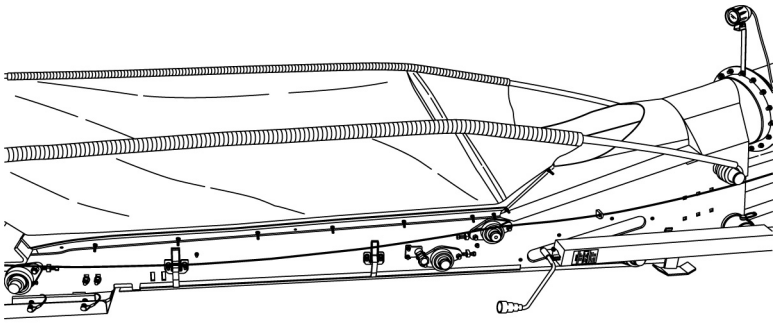


2. Ensure the top frame pieces bow outward.



If the frame bends upwards, ensure tek-screws were installed correctly when assembling the upper cloth frame.

Incorrect



3.24. Attach the Hopper Underside Covers

Table 13. Underside Covers

Item	Description
1	Hopper Front Cover
2	Spring Pin
3	Hopper Bottom Cover

Figure 42. Installing the Underside Front Cover

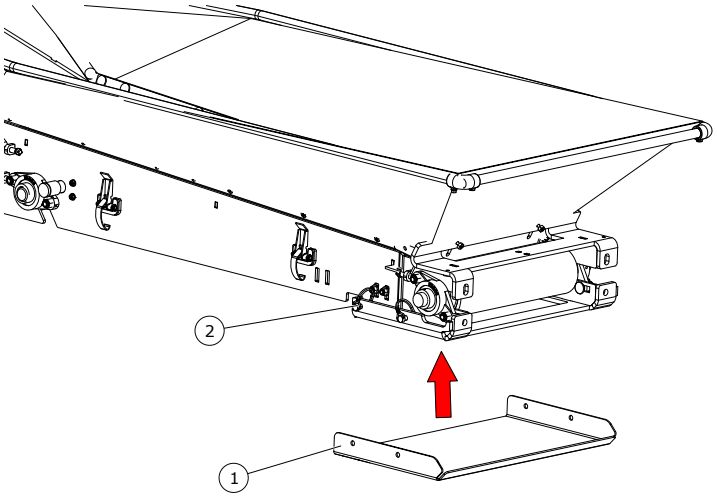
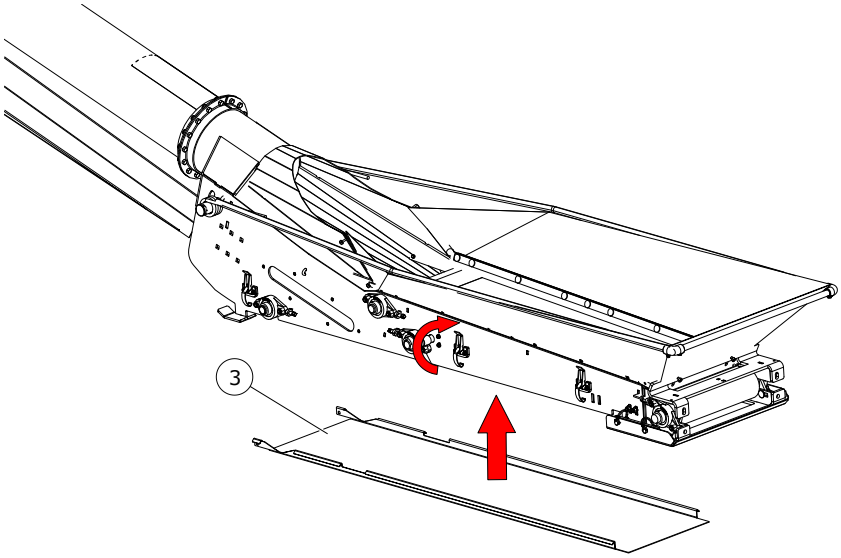


Figure 43. Installing the Underside Main Cover



3.25. Attach the S-Drive Bottom and Take-up Side Guards

Table 14. Parts Required to Attach S-Drive Bottom Guards

Item	Description
1	S-Drive Lower Bottom Cover
2	S-Drive Upper Bottom Cover
3	1/4" x 3/4" Hex Bolt (GR5)
4	1/4" Lock Washer
5	1/4" Flat Washer

Hardware Kit: HRDW-15-44x2

Figure 44. Installing the S-Drive Lower Bottom Guard

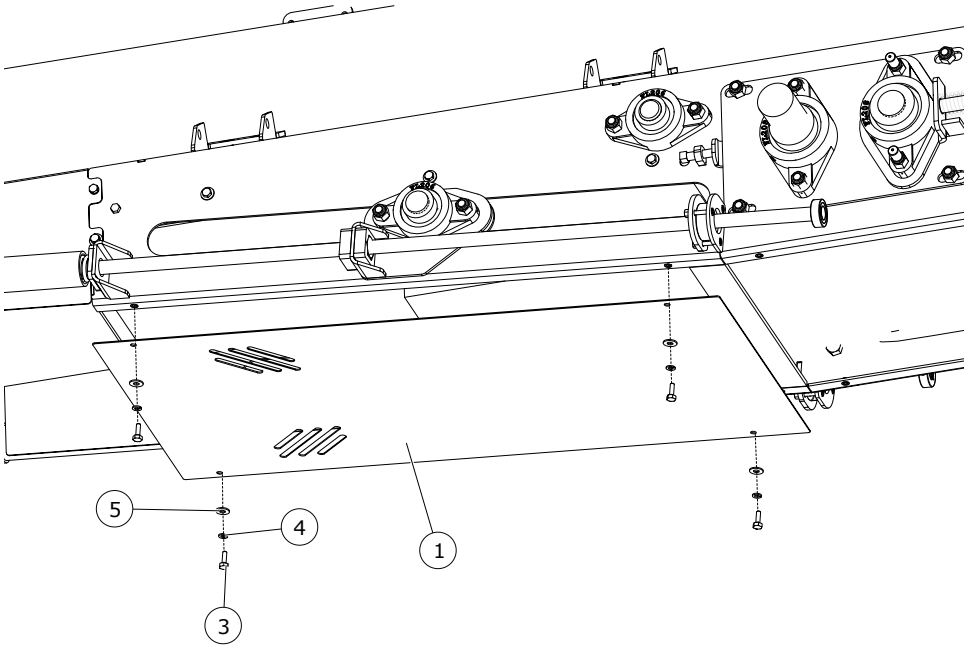


Figure 45. Installing the S-Drive Upper Bottom Guard

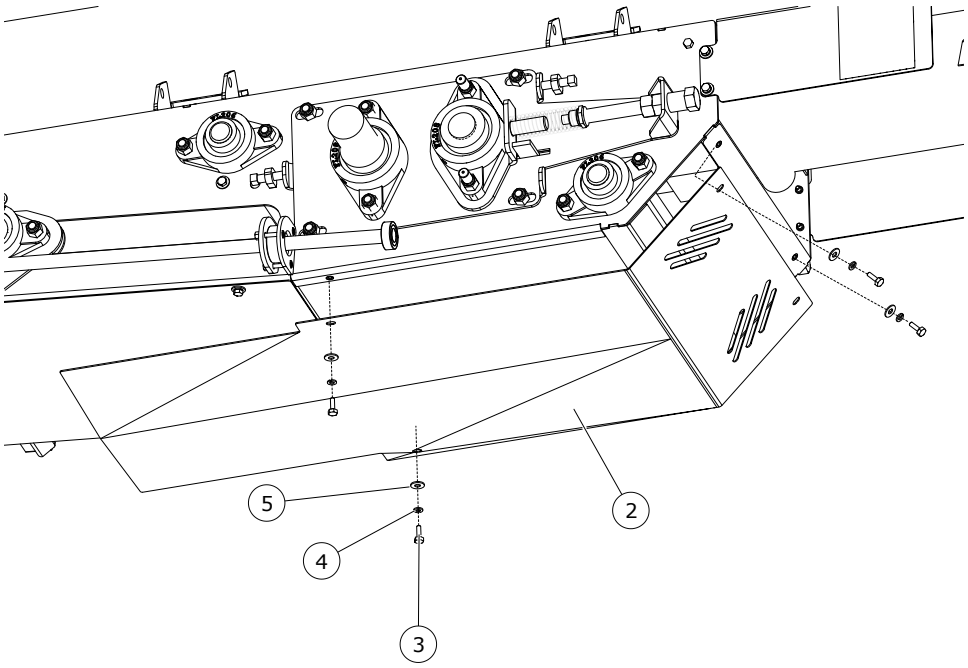


Table 15. Parts Required to Attach Take-up Guards

Item	Description
6	S-Drive Take-up Side Guard
7	1/4" x 3/4" Hex Bolt (GR5)
8	1/4" Flat Washer

Hardware Kit: HRDW-15-114

Figure 46. Installing the S-Drive Take-up Side Guards

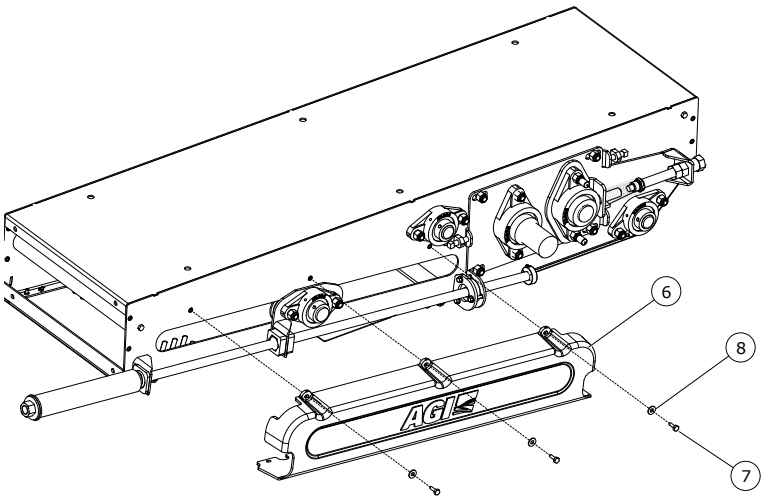
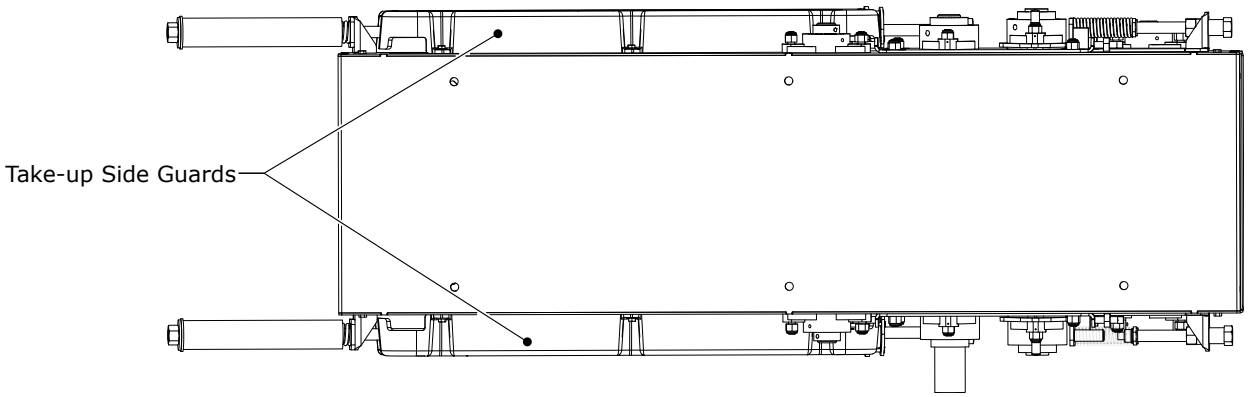


Figure 47. S-Drive with Take-Up Side Guards — Top View



3.26. Install the Weather Guard Mount Bars

1. Install the types of mount bar assemblies in Figure 48 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 16. 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 48. Types of Mount Bar Assemblies

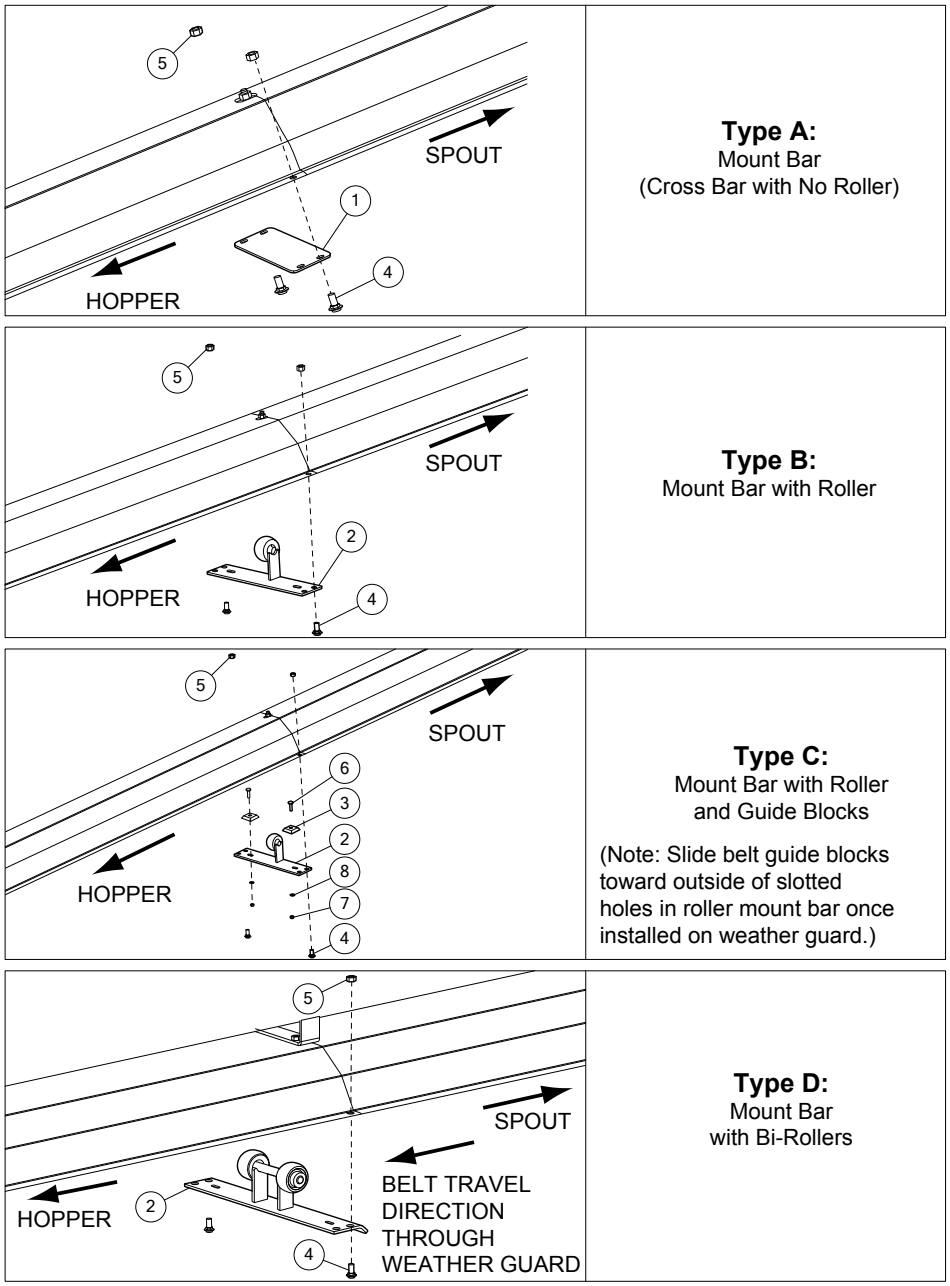
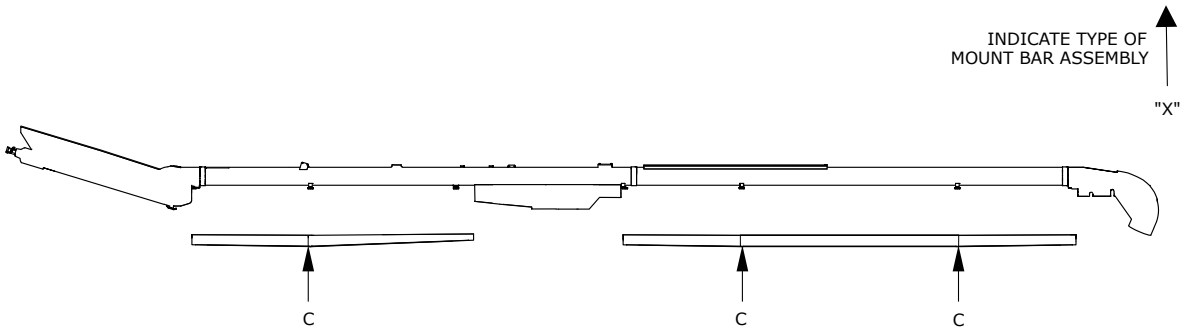


Figure 49. Mount Bar Schematic Diagram



3.27. 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" plastic flat washer (3), and two 3/8" hex nuts (4) (see Figure 50).

