Owner's Manual

15 Series Swing Away Harvest Grain Belt Conveyor

Publication No. B012791 – Rev 10

Toll Free 1-866-427-2638
www.brandt.ca

Brandt

Pre-delivery Inspection Sheet

To the Dealer

In order to ensure that this Belt Conveyor will provide your customer with many years of trouble free service, please ensure that the following Dealer Inspection has been performed.

DEALER INSPECTION REPORT

General

___Wheel Bolts Tight. (90 ft-lbs.)

___Tire Pressure as per sidewall marking.

___Main Conveyor tube is straight.

___Truss cables are tensioned properly.

___Truss cable clamps are tight (45 ft-lbs).

___Winch lift cable clamps are tight (15 ft-lbs).

___Verify via the safety section that ALL safety decals in place and legible.

___Tube flange bolts are tight.

___All fasteners are tight.

___Paint scratches are touched up.

___S-Drive, intake and discharge bearing lock collars and set screws are tight.

___All safety shields and guards are installed and secure.

___All pivot points, U-Joints and PTO Shafts have been lubricated.

___Conveying belt is installed in proper direction - as per assembly section.

___Conveying belt is routed correctly - as per assembly section.

___The outside lug of one of the outer lacing clips has been squeezed tightly against the lacing pin - look for squeeze mark.

___Ensure silicone is spread over lacing and pin.

___Intake hopper fabric is not torn, the seam is to the outside of hopper and the plastic trim is installed.

___All roller shaft ends are sprayed with corrosion inhibitor.

___Wind Guard plates are shingled properly.

___All applicable service bulletins performed.

___The gearbox oil level has been checked.

___If equipped, the downspout and buckets are installed properly.

___If equipped, the light kit functions properly.

Run In

___Conveyor has been elevated and lowered without any problems.

___Ensure the belt has been tensioned to be in the middle of the green zone decal.

___Engage the drive and be sure the belt starts to move without any slippage.

___Conveyor has been run slowly to check the belt tracking first at the S-Drive, then the Intake and then the Discharge.

___Conveyor has been run for 20 minutes and the conveying belt alignment has been checked and adjusted.

___The lacing pin has been checked to make sure it is still in place.

___ All hydraulic connections have been checked for leaks.

___The Tach/Hour Meter on the Swing Conveyor is functioning correctly.

Date_____ Dealer's Signature: _____

Table of Contents

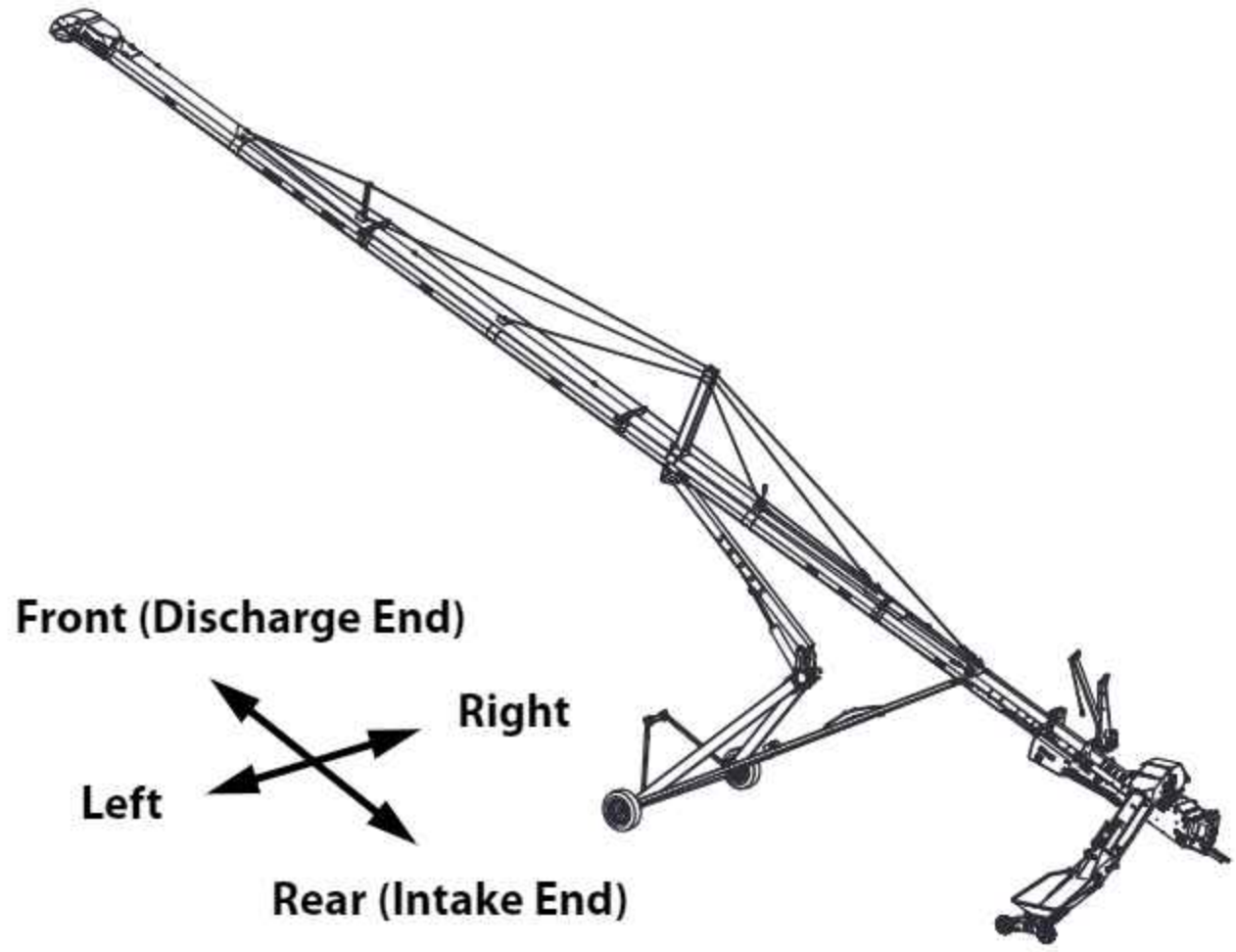
CHAPTER 1 Introduction

This manual is for use with Brandt Industries Ltd. 15 Series Harvest Belt Conveyors. Safe and efficient operation of your Conveyor requires that anyone who will inspect and work on this machine read and understand the information included in this manual. A person that is not trained and has not read this manual is not qualified to work on this machine. Read this manual before proceeding with any inspections or repairs on this machine.

Use the Table of Contents as a guide. Keep all manuals for future use. Contact Brandt Agricultural Products Ltd. if you need additional copies of this manual.

1.1 Operator Orientation

The directions left, right, front and rear, as mentioned throughout the manual, are as seen from the intake of the conveyor facing the conveyor outlet.



1.2 Safety Awareness Sign Off Form

Brandt Industries Ltd. follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the conveyor must read and clearly understand all safety, operating and maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Annually review this information before the beginning of the season.

Make these periodic reviews of Safety and Operation a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understood the information in the operator's manual and have been instructed in the operation of the equipment.

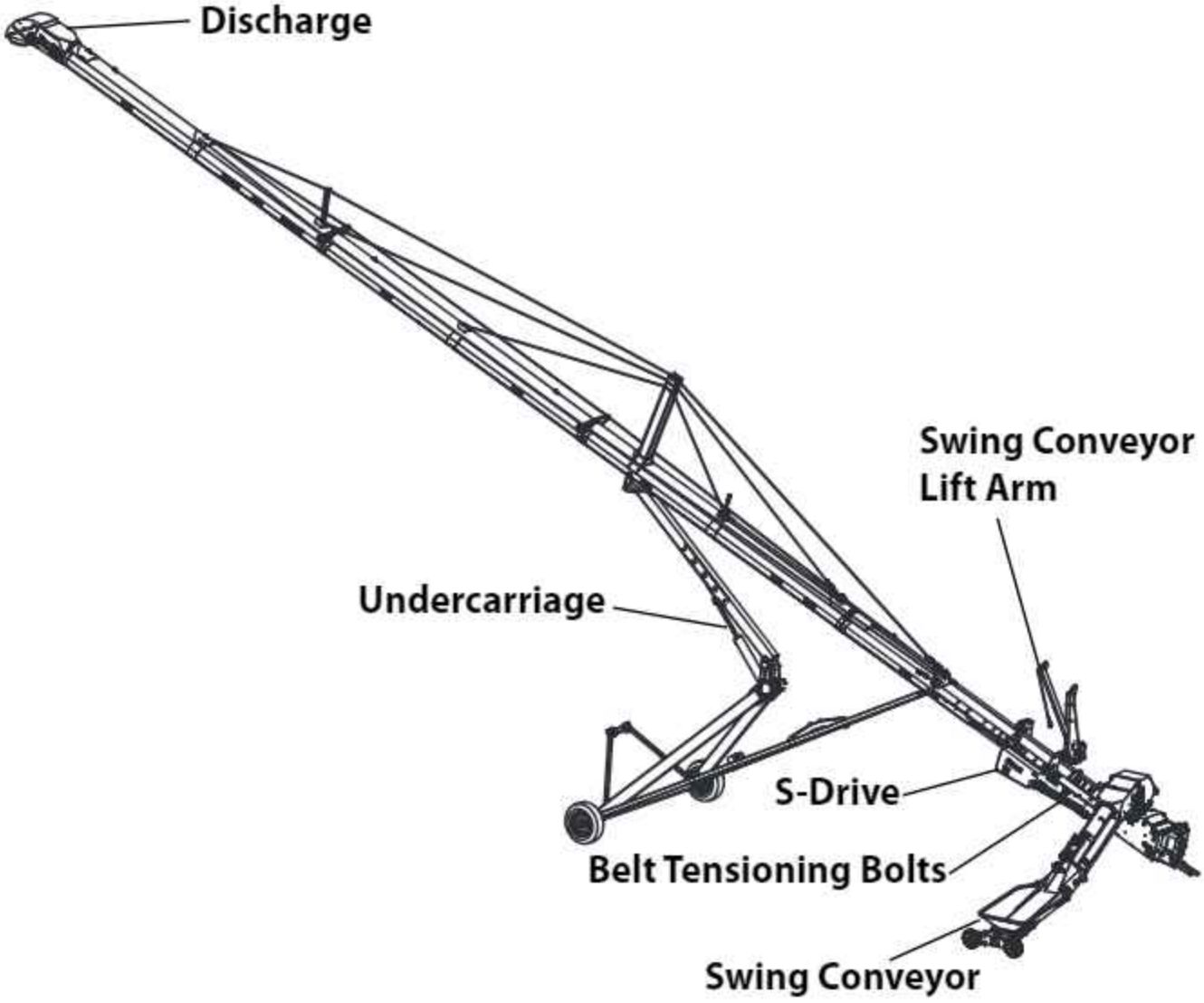
TABLE 1-1. Sign off Form

DATE	FULL NAME (PLEASE PRINT)	SIGNATURE	EMPLOYER NAME (PLEASE PRINT)	SIGNATURE

1.3 General Specifications

15 Series Harvest Grainbelts	1580 Swing	1590 Swing	15100 Swing
Performance			
Capacity PTO at 25 degrees	6200 bu/hr	6200 bu/hr	6200 bu/hr
Height at 25 degrees	33' 1"	37' 4"	41' 6"
Min. Required Horsepower - PTO	55	55	55
Hydraulic Requirements	1600 psi	1600 psi	1600 psi
Physical			
Raised Height at 30 degrees	39' 5"	44' 5"	49' 5"
Raised Reach at 30 Degrees	31' 7"	39' 5"	42' 10"
Transport Height	12' 11"	13' 6"	13' 6"
Transport Reach	36' 11"	46' 2"	51' 1"
Roller to Roller Length	75' 11"	85' 11"	95' 11"
Belt Width	15"	15"	15"
Belt Length	159" 11"	179' 11"	199' 11"
Hitch Weight (fully configured)	2190 lbs	1862 lbs	2019 lbs
Unit Weight (fully configured)	6228 lbs	6489 lbs	6710 lbs
Tube Diameter	10"	10"	10"
Tire Size	225/75R15 8PLY	225/75R15 8PLY	225/75R15 8PLY
Features			
Hydraulic winch	2500 lb	2500 lb	2500 lb
Windgaurds	Solid side fully enclosed	Solid side fully enclosed	Solid side fully enclosed
Belt Type	2 ply Rubber Chevron	2 ply Rubber Chevron	2 ply Rubber Chevron
Boot Dimensions	49 1/2" x 18 5/16" x 23 1/2"	49 1/2" x 18 5/16" x 23 1/2"	49 1/2" x 18 5/16" x 23 1/2"
Intake Style	Low Profile	Low Profile	Low Profile
Hopper	Solid Boot	Solid Boot	Solid Boot
Collapsing Hopper width and length	36" x 70"	36" x 70"	36" x 70"
Collapsed Hopper Height	7.5"	7.5"	7.5"
Extended Hopper Height	16"	16"	16"
Drive Roller Size	9"	9"	9"
Belt Take Up	35"	35"	35"
Drive Roller Wrap	22"	22"	22"
Swing Away			
Drive Roller Size	6"	6"	6"
Drive Roller Wrap	10"	10"	10"
Belt Take Up	6.5"	6.5"	6.5"
Swing Length (roller to roller)	16' 6"	16' 6"	16' 6"
Belt Length	37' 0"	37' 0"	37' 0"
Intake Mover Wheels	12 x 4	12 x 4	12 x 4

1.4 Description and Location of Major Components



CHAPTER 2 Important Safety Information

It is your responsibility as an owner, operator or supervisor, to know what specific requirements, precautions and work hazards exist. It is also your responsibility to make these known to all other personnel working with the equipment or in the area, so that they too may take any necessary safety precautions that may be required.

You are responsible for the safe operation and maintenance of this equipment. Make sure that all persons who operate, maintain or work near this equipment know the contents of this manual.

You are the key to safety. These safety precautions protect you and the people near you. Include these precautions in your safety program. Accidents can be prevented.

THINK SAFETY

WORK SAFELY

2.1 Safety Symbols / Signal Words

2.1.1 Recognizing Safety Information

This is the Safety Alert Symbol. It is used to alert you to injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

2.1.2 Understanding Signal Words

A signal word – DANGER, WARNING or CAUTION – is used with the Safety Alert Symbol.

⚠ DANGER

DANGER! Is reserved for a hazard that, if not avoided, will result in death or serious injury.

⚠ WARNING

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

⚠ CAUTION

Caution. Shows a hazard that, if not avoided, could result in injury.

NOTICE

Notice. Indicates that your heightened awareness is required to avoid practices not related to personal injury.

These safety signs include a message that tells what the hazard is, and the steps to avoid the hazard.

2.1.3 Safety Messages / Decals

Different safety messages are displayed on this equipment. Locate, read, and understand the safety messages. The DANGER, WARNING, CAUTION or NOTICE symbol can be shown with a safety message.

These messages mean:


Crush Hazard


Cutting Hazard


Hearing Protection


Hard Hat


Pinch Hazard


Entanglement


Eye Protection


High Voltage


Heavy Object


Breathing Protection


Stop


Lock-out Location


Lock-out Required

Note: Some of these messages will not be used on this product. They are shown for example only.

NOTICE

Notice. Replace safety signs when they become damaged. Make sure to include safety signs on replacement parts. New safety signs are available from Brandt Agricultural Products Ltd.

2.2 General Safety Precautions

- **THE MOST IMPORTANT SAFETY DEVICE ON THIS MACHINE IS A SAFE OPERATOR.** It is the operator's responsibility to read and understand all safety and operating instructions in the manual and to follow them.
- Conveyor owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes them self and bystanders to possible serious injury or death.
- Read and understand the Operator's manual and all safety signs before operating, maintaining, adjusting, unplugging or transporting the conveyor.
- Keep equipment, operator's stations, and the area around the equipment clean.
- Do not perform unauthorized modifications to this equipment.
- Make and follow an approved maintenance and inspection schedule.
- Do not remove, change, or disable machine guards.
- Keep railings, fences, and barriers in good condition and in place.
- Correct malfunctions and preform repairs immediately on discovery.
- Do not replace fasteners, or hardware, or mechanical connectors with a different or unknown grade or type. Torque fasteners and hardware to the correct value.
- Do not overload or exceed the machine capacity. Do not operate the machine at speeds or systems pressures that exceed the designed ratings.
- Use tools applicable to the work. Use power tools to loosen threaded fasteners only. Do not use SAE tools on SI (metric) fasteners.
- Use the correct lifting equipment for moving heavy parts. Follow recommended procedures for removal and installation of parts.
- Always have two people present when operating the machine.
- Keep the area clear of bystanders, especially children. Always ensure a clear path to the power source is available should the need arise to shut it down in case of an emergency.
- Have a first-aid kit available for use should the need arise and know how to use it.
- Provide a fire extinguisher for use in case of a fire. **Store in a highly visible place.**
- Do not allow riders on the machine.
- Place all controls in neutral, stop and lock out thepower source and wait for all moving parts to stopbefore servicing, adjusting, repairing or unplugging the machine.
- Know where overhead electrical lines are located and stay away from them. Electrocution can occur without direct contact.
- Know the location and read all decals on the machine. They contain important alerts and precautions which are to be followed at all times.

2.2.1 Personal Protection Equipment

- Wear close-fitting clothing and personal protection equipment that is required for the work. Do not allow clothing to interfere with vision, hearing, or free use of hands and feet.
- Wear approved hearing protection as required. Continuous exposure to high noise levels can cause loss of hearing.
- Wear hand protection suitable for the work. The appropriate gloves will reduce exposure to surface temperatures, chemical absorption through the skin, cuts and skin injury.
- Wear eye and face protection required for the work.
- Hard hats should be worn while working on this machine.
- Wear approved steel-toe footwear.
- **DO NOT** wear neckties, jewelry or loose-fitting clothing when operating or working on this equipment.
- Safety requires your full attention to the work. DO NOT wear radio or music headphones.
- Dusts, moulds and other pollutants can cause health problems. Operators should wear the appropriate breathing apparatus when operating or working on this equipment.

2.2.2 Handling Chemicals Safely

- Direct exposure to hazardous chemicals can cause serious injury. Hazardous chemicals used in Brandt products can include lubricants, coolants, paints, fuels, adhesives and other products.
- A Material Safety Data Sheet (MSDS) provides specific details on these chemical products; physical and health effects; safety precautions; and emergency response procedures.
- Check the MSDS before you start any job that involves a potentially hazardous chemical. You will understand the risk and how to do the work safely. Follow procedures and use approved equipment.

2.3 Operating Precautions

⚠ WARNING Follow these precautions to prevent death or serious injury.

- Read and understand the operator's manual prior to operating the conveyor.
- Read and understand the operator's manual for the brake winch prior to operating the conveyor.
- Complete an inspection of the machine before operating. Check condition of belts, gearboxes, drivelines, etc. and repair or replace if necessary.
- Watch for overhead electrical lines when moving the conveyor.
- Ensure all guards are in place and in good repair before operating.
- Keep hands, feet, hair and clothing away from all moving or rotating parts.
- Clear the area of all bystanders, especially children, before starting.
- Keep away from the intake of the conveyor while the machine is running. Keep others away.
- When cleaning out the corners of a truck box, do not lean over the conveyor intake.
- Do not use your hands or feet when cleaning out the intake hopper.
- Do not use the conveyor downspout as a support.
- Stay clear of the conveyor discharge end.
- Make sure the intake end of the conveyor is anchored or the discharge end is supported before moving any product.
- Do not stand on the edge of the truck box when loading a truck.
- Use extreme caution when maneuvering at or near maximum height. While the conveyor is in transport position, it should be backed until it is close to the bin then raised to the height needed, then carefully moved back to the bin. Under no circumstances should the conveyor be moved long distances while it is at maximum height.
- Dusts, molds and other pollutants can cause health problems. Therefore, operators should wear the appropriate breathing apparatus.
- Wear hearing protection while operating.
- Do not run the conveyor at high speeds when it is empty.

2.4 Hydraulic System Safety Precautions

⚠ WARNING Follow these precautions to prevent death or serious injury.

- Lock-out/Tag-out the hydraulic system before performing maintenance or repairs to the machine.
- Ensure that the equipment being repaired is not connected to other systems (electrical, pneumatic) on the machine. Lock-out/Tag-out other systems to prevent unintended start-up or operation.
- Do not attempt temporary repairs to hydraulic components using tape, clamps, cement, etc. The hydraulic system operates using extremely high pressure. These repairs will fail suddenly and create a hazard and unsafe condition.
- Ensure replacement parts meet the capacity and pressure rating of the original part.
- When changing more than one part, completely install one part at a time to prevent incorrect connections. Protect openings from contamination.
- Wear appropriate personal protection equipment when searching for a hydraulic leak. Use a piece of wood or cardboard as a backstop instead of your hands to isolate and identify a leak. **If you suspect you have been injured by a concentrated high pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin.**

THERE MAY BE NO VISIBLE SYMPTOMS IMMEDIATELY AFTER EXPOSURE.

2.5 Transport Safety

- Make sure you are in compliance with all local regulations regarding transport of Agricultural equipment on public roads and highways.
- Make sure the hitch on the towing vehicle is rated for the gross weight of the towed machine.
- Always lower the conveyor to its lowest position before transporting.
- Make sure the Slow Moving Vehicle emblem and all the lights and reflectors that are required by the local highway and transporting authorities are in place, clean and can be seen clearly by all overtaking on oncoming traffic.
- Attach securely to tow vehicle or tractor using a 1 1/4" dia. pin with a retainer and safety chain. Refer to Fig. 2-2 in Section 2.5.1 for safety chain attachment method.
- When transporting use a clevis-to-tongue connection. Never use a clevis-to-clevis or tongue-to-tongue connection as this can lead to hitching failure. See Fig. 2-1.

FIG. 2-1. Hitch Connection

- Do not exceed 32 km/h (20 mph) when towing a conveyor.
- The conveyor is not equipped with brakes. Make sure the tow vehicle has sufficient braking capacity to handle the extra load. The conveyor may not exceed 1.5 times the towing vehicle weight.
- Check the tires for cracks and make sure they are inflated to the recommended pressure as per sidewall marking.
- Never allow riders on the conveyor.
- Use hazard flashers on tow vehicle except where prohibited by law.
- Stay clear of all overhead electrical lines. Electrocution can occur without direct contact.
- Be careful not to turn too sharply when transporting the conveyor. Damage to the conveyor and/or towing vehicle can occur.
- Be aware of posts, trees, buildings and other obstacles when turning.

2.5.1 Safety Chain Installation

- Ensure that the chain has a load rating equal to or greater than the Gross Vehicle Weight.
- Attach the safety chain from the conveyor to the towing vehicle. The chain should be attached to the mounting location on the intake of the conveyor (see Fig. 2-2). Route the chain through the intermediate support on the side of the conveyor hitch to the towing vehicle. Do not use the intermediate support as the primary method of attachment.
- Allow no more slack in the chain than necessary for articulation.
- Do not leave the safety chain attached to the conveyor while conveying product. When not in use, store the safety chain in a clean dry place.
- The safety chain should be replaced and not be used if one or more of the links or end fittings are broken, stretched or otherwise damaged or deformed. The replacement chain must be rated and stamped for the appropriate towing operation.

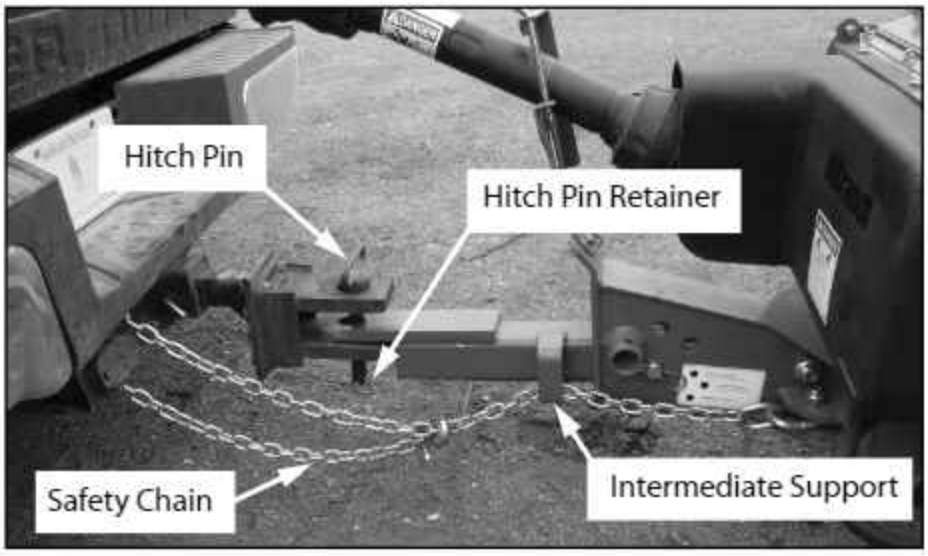


FIG. 2-2. Safety Chain Installation

2.6 Welding/Heating Safety Precautions

⚠ WARNING Follow these precautions to prevent death or serious injury.

- Do not weld or use a torch near pressurized fluid lines. Fluid lines can burst and create a flammable spray, resulting in severe burns to yourself and bystanders.
- Toxic fumes may be created when paint is heated by welding or using a torch. Remove paint a minimum of 4 inches (100mm) from the area affected by heating.
- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before heating. Remove the solvent or paint stripper and flammable material from the area. Ventilate the area for 15 minutes before welding or heating.
- Lock-out/Tag-out electrical power to the machine.
- Ground welding machine as near to the weld area as possible.
- Do not use chlorinated solvent in the area where welding will take place.
- Perform all work in a well-ventilated area. Use a welder's respirator.
- Dispose of paint and solvents properly.

2.7 Maintenance Safety

- Always disengage power, shut down the engine, remove the ignition key, be sure all moving parts have stopped before attempting to maintain or service the unit.
- Support the machine with blocks or stands when changing tires or working beneath.
- Follow good shop practices:
  - keep service areas clean and dry.
  - be sure electrical tools are properly grounded.
  - use adequate light for the job at hand.
  - use personal protective equipment. (ie. gloves, safety glasses, etc.)
- Use only tools, jacks and hoists of sufficient capacity for the job.
- Relieve pressure from the hydraulic system before servicing.
- Before applying pressure to a hydraulic system, be sure all connections and fittings are tight and in good condition. Never check for leaks with your hands. Always use a piece of wood.
- Replace all shields after maintenance. Never operate without shields, guards or access doors in place.

2.8 Grain Bin Safety

- Never enter a grain bin unless at least two people are present. Have one person outside the bin who can shut down the machine if an emergency arises.
- Always ensure an escape route exists before entering the bin.
- Do not walk on top of the grain in a bin unless another person is present and the person on the grain is equipped with a safety line.

2.9 Safety Decals

- Read and understand all decals before operating. Take care to follow all precautions and warnings displayed on the decals.
- Keep safety decals and signs clean and legible at all times.
- Replace safety decals and signs that are missing or have become illegible.
- Replaced parts that originally displayed a safety sign must also display the original sign.
- Safety decals or signs are available from your Dealer Parts Department or the factory.

2.10 Safety Decal Locations

The following illustrations show the position and content of the various safety decals on the Brandt Grainbelt Conveyor. If safety decals ever become damaged, removed or illegible, new decals must be applied.

WARNING

BEFORE TRANSPORTING REFER TO LOCAL TRANSPORTATION REGULATIONS AND OPERATORS MANUAL

FAILURE TO FOLLOW SAFE TOWING PRACTICES COULD CAUSE MACHINE DAMAGE AND/OR SERIOUS INJURY OR DEATH

BRANDT DOES NOT ASSUME LIABILITY FOR ANY PRODUCTS TRANSPORTED IN VIOLATION OF LOCAL TRANSPORT REGULATIONS WITHOUT DUE CONCERN FOR SAFETY

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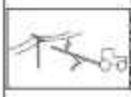
WARNING


HIGH-PRESSURE FLUID HAZARD
To prevent serious injury or death:
1. Relieve pressure on system before repairing or adjusting or disconnecting.
2. Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
3. Keep all components in good repair.

DANGER



ELECTROCUTION HAZARD
To prevent serious injury or death from electrocution:
Stay away from overhead power lines when transporting or raising conveyor.
This machine is not grounded. Electrocution can occur without direct contact.

DANGER

UPENDING HAZARD
1. The intake end of the conveyor must always have downward weight.
2. Always test it before releasing it from the vehicle or holddown.
3. Lift the intake slowly and keep it no higher than the tractor tow bar when attaching or releasing it.
4. Don't push the undercarriage.
5. Immediately lower the conveyor to transport position before moving.

FAILURE TO DO SO WILL CAUSE UPENDING , WHICH WILL RESULT IN SERIOUS INJURY OR DEATH.