   Note

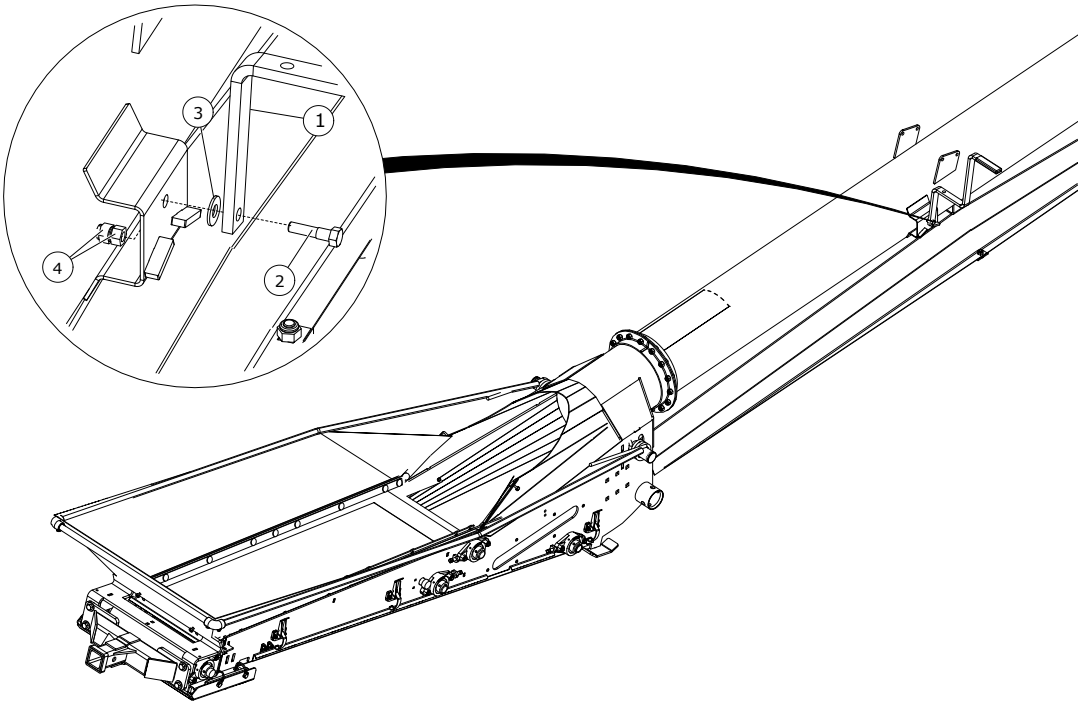
   Ensure the handle can pivot after tightening the bolt.

Table 17. Handle Components

Item	Description
1	Hopper Handle
2	3/8" x 1-1/2" Hex Bolt (GR8)
3	3/8" Plastic Flat Washer
4	3/8" Hex Nut

Hardware Kit: HRDW-15-82

Figure 50. Installing the Handle



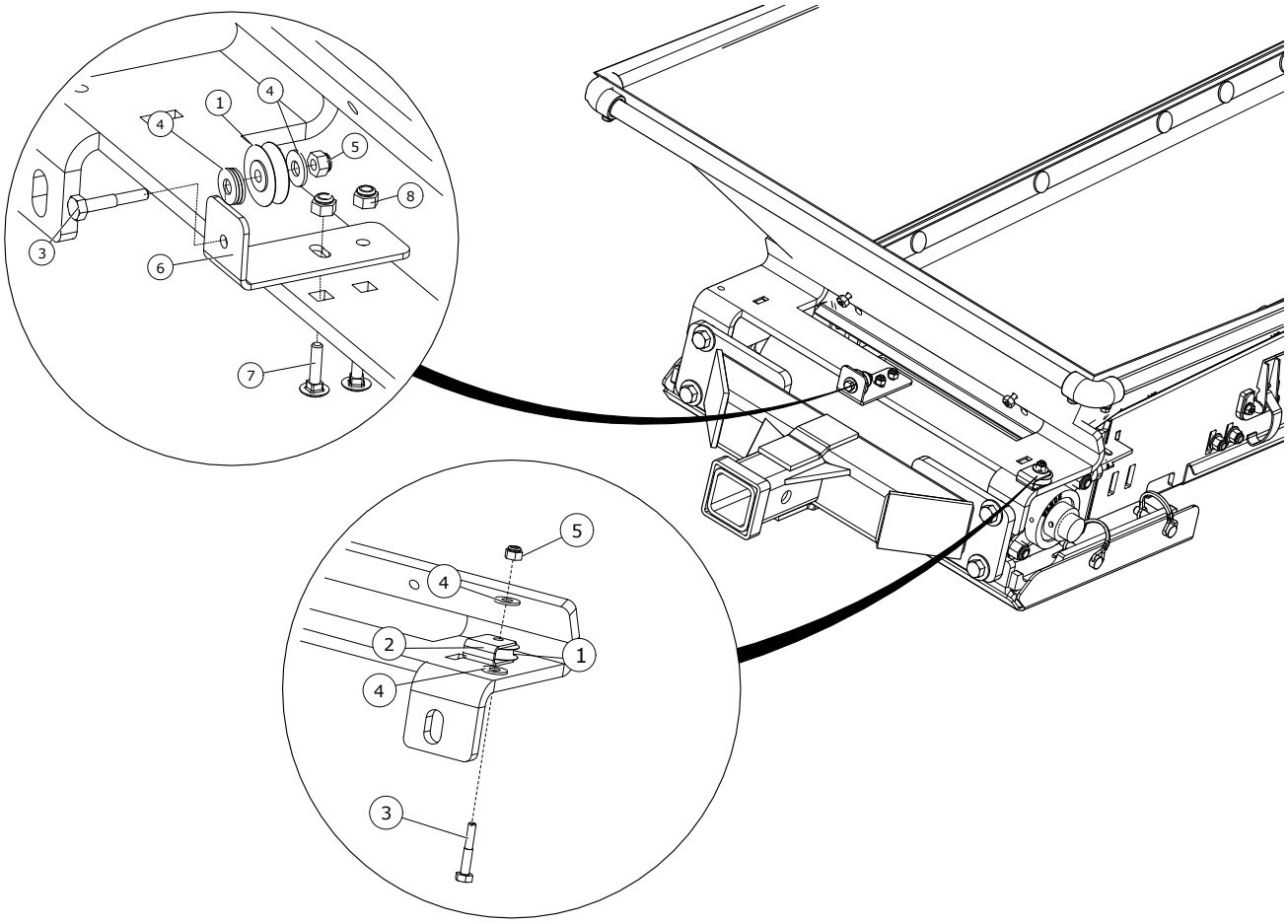
Install the Cable Sheaves

1. Install the cable sheaves as shown in Figure 51.

Table 18. Components for Cable Sheaves Installation

Item	Description
1	1-1/4" Cable Sheave
2	Cable Sheave Capture
3	1/4" x 1-1/2" Hex Bolt (GR8)
4	1/4" Flat Washer
5	1/4" Nylon Locknut (GR8)
6	Bolt-on Cable Sheave Bracket
7	1/4" Carriage Bolt (GR5)
8	1/4" Hex Flange Nut

Figure 51. Installing the Cable Sheaves



Install the Cable and Clamps

1. Point the hopper handle toward the hopper.
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" P-clip (3) to the front upper frame using one 5/16" x 1" bolt (5), one 5/16" nut (6) and two 5/16" flat washers (4). Do not fully tighten. See Figure 53.
5. Loop the cable (1) around the 5/16" x 1" bolt (5) and secure with 1/8" cable clamp (2). Ensure trailing cable end is kept short.
6. Tighten the bolt on the P-clip once the cable is in place.
7. Test the function of the collapsible hopper cloth controls by raising and lowering the handle. Adjust cable tension as required.

Figure 52. Installing the Cable and the Clamps

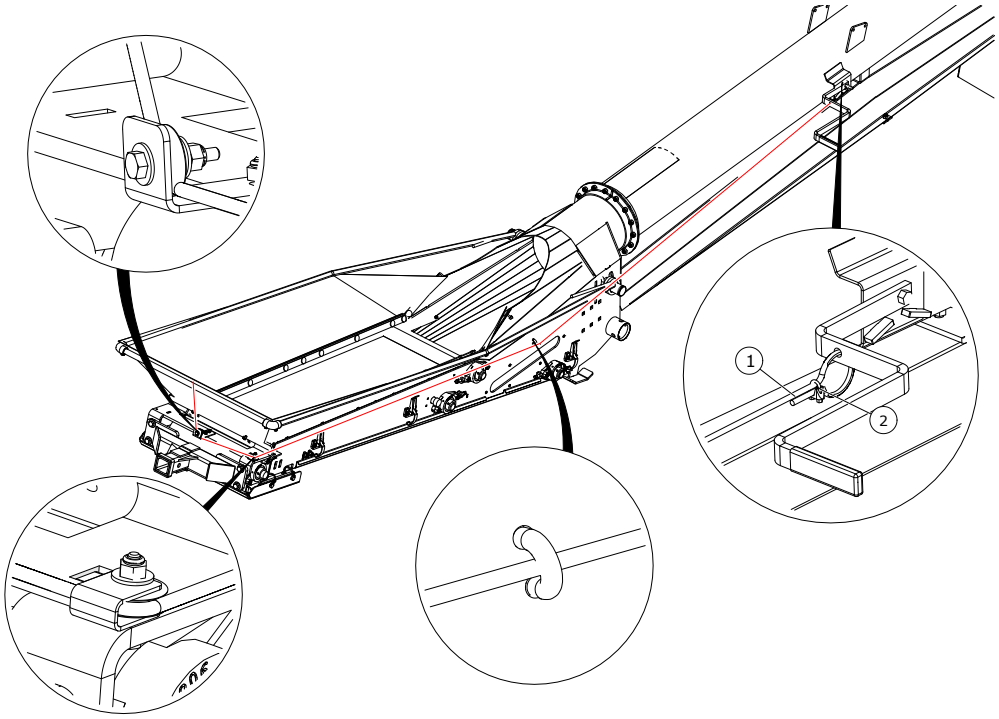
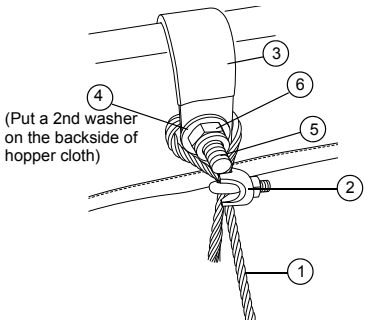


Table 19. Cable and Clamp Components

Item	Description
1	1/8" Cable 7x19 GAC
2	1/8" Cable Clamp
3	7/8" P-Clip
4	5/16" Flat Washer
5	5/16" x 1" Bolt (GR8)
6	5/16" Nylon Locknut (GR8)

Hardware Kit: HRDW-15-82

Figure 53. Attaching the Cable to the Hopper Frame



3.28. 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 54.