DANGER

MOVING PART HAZARD
To prevent serious injury or death from moving parts:
1. KEEP AWAY. Moving parts can crush and dismember.
2. Do not operate without guards and shields in place.
3. Close and secure guards and shields before starting.
4. Keep hands, feet, hair and clothing away from moving parts.
5. Disconnect and lockout power source before adjusting and servicing.
6. Do not stand or climb on machine when operating.

CAUTION

Close ball valve in the lift cylinder hydraulic line after raising conveyor into operating position.
Never leave the conveyor in the raised position for an extended period of time (ie over night). Always lower the conveyor into transport position when not in use.

CAUTION

1. Read and understand operator's manual before operating.
2. Keep all safety shields and devices in place.
3. Make certain everyone is clear before operating or moving the machine.
4. Keep hands, feet and clothing away from all moving parts.
5. Shut off power to adjust, service or clean the conveyor.
6. Support discharge end or anchor intake to prevent upending. (See Operator's Manual)
7. Disconnect power before resetting motor overload. (Electric Motor Drive)
8. Empty conveyor before moving to prevent upending.
9. Lower conveyor to transport position before moving or transporting.
10. Make certain electric motors are grounded.
11. Use only genuine Brandt replacement parts, especially shear pins and bolts.
12. Do not run this conveyor empty except at idling speed.

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IMPORTANT

BELT TRACKING AND BELT TENSION

Please Be Advised That Belt Tracking and Belt Tension Must Be Monitored During Operation.

Proper Belt Tracking and Belt Tension Are the Responsibility of the Owner/Operator.

PLEASE CONSULT YOUR MANUAL FOR FURTHER DETAILS ON TRACKING AND BELT TENSION.

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NOTICE

Conveying oil seeds, especially canola, in a non-Oilseed-Certified™ GrainBelt will result in belt shrinkage and/or product build up on rollers and may void the warranty.

When conveying fertilizers, monitor the EZTrack spring tension gauge closely. While the belt is stopped, ensure that the gauge is in the green zone to avoid damage to conveyor.

See operation section of manual for more details.

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BELT TENSION & BELT SPEED

SETTING BELT TENSION

Adjust the belt tension as shown in the Service Section of the Operator's Manual

DETERMINING BELT SPEED

To determine belt speed, use a stop watch to find the time (seconds) the belt takes to make 1 revolution

	1580 CONVEYOR		1590 CONVEYOR		15100 CONVEYOR	
Belt Speed (FPM)	LP	STD/Swing	LP	STD/Swing	LP	STD/SWING
400	25.5	24.0	28.5	27.0	31.5	30.0
500	20.4	19.2	22.8	21.6	25.2	24.0
600	17.0	16.0	19.0	18.0	21.0	20.0
700	14.6	13.7	16.3	15.4	18.0	17.1
800	12.8	12.0	14.3	13.5	15.8	15.0

DO NOT EXCEED 800 FPM BELT SPEED OR DAMAGE TO THE CONVEYOR WILL RESULT

See manual for more detailed information

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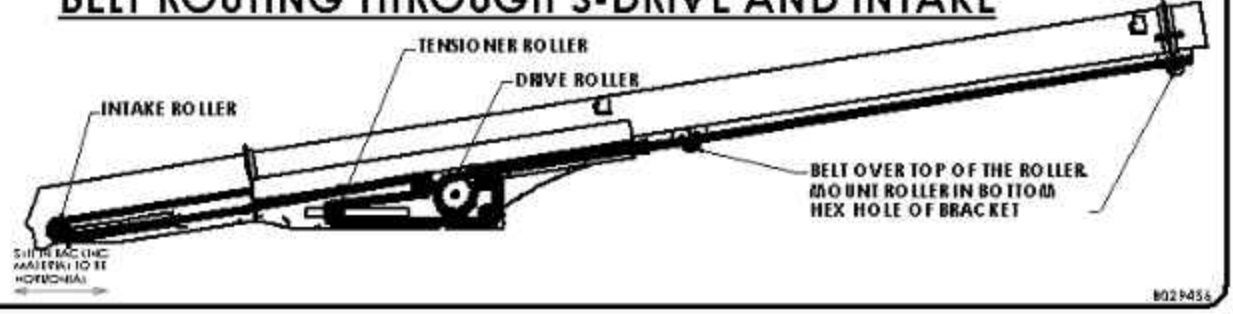
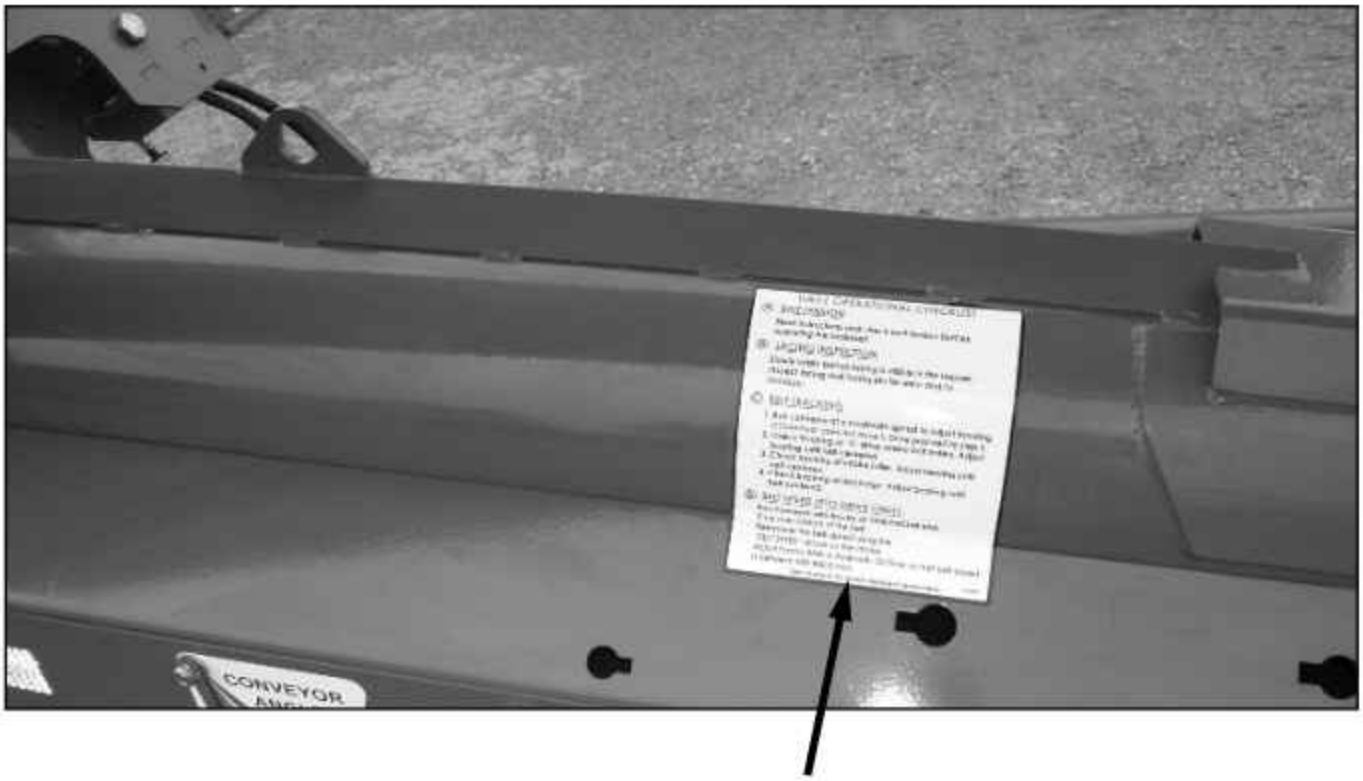
BELT ROUTING THROUGH S-DRIVE AND INTAKE





DAILY OPERATIONAL CHECKLIST

(A) BELT TENSION

Read instructions and check belt tension BEFORE operating the Grainbelt.

(B) LACING INSPECTION

Slowly rotate belt so lacing is visible in the hopper. Inspect lacing and lacing pin for wear and/or damage .

(C) BELT TRACKING

1. Run conveyor at a moderate speed to adjust tracking. If Conveyor does not have S-Drive proceed to step 3.
2. Check tracking at "S" drive where belt enters. Adjust bearing until belt centered.
3. Check tracking at intake roller. Adjust bearing until belt centered.
4. Check tracking at discharge. Adjust bearing until belt centered.

(D) BELT SPEED (PTO DRIVE ONLY)

Run conveyor with tractor at 1200 ENGINE RPM.
Time one rotation of the belt.
Determine the belt speed using the "BELT SPEED" decal on the intake.
Adjust tractor RPM or Hydraulic Oil Flow so that belt speed is between 400-800 ft/min.

See manual for more detailed information

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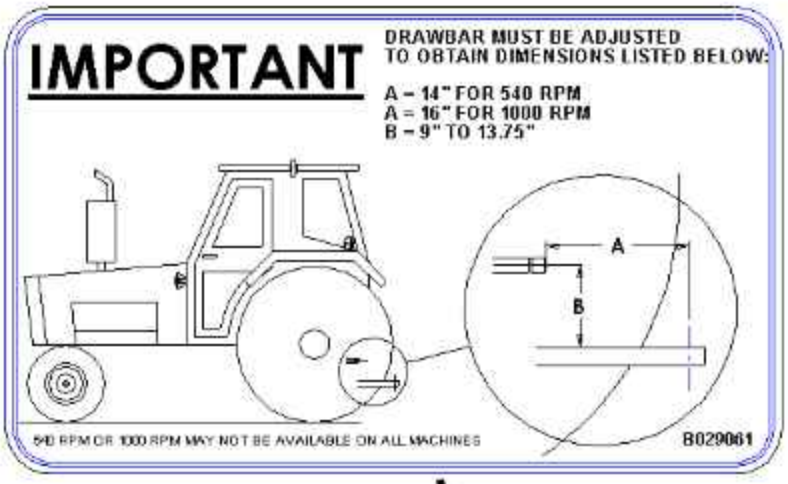
IMPORTANT
DRAWBAR MUST BE ADJUSTED
TO OBTAIN DIMENSIONS LISTED BELOW:
A – 14" FOR 540 RPM
A – 16" FOR 1000 RPM
B – 9" TO 13.75"
A
B
540 RPM OR 1000 RPM MAY NOT BE AVAILABLE ON ALL MACHINES
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Brandt
DANGER


DANGER
MOVING PART HAZARD
To prevent serious injury or death from moving parts:
- KEEP AWAY. Moving parts can crush and dismember.
- Do not operate without guards and shields in place.
- Close and secure guards and shields before starting.
- Keep hands, feet, hair and clothing away from moving parts.
- Disconnect and lockout power source before adjusting and servicing.
- Do not stand or climb on machine when operating.
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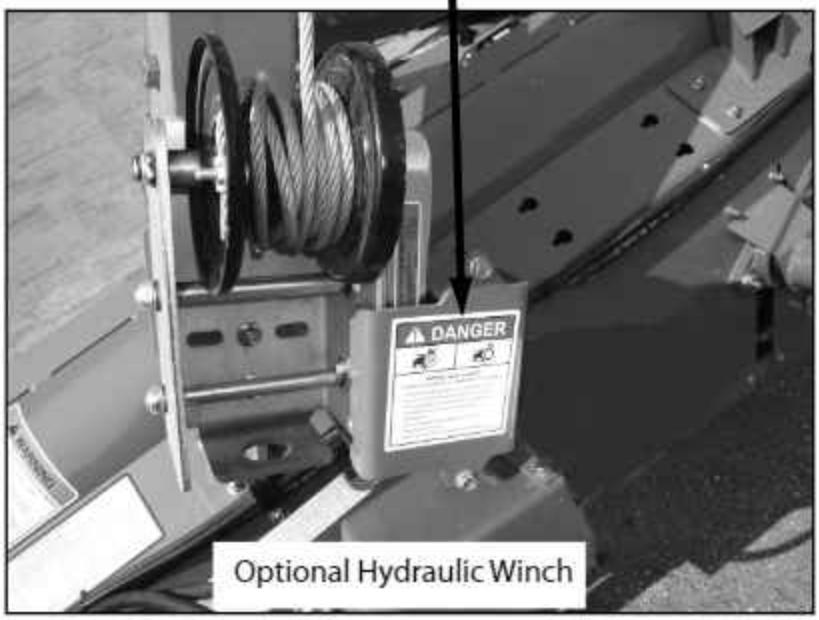
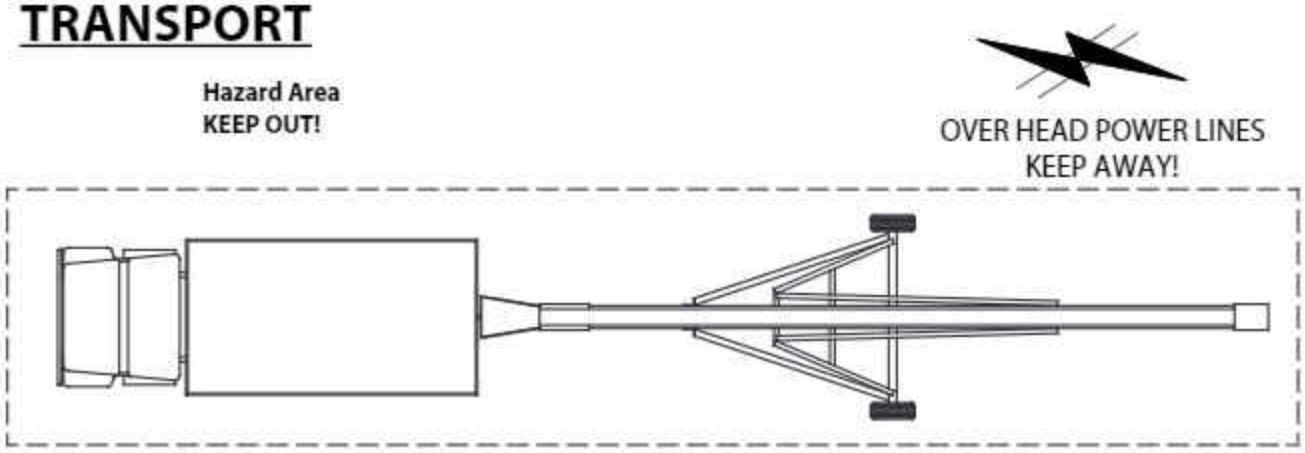


Optional Hydraulic Winch

2.11 Work Area Safety

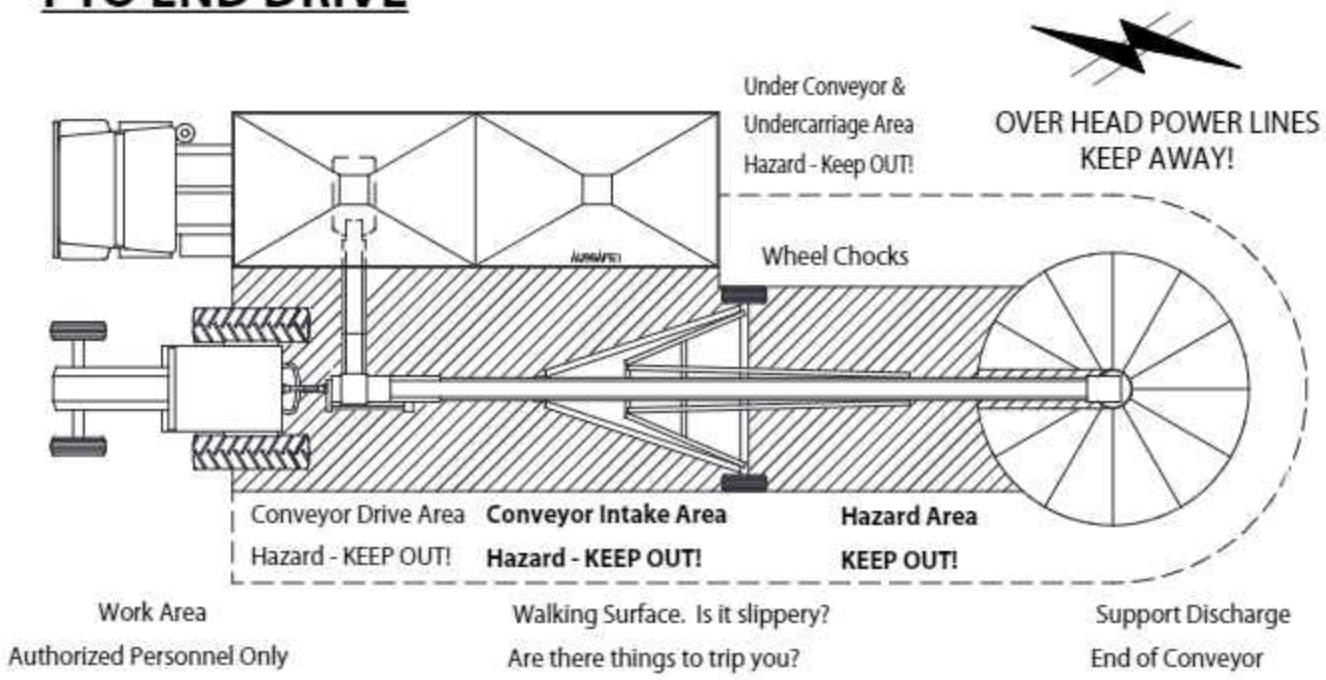
The work areas shown below and on the next page should be marked off with barriers.
It shall be the duty of the operator to see that children and/or other persons stay out of the work area! Trespassing into the work area by any one not directly involved in the actual operation, or trespassing into the hazard area by anyone, shall result in an immediate shut down by the operator.
Prior to start up and during operation, it shall be the responsibility of the operator to see that the work area has secure footing, is clean and free of all debris and tools which may cause accidental tripping and/or falling.

TRANSPORT



NOTE: When transporting the conveyor with a tractor, make sure the PTO Shaft has been disconnected from the tractor and placed in the PTO Shaft Holder. Failure to do this could cause damage to the conveyor, tractor and PTO Shaft.

PTO END DRIVE



CHAPTER 3 Assembly

Before beginning to assemble your new Brandt Conveyor, you are advised to read the following instructions carefully. Familiarize yourself with all the sub-assemblies and parts making up the conveyor. Check that all parts are on hand and arranged for easy access.

3.1 Preparing the Assembly Site

IMPORTANT: *In order to setup the tube conveyor, at least two people are required and the assembly must be carried out in a large open area with a flat floor surface. Do not attempt to assemble the conveyor alone or without a front end loader or overhead crane.*

3.2 Undercarriage Assembly - All Models

1. Mount the wheels to the Axle using the wheel nuts provided. **Torque the wheel nuts to 90 ft.lbs.** See Fig. 3-1.
2. Loosely attach the Lift Arms to the Axle using six 1/2" x 4" U-Bolts x 5" long and lock nuts. Position the arms on the axle where shown. Do not tighten the nuts yet. Place the other end of the Lift Arms on a wood 2x4.
3. Attach the Reflector Plates to the Lift Arms using two 1/4" x 3/4" bolts and lock nuts.
4. Install a plastic Oval Grommet in the lower hole of the right Lift Arm.

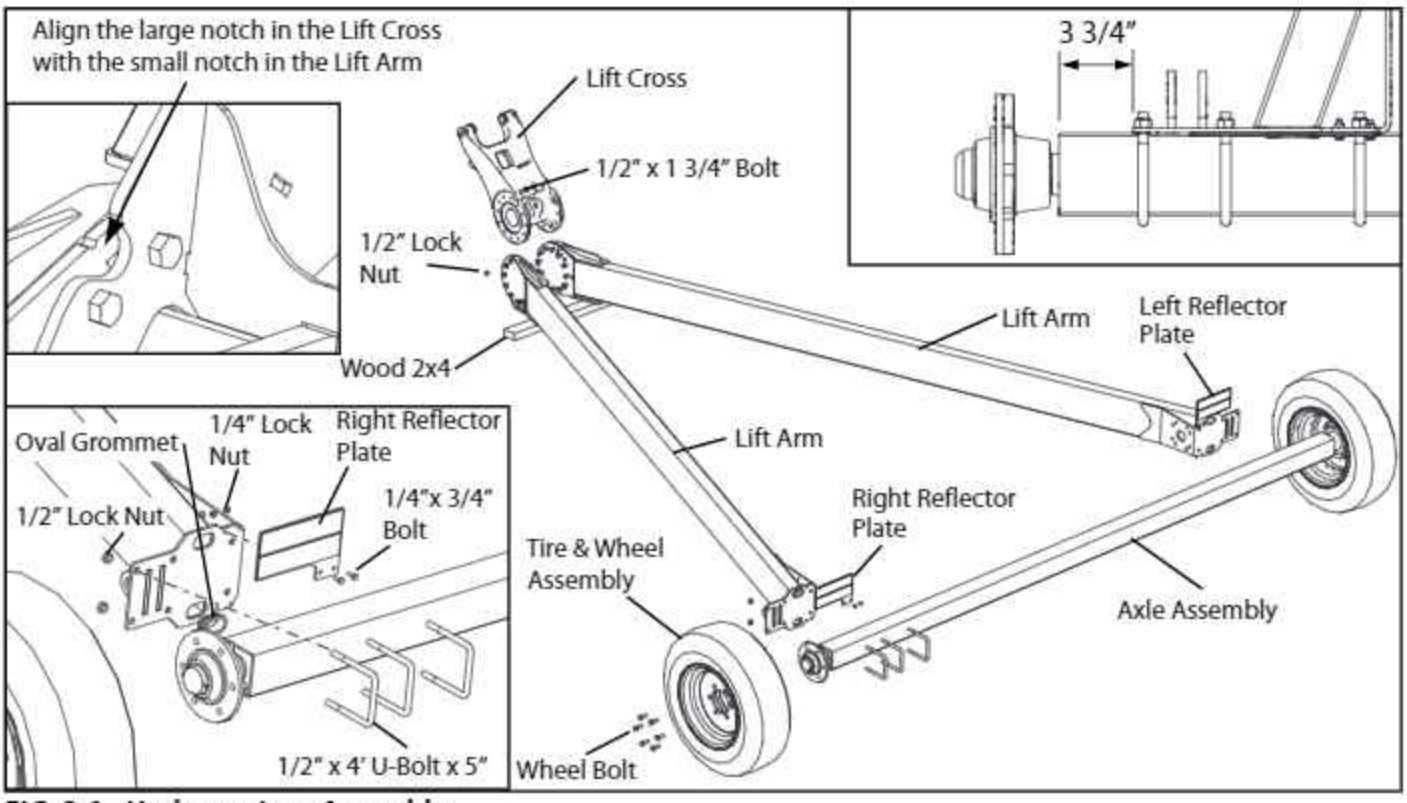


FIG. 3-1. Undercarriage Assembly

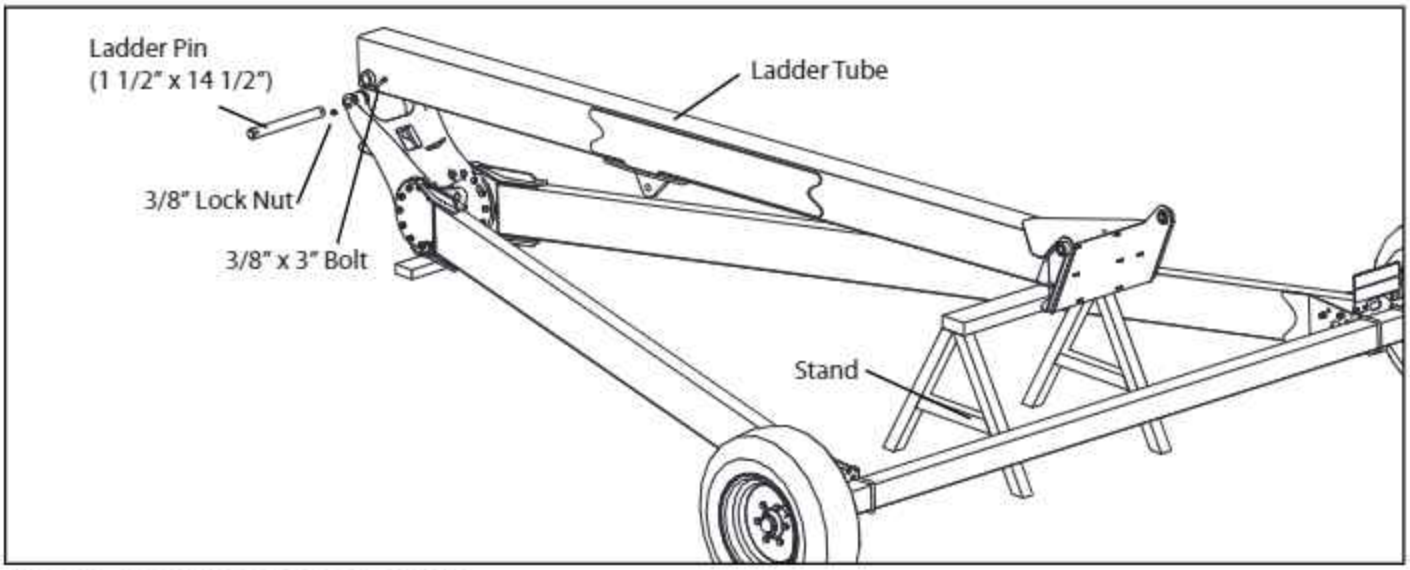


FIG. 3-2. Installing the Ladder Tube

5. Install the Lift Cross between the Lift Arms using twenty four 1/2" x 1 3/4" bolts and lock nuts. Make sure the Lift Cross is oriented as shown in Fig. 3-1. Tighten all the nuts and the nuts on the U-Bolts.

6. Place a stand between the Lift Arms as shown in Fig.3-2. Attach the Ladder Tube to the Lift Cross using the 1 1/2" Ladder Pin (1 1/2" x 14 1/2" long). Secure in place using a 3/8" x 3" bolt and lock nut in both ends of the pin.

3.3 Tube Assembly - 1580

1. Place a stand where shown in Fig. 3-3. Bring in the Suspension Tube Assembly and attach it to the Ladder Tube using two Long Suspension Pins (3 11/16" long), two 1" flat washers, two Suspension Collars, two 3/8" x 2 1/2" bolts and lock nuts.

2. Place a stand where shown in Fig. 3-4. Bring in the Lower Tube Assembly. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

3. Attach the Lower Tube Assembly to the Suspension Tube. Make sure the Side Cable Truss is in place. Use five 1/2" x 2" bolts, lock washers and nuts when connecting the tubes and side cable truss. Use eleven 1/2" x 1 1/4" bolts, lock washers and nuts in the other holes. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.