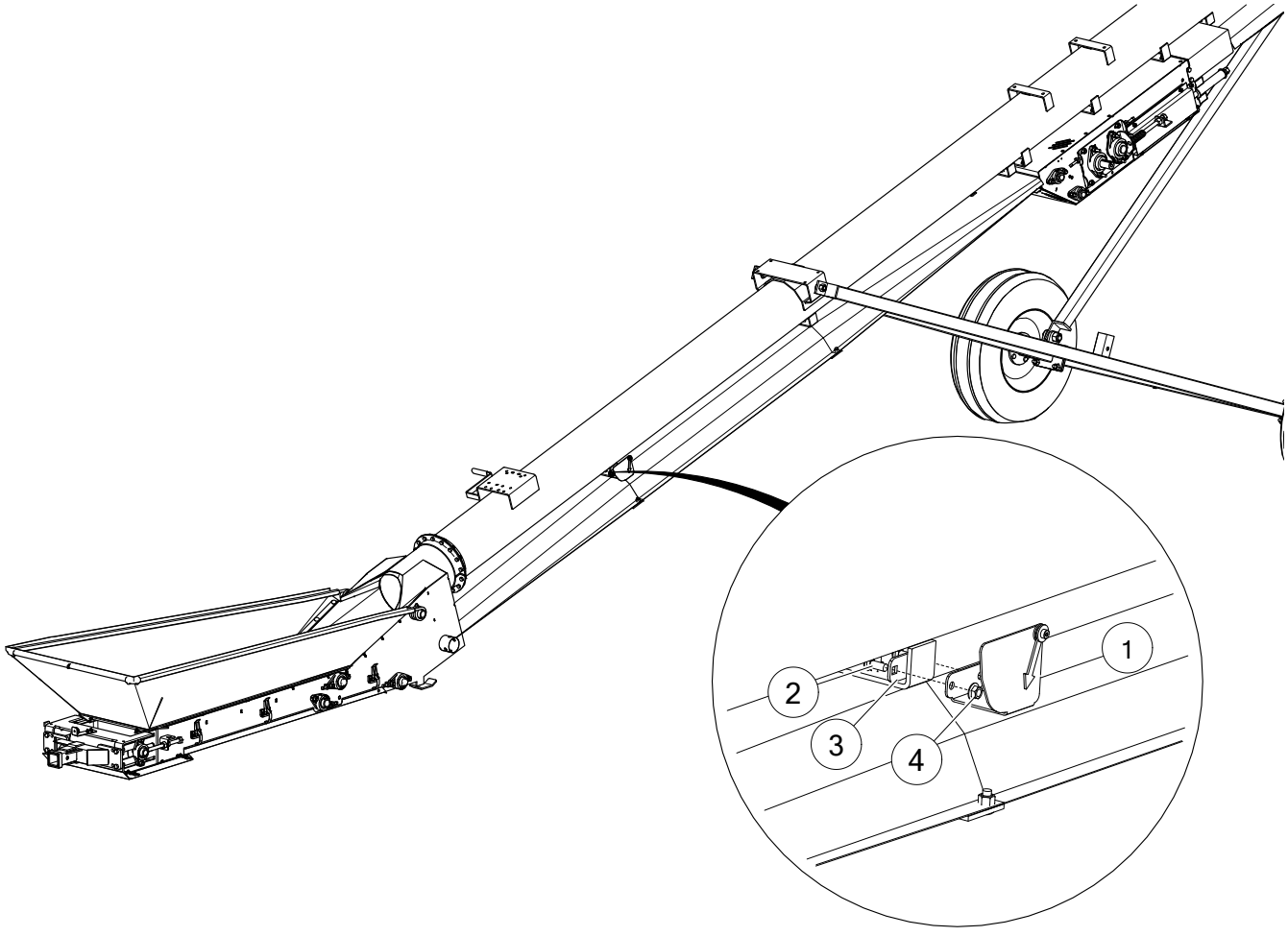
Important

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

Table 20. Angle Indicator

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

Figure 54. Installing the Angle Indicator



3.29. Attach the Hitch

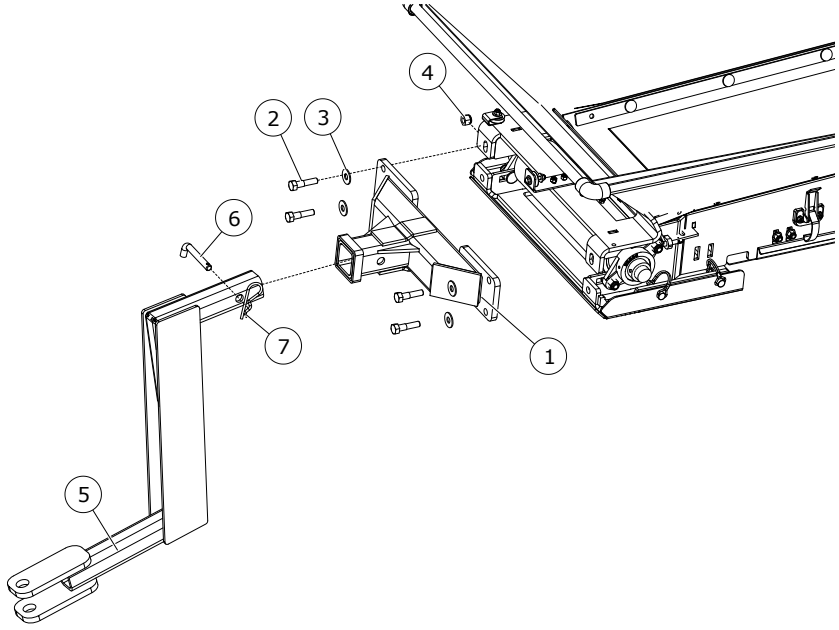
1. Attach the hitch (1) to the hopper weldment using 1/2" x 2" bolts (2), 7/16" flat washers (3), and 1/2" nuts (4).
2. Insert the tongue (5) into the tongue stub.
3. Secure the tongue in place using 5/8" x 3" hitch pin (6) and 3/16" x 3-1/4" hairpin (7).

Table 21. Hitch Components

Item	Description	Quantity
1	Hitch FL (1 PC)	1
2	1/2" x 2" Hex Bolt (GR8)	4
3	7/16" Flat Washer	4
4	1/2" Nylock Nut (GR8)	4
5	Tongue - Drop FL	1
6	5/8" x 3" Hitch Pin	1
7	3/16" x 3-1/4" Hairpin	1

Hardware Kit: HRDW-15-16

Figure 55. Hitch Components



3.30. Attach the Spout Brush

1. Attach the brush (1) to the roller plates with 1/4" x 3/4" carriage bolts (2) and 1/4" lock nuts (3).
2. Adjust the position of the brush using the slots so that the bristles reach all the way to the deepest part of the chevron on the belt (see Figure 57).
3. Tighten the nuts.

Figure 56. Attaching the Spout Brush

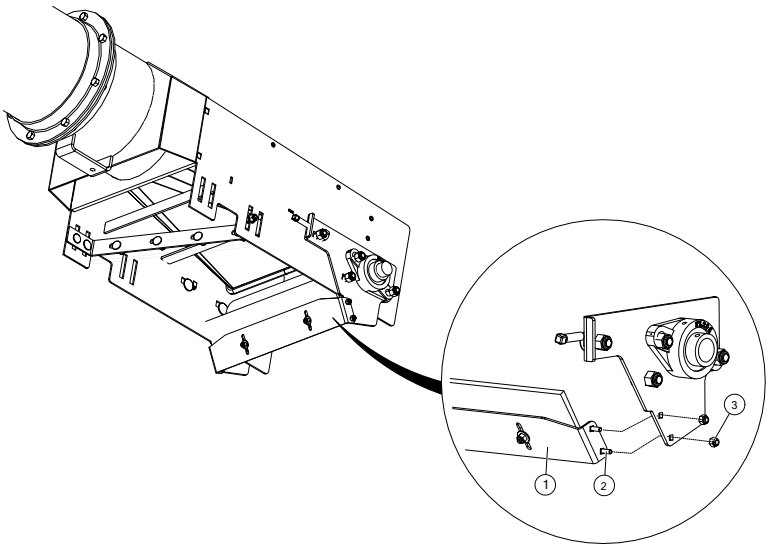
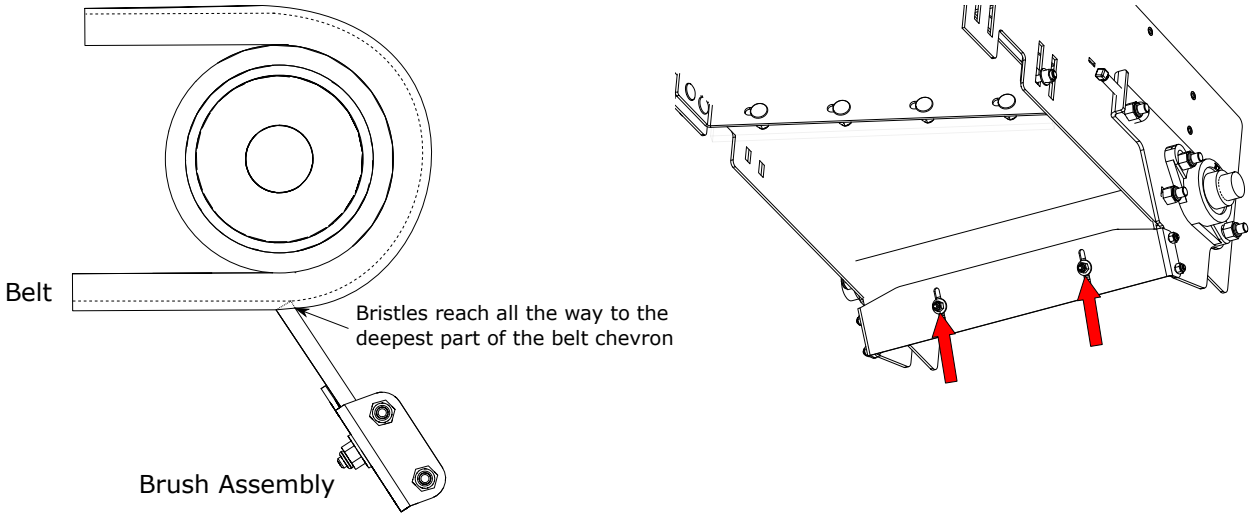


Table 22. Spout Brush

Item	Description	Quantity
1	Spout Brush	1
2	1/4" x 3/4" Carriage Bolt (GR5)	4
3	1/4" Lock Nut (GR8)	4

Figure 57. Adjusting the Spout Brush



3.31. Install the Spout Cap and Hood

1. Attach the spout cap (1) to the spout using four 1/4" x 3/4" serrated hex flange bolt (2), see Figure 58.
2. Place the hood (3) around the bearing assembly (see Figure 59).
3. Use 1/4" x 3/4" serrated hex flange bolt (2) to secure the hood to the conveyor spout.

Table 23. Spout Cap and Hood Components

Item	Description	Quantity
1	Spout Cap	1
2	1/4" x 3/4" Serrated Hex Flange Bolt (GR5)	10
3	Hood	1
4	1/4" Fender Washer	6

Hardware Kit: HRDW-15-97

Figure 58. Installing Spout Cap

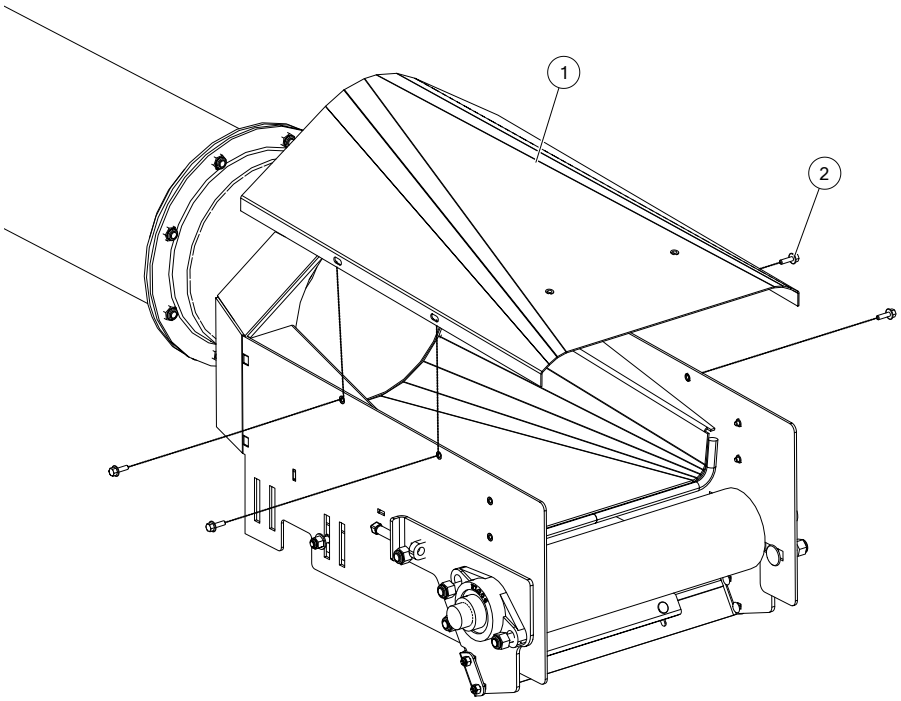
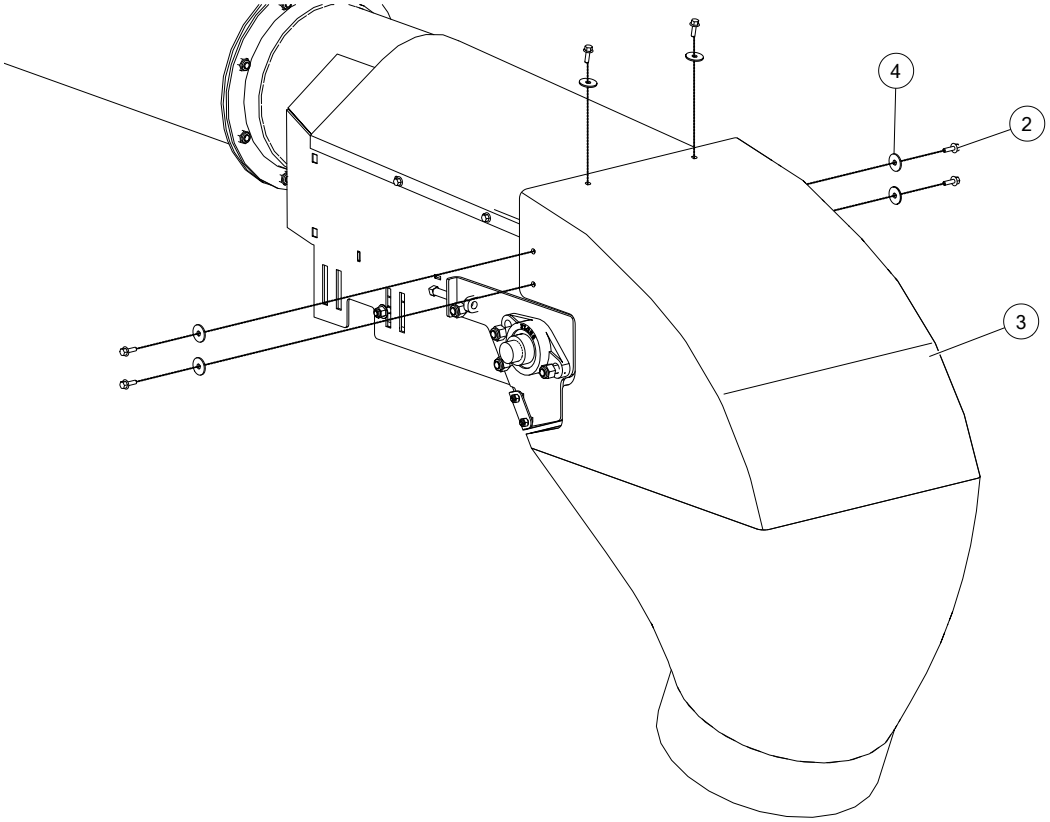


Figure 59. Installing Hood



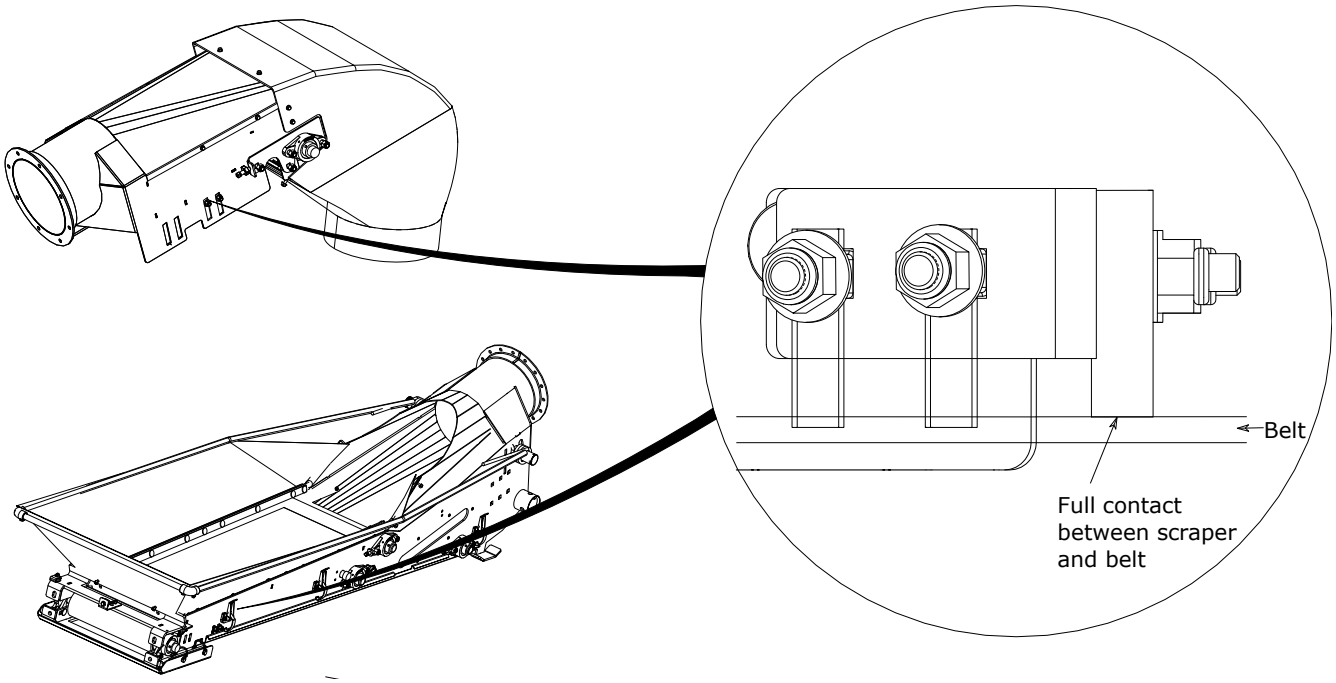
3.32. Adjusting the Hopper and Spout Scraper

1. Loosen the nuts (on both sides) holding the scraper to the hopper or spout, see Figure 60.
2. Lower scraper until it rests on the belt with light pressure.