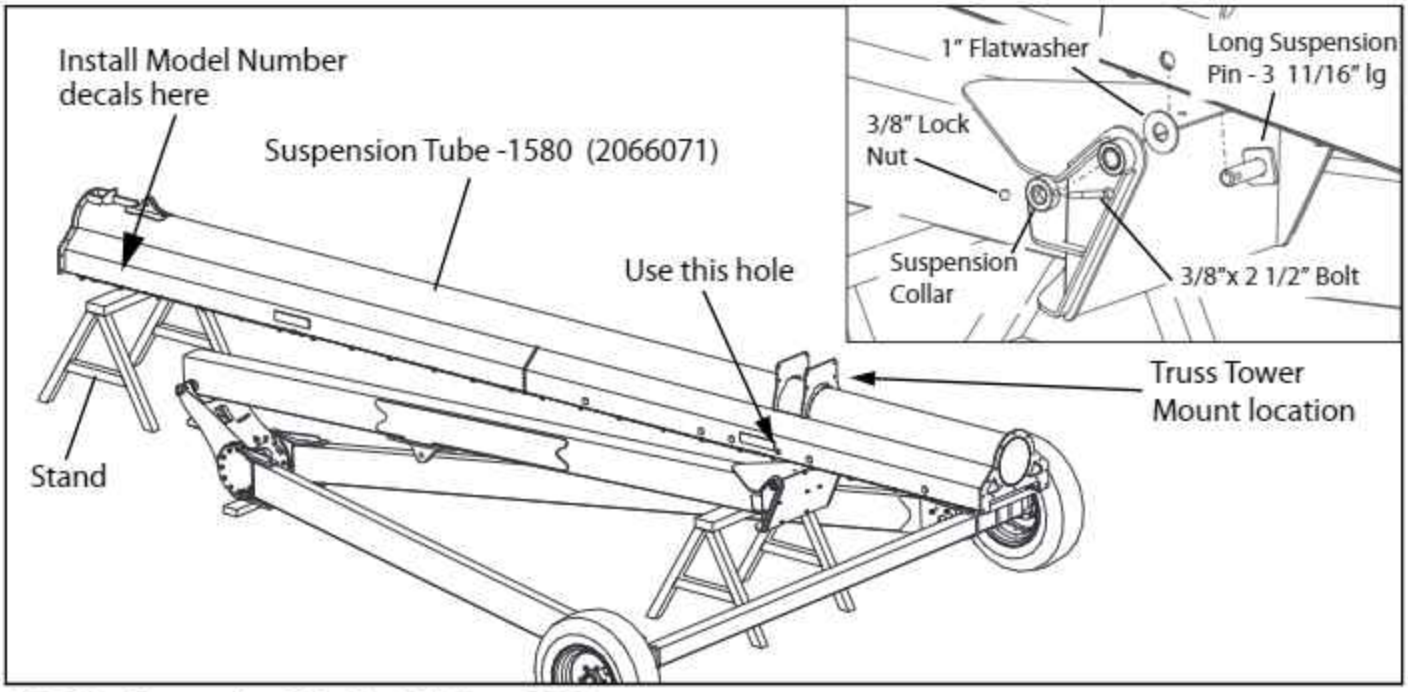


FIG. 3-3. Suspension Tube Installation - 1580

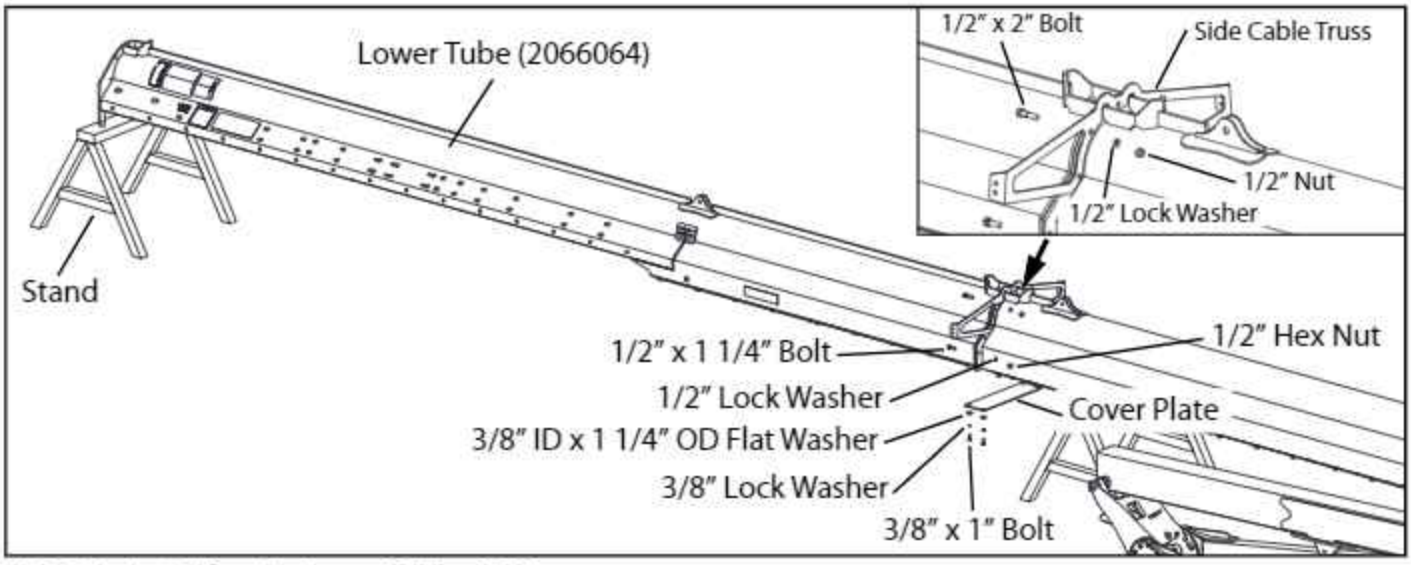


FIG. 3-4. Installing the Lower Tube - 1580

4. Place a stand where shown in Fig. 3-6. Bring in the Third Tube Assembly. Make sure it is oriented as shown. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

5. Attach the Third Tube Assembly to the Suspension Tube. Make sure the Side Cable Truss is in place. Use five 1/2" x 2" bolts, lock washers and nuts when connecting the tubes and side cable truss. Use three 1/2" x 1 1/4" bolts, lock washers and nuts in the bottom holes. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.

6. Place a stand where shown in Fig. 3-7. Bring in the Upper Tube Assembly. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

7. Attach the Upper Tube Assembly to the Third Tube using eight 1/2" x 1 1/4" bolts, lock washers and nuts. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.

FIG. 3-5. Tube Joint Detail

8. With a chalkline or by carefully eyeing the tube assembly from one end, ensure that the tube is straight side to side. Use shims if required.

9. Tighten the tube flange bolts securely in a sequence that starts at one bolt and progresses to the bolt on the opposite side of the tube. Keep progressing around the tube in this manner until all the bolts are tight.

10. Replace all Wind Guard Plates that were removed. Make sure the plates are lapped properly as shown in Fig. 3-6.

11. Install the Cover Plate at the lower tube joint using four 3/8" x 1" bolts, lock washers and 3/8" ID x 1 1/4" OD flat washers. See Fig. 3-4.

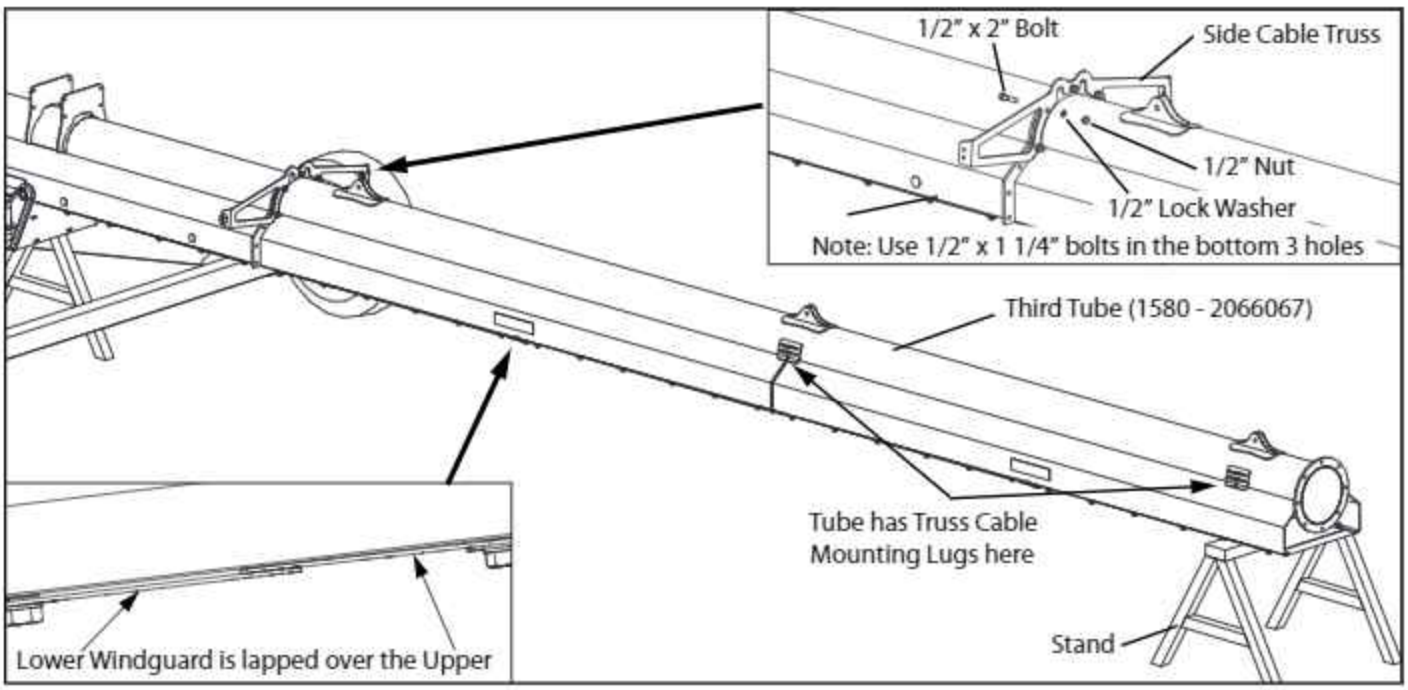


FIG. 3-6. Installing the Third Tube - 1580

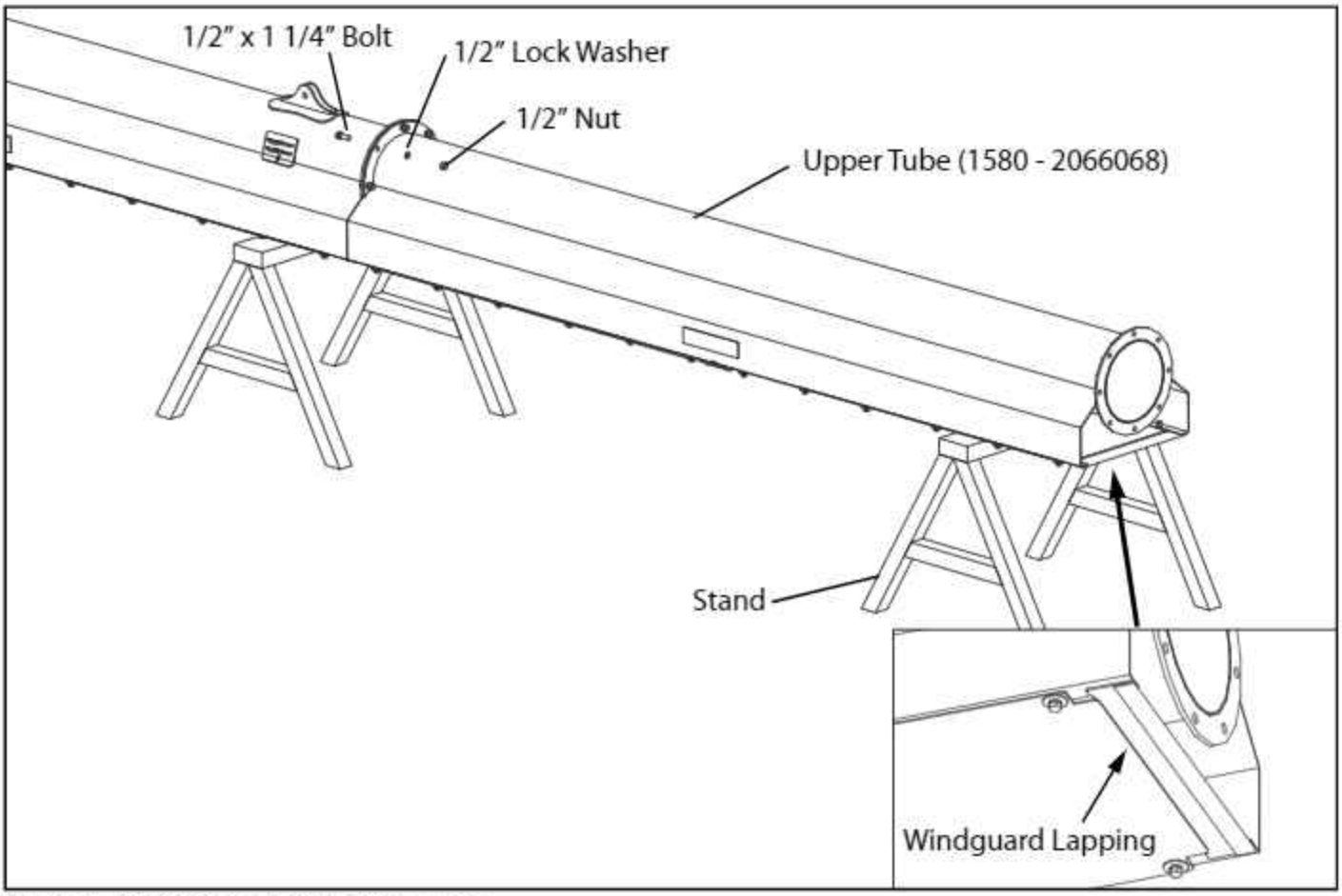


FIG. 3-7. Upper Tube Installation - 1580

3.4 Tube Assembly - 1590

1. Place a stand where shown in Fig. 3-8. Bring in the Suspension Tube Assembly and attach it to the Ladder Tube using two Long Suspension Pins (3 11/16" long), two 1" flat washers, two Suspension Collars, two 3/8" x 2 1/2" bolts and lock nuts.

2. Place a stand where shown in Fig. 3-9. Bring in the Lower Tube Assembly. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

3. Attach the Lower Tube Assembly to the Suspension Tube. Make sure the Side Cable Truss is in place. Use five 1/2" x 2" bolts, lock washers and nuts when connecting the tubes and side cable truss. Use eleven 1/2" x 1 1/4" bolts, lock washers and nuts in the other holes. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.

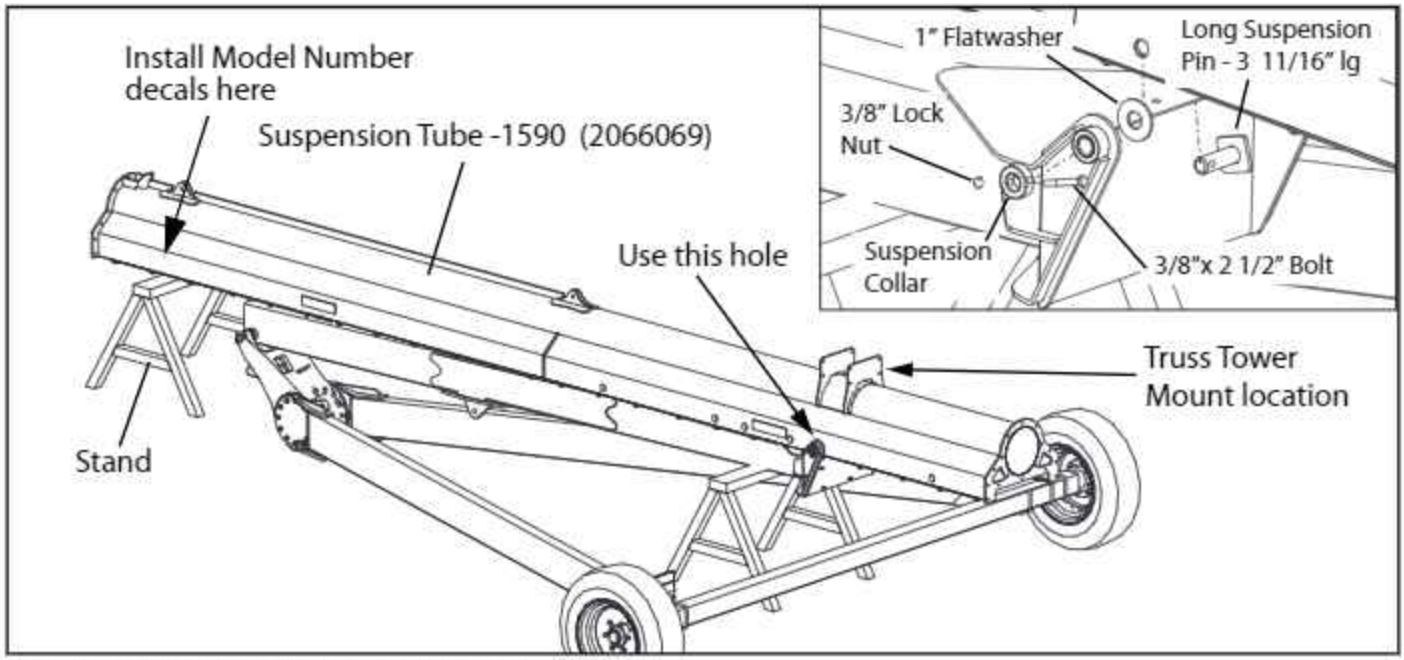


FIG. 3-8. Suspension Tube Installation - 1590

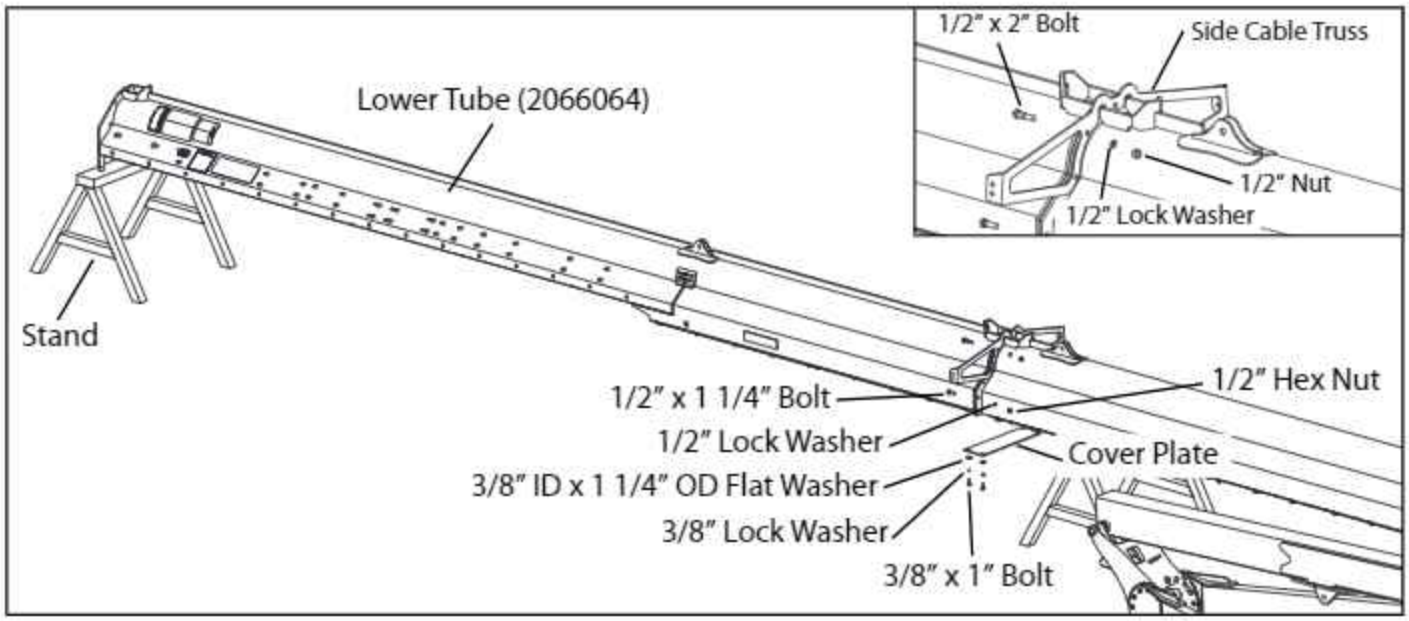


FIG. 3-9. Installing the Lower Tube - 1590

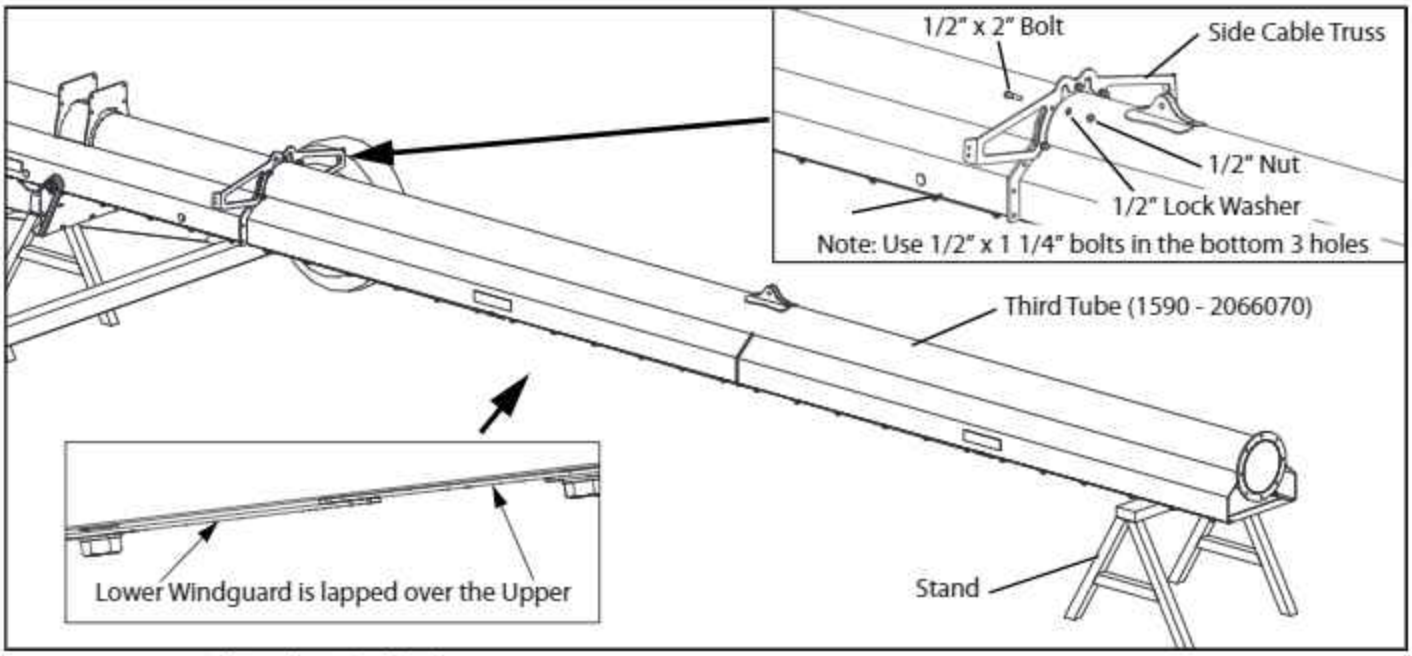


FIG. 3-10. Installing the Third Tube - 1590

4. Place a stand where shown in Fig. 3-10. Bring in the Third Tube Assembly. Make sure it is oriented as shown. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

5. Attach the Third Tube Assembly to the Suspension Tube. Make sure the Side Cable Truss is in place. Use five 1/2" x 2" bolts, lock washers and nuts when connecting the tubes and side cable truss. Use three 1/2" x 1 1/4" bolts, lock washers and nuts in the bottom holes. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-10.

6. Place a stand where shown in Fig. 3-11. Bring in the Upper Tube Assembly. Make sure it is oriented as shown. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

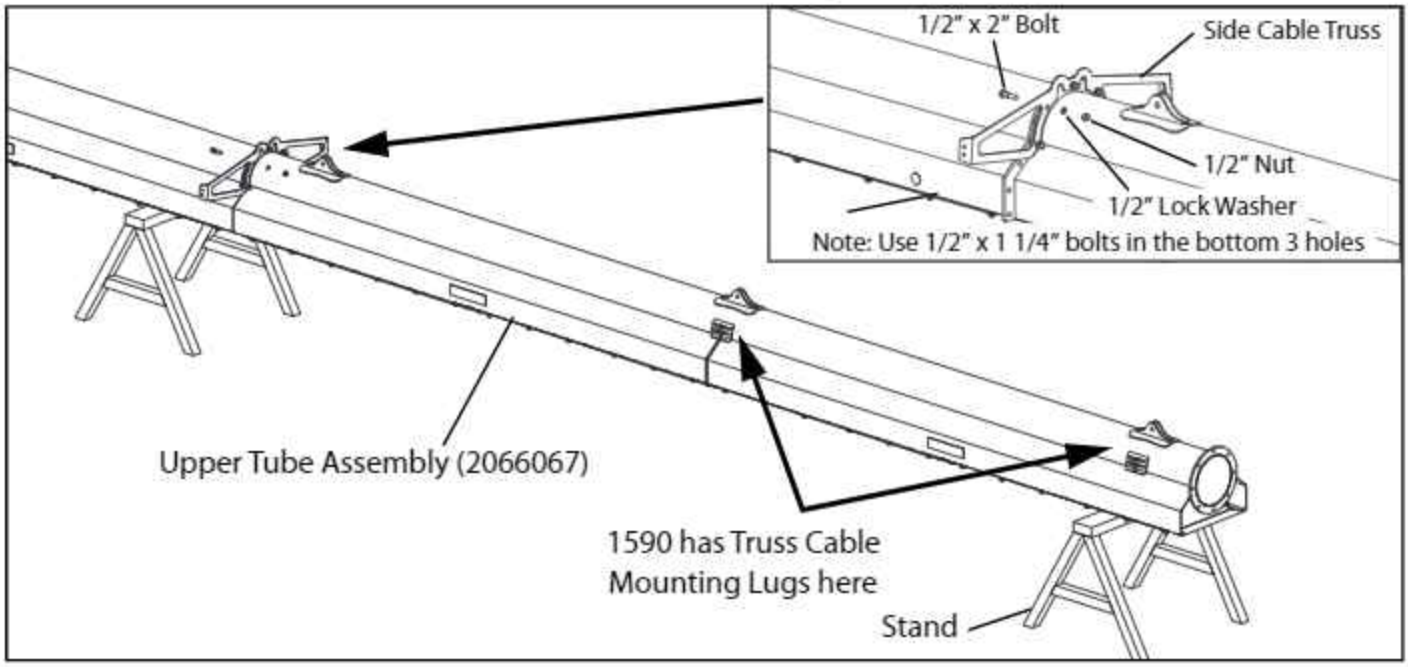


FIG. 3-11. Upper Tube Installation - 1590

7. Attach the Upper Tube Assembly to the Third Tube. Make sure the Side Cable Truss is in place. Use five 1/2" x 2" bolts, lock washers and nuts when connecting the tubes and side cable truss. Use three 1/2" x 1 1/4" bolts, lock washers and nuts in the bottom holes. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-11.

8. With a chalkline or by carefully eyeing the tube assembly from one end, ensure that the tube is straight side to side. Use shims if required.

9. Tighten the tube flange bolts securely in a sequence that starts at one bolt and progresses to the bolt on the opposite side of the tube. Keep progressing around the tube in this manner until all the bolts are tight.

10. Install the Cover Plate over the lower flange joint as shown in Fig. 3-9.

11. Replace all Wind Guard Plates that were removed. Make sure the plates are lapped properly as shown in Fig. 3-10.

3.5 Tube Assembly - 15100

1. Place a stand where shown in Fig. 3-12. Bring in the Suspension Tube Assembly and attach it to the Ladder Tube using two Long Suspension Pins (3 11/16" long), two 1" flat washers, two Suspension Collars, two 3/8" x 2 1/2" bolts and lock nuts.

2. Place a stand where shown in Fig. 3-13. Bring in the Second Tube Assembly. Make sure it is oriented as shown. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

3. Attach the Second Tube Assembly to the Suspension Tube. Make sure the Side Cable Truss is in place. Use five 1/2" x 2" bolts, lock washers and nuts when connecting the tubes and side cable truss. Use eleven 1/2" x 1 1/4" bolts, lock washers and nuts in the other holes. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.