   Important

   Ensure no part of the metal scraper mount contacts the belt.
3. Tighten the nuts.

Figure 60. Adjusting Scraper



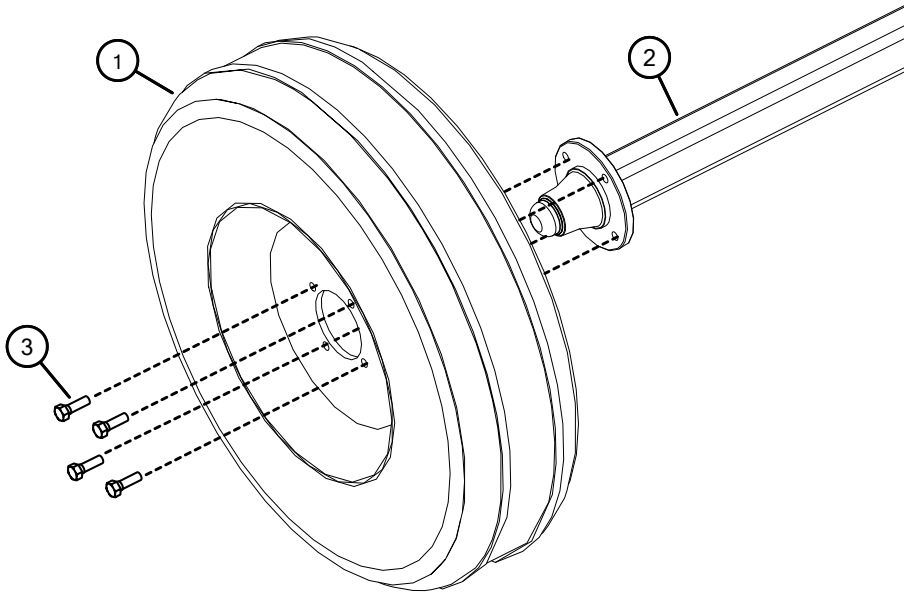
3.33. Install the Wheels

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 61).

Table 24. Components to Attach the Wheels to the Axle

Item	Description
1	Tire Assembly
2	Axle
3	Wheel Bolt

Figure 61. Attaching the Wheels to the Axle



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

3.34. Assemble the A-Frame

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

1. Loosely fasten the axle arms (7) to the axle (4) using one 5/8" x 5" bolt (11), three 5/8" x 2" bolts (8), five 5/8" flat washers (9), and four 5/8" nylon locknuts (10).

   Note

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

2. Fasten the axle arms to the suspension bracket using 3/4" x 2" hex bolts (12) and 3/4" nylon locknuts (14).
3. Secure the slider (2) to the end of the track (towards the spout) using vise-grips.
4. Fasten upright arms (1) to the slider (2) using 1/4" x 2" cotter pins (3) and 3/4" flat washers (13).
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 (1) to the axle (4) using 1" x 3" hex bolts (5) and 1" nylon locknuts (6).
7. Tighten the bolts that fasten the axle arms to the axle.
8. Lower tube and remove vise grips.

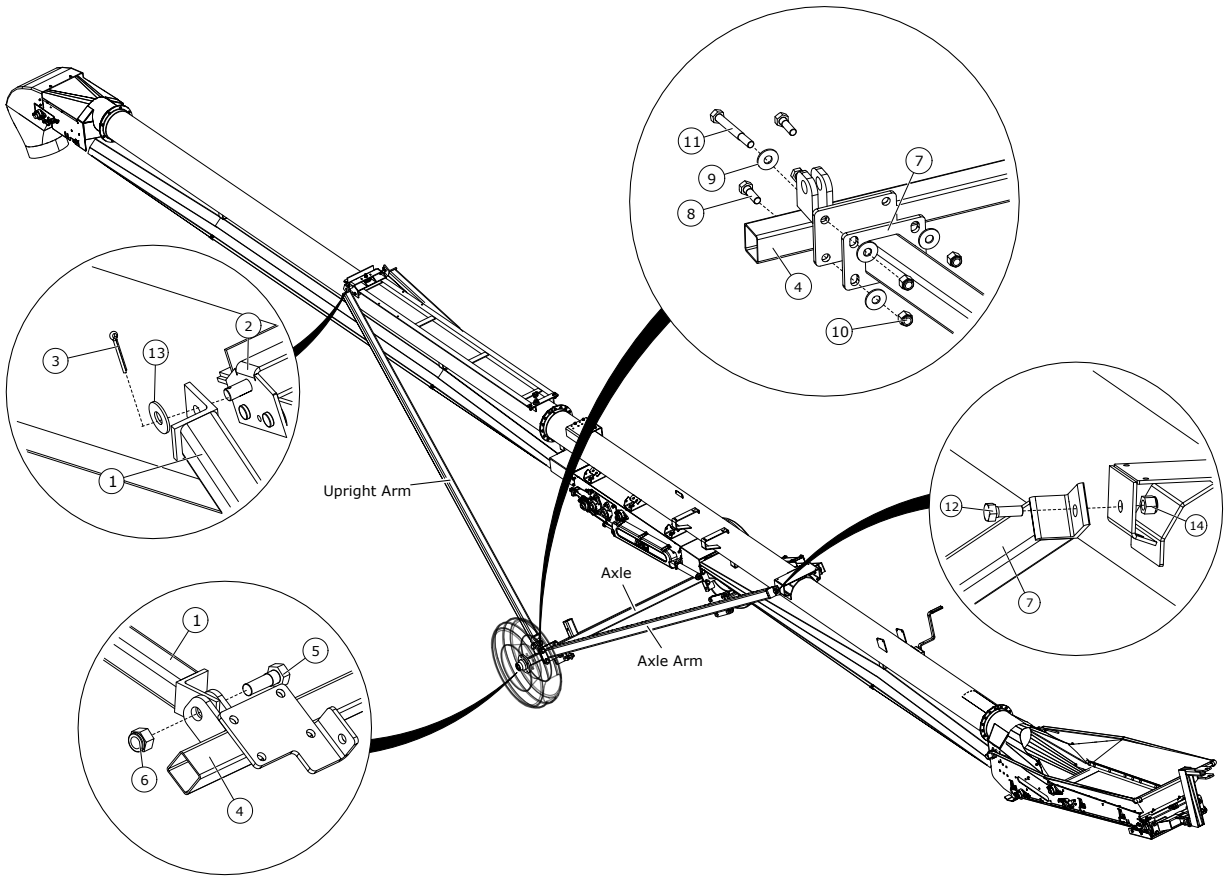
⚠ WARNING Do not remove the tube support(s) until the conveyor is fully assembled.

Table 25. Components to Assemble the A-Frame

Item	Description
1	Upright Arm
2	Slider
3	1/4" x 2" Cotter Pin
4	Axle
5	1" x 3" Hex Bolt (GR8)
6	1" Nylon Locknut (GR8)
7	Axle Arm
8	5/8" x 2" Hex Bolt (GR8)
9	5/8" Flat Washer
10	5/8" Nylon Locknut (GR8)
11	5/8" x 5" Hex Bolt (GR8)
12	3/4" x 2" Hex Bolt (GR8)
13	3/4" Flat Washer
14	3/4 " Nylon Locknut (GR8)

Hardware Kit: HRDW-15-31, HRDW-15-123

Figure 62. Assembling the A-Frame



3.35. 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 Figure 63).

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

2. Thread cable onto drum and secure with spool anchor.

   Note

   The nut must be on the outside of the drum to prevent damage to the cable.

3. Run the cable towards the spout.
4. Thread the cable through the slider pulley.
5. Run the cable from the slider pulley towards the hopper and stop at the cable attach (3).
6. Loop the cable under and around the cable attach and secure it with two 5/16" cable clamps (2).
7. Trim excess cable.
8. 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.

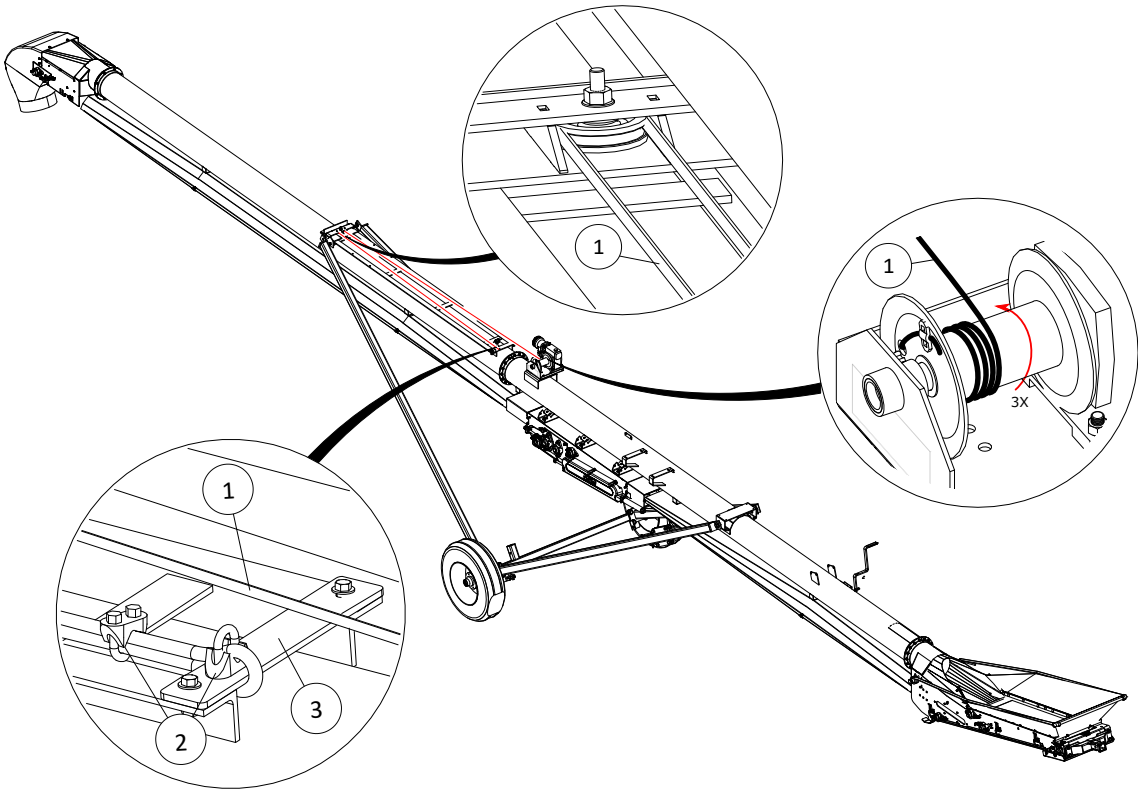
   Stop the test if anything should slide, slip, or jam. Correct the issue before continuing.

Table 26. Tube Lift Cable Components

Item	Description
1	26' Cable 5/16" 7 x 19 GAC
2	5/16" Cable Clamp*
3	Small Cable Attach

*Hardware Kit: HRDW-15-124

Figure 63. Installing the Tube Lift Cable



WARNING Crushing/impact hazard

Wrap the cable at least three times around the drum while the conveyor is in the transport position. The cable must leave the winch from the top of the drum.

3.36. Align the Winch

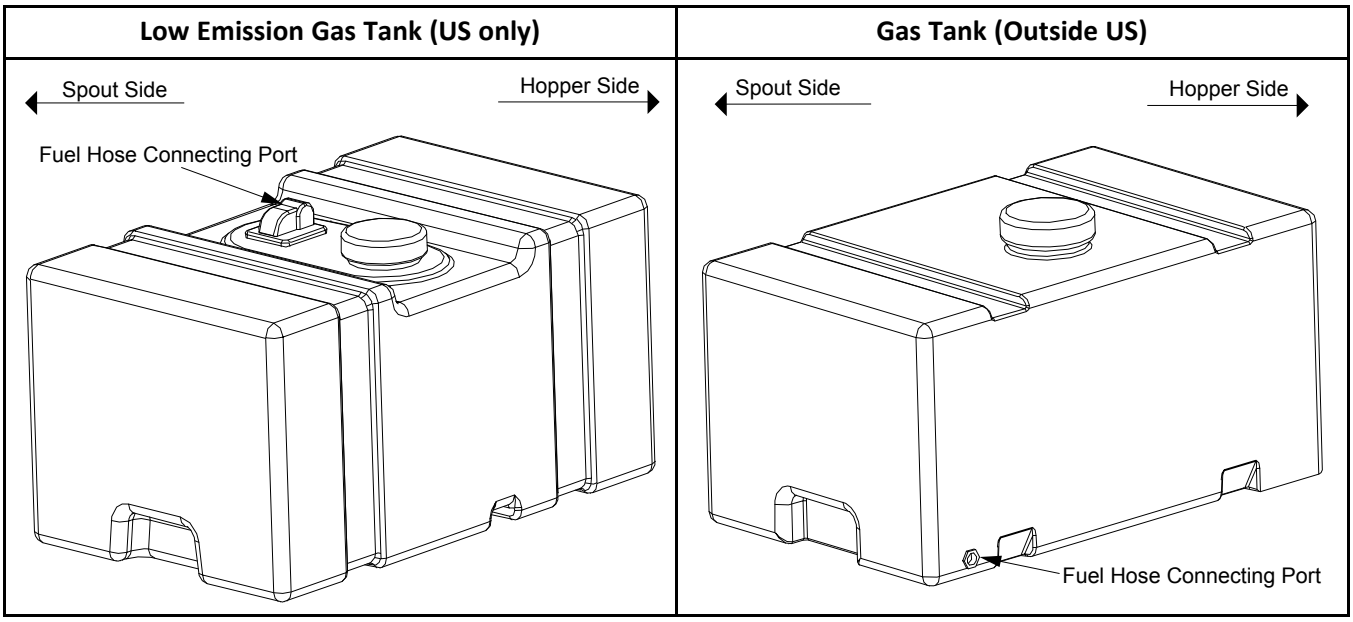
This procedure describes the alignment of the winch.

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.

3.37. Install the Tank Kit and the Primer Bulb

Depending on the region two different versions of tank kit are provided with the conveyors. The size and shape of the fuel tank can vary depending on the conveyor series. Examples of gas tank are shown in Figure 64 below:

Figure 64. Gas Tank Type



3.37.1 Install Tank Mount

This section covers the tank mount installation for Top-Mount Drive only. For Under-Mount Drive tank mount installation, refer to Installing the Fuel Tank Mount on page 80.

1. Attach the plastic tank mount bracket (1) using 7/16" x 1" hex flange bolts (2) and 7/16" flange nuts (3).

   Note

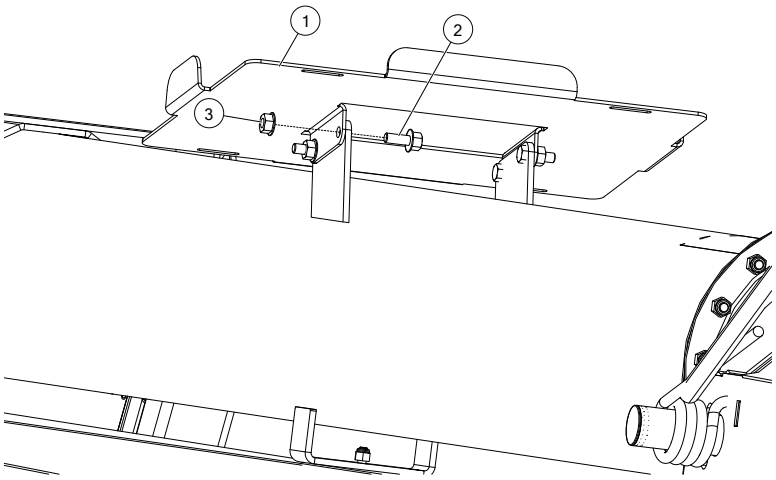
   For the top-mount drive, tank mount bracket share bolts with fuel pump bracket, see Section 3.37.5 – Install Fuel Pump (For Top-Mount Drive) on page 138.