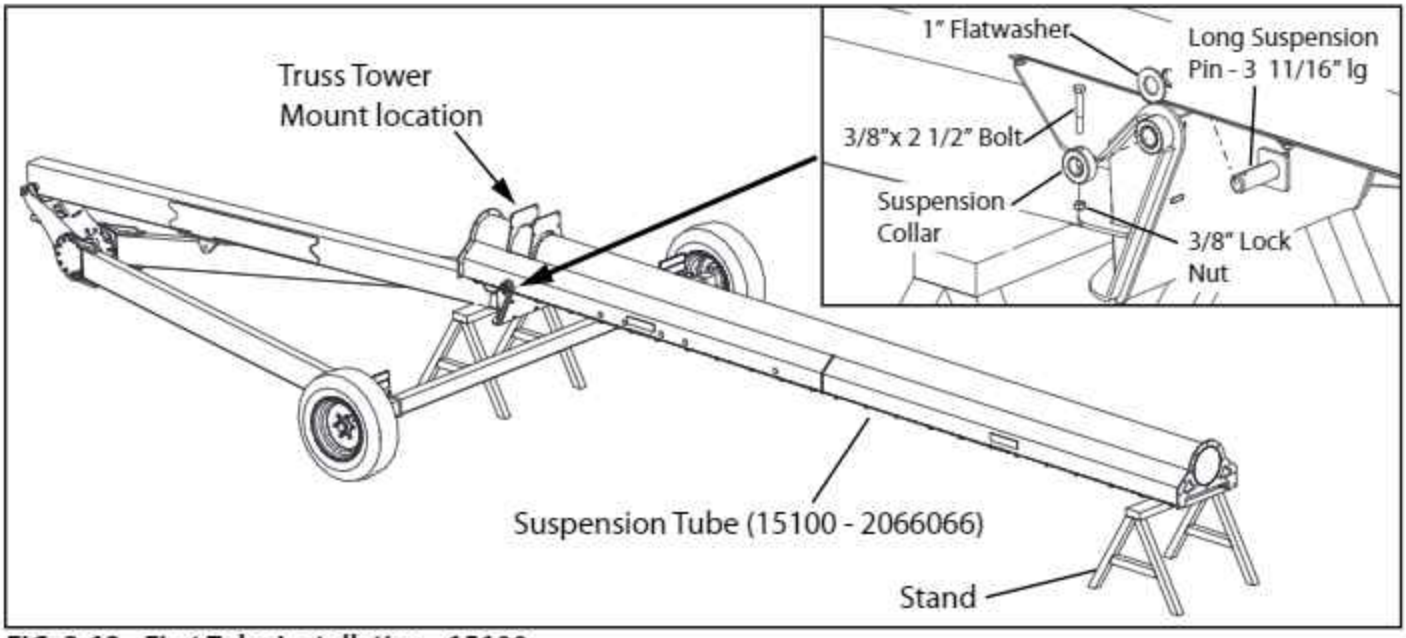


FIG. 3-12. First Tube Installation - 15100

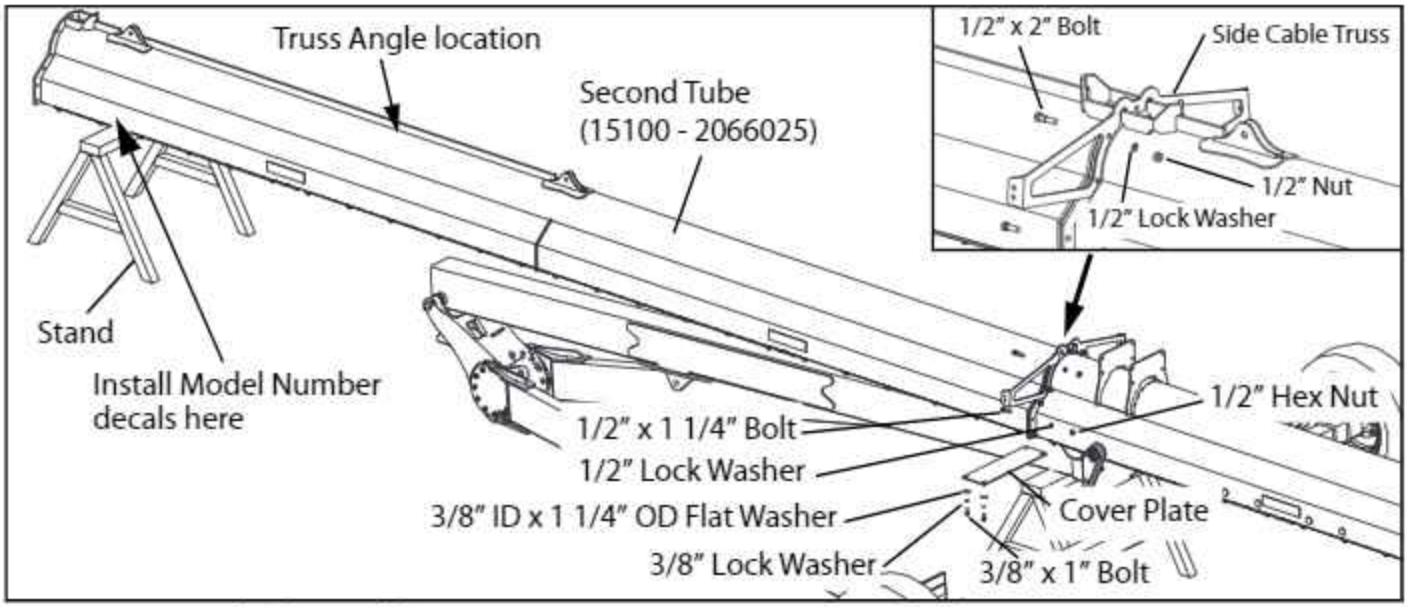


FIG. 3-13. Second Tube Installation - 15100

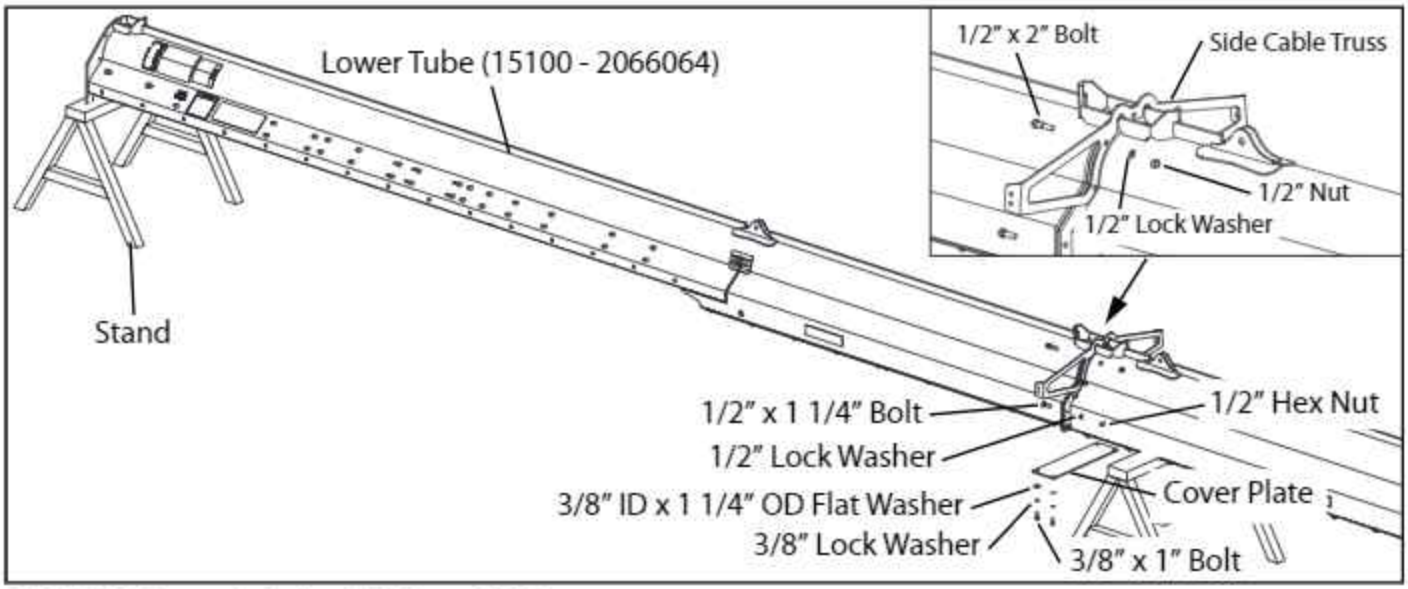


FIG. 3-14. Lower Tube Installation - 15100

4. Place a stand where shown in Fig. 3-14. Bring in the Lower Tube Assembly. Make sure it is oriented as shown. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

5. Attach the Lower Tube Assembly to the Second Tube. Make sure the Side Cable Truss is in place. Use five 1/2" x 2" bolts, lock washers and nuts when connecting the tubes and side cable truss. Use eleven 1/2" x 1 1/4" bolts, lock washers and nuts in the other holes. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.

6. Place a stand where shown in Fig. 3-15. Bring in the Fourth Tube Assembly. Make sure it is oriented as shown. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

7. Attach the Fourth Tube Assembly to the Suspension Tube. Make sure the Side Cable Truss is in place. Use five 1/2" x 2" bolts, lock washers and nuts when connecting the tubes and side cable truss. Use three 1/2" x 1 1/4"

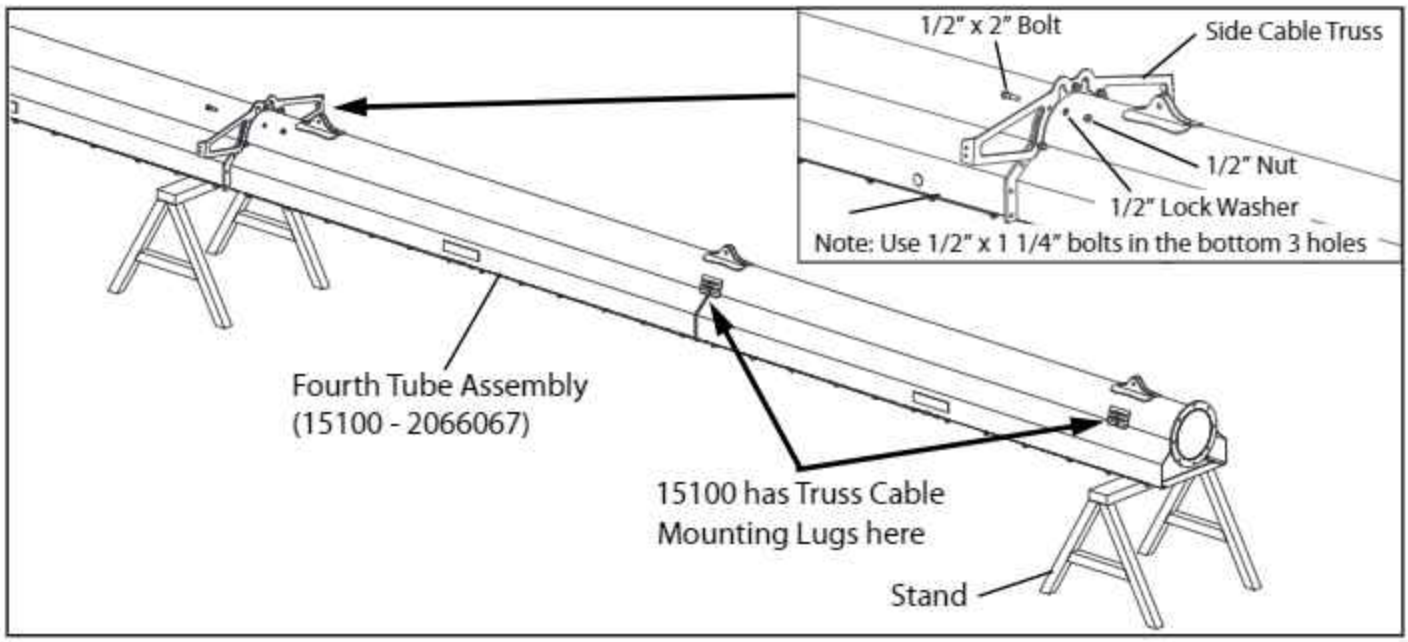


FIG. 3-15. Fourth Tube Installation - 15100

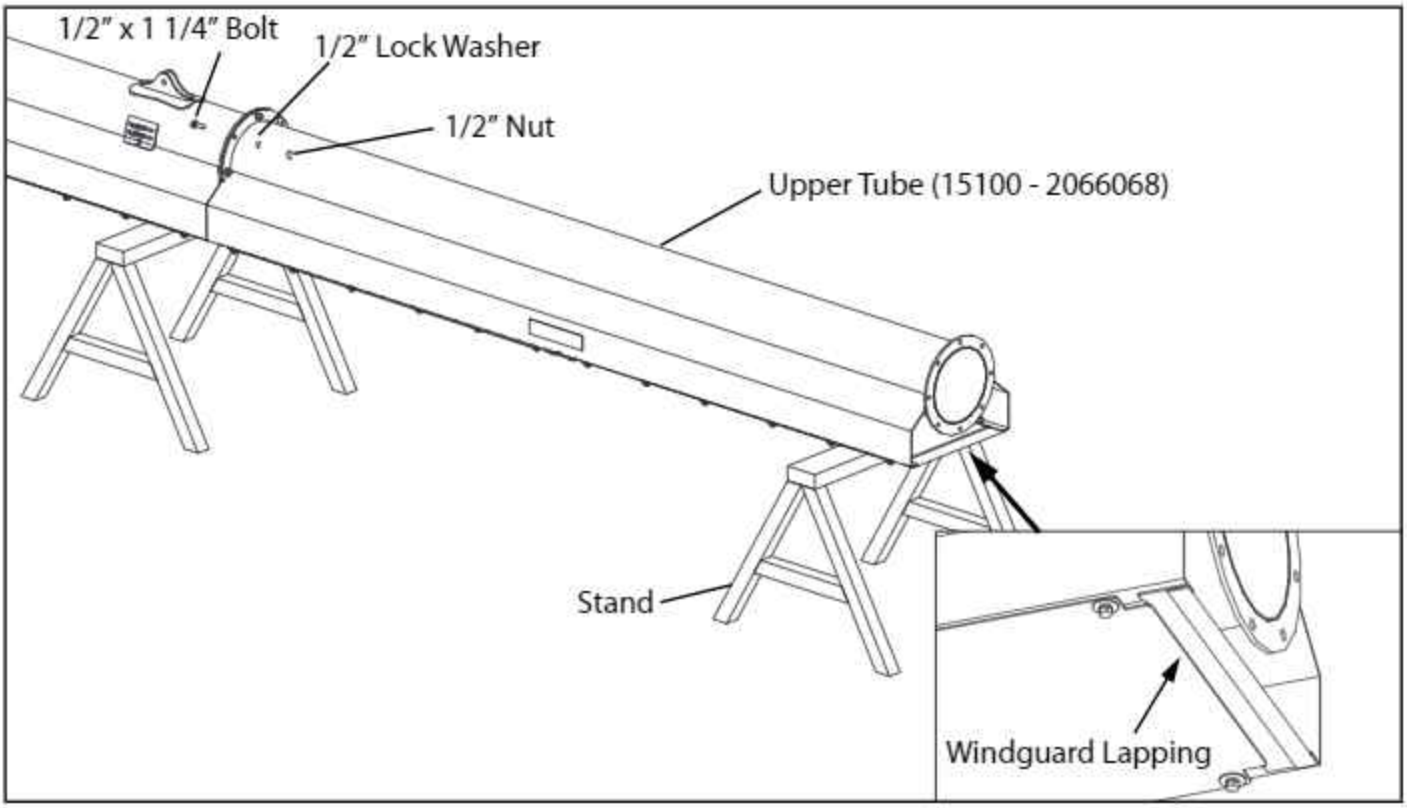


FIG. 3-16. Upper Tube Installation - 15100

bolts, lock washers and nuts in the other holes. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.

8. Place a stand where shown in Fig. 3-16. Bring in the Upper Tube Assembly. Make sure it is oriented as shown. Remove any Wind Guard Plates necessary to gain access to the tube flanges.

9. Attach the Upper Tube Assembly to the Fourth Tube using eight 1/2" x 1 1/4" bolts, lock washers and nuts. Snug the four nuts on the top, bottom and either side at this time. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.

10. With a chalkline or by carefully eyeing the tube assembly from one end, ensure that the tube is straight side to side. Use shims if required.

11. Tighten the tube flange bolts securely in a sequence that starts at one bolt and progresses to the bolt on the opposite side of the tube. Keep progressing around the tube in this manner until all the bolts are tight.

12. Install the Cover Plates over the flange joints as shown in Fig. 3-13 and 3-14.

13. Replace all Wind Guard Plates that were removed. Make sure the plates are lapped properly as shown in Fig. 3-15.

3.6 Intake, Discharge and S-Drive Assembly

1. Attach the Discharge to the Upper Tube using eight 1/2" x 1" bolts and lock nuts, as shown in Fig. 3-17. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.
2. Mount the Intake to the Lower Tube using twelve 1/2" x 1" bolts and lock nuts, as shown in Fig. 3-18. Make sure the tube joint is aligned and smooth, as shown in Fig. 3-5.
3. Attach the Upper Intake Belt Guide to the Lower Intake Belt Guide using four 3/8" x 3/4" bolts and lock nuts.
4. Mount the Belt Guide assembly to the under side of the Intake using four 3/8" x 1 1/4" bolts and serrated flange nuts.
5. Loosely attach the Triple Hose Holder to the Intake using two 5/16" x 1" bolts and lock nuts. Do not tighten the nuts yet.

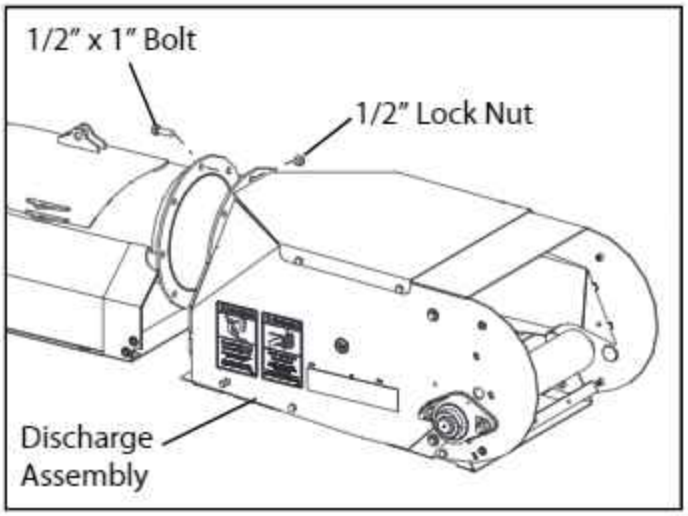


FIG. 3-17. Discharge Installation

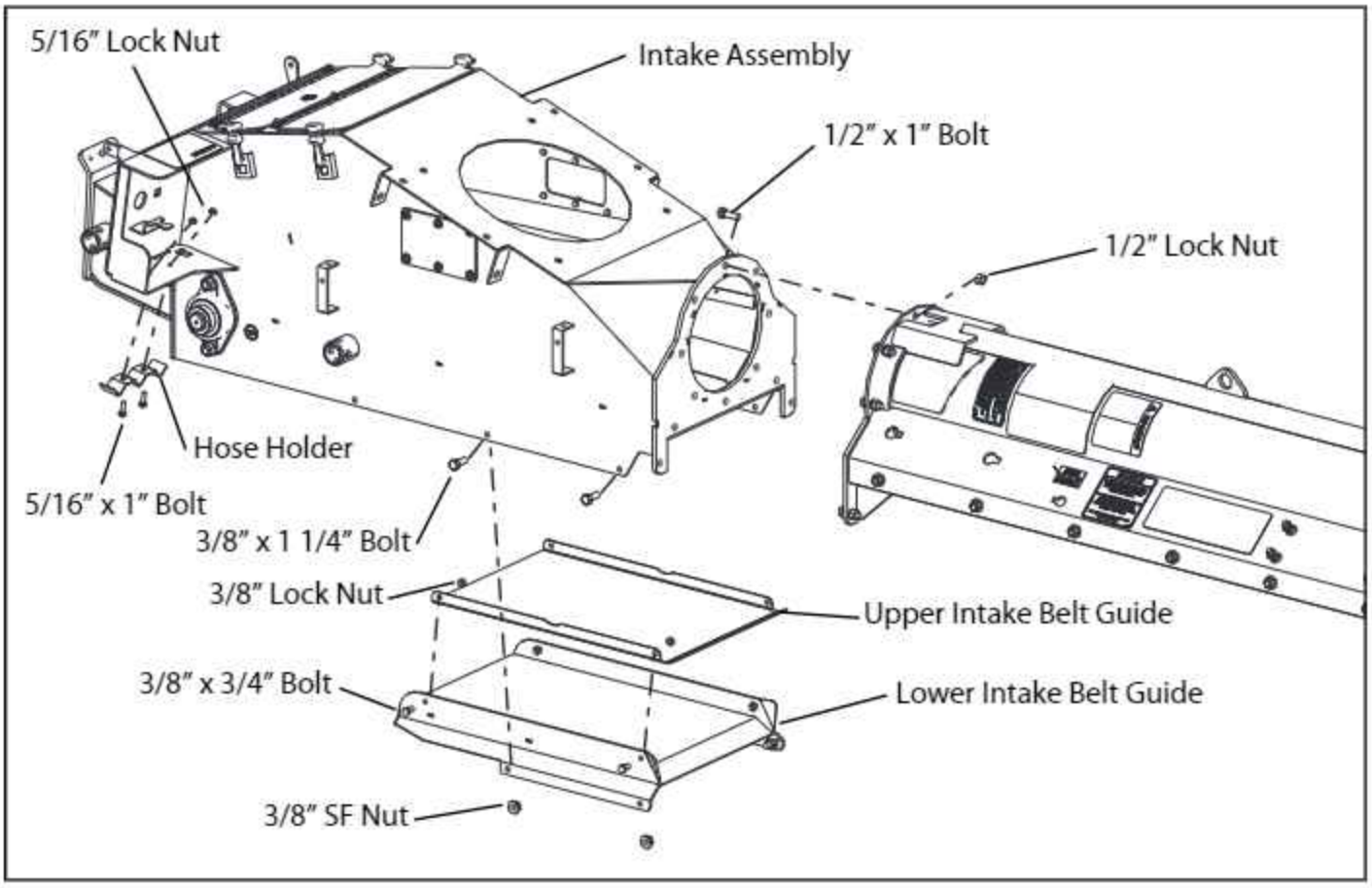


FIG. 3-18. Intake Installation

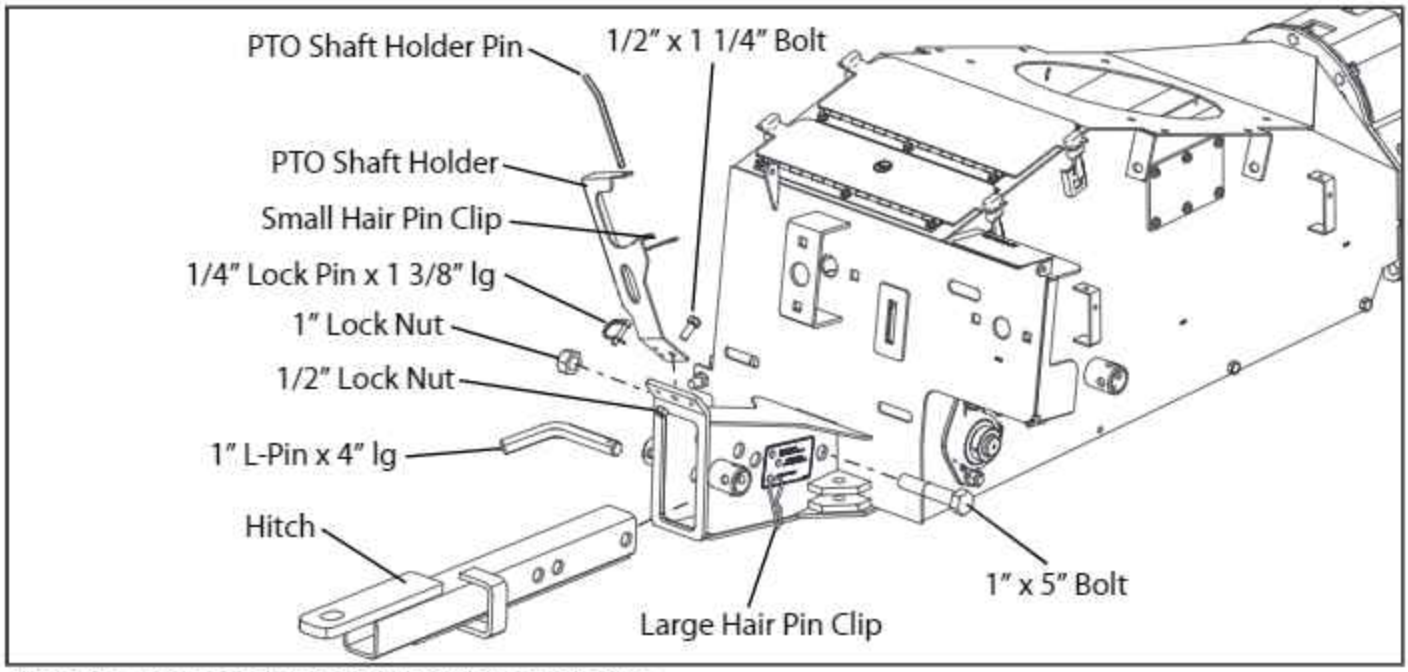


FIG. 3-19. Hitch and PTO Shaft Holder Installation

6. Slide the Hitch into the receiver on the end of the Boot and fasten in place using a 1" x 5" bolt and lock nut. Do not fully tighten the nut, the Hitch must be able to rotate. Fix the Hitch in place using the 1" L-Pin and large hair pin clip.

7. Attach the PTO Shaft Holder to the top of the receiver using a 1/2" x 1 1/4" bolt and lock nut. Do not fully tighten the nut, the PTO Shaft Holder must be able to rotate. Fix the Holder in place using the 1/4" Lock Pin.

8. Insert the PTO Shaft Holder Pin into the Holder and secure in place using the small hair pin clip.

9. Install the S Drive Assembly to the Lower Tube using eighteen 1/2" x 1" carriage bolts and serrated flange nuts, where shown in Fig. 3-20.

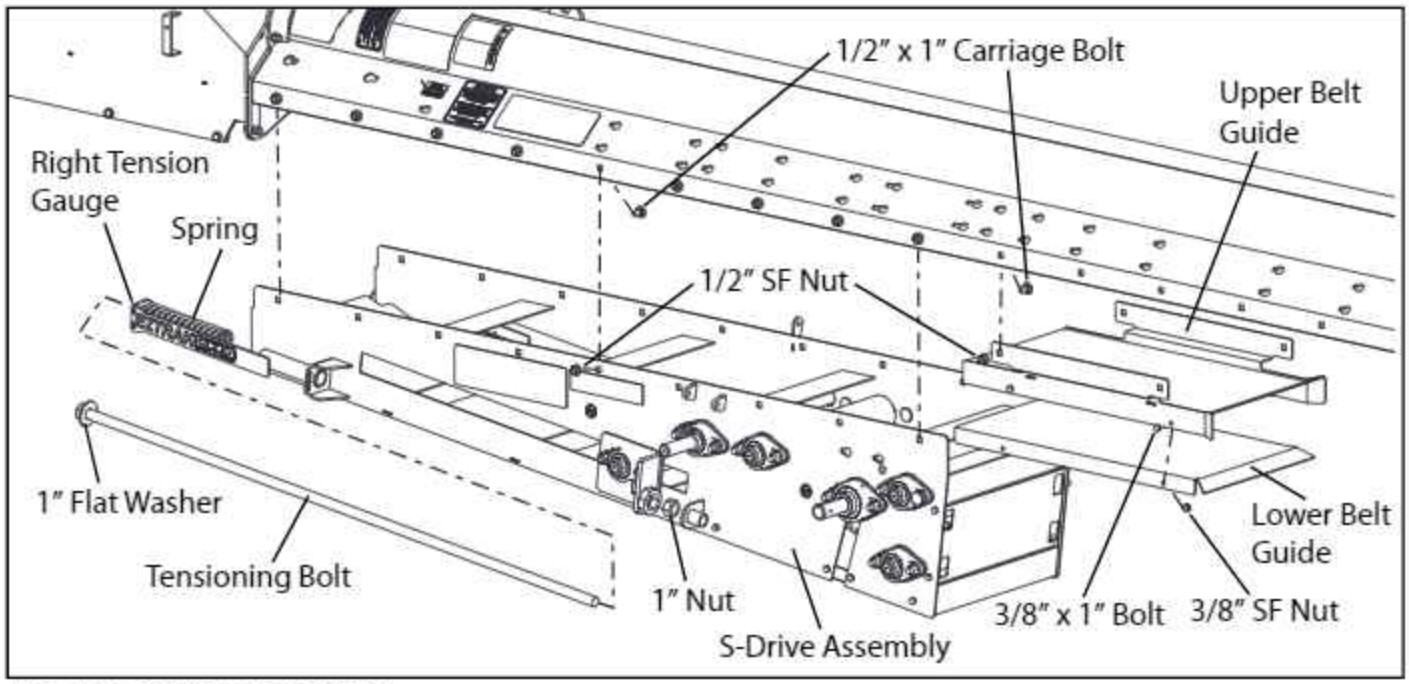


FIG. 3-20. S Drive Installation

10. Install the Angle Pointer at the Conveyor Angle decal on the left side of the S-Drive, using the fasteners shown in Fig. 3-21. Make sure the pointer rotates freely.

11. Pull the tensioning roller back far enough to insert a 1" nut into the hex nut holder. Do this on both sides. See Fig,. 3-20.

12. On the right side of the S Drive, slide a large compression spring over the bushing welded to the lower end of the S Drive. Insert the Right Tension Gauge into the slotted hole beside the spring and slide it up to the spring.

13. Slide a 1" Flat Washer onto a Tensioning Bolt and insert it through the Tensioning Gauge and spring, down to the tensioning roller. Thread the bolt into the 1" nut just installed, just far enough for the bolt to enter the guide bushing on the other side of the nut. Leave the tensioning roller in it's loosest position at this time.

14. Repeat steps 12 and 13 on the left side.

15. Insert the Lower Belt Guide into the Upper Belt Guide and fasten together using four 3/8" x 1" bolts and serrated flange nuts.

16. Install the Belt Guide Assembly in the lower tube where shown in Fig. 3-20, using four 1/2" x 1" carriage bolts and serrated flange nuts.