Table 27. Tank Mount

Item	Description	Quantity
1	Tank Mount Bracket	1
2	7/16" x 1" Serrated Hex Flange Bolt (GR5)	4
3	7/16" Serrated Hex Flange Nut (GR5)	4

Hardware Kit: HRDW-15-71

Figure 65. Tank Mount Bracket for Top-Mount Drive



3.37.2 Install Low Emission Tank (for USA only)

1. Secure the tank (6) to the tank bracket with gear clamps (4) (see Figure 66).
2. Attach the 1/4" hose barb (7) to the tank outlet (see Figure 67).
3. Connect the 1/4" fuel line (9) to the hose barb with hose clamp (8).
4. **For Under-mount Drive:** To install primer bulb, see Section 3.37.4 – Install Primer Bulb (For Under-Mount Drive) on page 136.
5. **For Top-mount Drive:** To install fuel pump, see Section 3.37.5 – Install Fuel Pump (For Top-Mount Drive) on page 138).

Table 28. Gas Tank Components

Item	Description	Quantity
4	36" Gear Clamp	2
6	45 L (12 gal) Gas Tank w/Cap Fitting	1
7	1/4" MPT x 1/4" Hose Barb	1
8	1/2" Hose Clamp	4
9	1/4" ID Fuel Line — 14' for over-mount drive, 20' for under-mount drive	1

Figure 66. Gas Tank

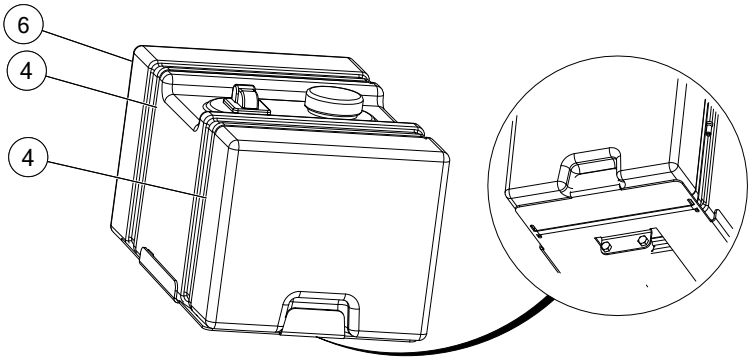
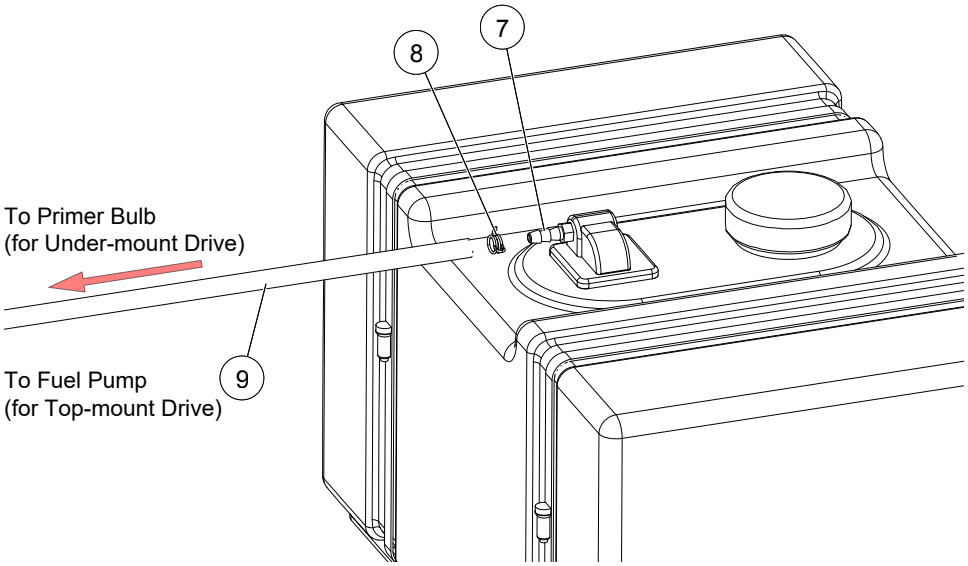


Figure 67. Fuel Line



3.37.3 Install Tank (for outside USA)

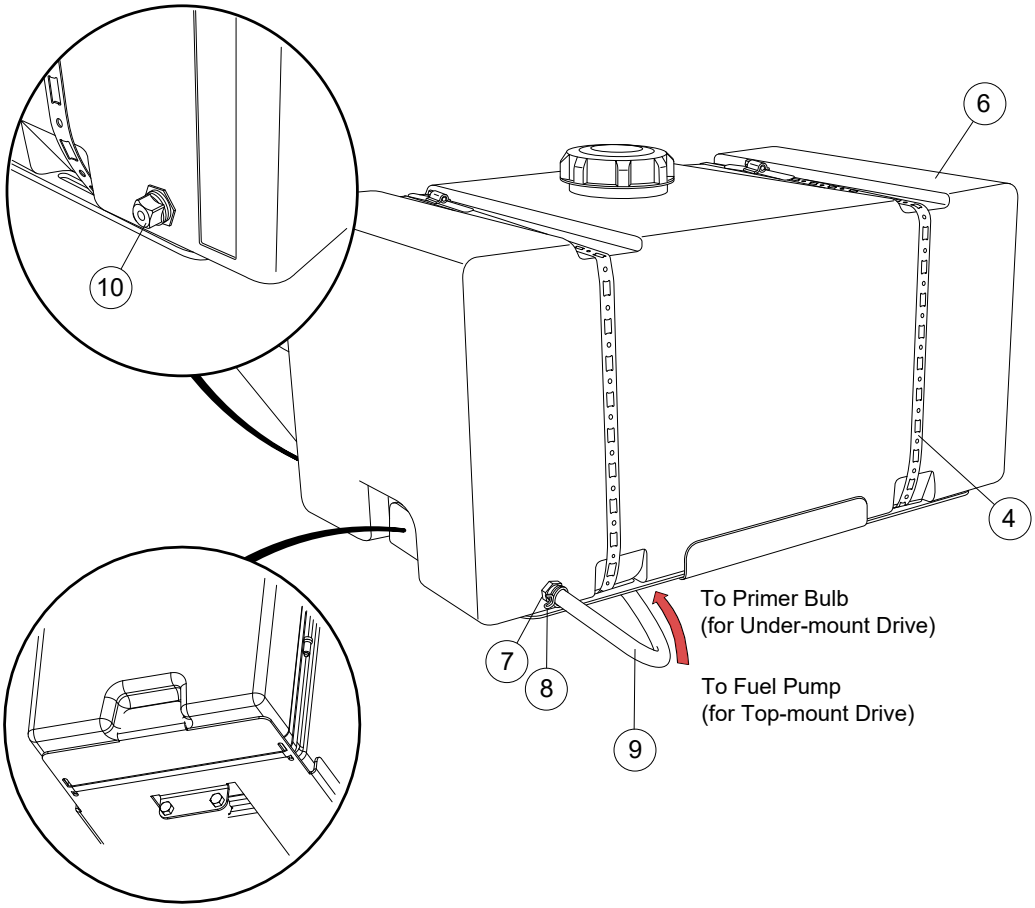
1. Secure the tank (6) to the tank bracket with gear clamps (4) (see Figure 68).
2. Attach the 1/4" hose barb (7) to the tank outlet.
3. Connect the 1/4" fuel line (9) to the hose barb with hose clamp (8).
4. **For Under-mount Drive:** Insert the square plug (10) into the hole in the bottom of the tank nearer to the spout. To install primer bulb, see Section 3.37.4 – Install Primer Bulb (For Under-Mount Drive) on page 136.
5. **For Top-mount Drive:** To install fuel pump, see Section 3.37.5 – Install Fuel Pump (For Top-Mount Drive) on page 138).

Table 29. Gas Tank Components

Item	Description	Quantity
4	36" Gear Clamp	2
6	Gas Tank — 22 x 14 x 11.5 — 53 L (14 gal) — red	1
7	1/4" MPT x 1/4" Hose Barb	1
8	1/2" Hose Clamp	2
9	1/4" ID Fuel Line — 14'	1
10	Square Plug (threaded)	1

Hardware Kit: PARTK-15-96

Figure 68. Gas Tank and Fuel Line



3.37.4 Install Primer Bulb (For Under-Mount Drive)

Important

Check the primer bulb for setup orientation for proper fuel flow direction. The red end points of the bulb must connect to the gas tank side. Arrows, imprinted on the primer bulb, indicate the direction of fuel flow, which has to be from gas tank to gas engine. Check for any defects in the bulb and hoses prior to installation.

1. Route fuel hose of reasonable length from the fuel tank to the primer bulb. Connect the fuel line to the primer bulb with hose clamp. see Figure 69 and Figure 70.

Figure 69. Primer Bulb

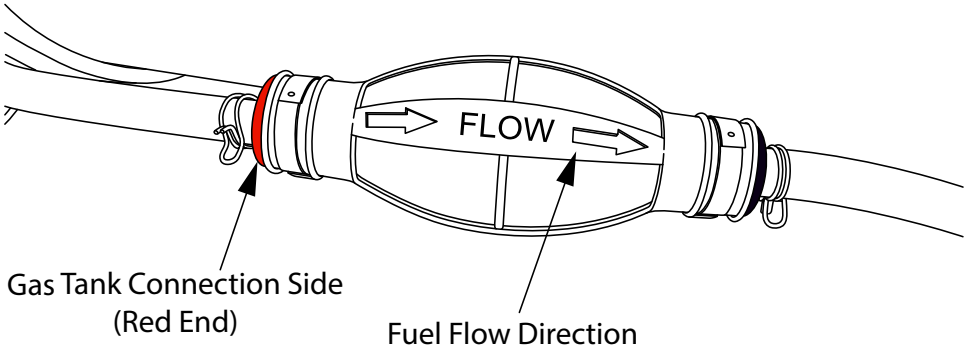
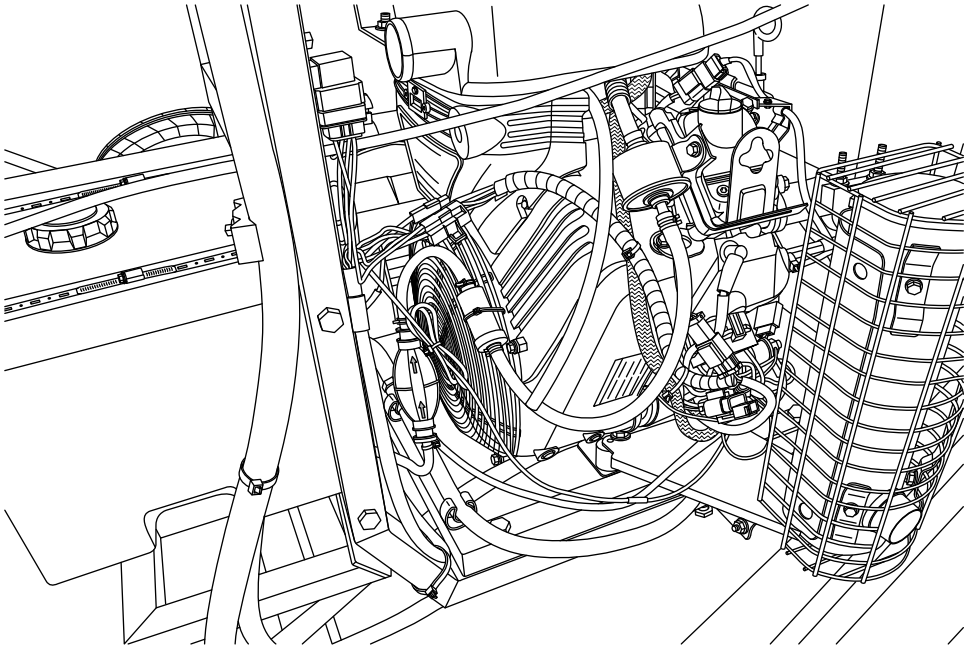
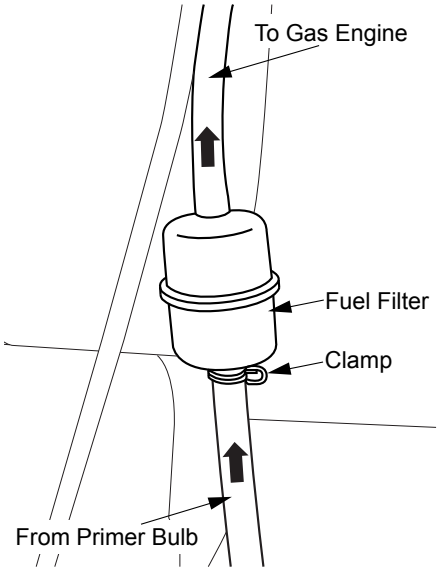


Figure 70. Hose Routing From Fuel Tank



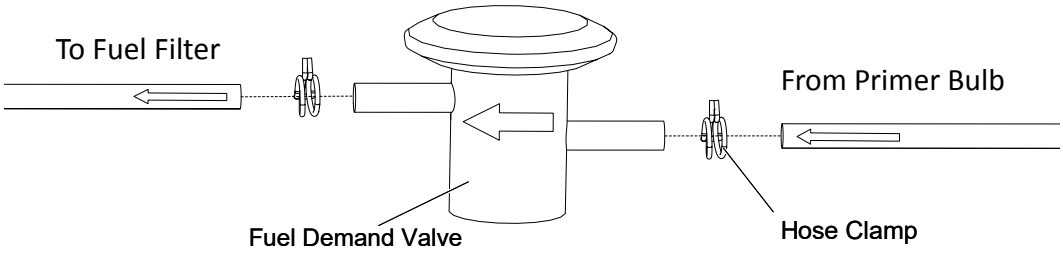
2. Connect a fuel filter (Figure 71) using 1/4" fuel line to the primer bulb. Use a reasonable length of fuel line so that the fuel demand valve can easily be installed between the primer bulb and the fuel filter.

Figure 71. Fuel Filter



3. If equipped with an low emission tank kit, install a fuel demand valve. Cut the fuel line between the primer bulb and the fuel filter. Insert the fuel demand valve into the fuel line with hose clamps (see Figure 72).

Figure 72. Fuel Demand Valve



4. Connect the fuel line to the engine using hose clamp.
5. Secure the fuel hoses with zip ties.

After installation check

Note

Before checking the primer bulb, please proceed and complete all the assemblies first and after the conveyor is completely assembled, place finishing zip-ties on all fuel hoses to ensure all lines are snug in place. Also zip-tie the gearbox breather to the fuel hose above the fuel filter.

1. Prime the fuel system with the primer bulb until fuel is seen in the fuel filter.
2. Run the machine and check all connections for any leaks or loose fitting.

Important

Do not start the engine on empty fuel, before pumping the primer bulb. Otherwise you risk wearing out the battery, and may risk of engine failure.