17. Install the Return Rollers into the Roller Holders at the breaks in the Wind Guards. See Fig. 3-22.

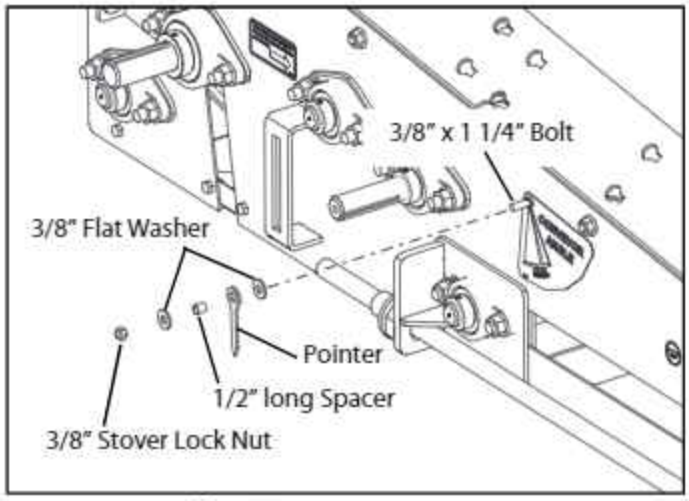


FIG. 3-21. Angle Pointer

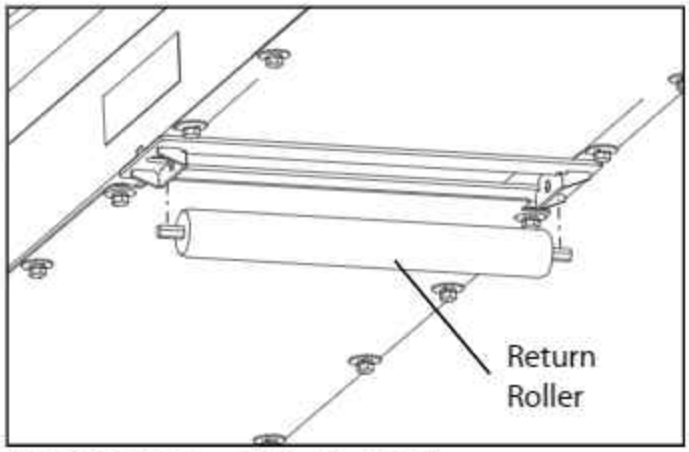


FIG. 3-22. Return Roller Installation

3.7 Tube Truss Installation

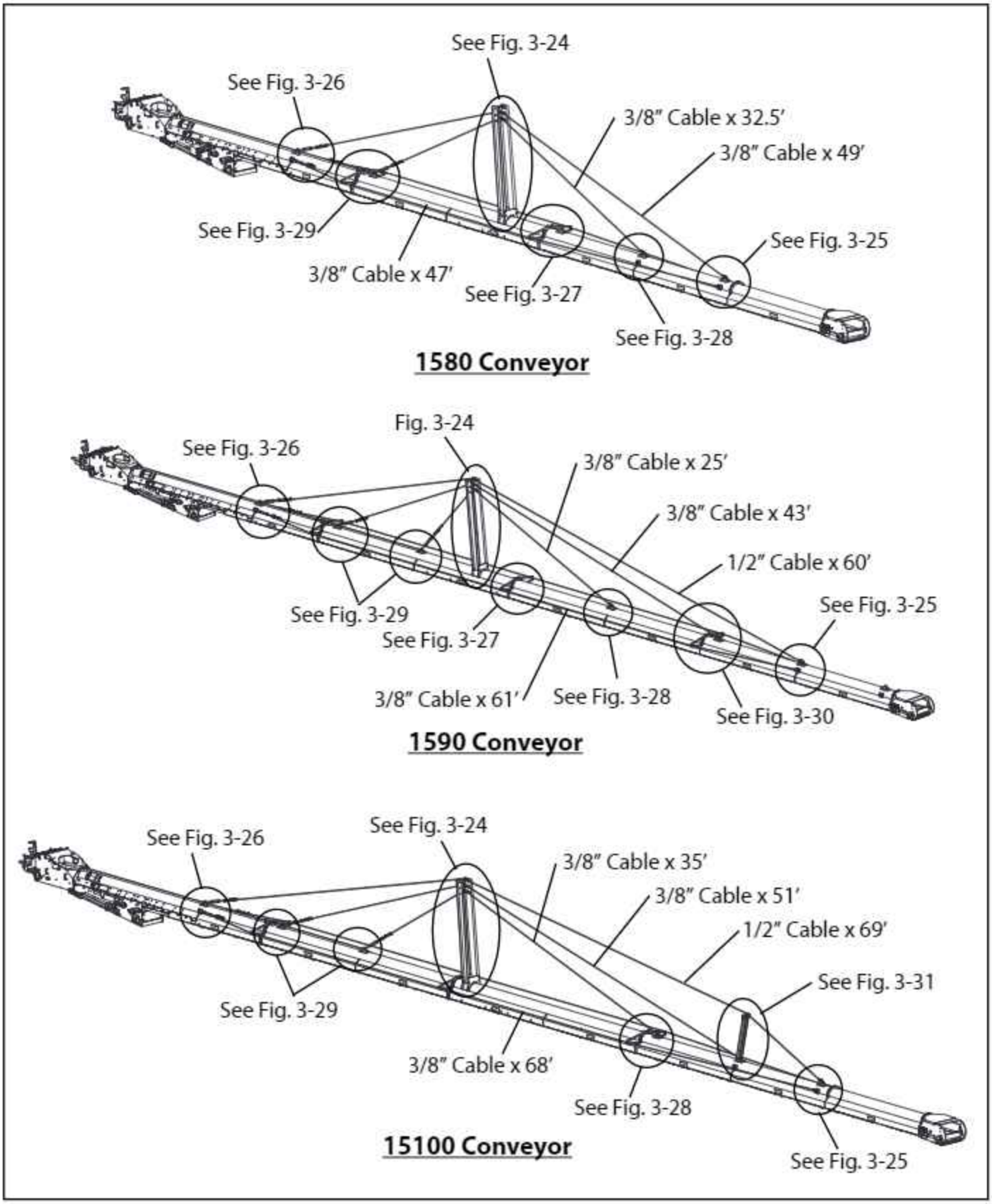


FIG. 3-23. Installing the Truss Cables

3.7.1 1580 Truss Assembly

1. Assemble the Large Truss Tower and install it on the tube using twenty 1/2"x 1 1/4" bolts and lock nuts. See Fig. 3-24.
2. Loosely install the Cable Clamps on the tower supports as shown.
3. Attach the looped end of the 49' truss cable to the top end of the tube and the two 47' cables to the sides of the tube, as shown in Fig. 3-25.
4. Route the cable on the top of the tube through the cable clamp on the top of the truss tower and down to the mount on the lower tube. Do not tighten the cable clamp yet.
5. Extend a Turnbuckle to it's longest length. Attach one end to the mount on the top of the auger tube, where shown in Fig. 3-26. Use a 5/8" x 2 1/2" bolt, a Butt Tite Spacer and a 5/8" lock nut to secure in place.
6. Insert a Cable Thimble in the other end of the Turnbuckle.
7. Slide three Cable Clamps onto the end of the Truss Cable. Insert the end through the eye of the turnbuckle, making sure it is properly positioned in the thimble.
8. While wearing gloves, pull the cable as tight as possible and install a clamp about 12" from the eye of the turnbuckle. Install a second clamp as close as possible to the cable thimble and the third half way between the other two. See Fig. 3-26 for the proper clamp orientation.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

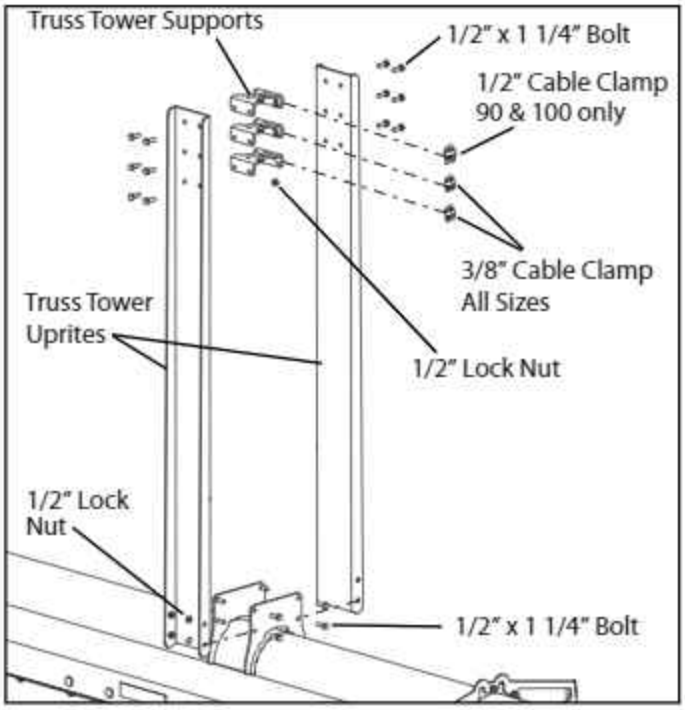


FIG. 3-24. Large Truss Tower Installation

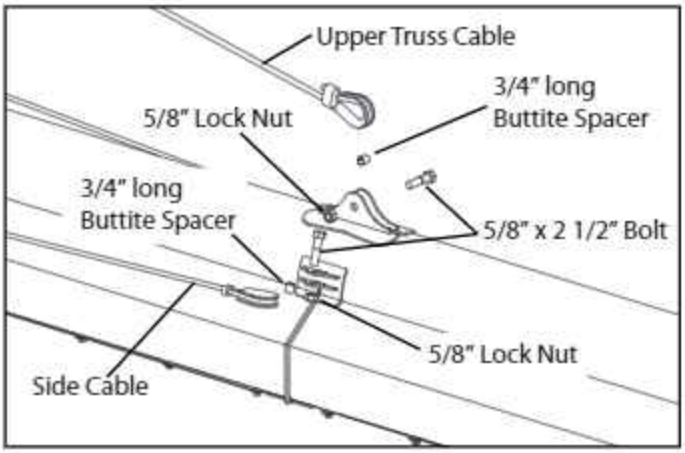


FIG. 3-25. Truss Cable Mounting

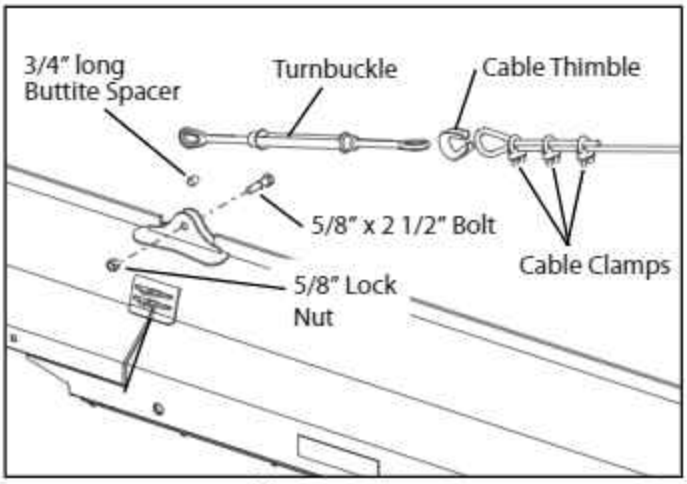


FIG. 3-26. Truss Cable Mounting

9. Loosely install a 3/8" cable clamp into each of the Side Cable Trusses as shown in Fig. 3-27.

10. Route the cables on the sides of the tube through the cable clamp in the Side Cable Trusses and down to the mount on the lower tube. Do not tighten the cable clamps yet.

11. Repeat steps 5, 6, 7 and 8 with the lateral cables.

12. Attach the looped end of the 32.5' truss cable to the mount location shown in Fig. 3-23. Use a 5/8" x 2 1/2" bolt, 3/4" spacer and lock nut as shown in Fig. 3-28.

13. Route the cable through the cable clamp on the middle plate of the truss tower and down to the mount on the tube closest to the lower tube flange. Do not tighten the cable clamp yet. See Fig. 3-23.

14. Repeat steps 5, 6, 7 and 8 with the short cable.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

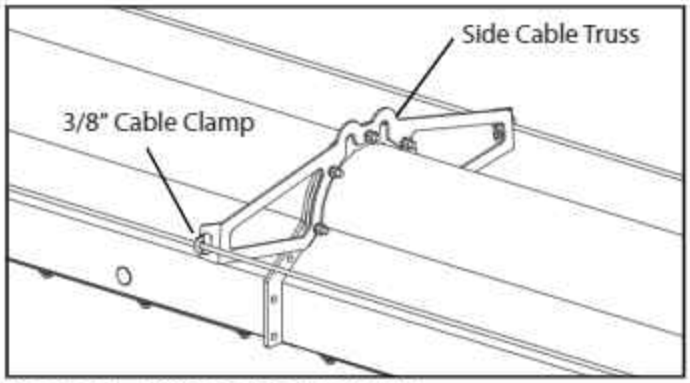


FIG. 3-27. Truss Cable Mounting

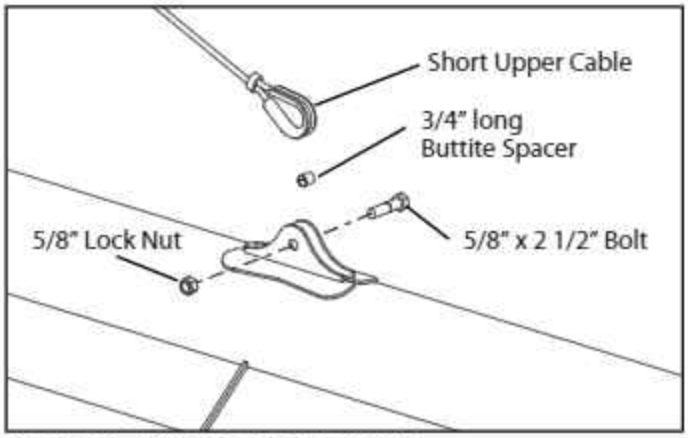


FIG. 3-28. Truss Cable Mounting

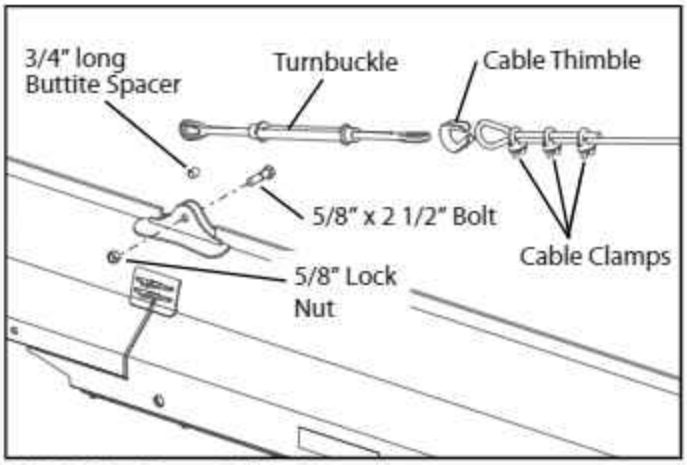


FIG. 3-29. Truss Cable Mounting

3.7.2 1590 Truss Assembly

1. Assemble the Large Truss Tower and install it on the tube using twenty 1/2"x 1 1/4" bolts and lock nuts. See Fig. 3-24.
2. Loosely install one 1/2" Cable Clamp and two 3/8" Cable Clamps on the Truss Tower.
3. Attach the looped end of the 1/2" x 60' truss cable to the top end of the tube and the two 3/8" x 61' cables to the sides of the tube, as shown in Fig. 3-25.
4. Route the cable on the top of the tube through the cable clamp on the top of the truss tower and down to the mount on the lower tube. Do not tighten the cable clamp yet.
5. Extend a Turnbuckle to it's longest length. Attach one end to the mount on the top of the auger tube, where shown in Fig. 3-26. Use a 5/8" x 2 1/2" bolt, a Butt Tite Spacer and a 5/8" lock nut to secure in place.
6. Insert a Cable Thimble in the other end of the Turnbuckle.
7. Slide three Cable Clamps onto the end of the Truss Cable. Insert the end through the eye of the turnbuckle, making sure it is properly positioned in the thimble.
8. While wearing gloves, pull the cable as tight as possible and install a clamp about 12" from the eye of the turnbuckle. Install a second clamp as close as possible to the cable thimble and the third half way between the other two. See Fig. 3-26 for the proper clamp orientation.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

9. Loosely install a 3/8" cable clamp into each of the Side Cable Trusses as shown in Fig. 3-27.
10. Route the cables on the sides of the tube through the cable clamps in the Side Cable Trusses and down to the mount on the lower tube. Do not tighten the cable clamps yet.
11. Repeat steps 5, 6, 7 and 8 with the lateral cables. Use two 3/8" cable clamps on each cable.

NOTE: 3/8" Cable Thimbles and Clamps must be used on 3/8" cables.

12. Attach the looped end of the 43' truss cable to the mount location shown in Fig. 3-23. Use a 5/8" x 2 1/2" bolt, 3/4" spacer and lock nut as shown in Fig. 3-30.

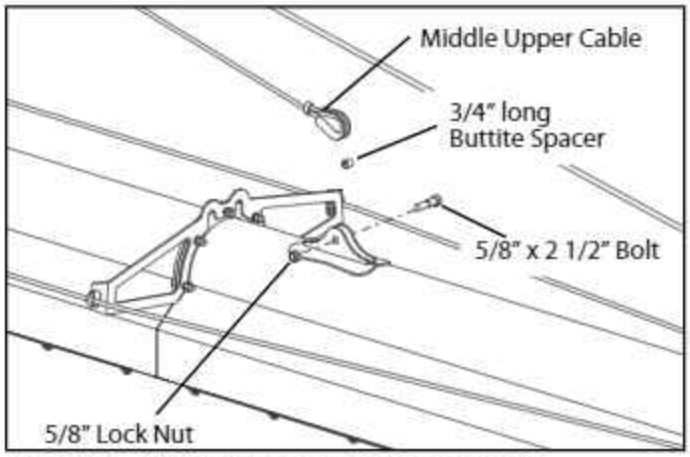


FIG. 3-30. Middle Truss Cable Installation

13. Route the cable through the cable clamp on the middle plate of the truss tower and down to the mount on the tube closest to the lower tube flange. Do not tighten the cable clamp yet. See Fig. 3-23.
14. Repeat steps 5, 6, 7 and 8 with the middle cable. Use two 3/8" cable clamps on the cable.

NOTE: 3/8" Cable Thimbles and Clamps must be used on 3/8" cables.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

15. Attach the looped end of the 25' truss cable to the mount location shown in Fig. 3-23. Use a 5/8" x 2 1/2" bolt, 3/4" spacer and lock nut as shown in Fig. 3-28.
16. Route the cable through the cable clamp on the bottom plate of the truss tower and down to the mount in the middle of the Suspension Tube. Do not tighten the cable clamp yet. See Fig. 3-23.

17. Repeat steps 5, 6, 7 and 8 with this cable. Use two 3/8" cable clamps on the cable.

NOTE: 3/8" Cable Thimbles and Clamps must be used on 3/8" cables.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

3.7.3 15100 Truss Assembly

1. Assemble the Large Truss Tower and install it on the tube using twenty 1/2"x 1 1/4" bolts and lock nuts. See Fig. 3-24.
2. Loosely install one 1/2" Cable Clamp and two 3/8" Cable Clamps on the Truss Tower.
3. Assemble the Short Truss Tower and attach it and the looped end of the 51' cable to the mount shown in Fig. 3-23 and Fig. 3-31.
4. Attach the looped end of the 1/2"x 69' truss cable to the top end of the tube and the two 3/8" x 68' cables to the sides of the tube, as shown in Fig. 3-25.

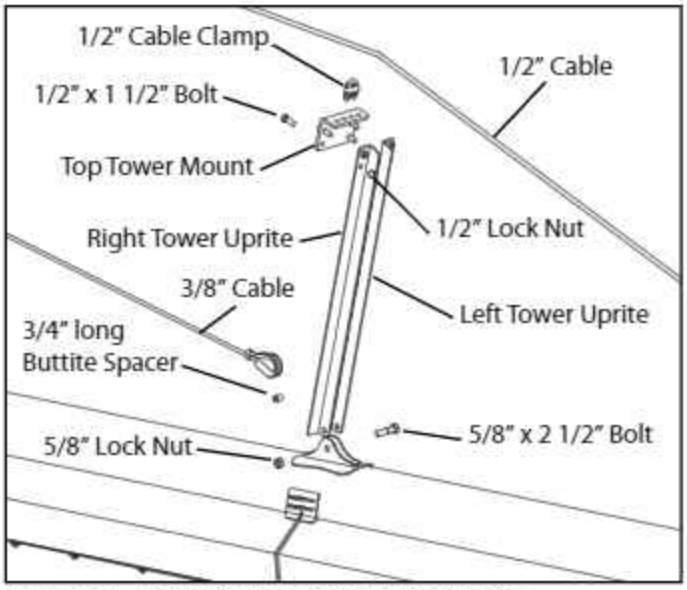


FIG. 3-31. Short Truss Tower Installation

5. Route the cable on the top of the tube through the cable clamp on the top of both truss towers and down to the mount on the lower tube. Do not tighten the cable clamps yet.
6. Extend a Turnbuckle to it's longest length. Attach one end to the mount on the top of the auger tube, where shown in Fig. 3-26. Use a 5/8" x 2 1/2" bolt, a Butt Tite Spacer and a 5/8" lock nut to secure in place.
7. Insert a Cable Thimble in the other end of the Turnbuckle.
8. Slide three Cable Clamps onto the end of the Truss Cable. Insert the end through the eye of the turnbuckle, making sure it is properly positioned in the thimble.
9. While wearing gloves, pull the cable as tight as possible and install a clamp about 12" from the eye of the turnbuckle. Install a second clamp as close as possible to the cable thimble and the third half way between the other two. See Fig. 3-26 for the proper clamp orientation.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

10. Loosely install a 3/8" cable clamp into each of the Side Cable Trusses as shown in Fig. 3-27.
11. Route the cables on the sides of the tube through the cable clamp in the Side Cable Trusses and down to the mount on the lower tube. Do not tighten the cable clamps yet.
12. Repeat steps 6, 7, 8 and 9 with the lateral cables. Use two 3/8" cable clamps on each cable.

NOTE: 3/8" cable Thimbles and Clamps must be used on 3/8" cables.

13. Attach the looped end of the 51' truss cable to the mount location shown in Fig. 3-23, if not already done. Use a 5/8" x 2 1/2" bolt, 3/4" spacer and lock nut as shown in Fig. 3-31.

14. Route the cable through the cable clamp on the middle plate of the truss tower and down to the mount on the tube closest to the lower tube flange. Do not tighten the cable clamp yet. See Fig. 3-23.

15. Repeat steps 6, 7, 8 and 9 with this cable. Use two 3/8" cable clamps on each cable.

NOTE: 3/8" cable Thimbles and Clamps must be used on 3/8" cables.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

16. Attach the looped end of the 35' truss cable to the mount location shown in Fig. 3-23. Use a 5/8" x 2 1/2" bolt, 3/4" spacer and lock nut as shown in Fig. 3-28.

17. Route the cable through the cable clamp on the bottom plate of the truss tower and down to the mount in the middle of the Suspension Tube. Do not tighten the cable clamp yet. See Fig. 3-23.

18. Repeat steps 6, 7, 8 and 9 with this cable. Use two 3/8" cable clamps on each cable.

NOTE: 3/8" cable Thimbles and Clamps must be used on 3/8" cables.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

3.8 Cable Truss Tensioning

1. Adjust the height of the tube so it appears straight when viewed from the side.

2. Wrap a sling around the upper tube where shown in Fig. 3-32, leaving the intake end on the stand. **CAREFULLY AND VERY SLOWLY,** raise the discharge end of the conveyor to the dimension shown in Fig. 3-32. This will put a bow in the conveyor tube. Be extremely careful not the kink the tube.

3. While wearing gloves, pull the upper truss cables as tight as possible and tighten the cable clamps. **Torque the cable clamps to 45 ft.lbs.** Tension the top long cable by adjusting the turnbuckle. Tighten the other top cables until they are tight. When the cables are adequately tight, tighten down each of the clamps on the Main Truss Tower. Re-torque the clamps on the turnbuckles. Lower the discharge end of the tube. Measure the distance between the tube and the stand. It should be very close to dimension 'B' in Fig. 3-32.

FIG. 3-32. Lifting the Discharge End of the Tube

If the measured dimension is less than dimension 'B'

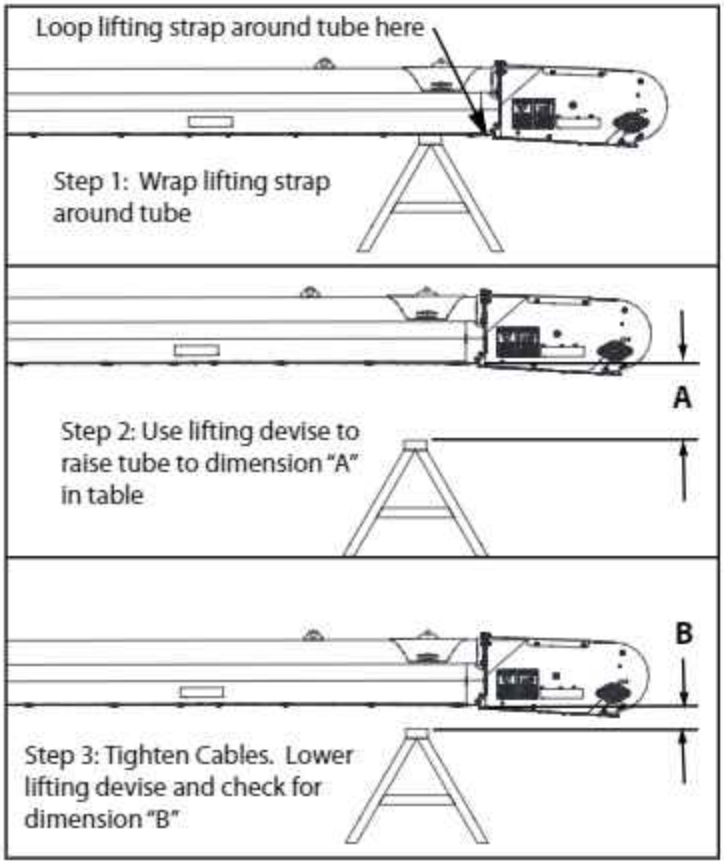
Raise the discharge end of the tube again, until the cables are slack and tighten the turnbuckles more. Lower the tube and recheck the distance between the tube and the stand. Readjust if necessary.

If the measured dimension is more than dimension 'B'

Adjust the turnbuckles to lower the discharge end to dimension 'B'.

NOTE: The cables will stretch after some use and will require re-tightening as time passes.

4. On the 15100 conveyor, adjust the position of the Short Truss Tower as shown in Fig. 3-33. Make the angle of the truss tower to the upper truss cable approximately the same on both sides of the tower. An approximate angle from the tube to the truss tower is shown in Fig. 3-33.



Conveyor Size	Approx. Lifting Height above stand (A)	Final Height above stand (B)
1580	10"	2"
1590	12"	2"
15100	20"	2"

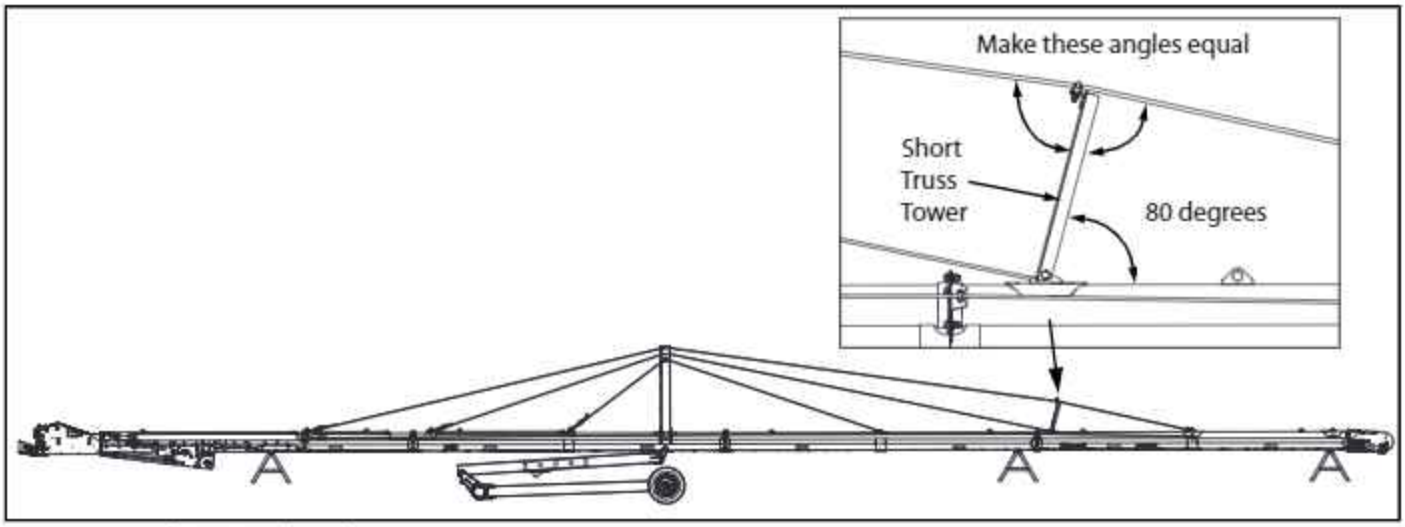


FIG. 3-33. Adjusting the Short Truss Tower - 15100

5. Re-torque the clamps on the turnbuckles to 45 ft.lbs.

6. Tighten the clamps on all the Truss Towers.

7. Tension the side cables evenly by adjusting the turnbuckles. Tighten the cable until they are adequately tight while keeping a eye on the tube to make sure it remains straight. Re-torque the clamps on the turnbuckles to 45 ft.lbs. Tighten the clamps on all the Side Cable Trusses.