3.37.5 Install Fuel Pump (For Top-Mount Drive)

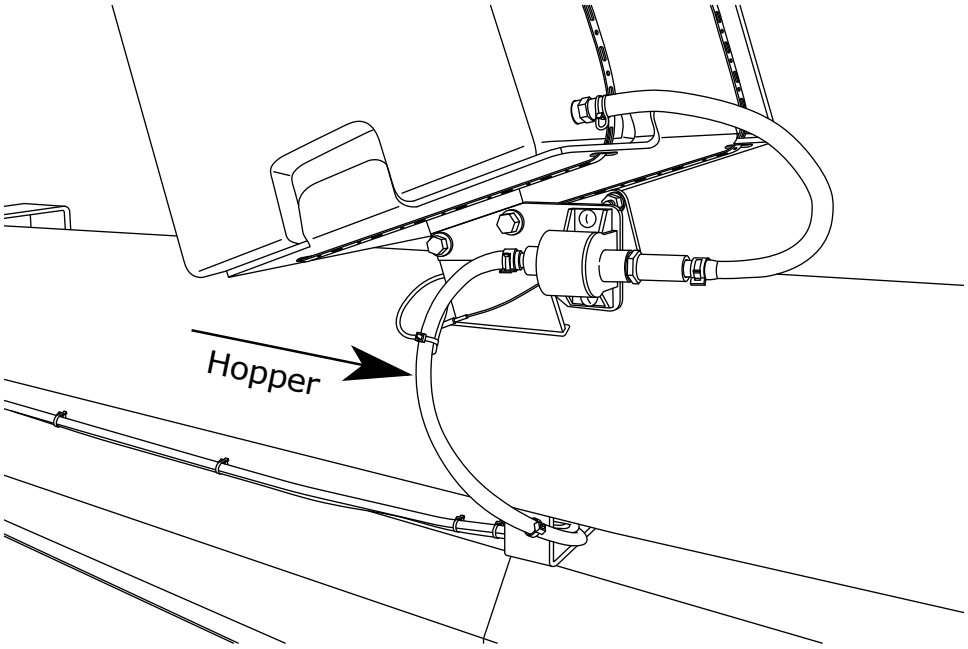
1. Attach the fuel pump assembly to the bracket.

   Important

   Check the fuel pump for setup orientation for proper fuel flow direction. The arrow on the fuel pump indicates the direction of fuel flow, which has to be from gas tank to gas engine.

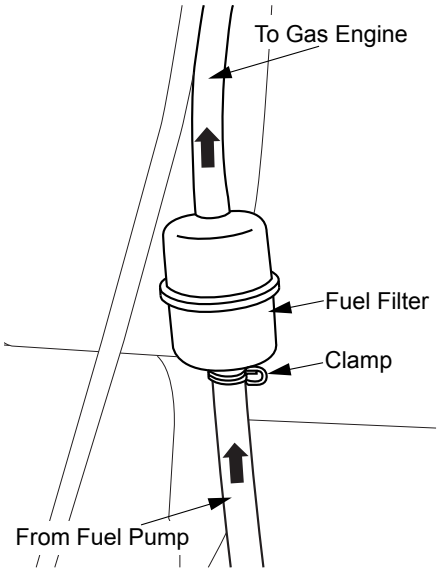
2. Install the bracket with fuel pump to the gas tank mount. Ensure the fuel pump is pointing towards the hopper. See Figure 73.
3. Connect the fuel line to the fuel pump with hose clamp. See Figure 73.

Figure 73. Hose Routing From Fuel Tank



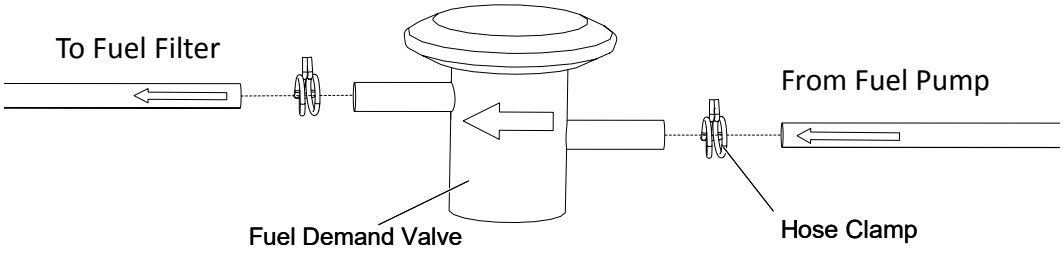
4. Connect a fuel filter (Figure 74) using 1/4" fuel line to the fuel pump.

Figure 74. Fuel Filter



5. If equipped with an low emission tank kit, install a fuel demand valve. Cut the fuel line between the fuel pump and the fuel filter. Insert the fuel demand valve into the fuel line with hose clamps (see Figure 75).

Figure 75. Fuel Demand Valve

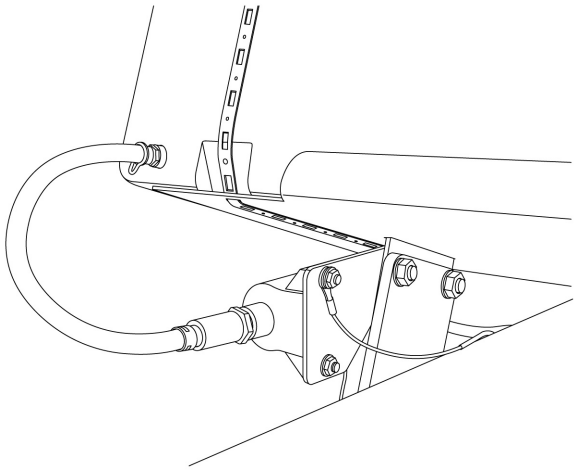


6. Connect the fuel line to the engine using hose clamp.
7. Secure the fuel hoses with zip ties.

Fuel Pump Wiring

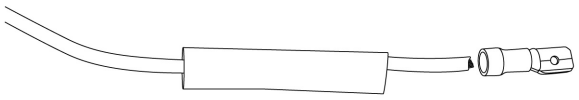
1. Attach the black wire (ground) to the bolt.Figure 76

Figure 76. Ground Wire



2. Strip the ends of the 18’ cable. Crimp on a male connector on one end as shown in Figure 77.

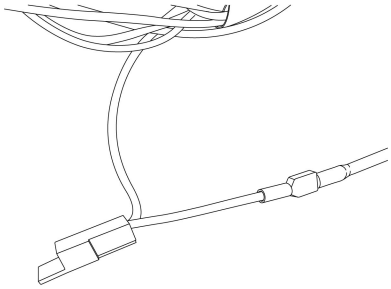
Figure 77. 18’ Cable



Parts: PARTK-15-46

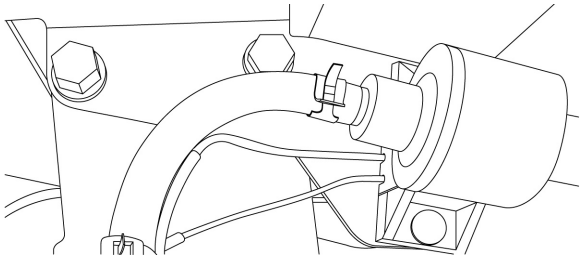
3. Apply heat shrink tubing to the joint.
4. Attach the male connector to the yellow wire from the engine harness as shown in Figure 78.

Figure 78. Fuel Pump Wire to Engine Harness



5. Attach the other end of the 18’ cable to the red wire at the pump end with a butt connector.

Figure 79. Installed Fuel Pump



After installation check

Note

Before checking the fuel pump, please proceed and complete all the assemblies first and after the conveyor is completely assembled, place finishing zip-ties on all fuel hoses to ensure all lines are snug in place. Also zip-tie the gearbox breather to the fuel hose above the fuel filter.

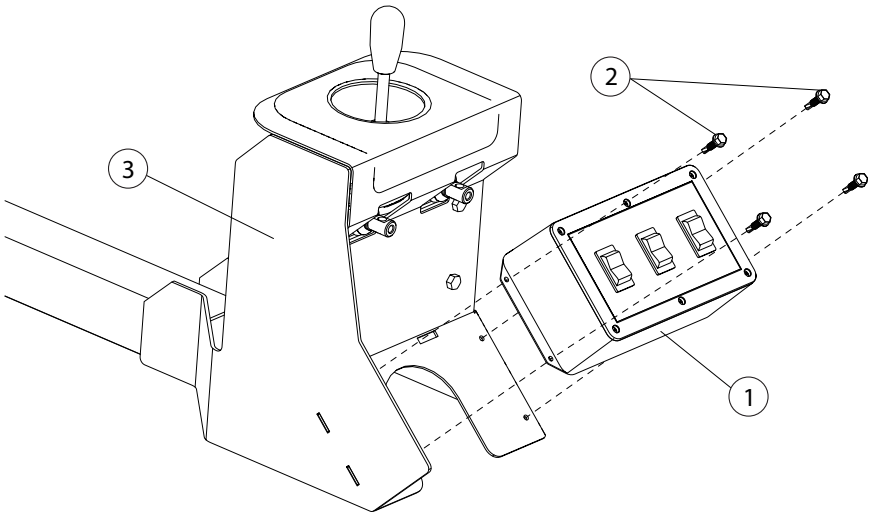
1. Run the machine.
2. Check all connections for any leaks or loose fitting.

3.38. Install the Gas Drive Control Box

Note

Install control box after connecting mover kit to the conveyor (refer to Mover Kit manual 8210-00021).

Figure 80. Control Box



Item	Description
1	Control Box
2	#8 x 3/4" Flat Head Screw
3	Control Box Mount (Welded to the Control Stand)

Hardware Kit: HRDW-15-107

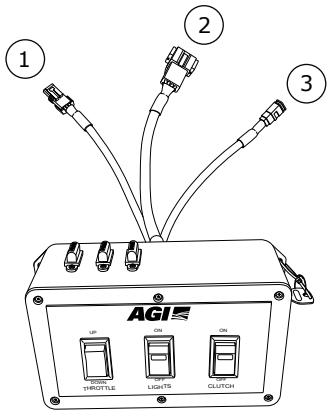
3.39. Gas Drive Control Box Wiring

Important

- Consult the OEM (original equipment manufacturers) manual to make all required electrical connections.
- Before you begin wiring, make sure to take the key out of the control box.

Control Box Wiring Connections

Figure 81. Control Box Pigtail Wire Connections

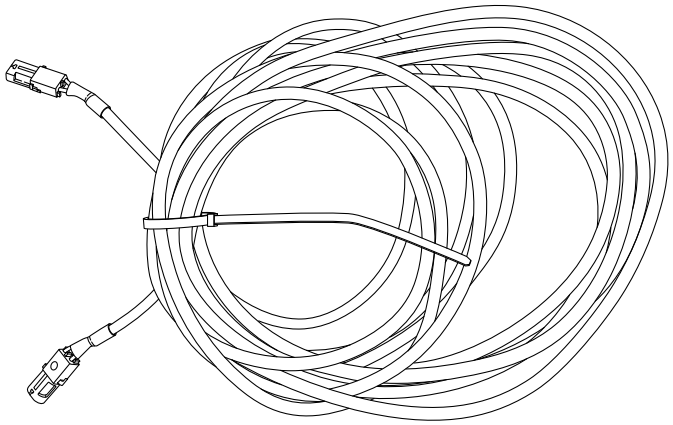


Item	Description
1	Throttle Harness Cable
2	Engine Harness Cable
3	Lighting Harness Cable

Throttle Harness

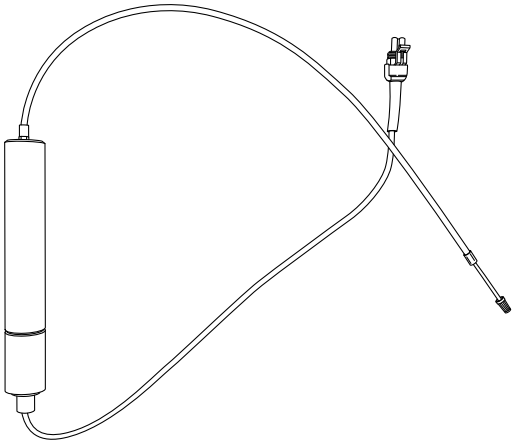
1. Connect the throttle harness (Figure 82) to the throttle harness cable (1), see Figure 81.

Figure 82. Throttle Harness

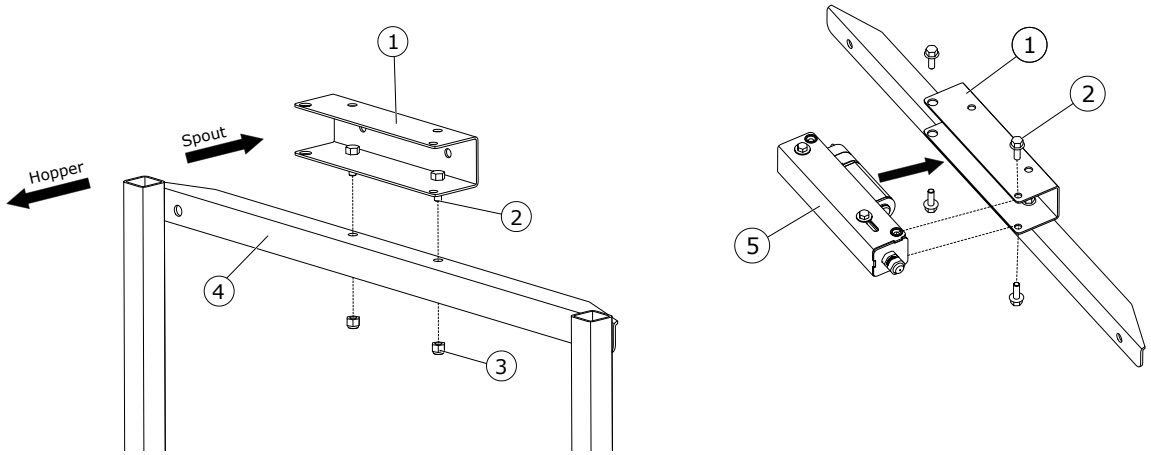


2. Route the throttle harness along the conveyor tube towards the gas drive.
3. Attach the throttle harness to the throttle actuator.

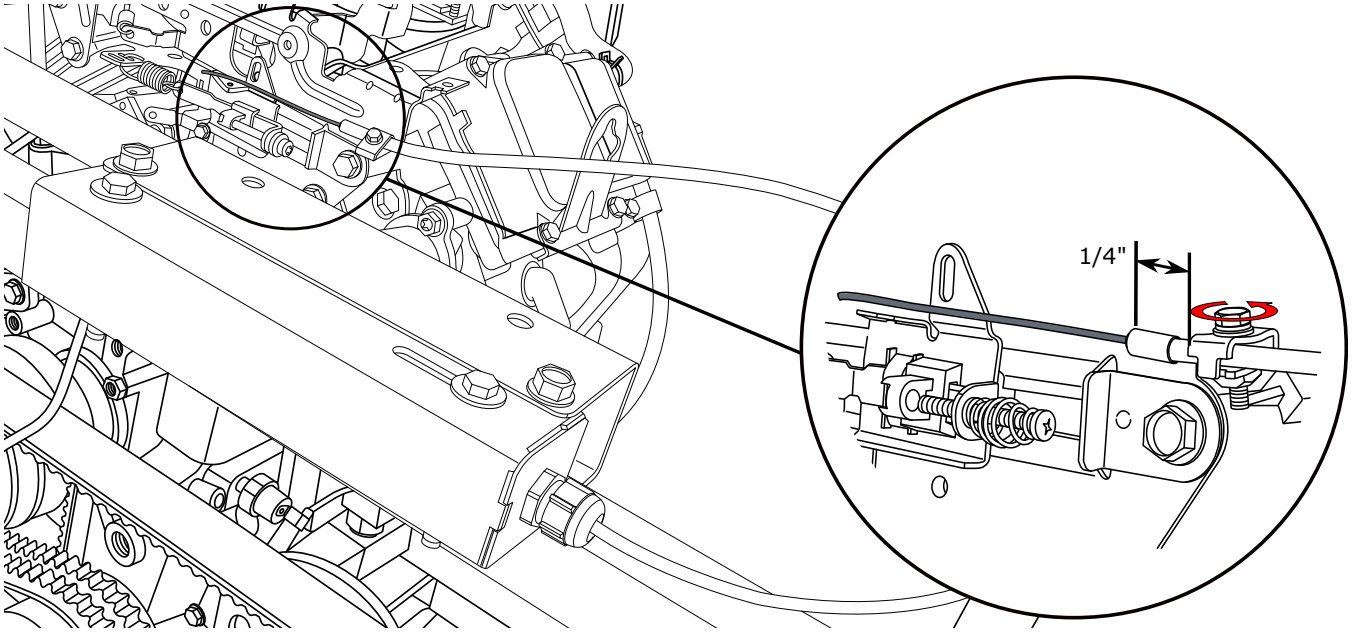
Figure 83. Throttle Actuator



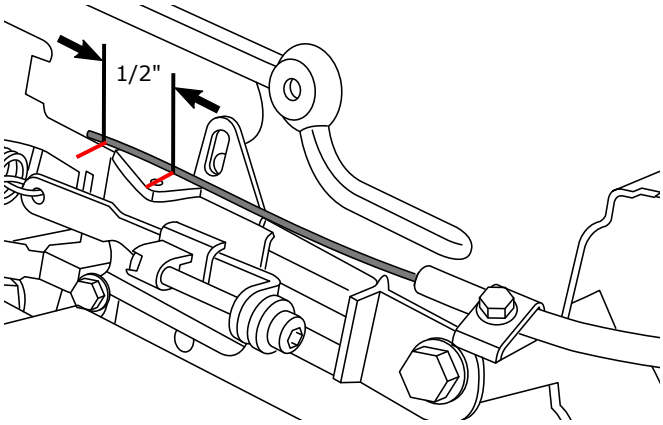
4. Attach the throttle mounting bracket to the back guard brace of the motor mount cage. Ensure the actuator bracket faces the spout end of the conveyor.
5. Attach the actuator to the mounting bracket with four bolts.



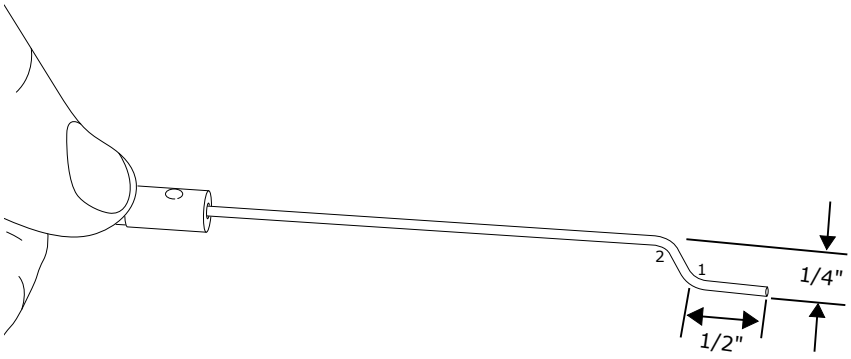
6. Turn on power. Using control box, extend the throttle cable to maximum extension by pressing the “Down” throttle button until the cable is fully extended and stops moving.
7. Loosen the bolt on the throttle cable clamp. Ensure the throttle cable is at maximum extension.
8. Position the throttle cable in the clamp with approximately 1/4" of the throttle cable sleeve extending past the clamp.



9. Position the end of the wire over the hole in the throttle bracket. Mark the wire approximately 1/2" past the hole in the throttle bracket. Trim the excess throttle wire past your mark.

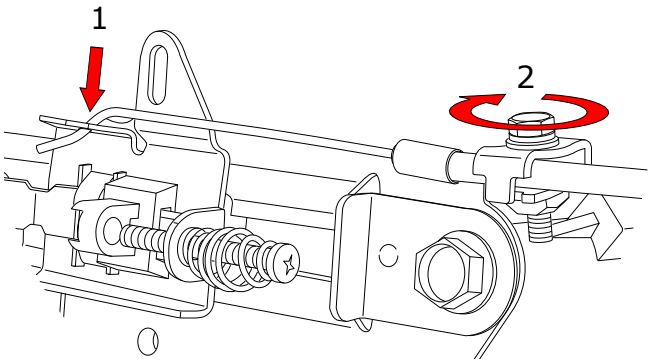


10. Make a Z bend in the end of the throttle wire. The leg of the first bend should be approximately 1/2" long and the offset between bend 1 and 2 should be approximately 1/4".

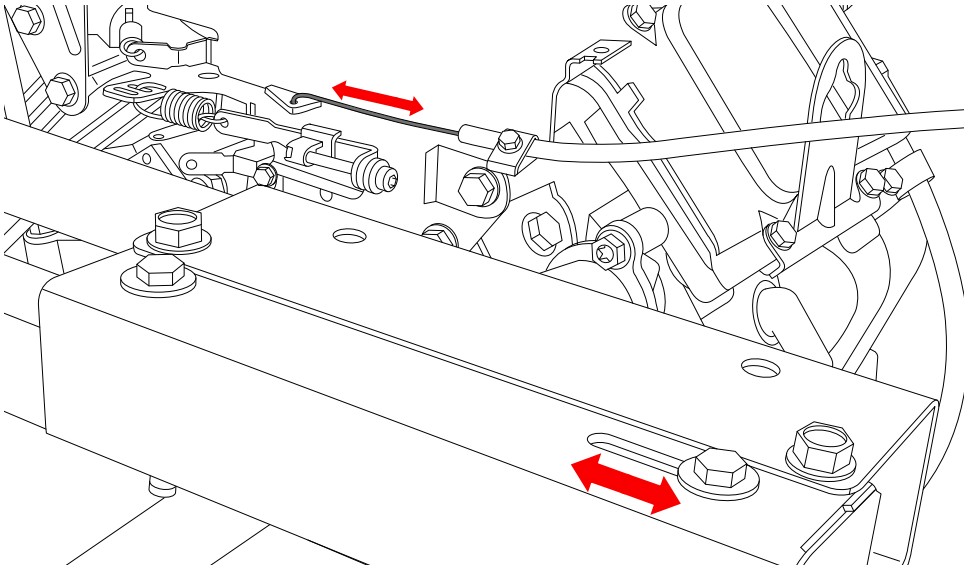


11. Attach the wire in the throttle bracket and then position the throttle cable in the cable clamp. Ensure that the throttle arm is still pushed all the way left (at the furthest position away from the cable clamp), then

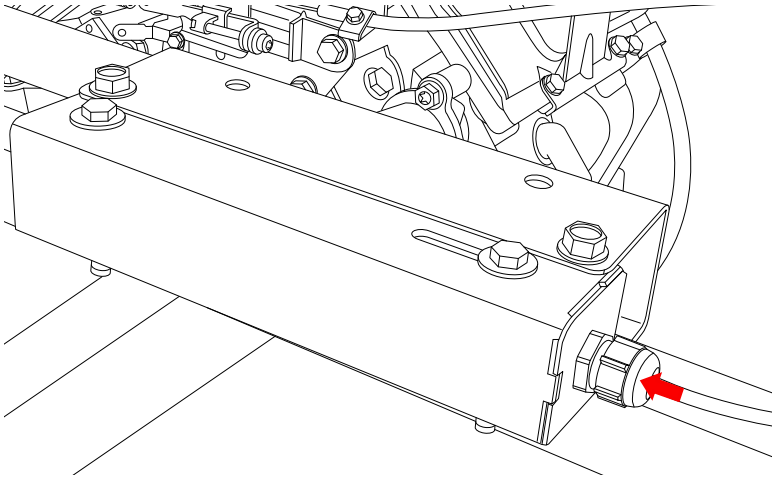
secure the throttle cable in the clamp by tightening the bolt. Tighten only enough to hold the casing but do not restrict the movement of the wire.



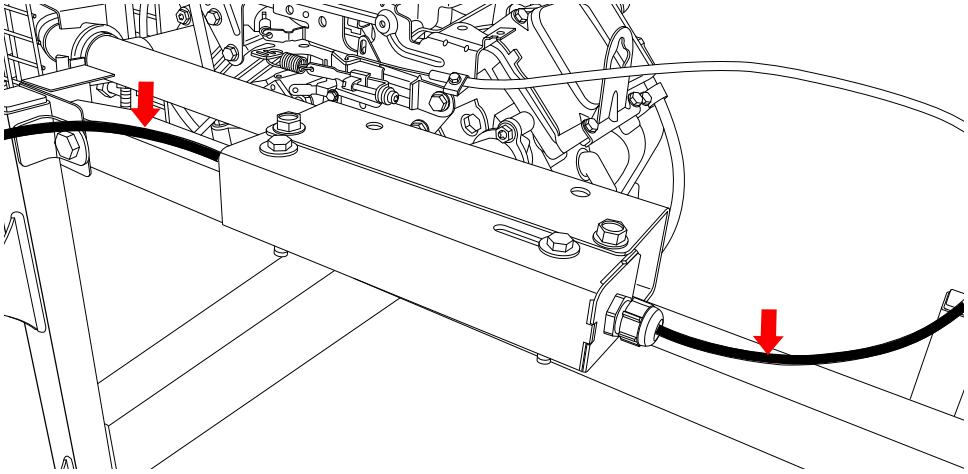
12. Using the control box up and down buttons, cycle the throttle actuator back and forth ensuring that the throttle is moving through its full range of motion and that the bolt holding the actuator is moving back and forth within the slot in the mounting bracket without binding.



13. Check that the grey plastic nut on the end of the throttle is tight. It must be tight enough to hold the cable sleeve from moving but still allow the throttle cable to cycle back and forth.



14. Using the supplied P-clips and tek screws, attach the wires to the cross brace in the positions shown so they are out of the way and do not become entangled with the motor.



15. Adjust the maximum rpm.

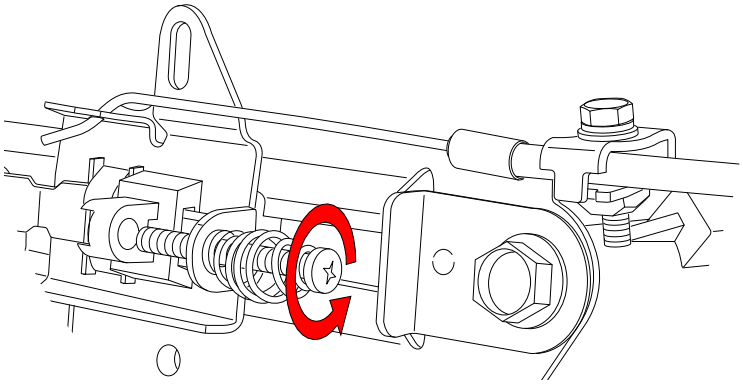
Note

This can only be done if the mover and the conveyor belt has already been installed.

a. Start the engine and increase to maximum throttle.

b. Check the tachometer on the motor. The maximum rpm should be 3600 rpm.

c. If necessary, adjust screw to achieve the target rpm. Turn the screw counter clockwise to lower the engine rpm.

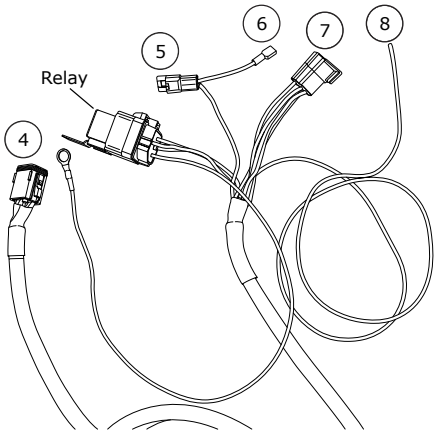


Engine Harness

Note

- The engine wiring harness has 3 plugs and a bare wire.
- A pre-wired relay connector is part of the engine wiring harness.

Figure 84. Engine Harness

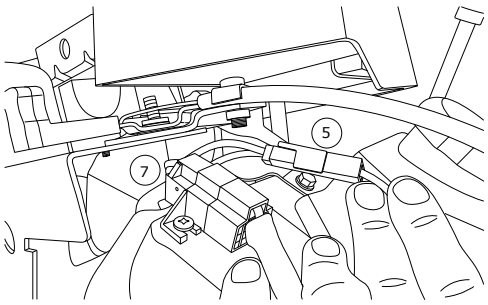


Item	Description
4	8 Pin Female Deutsch (Control Box Connector)
5	1 Pin Delphi Male (Auxiliary Power to Motor)
6	Female Connector (to Fuel Pump, if required)
7	5 Pin Delphi (Engine Connector)
8	Bare Red Wire (Clutch Control)

1. Connect 8 pin connector (4) to the engine harness cable (2), see Figure 81.
2. Route the engine harness along the conveyor tube towards the gas drive.
3. Connect plugs 5 and 7 to the corresponding engine plugs.

   Note
   If motor comes with a key plugged in, remove key and ignition before connecting plugs 5 and 7.

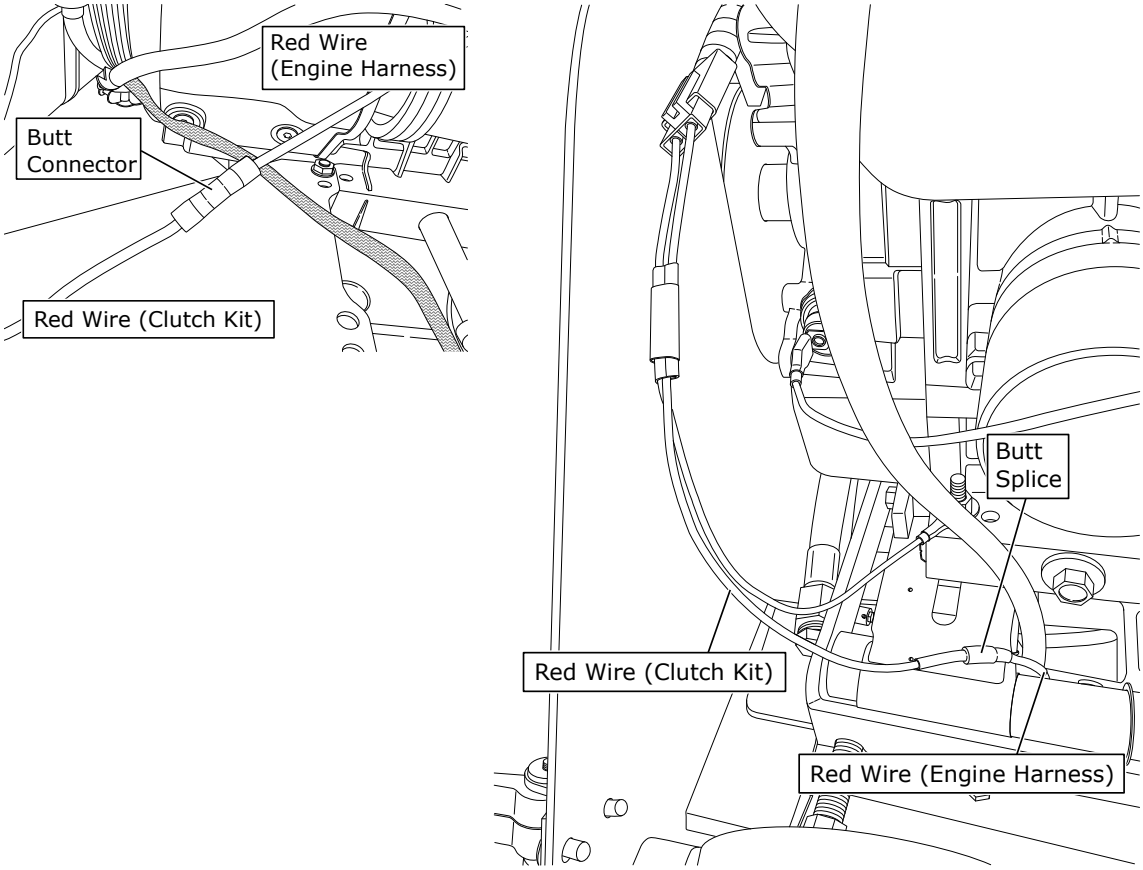
Figure 85. Example of Engine Wiring Connections



Note
Locations of the plugs 5 and 7 vary depending on the engine model.