3.9 Belt Installation

1. Unroll a few feet of belt and trim the corners of the leading end as shown in Fig. 3-34. Make sure to trim only the end shown. Fig. 3-34 shows the direction of travel of the belt

NOTE: Note how the edge of the chevron is pointing in the belt direction. **Make sure the leading end of the belt goes first.** Check that all the staples which hold the lacing to the belt are crimped properly.

2. Fig 3-35 shows where to start feeding the belt into the conveyor. Make sure the leading end is inserted first, with the slider backing on top. The belt goes over the support tube shown and under and around the Intake Roller.

3. Insert a Fish Tape into the discharge end of the conveyor and push it down the tube to the Intake end.

4. Attach the "fish tape" to the belt by running a wire through the lacing.

CRITICAL Make sure that tube assembly is properly held in position so that it doesn't fall off the stands when pulling the belt through.

5. Pull the belt through the tube to the discharge end. Bring the belt through the discharge as shown in Fig. 3-36.

6. Pull the belt back toward the intake making sure the belt is inside the Wind Guards.

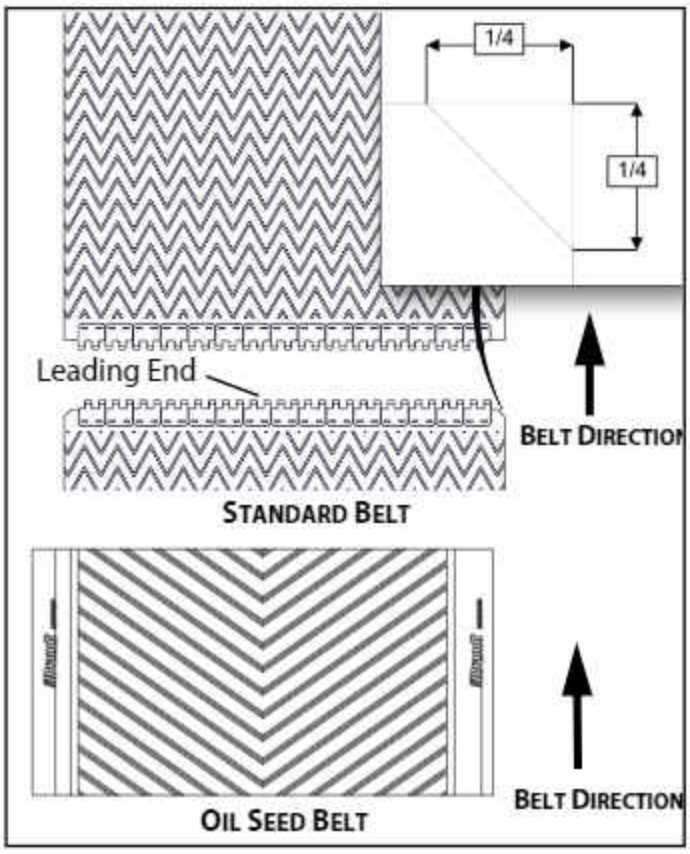


FIG. 3-34. Notching the Belt's Leading End

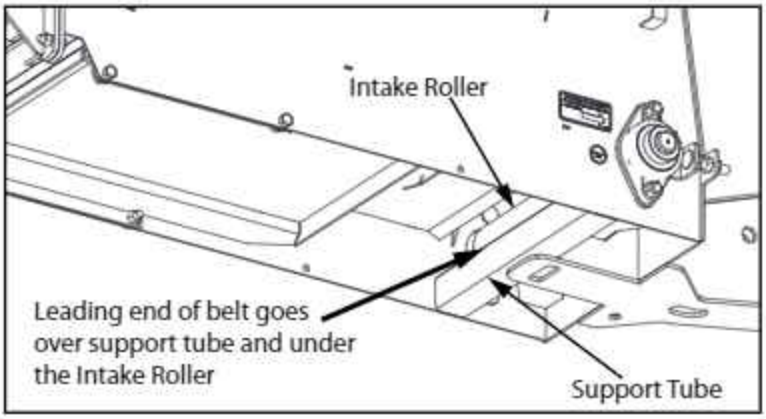


FIG. 3-35. Inserting the Belt

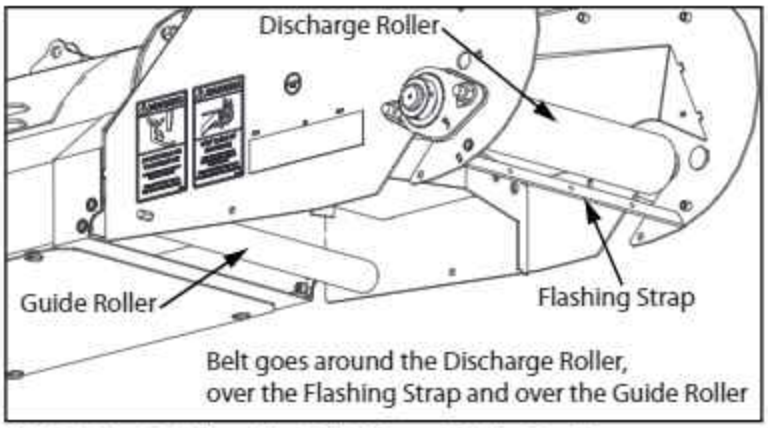


FIG. 3-36. Guiding the Belt through the Discharge

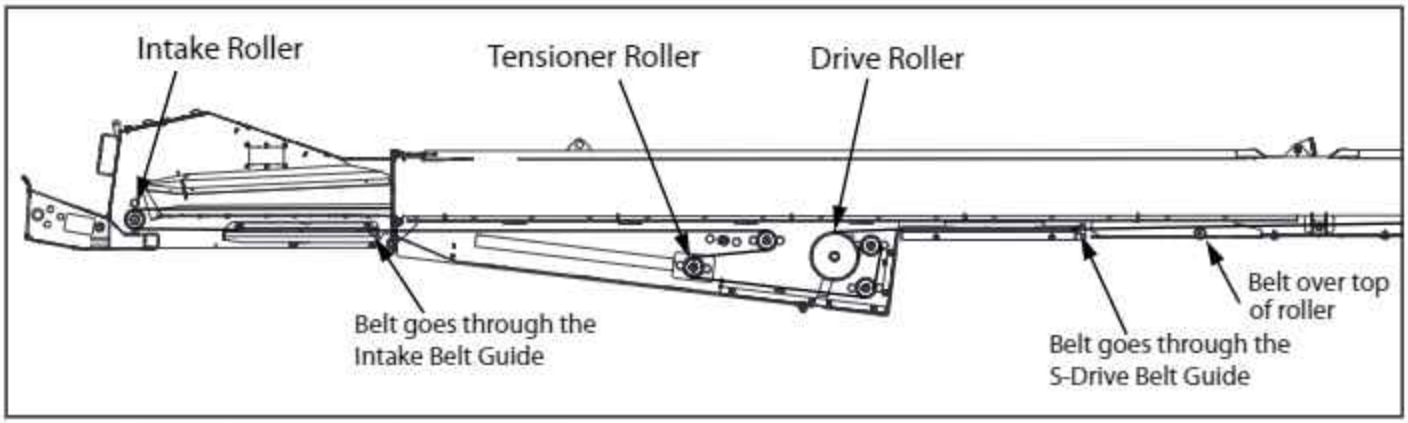


FIG. 3-37. Belt Routing through the S-Drive

7. Thread the belt through the S-Drive Belt Guide and around the S-Drive Rollers as shown in Fig 3-37.

NOTE: Make sure the tensioner roller on the S-Drive has been backed-off to it's loosest position.

8. Bring the end of the belt through the S-Drive, through the Intake Belt Guide and connect it to the other end of the belt using the lacing pin.

9. Squeeze the portion of the outside lacing clip as shown in Fig 3-38. Make sure the clip bites into the plastic of the lacing pin to hold it in place. Do this on one lacing clip only.

10. Trim the excess pin with side cutters. Do not leave any pin extending past the edge of the belt. Apply a coating of silicone over the lacing.

11. Turn the Tensioner Roller Adjusting Bolts (on the S-Drive) to tighten the conveyor belt. Refer to Section 5.4 for proper tensioning of the conveyor belt.

NOTE: Make sure the belt is centered on the rollers.

12. Install the two pieces of Flashing and the Flashing Retainer to the inside the boot using five 1/4" x 1" bolts and lock nuts, as shown in Fig. 3-39. Make sure the Outer Flashing with Wings is on the outside. Fasten the top of the wings to the side of the intake using a #10 x 5/8" TEK Screw in each.

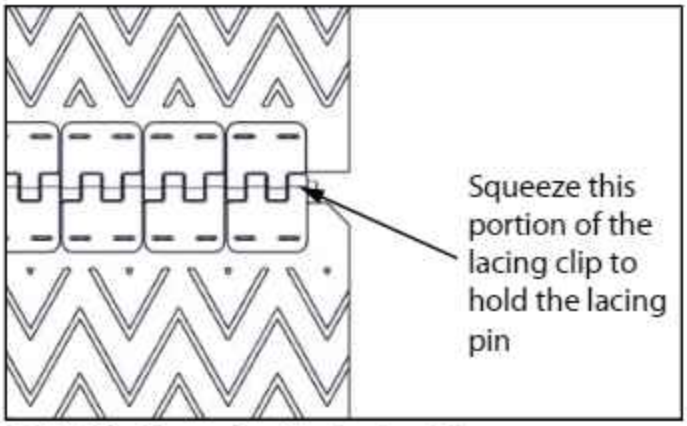


FIG. 3-38. Squeezing the Lacing Clip

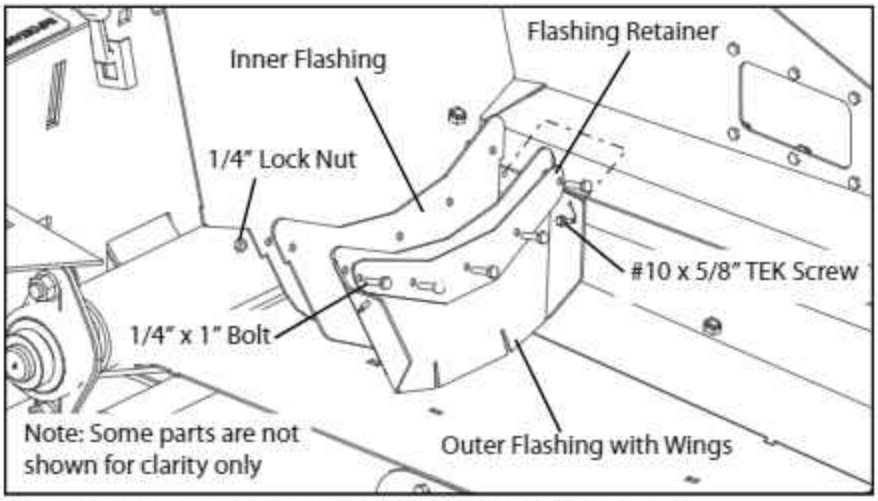


FIG. 3-39. Installing the Belt Flashing inside the Boot

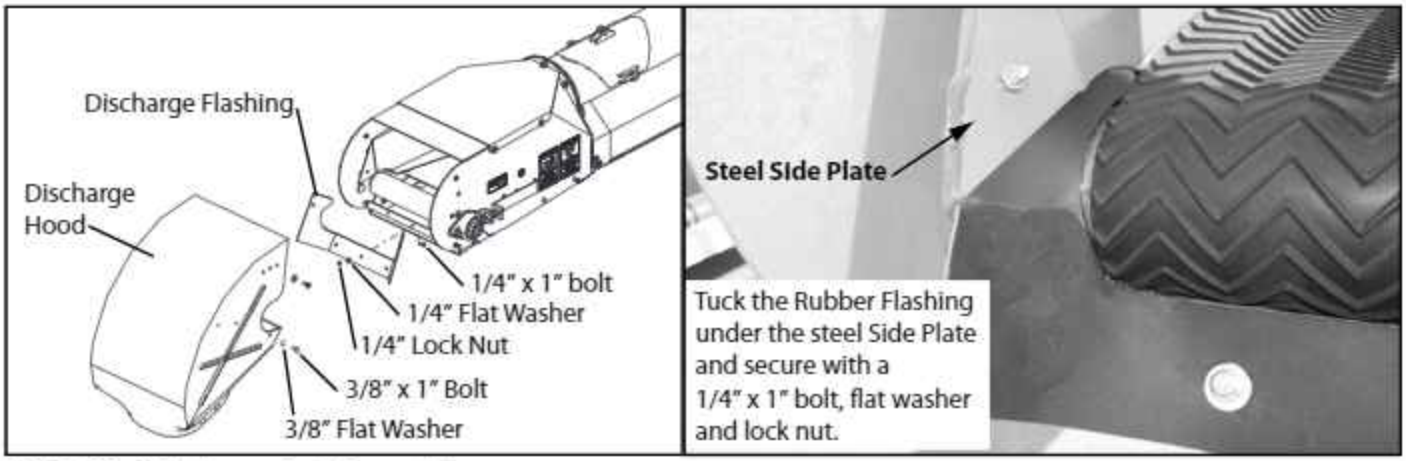


FIG. 3-40. Discharge End Assembly

13. Attach the Discharge Flashing to the Discharge Weldment using five 1/4" x 1" bolts, flat washers and lock nuts. The flashing goes on the side away from the roller, as shown. Ensure the flashing is tight against the metal backing. Tuck the ends under the side plates as shown in Fig 3-40.

14. Attach the Discharge Hood to the Discharge Weldment using four 3/8"x 1" bolts and flat washers. Use the center hole in the upper locations at this time. See Fig 3-40.

15. Attach the Lower Cover to the tube using six 1/2" x 1" carriage bolts and serrated flange nuts, as shown in Fig. 3-41.

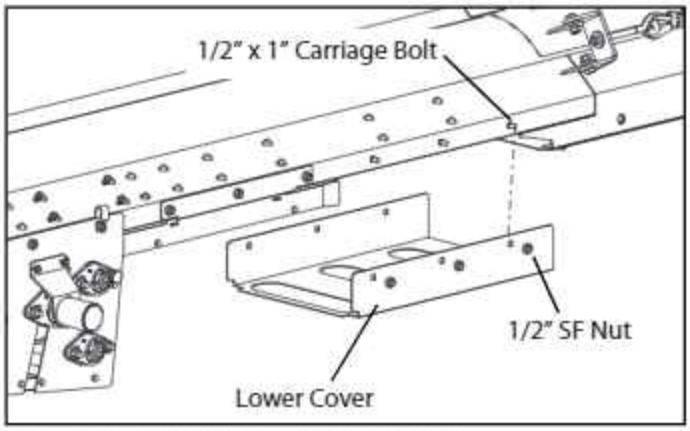


FIG. 3-41. Lower Cover Installation

3.10 Final Undercarriage Assembly

1. Wrap a sling around the tube, close to the Truss Tower as shown in Fig. 3-42. Raise the tube about 4 feet.
2. Wrap another sling around the tube, close the Boot. Raise the tube high enough to remove the stand from under the Lower Tube. Lower the intake end to the ground.
3. Install the Transport Uprites and the Transport Rest as shown in Fig. 3-42, using sixteen 1/2"x 1 1/4" bolts and lock nuts. Make sure the Transport Uprites are tipped toward the intake of the conveyor.

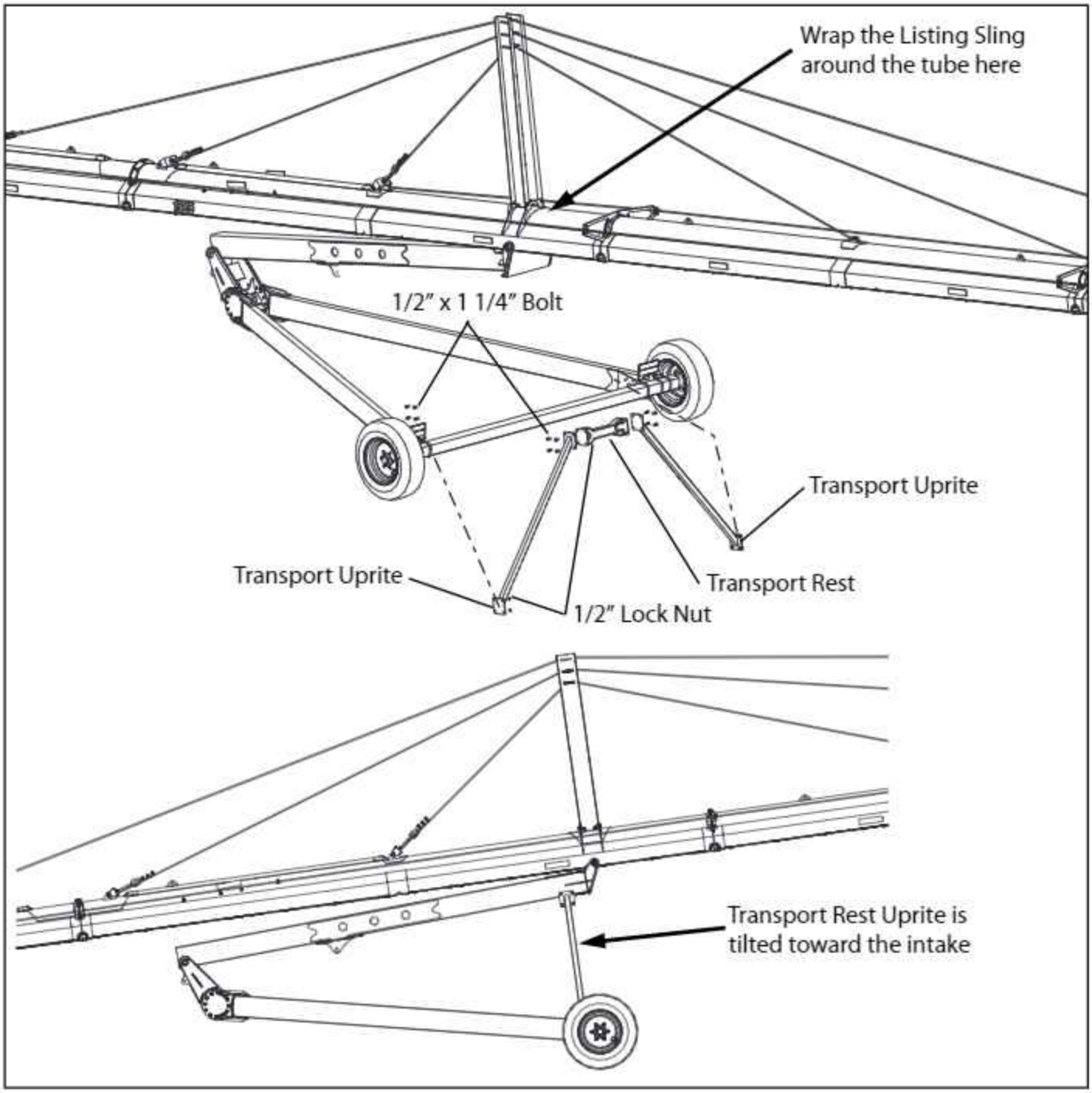


FIG. 3-42. Transport Rest Installation

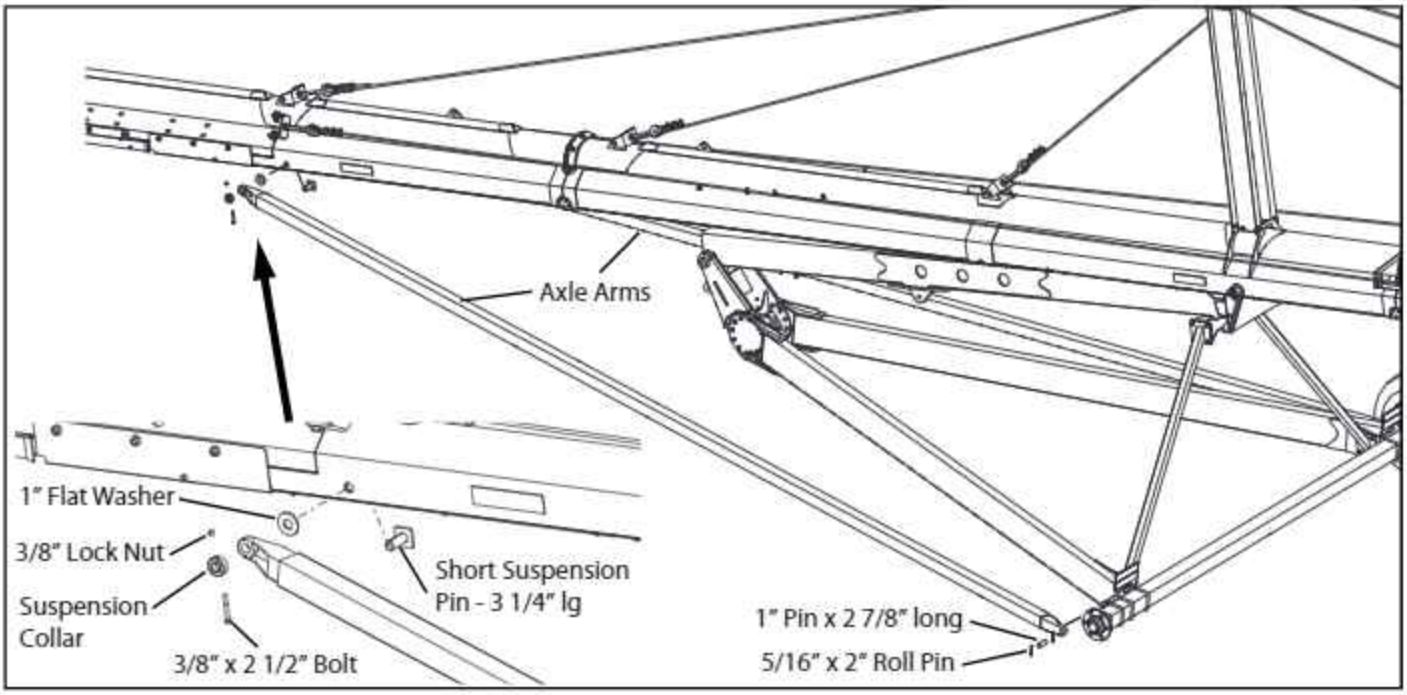


FIG. 3-43. Attaching the Axle Arms

4. Apply a thin layer of grease to the 1" dia x 2 7/8" pins. Attach the Axle Arms to the lugs welded to the Axle using the pins. See Fig. 3-43. Secure each pin in place using two 5/16"x 2" roll pins.

5. Wrap a sling around the Ladder and raise it until the Lift Arms are off the ground by approximately 12".

6. Insert the Short Suspension Pin (3 1/4" lg) through the hole in the side panel, from the inside, as shown in Fig. 3-43. Slide a 1" flat washer onto the outside of the pin. Do this on both sides.

7. Adjust the height of the tube and Ladder to allow connecting the Axle Arms to the tube. Slide the Suspension Collar onto the pin and secure in place using a 3/8" x 2 1/2" bolt and lock nut.

8. Install the Axle Arm Cross Brace between the Axle Arms using four 3/8"x 3" U-bolts (1580 & 1590) or 3/8"x 4" U-bolts (15100) and eight flange lock nuts. Do not tighten the nuts at this time. Position the Cross Brace so the lugs on the back of the Lift Cross will rest on the Cross Brace. See Fig. 3-44.

9. Carefully lower the tube and Ladder until the Ladder is sitting on the Transport Rest. Adjust the height and location of the Axle Arm Cross Brace so the lugs on the back of the Lift Cross are resting on it. Tighten the U-bolt nuts.

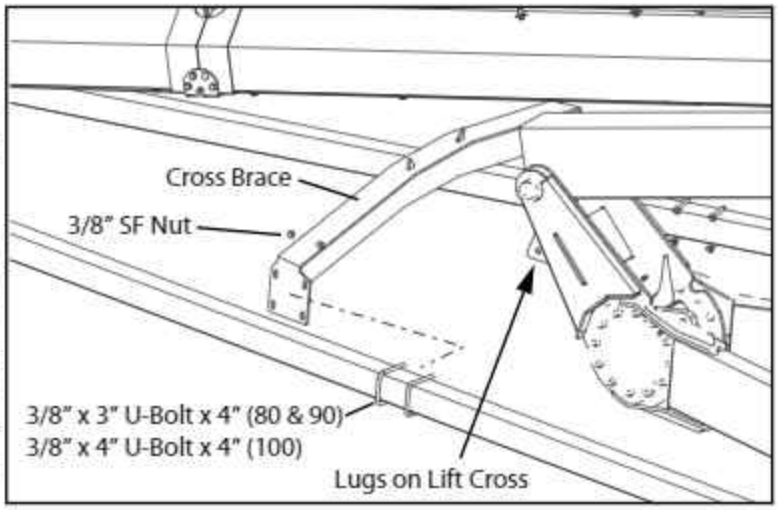


FIG. 3-44. Axle Arm Cross Brace Installation

10. Mount the Plastic Manual Holder on the right Axle Arm using two Manual Holder Brackets, two 1/4" U-bolts, three 1/4" x 3/4" bolts, flat washers and seven 1/4" flange lock nuts. See Fig. 3-45.

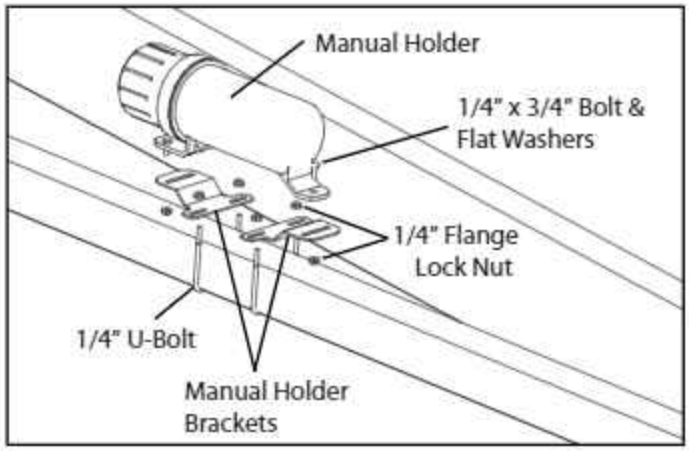


FIG. 3-45. Manual Holder Installation

3.11 Hydraulic Cylinder Installation

1. Install the #8MORB x #6MJIC fitting in the base end port of the hydraulic cylinder. See Fig. 3-46.
2. Install the #8MORB Breather fitting in the rod end port.
3. Mount the hydraulic cylinder between the Lift Cross and the Ladder with the rod end connected to the Ladder. See Fig. 3-46. It may be necessary to lift the auger tube slightly to make room for the cylinder. Make sure the ports are down.

NOTE: Due to factory pressure testing of the cylinders, there may be a small amount of oil left in the rod end cavity of the cylinder which will be forced out of the vented breather plug when extending the cylinder for the first time. This does not indicate leaking internal seals. Remove the vented breather plug when extending the cylinder for the first time and provide a catch basin to catch the expelled oil.

NOTE: Do not attach a hose to the rod end of the cylinder to make it dual acting. Damage to the tube and under carriage could occur.

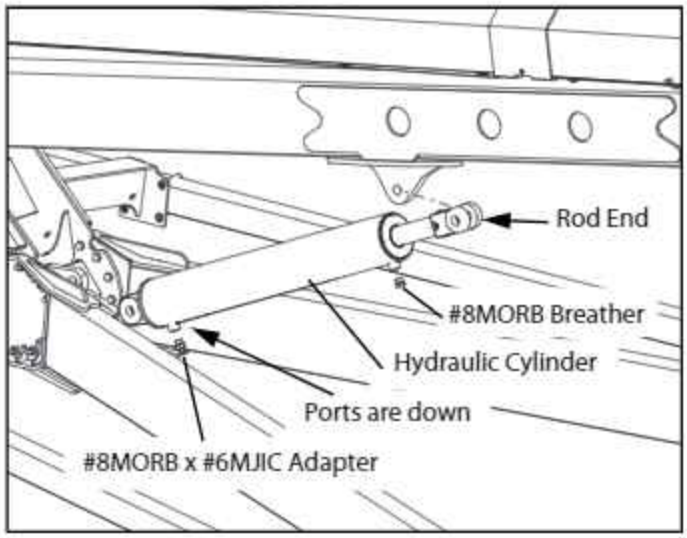


FIG. 3-46. Lift Cylinder Installation

4. Insert a Rubber Grommet into the oval holes in both ends of the right Lift Arm, as shown in Fig. 3-48 and 3-49.

5. Attach the female end of the hydraulic hose to the fitting in the base end of the cylinder. See Fig. 3-47.

6. Route the hydraulic hose as shown in Fig. 3-47, 3-48, 3-49 and 3-50. Slide the hose through the oval hole in the Lift Arm. See Fig. 3-48. Push the hose down the inside of the lift arm and out the hole shown in Fig. 3-49. Push the hose up the inside of the Axle Arm to the tube connection. Install six evenly spaced Hose Holders to the Lower Cover and S-Drive mounting bolts, as shown in Fig.3-51. Run the hose through the Hose Holders to the boot. The hose goes through the two loops welded to the side of the boot. Use the triple hose holder attached to the boot to further hold the hose. See Fig. 3-50.

7. Thread the metal ball valve onto the end of the hose. Attach the 1/2" MPT x 3/8" MPT adapter and the Male Pioneer tip to the other end of the ball valve. Use teflon tape or pipe sealant on all tapered pipe threads. See Fig. 3-52.

FIG. 3-47. Hydraulic Hose to the Cylinder

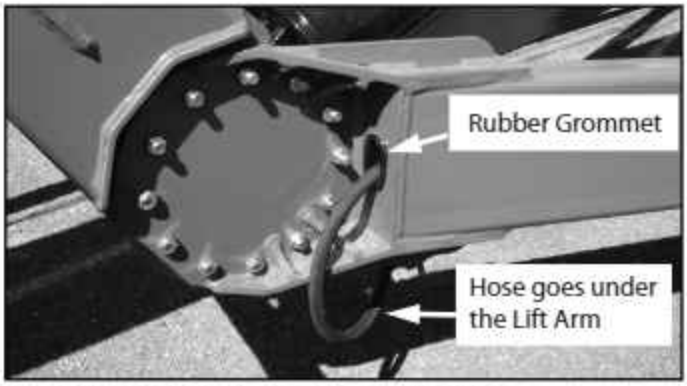


FIG. 3-48. Hydraulic Hose into Lift Arm

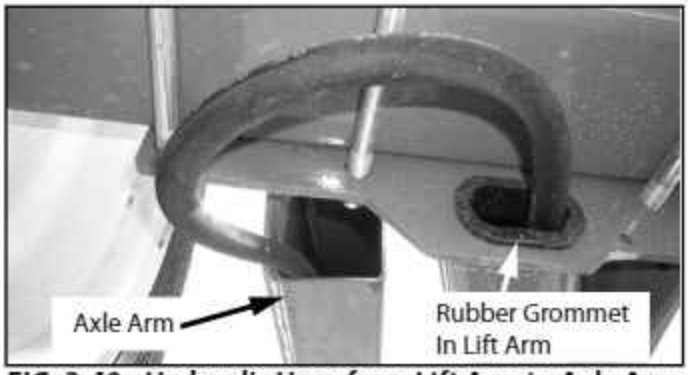


FIG. 3-49. Hydraulic Hose from Lift Arm to Axle Arm

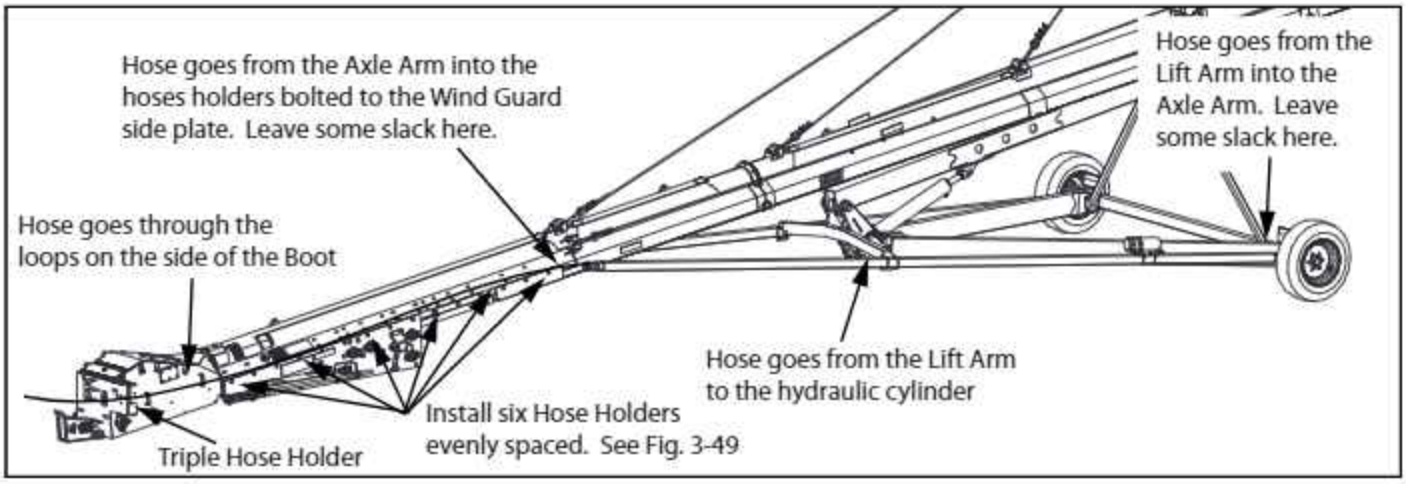


FIG. 3-50. Routing the Hydraulic Hose through the Undercarriage

FIG. 3-51. Hydraulic Hose Holder

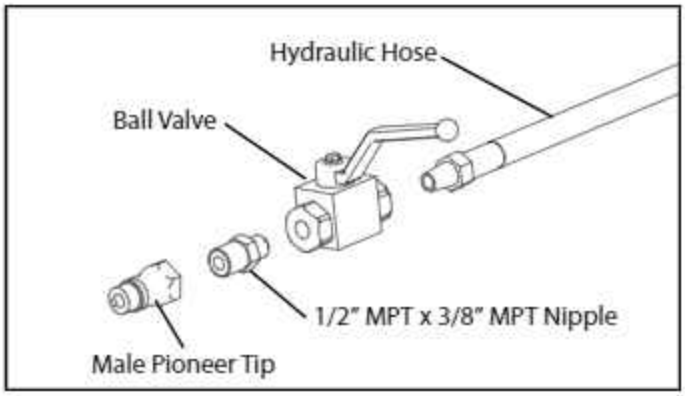


FIG. 3-52. Installing Fittings on the Hose End

3.12 End Drive Installation

NOTE: The Jackshaft may already be installed in the S-Drive. If so, proceed to step 4.

1. Loosely attach a 1 1/4" Bearing and Bearing Backing Plate on both sides of the S-Drive where shown in Fig. 3-53. Use 5/8"x 2" carriage bolts and serrated flange nuts. Do not tighten the nuts yet.

2. Slide the Jackshaft through the bearings and position it so there is an equal amount of shaft sticking through each bearing. See Fig. 3-54.

3. Tighten the bearing nuts. Lock the bearing lock collars. Remove the lock collar set screws, apply medium strength thread locking compound to them, reinstall and tighten.

4. Install a 1/4" x 2" Key on the Jackshaft and apply a coating of anti-seize compound to the end of the shaft. See Fig. 3-55.

5. Position the gearbox as shown in Fig. 3-55 and turn the splined input in the direction shown. Make sure the output tube is turning in the direction shown.

6. Slide the gearbox onto the Jackshaft.

7. Attach the Gearbox Mount to the top of the gearbox using two 1/2" x 1 1/4" serrated flange bolts at this time. The other two bolts will be installed later.

8. Mount the Gearbox Mount between the lugs on the S-Drive using two 1/2" x 1 1/4" serrated flange bolts and nuts.

9. Slide a 3/8" lock washer and the Key Stop Washer onto the 3/8" x 1 1/4" bolt. Thread the bolt into the end of the Jackshaft.

10. Install the 1 1/2" plastic plug into the gearbox tube as shown.

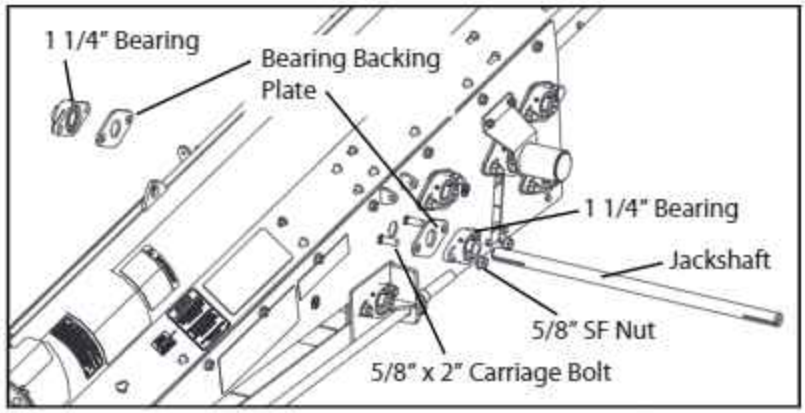


FIG. 3-53. Jackshaft Installation

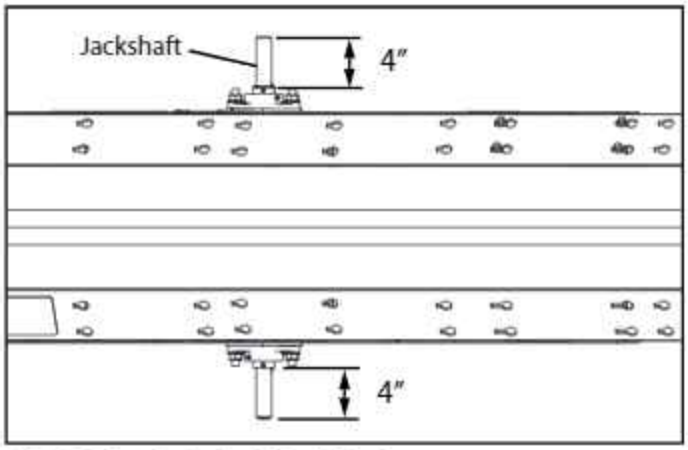


FIG. 3-54. Jackshaft Positioning

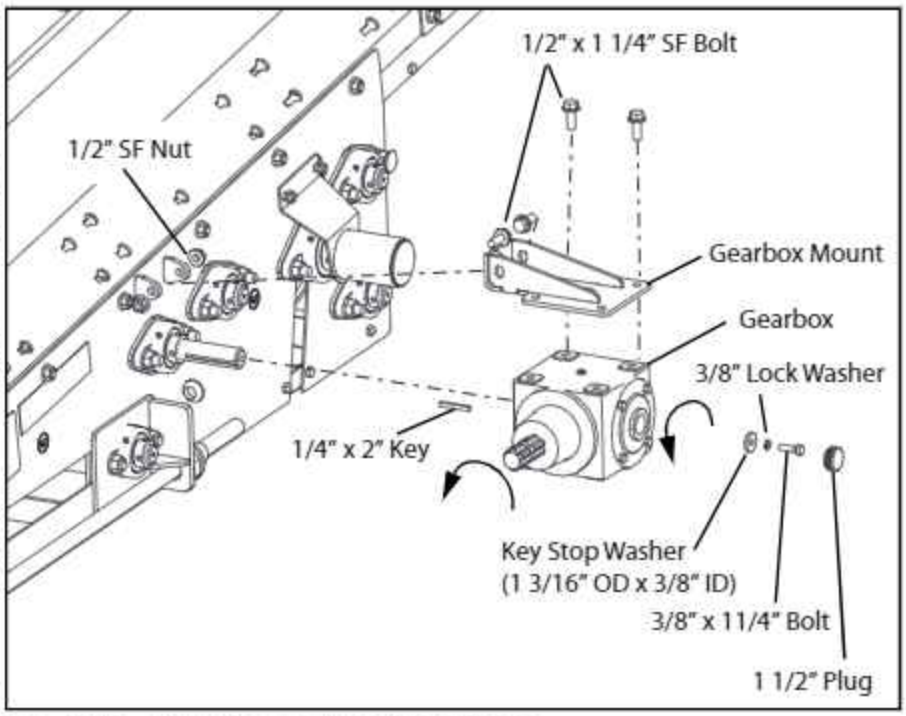


FIG. 3-55. End Drive Gearbox Installation

11. Loosely mount the Connecting Shaft Bearing to the Boot where shown in Fig. 3-56, using two 5/8" x 1 1/2" carriage bolts and serrated flange nuts. Do not fully tighten the nuts yet.

12. Attach the Coupler Guard Mount Plate to the Plastic Coupler Guard using two 3/8" x 3/4" bolts and locking flange nuts. See Fig. 3-57.

13. Slide a 2 1/2" hose clamp onto each end of the Driveshaft Guard Tube. Slide the Plastic Coupler Guard onto one end of the tube, far enough that the end of the tube is exposed.

14. Install a 1/4" x 1 1/2" key into the keyway in one end of the Connecting Shaft. Slide the 50x17 Sprocket - 1 1/4" bore onto the shaft, so it is flush with the end of the shaft. Secure in place with two 5/16"x 1/2" set screws.

15. Slide the 50x17 Sprocket -Splined Bore onto the gearbox input shaft. Position the sprocket so it is flush with the end of the shaft.

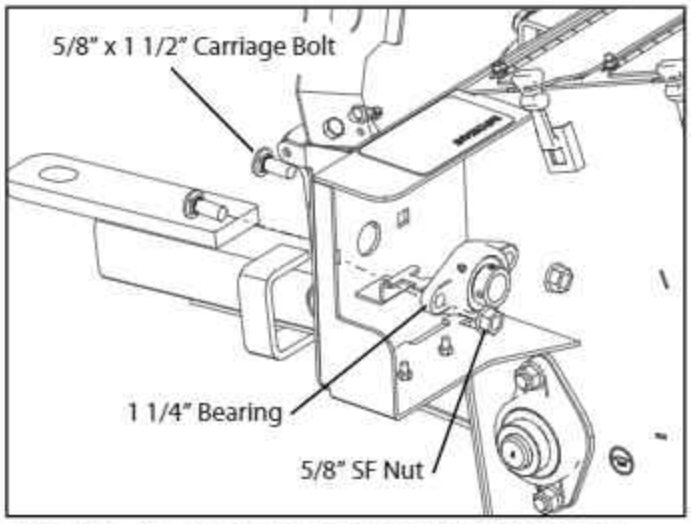


FIG. 3-56. Connecting Shaft Bearing Installation

16. Insert the end of the Connecting Shaft into the Guard Tube and slide the shaft through the bearing mounted to the boot. Adjust the position of the shaft so the two coupler sprockets line up and install the 50-2 Coupling Chain.

17. Tighten the nuts on the bearing mounted to the boot.

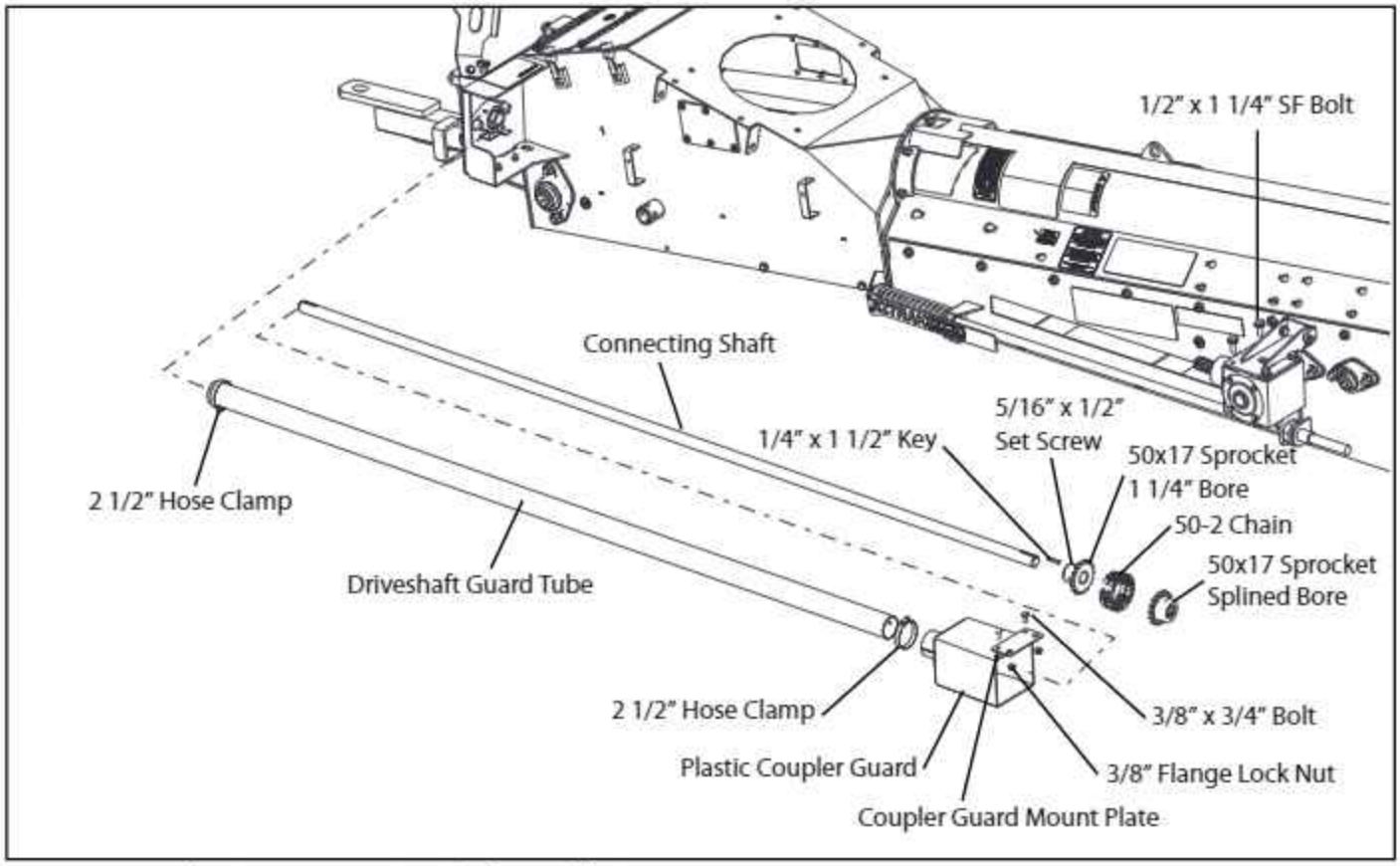


FIG. 3-57. End Drive Connecting Shaft Installation

18. Slide the Coupler Guard over the coupler sprockets and attach it to the gearbox using two 1/2" x 1 1/4" serrated flange bolts.

19. Place the hose clamp at the other end of the Guard Tube over the mount under the bearing and tighten in place.

20. Open the lower boot inspection door and install a 1 1/4" bearing inside the boot as shown in Fig. 3-58. Make sure the grease zerk is up. Fasten in place using two 5/8" x 1 1/2" carriage bolts and serrated flange nuts.

21. Insert the Splined Input Shaft through a 1 1/4" Bearing. Place a 1/4" x 1 1/2" key in the keyway.

22. Position the 60-2 x 21 tooth Sprocket between the boot plate and the bearing mount bracket and push the Input Shaft through it and the bearing inside the boot. Position the shaft so there is 1/4" of shaft past the lock collar of the bearing inside the boot as shown in Fig. 3-59. Fasten the outer bearing in place using two 5/8" x 1 1/2" carriage bolts and serrated flange nuts. See Fig. 3-60.

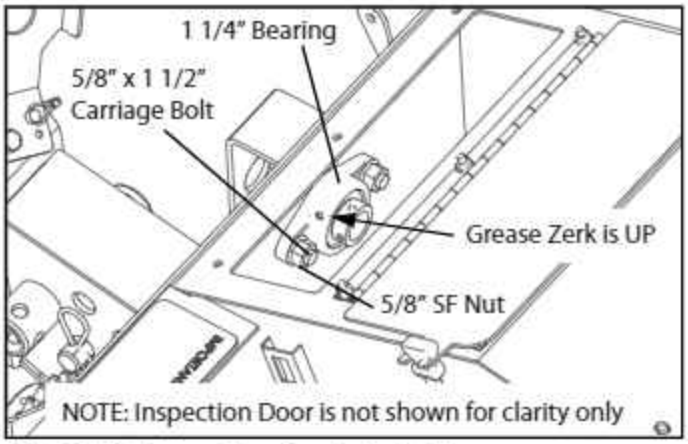


FIG. 3-58. Inner Bearing Installation

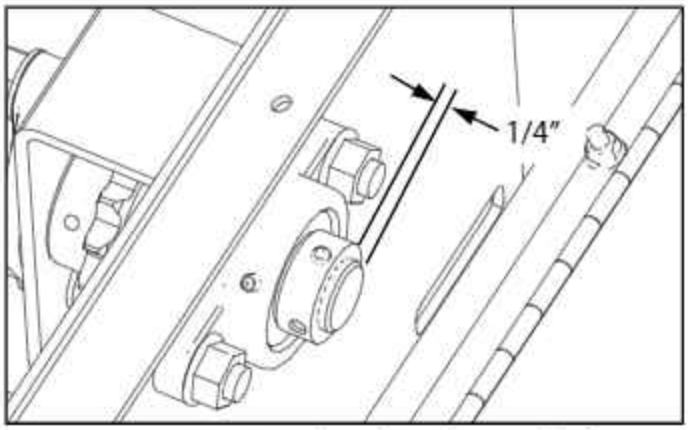


FIG. 3-59. Positioning the Splined Input Shaft

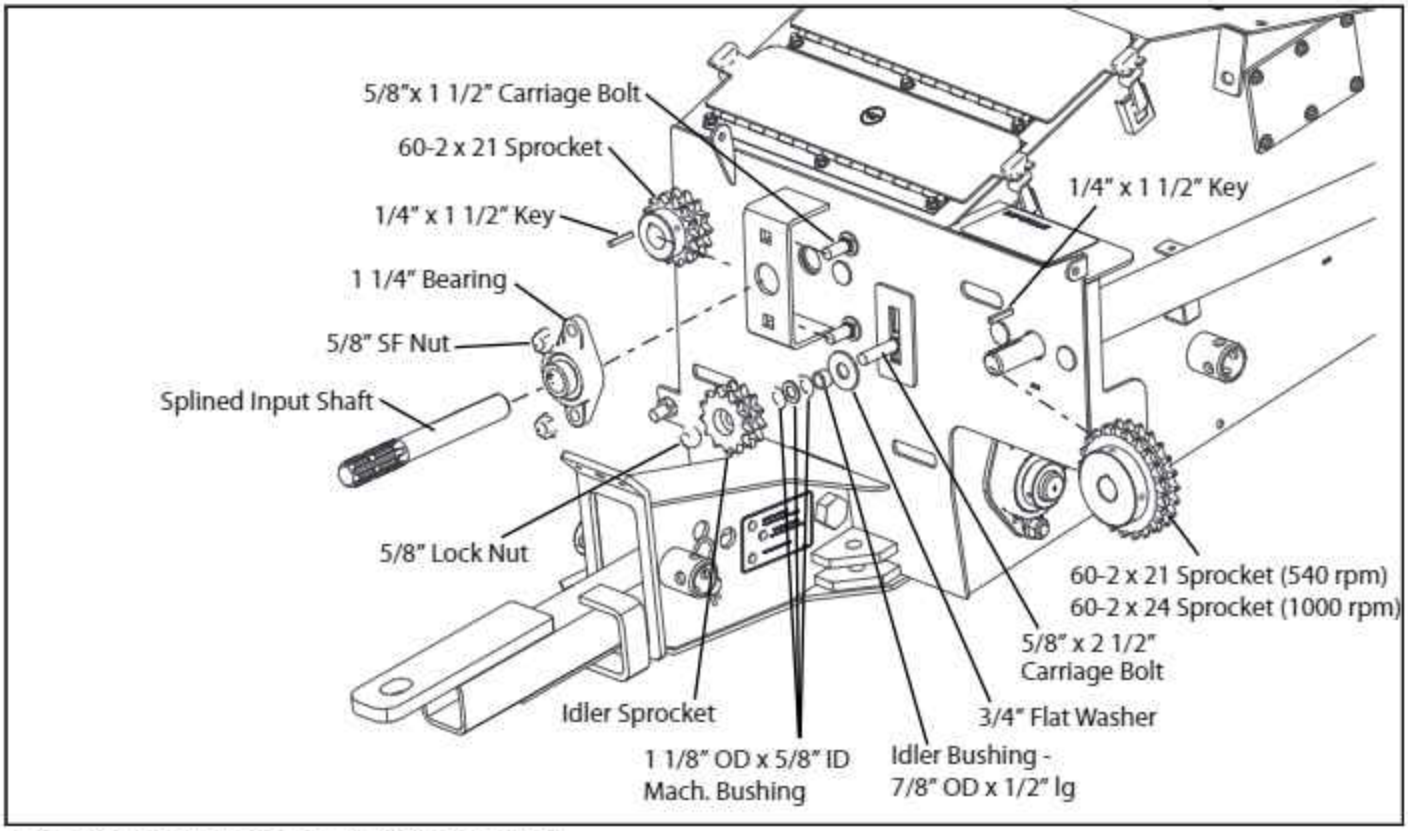


FIG. 3-60. End Drive Input Shaft Assembly

23. Insert the 5/8" x 2 1/2" carriage bolt through the slot in the back wall of the boot, from the inside, as shown in Fig. 3-60.

24. Onto the carriage bolt mount the following: a 3/4" flat washer, the short Idler Bushing (7/8" OD x 1/2" long), three 1 1/8" OD x 5/8" ID machinery bushings, the Idler Sprocket and a 5/8" lock nut. Tighten the nut (the nut will be loosened later when the chain is installed).

25. Insert a 1/4" x 1 1/2" key into the keyway on the end of the Connecting Shaft. Loosely install either the 60-2 x 21 tooth sprocket (540 rpm kit) or the 60-2 x 24 tooth sprocket (1000 rpm kit).

26. Align the two driving sprockets with the Idler Sprocket and tighten the sprocket set screws to hold them in place. Use medium strength thread locking compound on the set screws.

27. Loosen the Idler sprocket nut and install the roller chain. Make sure the lower span of the chain goes over the idler as shown in Fig. 3-61. Adjust the position of the idler to tighten the chain and tighten the idler nut.

28. Install a Rubber latch where shown in Fig. 3-61.

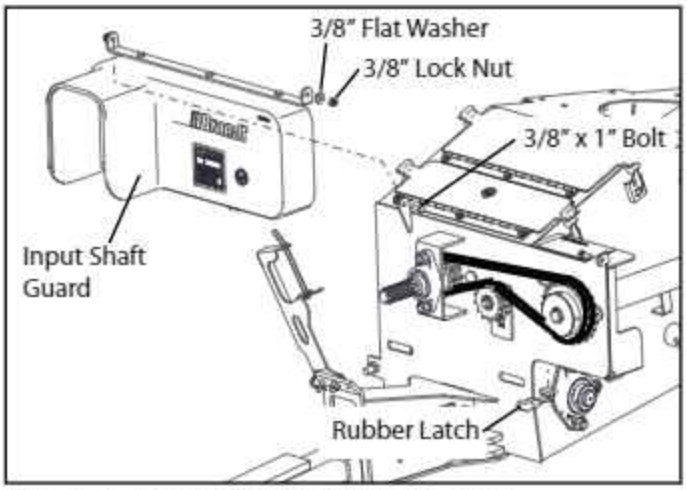


FIG. 3-61. Input Shaft Guard Assembly

29. Mount the Input Shaft Guard to the boot using two 3/8" x 1" bolts, flat washers and lock nuts.

30. Insert the 5/8" x 3" carriage bolt through the slot in the bracket welded to the side of the S-Drive, from the inside, as shown in Fig. 3-62.

31. Onto the carriage bolt mount the following: a 3/4" flat washer, the long Idler Bushing (7/8" OD x 1" long), four 1 1/8" OD x 5/8" ID machinery bushings, the Idler Sprocket and a 5/8" lock nut. Tighten the nut (the nut will be loosened later when the chain is installed).