4. Secure the relay to a nearby support bar using Tek screw.
5. Connect engine harness red wire (6) to the clutch pigtail red wire using butt connector. Crimp the butt connector and gently tug on both sides of the connector to test the integrity of the joint.
6. Use heat shrink tubing to completely isolate the joint from the environment.

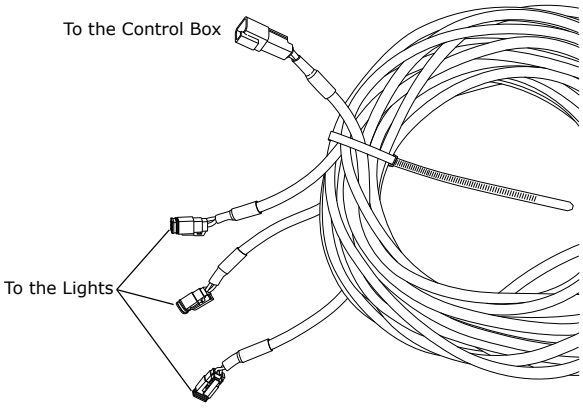
Figure 86. Clutch Wiring



Lighting Harness

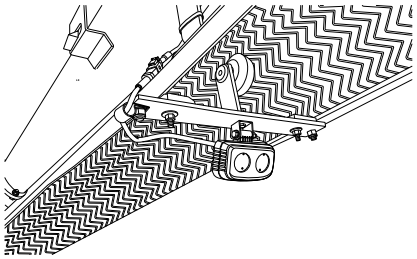
1. Attach the female connector (Figure 87) to the lighting harness cable (3), see Figure 81.

Figure 87. Lighting Harness

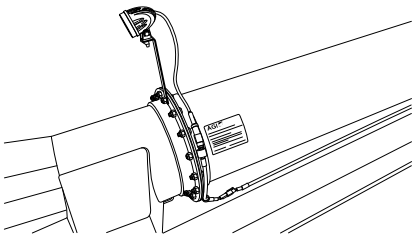


Cable Description
4' cable for mover light
9-1/2' cable for hopper light
33' cable for the spout light

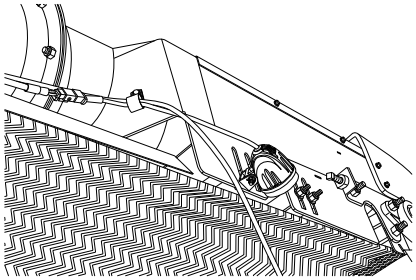
2. Route the cables along the conveyor tube towards individual lights. For mover light, tuck the 4’ cable underneath the conveyor tube and attach to the weather guard mount bar.
3. Attach the orange connectors to the lights.



Mover Light



Hopper Light



Spout Light

Secure Cables and Wiring

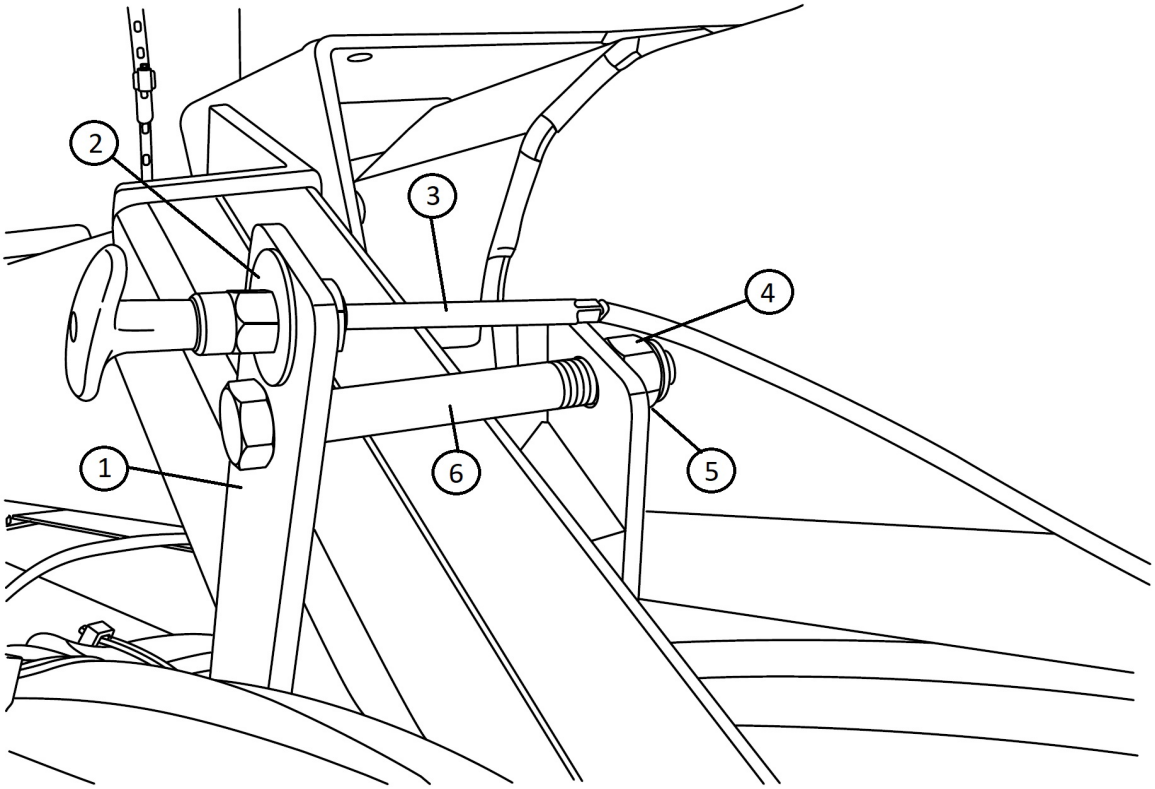
After the conveyor is completely assembled, place finishing zip-ties on all cables and wiring to ensure all lines are snug in place.

3.40. Install the Choke

Note

This procedure applies to carbureted engines only.

1. Bolt the mount bracket on the upper axle arm.
2. Mount the choke with extended cable onto the bracket, using a 3/8” flat washer and the nut that comes with the choke.
3. Detach the choke that came with the motor and replace it with the other end of the choke from step 2.



Item	Description
1	Choke Mount Bracket
2	3/8" Flat Washer
3	Choke with Extended Cable
4	1/4" Lock Nut
5	1/4" Flat Washer
6	1/4" X 4" Carriage Bolt (GR 8)

3.41. Install the Inspection Step

The inspection step is used on conveyors with a top mount gas engine or electric motor.

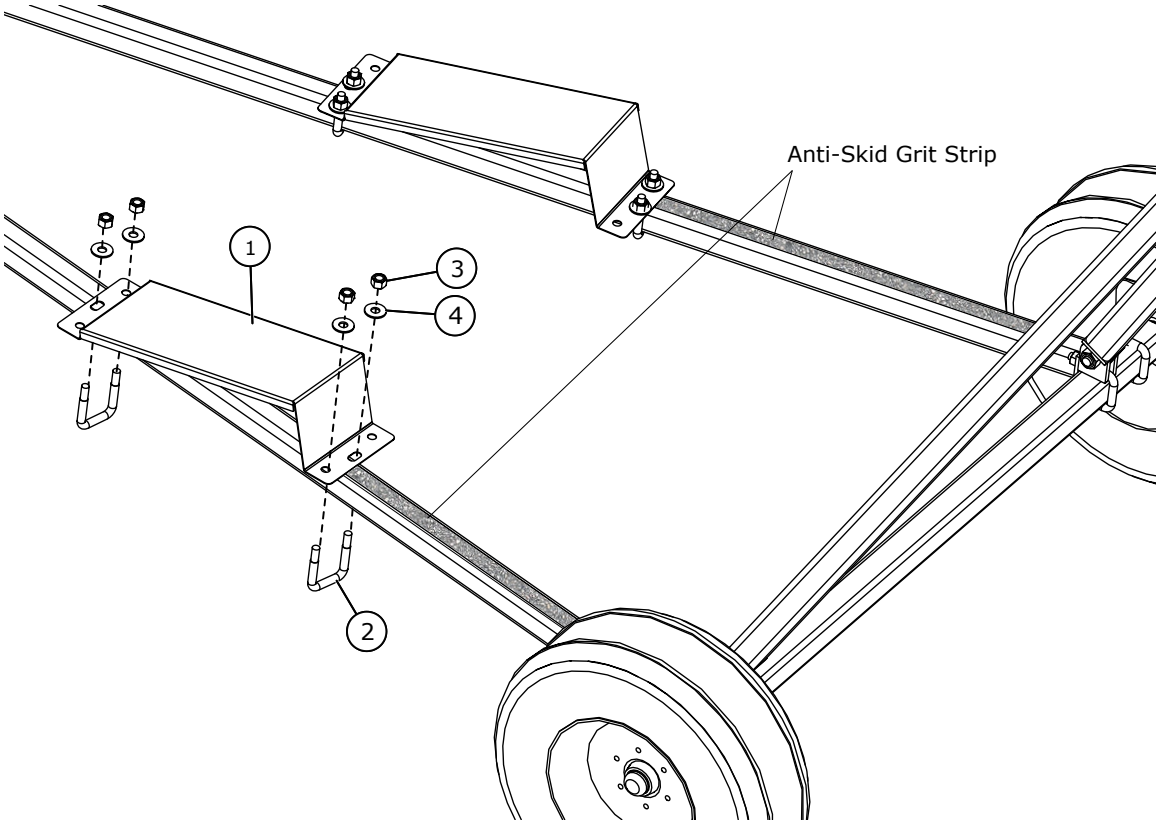
1. Position the inspection step adjacent to the portion of the axle frame with anti-slip tape (and below the gas engine or electric motor) as shown in Figure 88.
2. Attach 3/4" x 3" u-bolts (2) from the underside of the axle frame and through the inspection step (1) with 3/4" nylock nuts (3) and 3/4" flat washers (4) (see Figure 88).

Table 30. Inspection Step Components

ITEM	DESCRIPTION	QTY
1	Inspection Step	2
2	3/4" x 3" U-Bolt	4
3	3/4" Nylon Locknut (GR8)	8
4	3/4" Flat Washer	8

Hardware Kit: HRDW-20-16

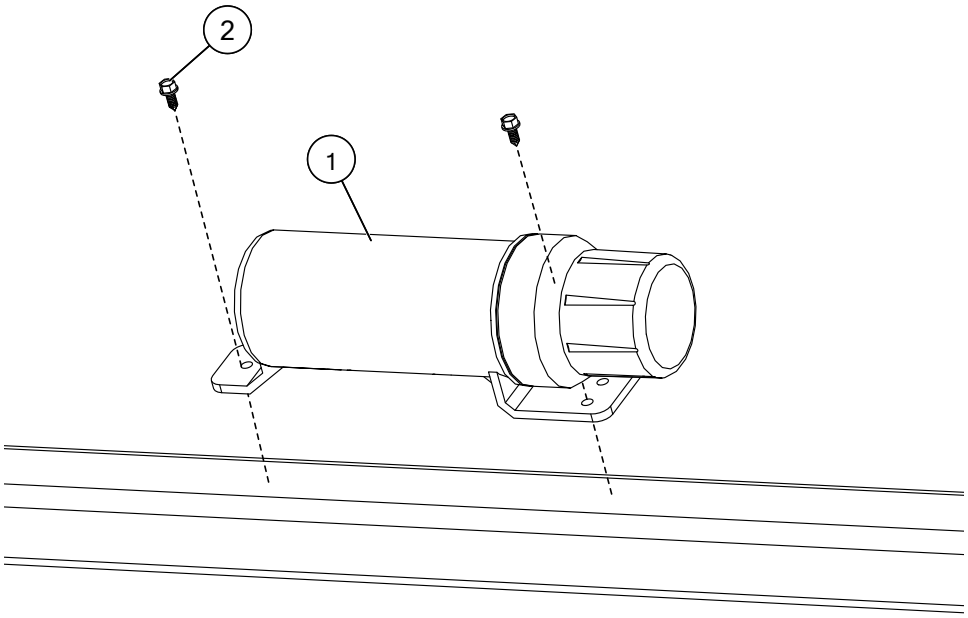
Figure 88. Installing Inspection Step



3.42. Install the Manual Container

1. Position the manual container (1) on the axle arm.
2. Secure the container with two self-tapping screws (2).

Figure 89. Screw-on Manual Container

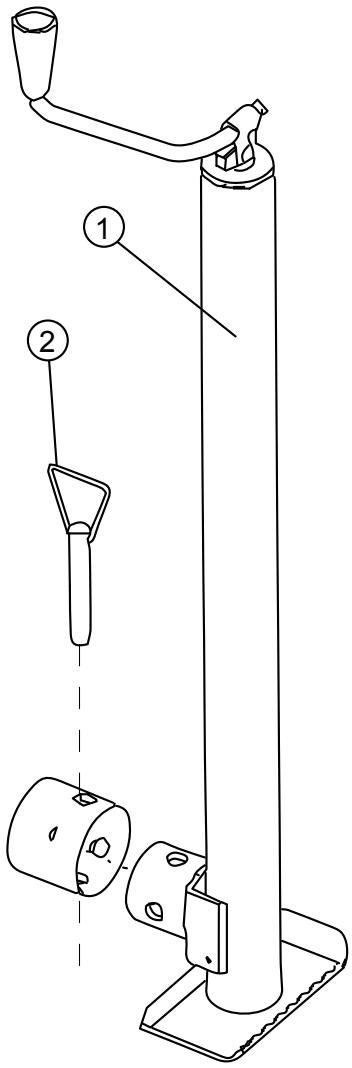


Item	Description
1	Manual Container
2	Self-Tapping Screw #14 x 5/8"

3.43. Attach the Jack

1. Insert the jack (1) into the jack stub (located on the conveyor hitch) (see Figure 90).
2. Secure the jack in place with the pin (2) provided.

Figure 90. Attaching the Jack



Ref	Description
1	Jack
2	Pin

4. Appendix

4.1. Bolt Torque

Table 31 gives the correct torque values for various hardware. Tighten all bolts to the torque specified, unless otherwise noted. Check tightness periodically, using Table 31 as a guide. Replace the hardware with the same strength bolt, contact AGI if you are unsure.

Table 31. 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%.

4.2. 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 32. 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 33. 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 34. 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
-5	1/2" - 20	17-19	23-26

Table 34 Stud End O-Ring Boss (ORB) SAE (U/UF) – Carbon Steel (continued)

Tube Size	Thread UNF-2A	Max ft-lbs	Max N-m
-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 35. 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

5. Specifications

Specifications

Table 36. 1549 CX³ Field Loader

MODEL	**1549 CX³**
DIMENSIONS	
Conveyor Tube Diameter	10"
Belt Length	110'8"
OTHER	
Gas Drive (HP)	32
Gear Box Oil Type	80W90 or SAE Approved Equivalent
Hydraulic Oil	ATF Dexron III or Equivalent
Hitch Pin Size (Min. Diameter x Length)	1/2" x 3"

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Please include the part number listed on the cover page in your message.