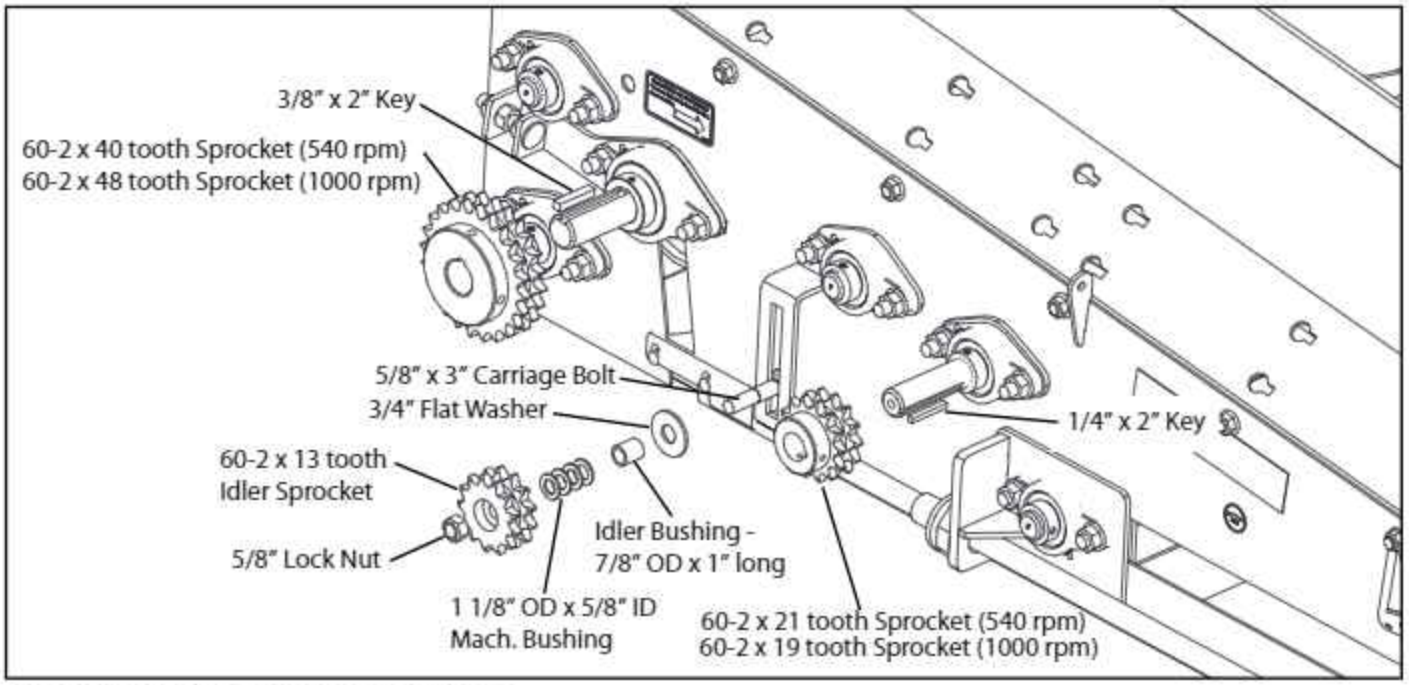


FIG. 3-62. S-Drive Sprocket Installation

32. Insert a 1/4" x 2" key into the keyway on the end of the Jack Shaft. Loosely install the 60-2 x 14 tooth sprocket.

33. Insert the 3/8" x 2" key into the keyway on the end of the Drive Roller. Loosely install the 60-2 x 24 tooth sprocket.

34. Align the two driving sprockets with the Idler Sprocket and tighten the sprocket set screws to hold them in place. Use medium strength thread locking compound on the set screws.

35. Loosen the Idler sprocket nut and install the roller chain. Make sure the lower span of the chain goes over the idler as shown in Fig. 3-63. Adjust the position of the idler to tighten the chain and tighten the idler nut.

36. Install a Rubber latch where shown in Fig. 3-64.

37. Mount the S-Drive Chain Guard to the boot using two 3/8" x 1" bolts, flat washers and lock nuts. See Fig. 3-64.

38. Install the implement jack in a vertical position with the retaining pin securely in place as shown in Fig. 3-65. Mount the Jack on the same side of the main conveyor as the Swing Conveyor will be mounted on.

39. Install the PTO Shaft on the drive stub and place in the holder.

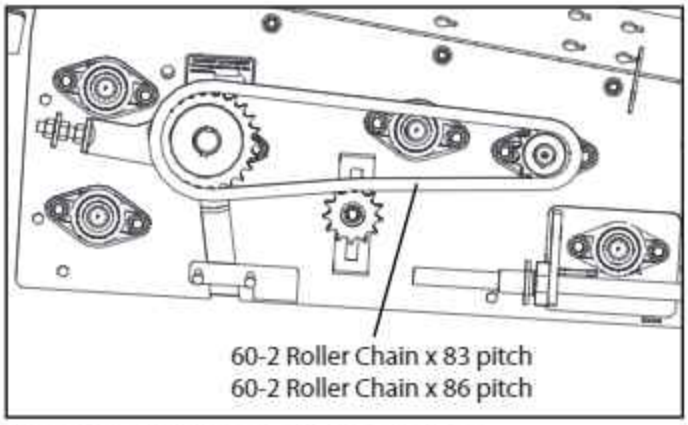


FIG. 3-63. S-Drive Chain Installation

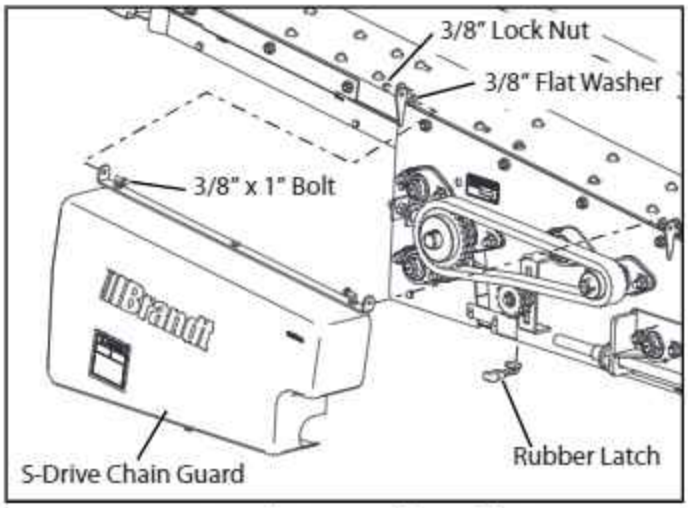


FIG. 3-64. S-Drive Chain Guard Installation

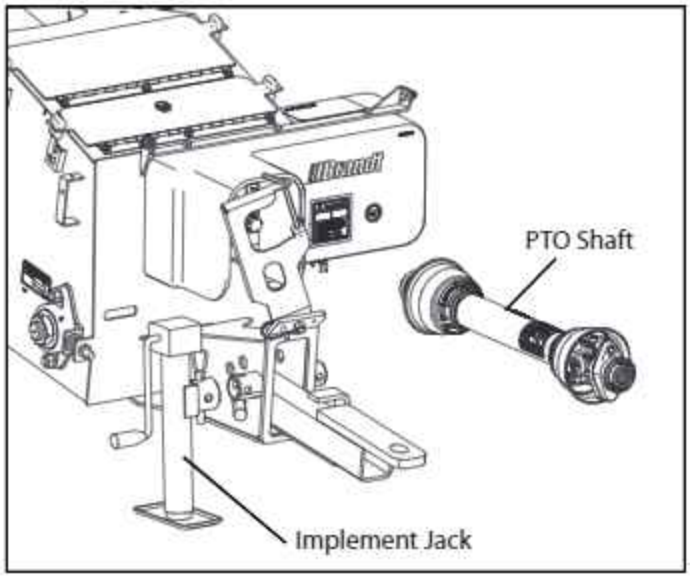


FIG. 3-65. PTO Shaft and Jack Installation

3.13 Lift Arm Assembly

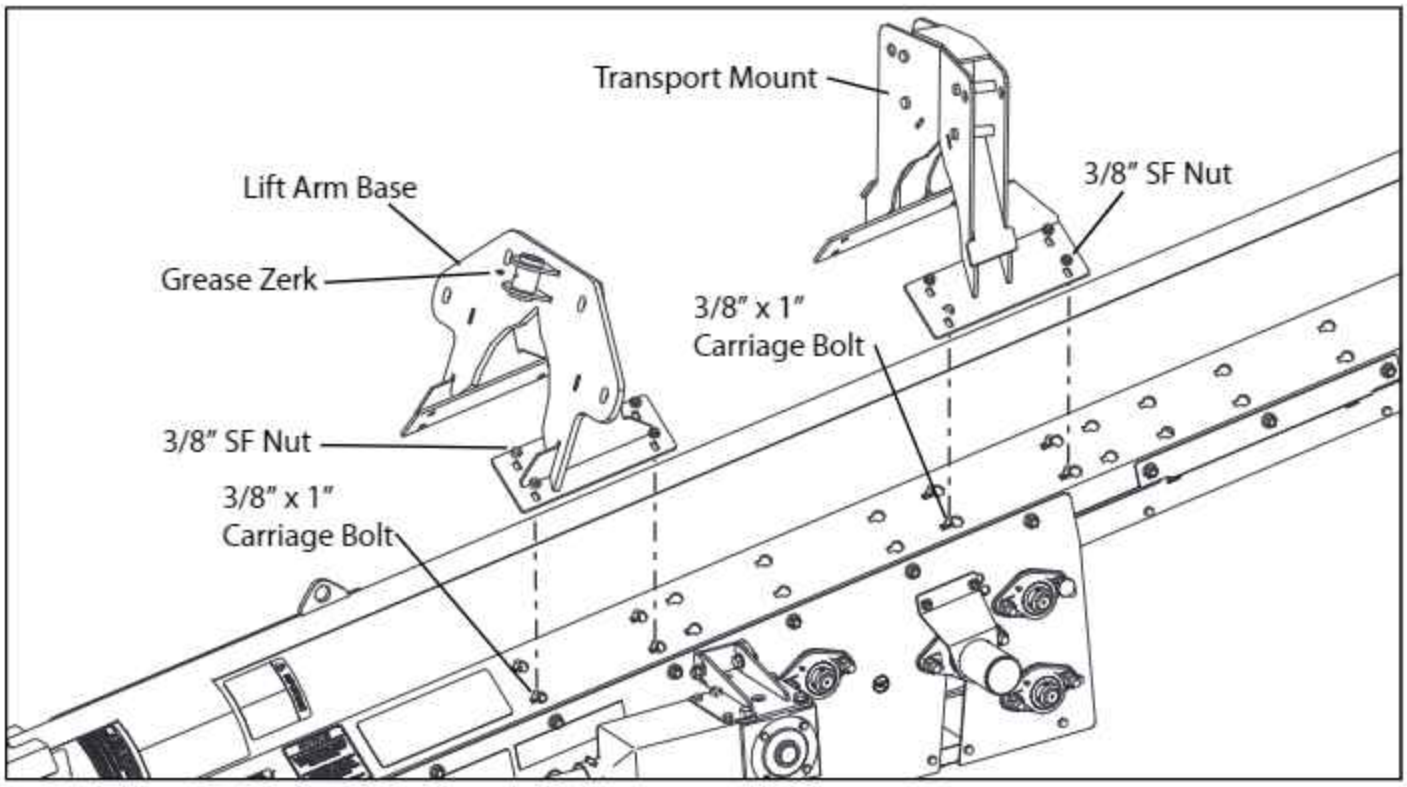


FIG. 3-66. Lift Arm and Transport Mount Installation

1. Mount the Lift Arm Base to the tube where shown in Fig. 3-66 using eight 3/8" x 1" carriage bolts and serrated flange nuts. Thread the grease zerk in the pivot bushing.

2. Mount the Transport Mount to the tube using eight 3/8" x 1" carriage bolts and serrated flange nuts. The position of the mount will be finalized after the Swing Tube Winch has been installed. See section 3.1.1, 3.2.1 or 3.3.3 of the Swing Conveyor Mover and Winch manual.

3. Install a Cable Sheave into the Lift Arm as shown in Fig. 3-67 using a Sheave Mount Pin, 1/4" x 2" bolt and lock nut.

4. Attach the Lift Cable to the Lift Arm as shown using a 5/8" x 2 1/4" Bolt and lock nut.

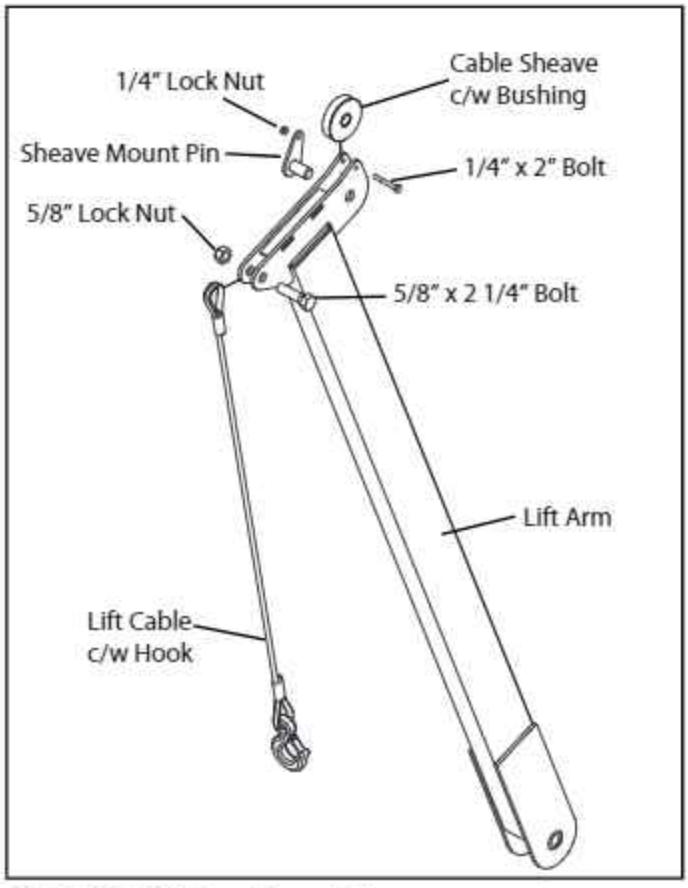


FIG. 3-67. Lift Arm Assembly

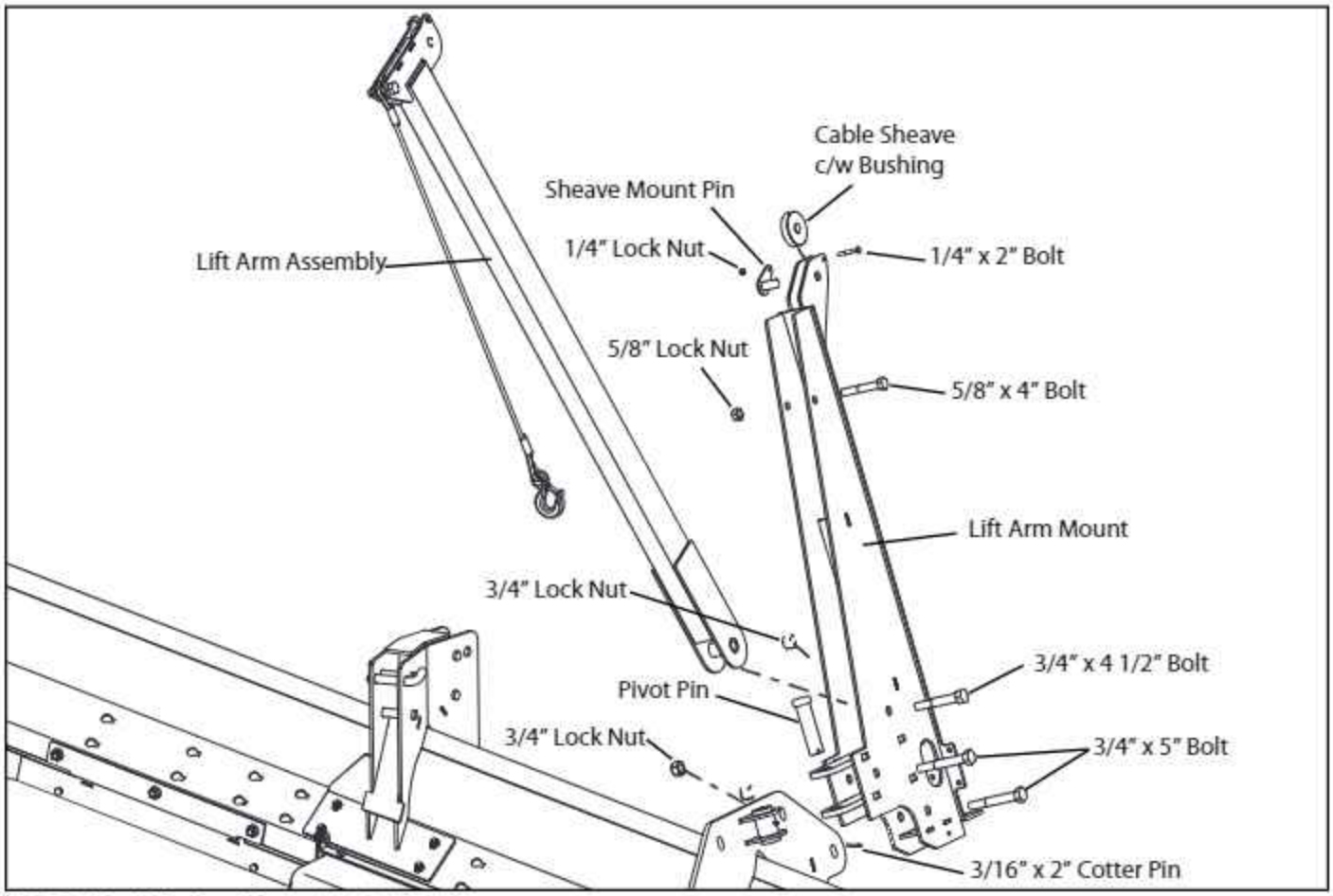


FIG. 3-68. Lift Arm Mount Installation

5. Install a Cable Sheave into the Lift Arm Mount as shown in Fig. 3-68 using a Sheave Mount Pin, 1/4" x 2" bolt and lock nut.

6. Attach the Lift Arm Mount to the Lift Arm Base using the Pivot Pin and a 3/16" x 2" cotter pin. Retain the Mount in place using two 3/4" x 5" bolts and lock nuts, as shown.

7. Insert the Lift Arm Assembly into the Mount and fasten in place using 3/4" x 4 1/2" bolt and lock nut. Do not fully tighten the nut, the Lift Arm must be able to move.

8. Attach the looped end of the Winch Cable to the Lift Arm Mount using a 5/8" x 4" bolt and lock nut. Route the cable as shown in Fig. 3-69. The other end of the cable will be attached to the winch later.

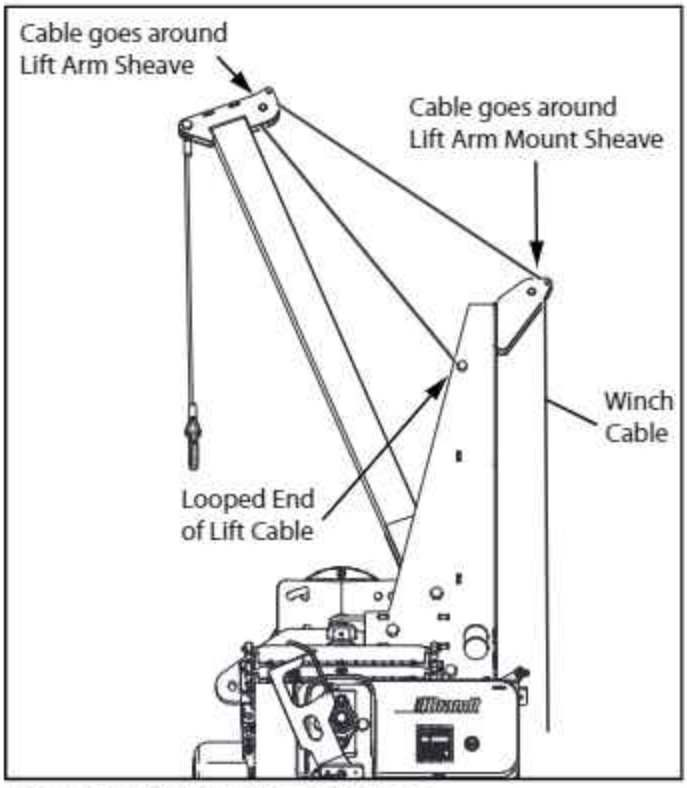


FIG. 3-69. Routing the Lift Cable

3.14 Swing Conveyor Ass'y

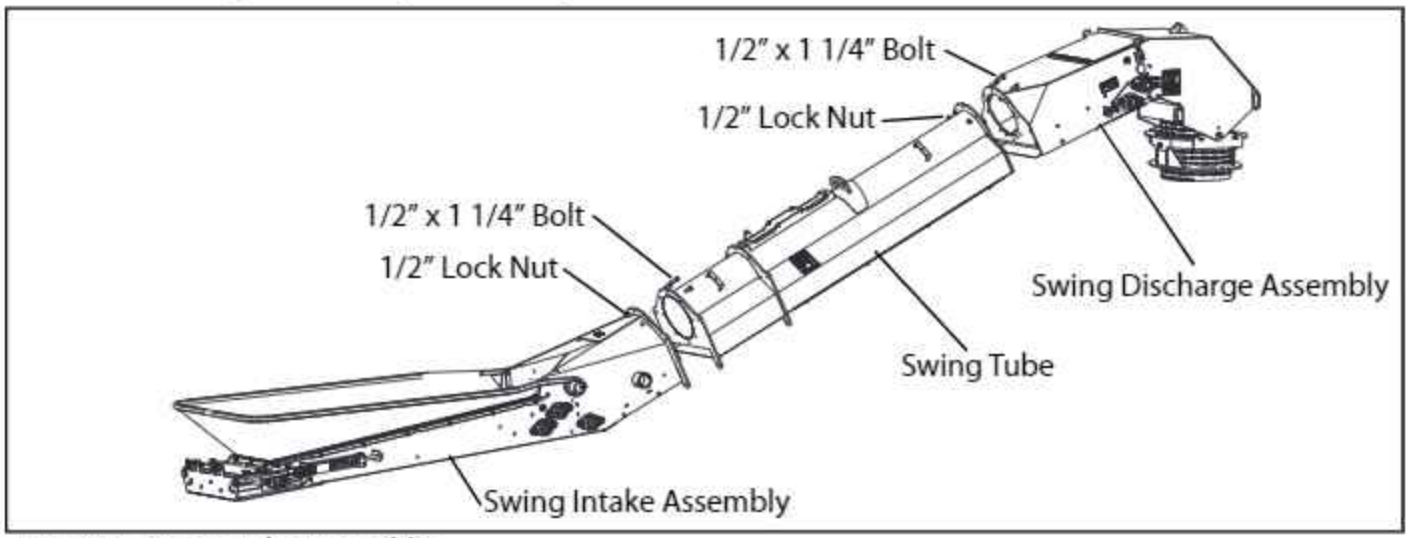


FIG. 3-70. Swing Tube Assembly

1. Attach the Swing Intake Assembly and the Swing Discharge Assembly to the Swing Tube using eight 1/2" x 1 1/4" bolts and lock nuts in each joint, as shown in Fig. 3-70. Make sure the tube joints are aligned and smooth, as shown in Fig. 3-71.

2. Place a bubble level onto a horizontal bracket on the Intake and the Discharge. Turn the intake until the both bubbles are centred. Tighten the joining bolts.

NOTE: It is very important to get both the Intake and the Discharge ends level to each other. Otherwise belt alignment problems will happen.

FIG. 3-71. Tube Joint Detail

3.15 Swing Conveyor Belt Installation

1. Loosen but do not remove all the bolts that hold the intake flashing in place as shown in Fig 3-72. This will ease installation of the belt.

2. Place stands under the conveyor, as shown in Fig. 3-73. Temporarily, remove the under side plates shown. This allows for easier access when installing the belt.

3. Unroll the belt and trim the corners of the leading end as show in Fig. 3-74. Make sure to trim only the end shown. Fig. 3-74 shows the direction of travel of the belt.

NOTE: Observe how the edge of the chevron is pointing in the belt direction. **Make sure the leading end of the belt goes first.** Check that all the staples which hold the lacing to the belt are crimped properly.

4. Fig 3-73 shows where to start feeding the belt into the conveyor. Make sure the leading end is inserted first, with the slider backing on top.

5. Pull the belt through the underside of the intake, around the roller, under **BOTH** intake flashing strips and thread it around the two 'S' rollers. Take your time doing this as it can be difficult. See Fig.3-75.

NOTE: On Oil Seed Conveyors, the belt must go UNDER the long flashings inside transition area of the Intake. See Fig. 3-76.

6. Insert a "fish tape" into the discharge end of the conveyor and push it down the tube to the intake.

7. Attach the "fish tape" to the belt by running a wire through the lacing.

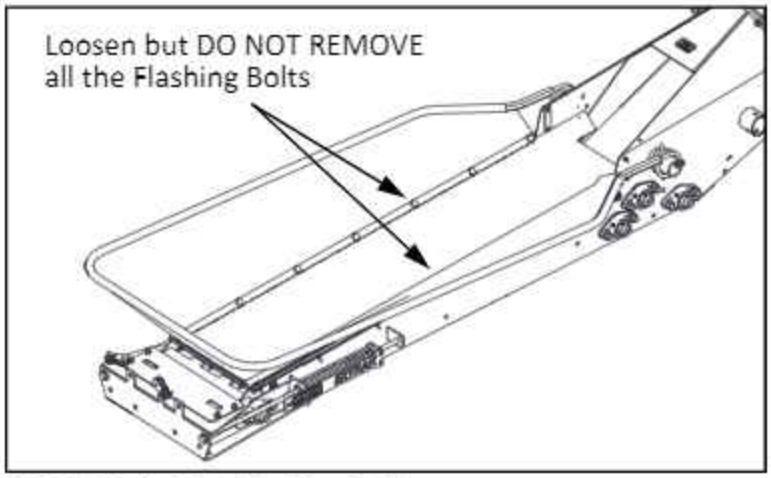


FIG. 3-72. Intake Flashing Bolts

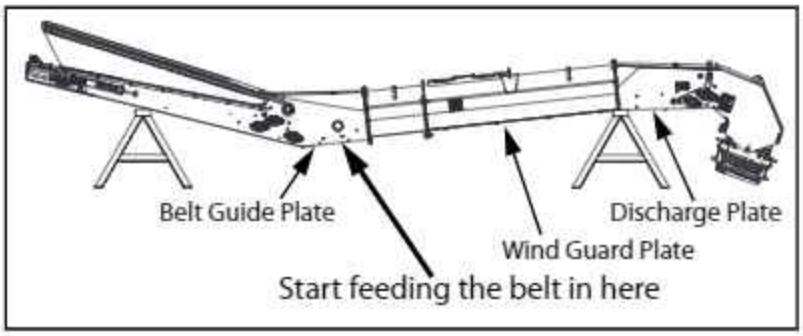


FIG. 3-73. Swing Tube on Stands

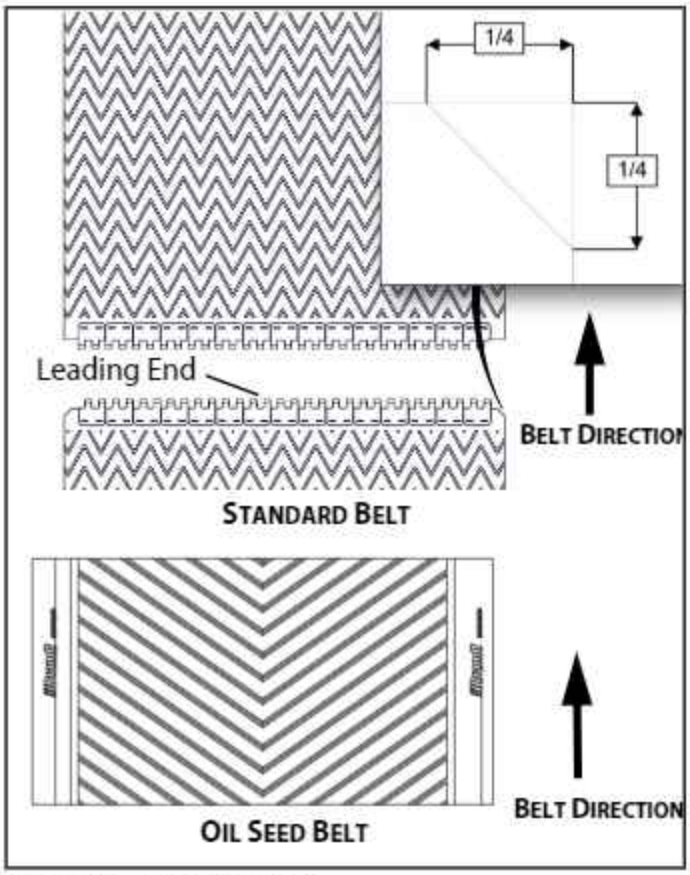


FIG. 3-74. Belt Direction

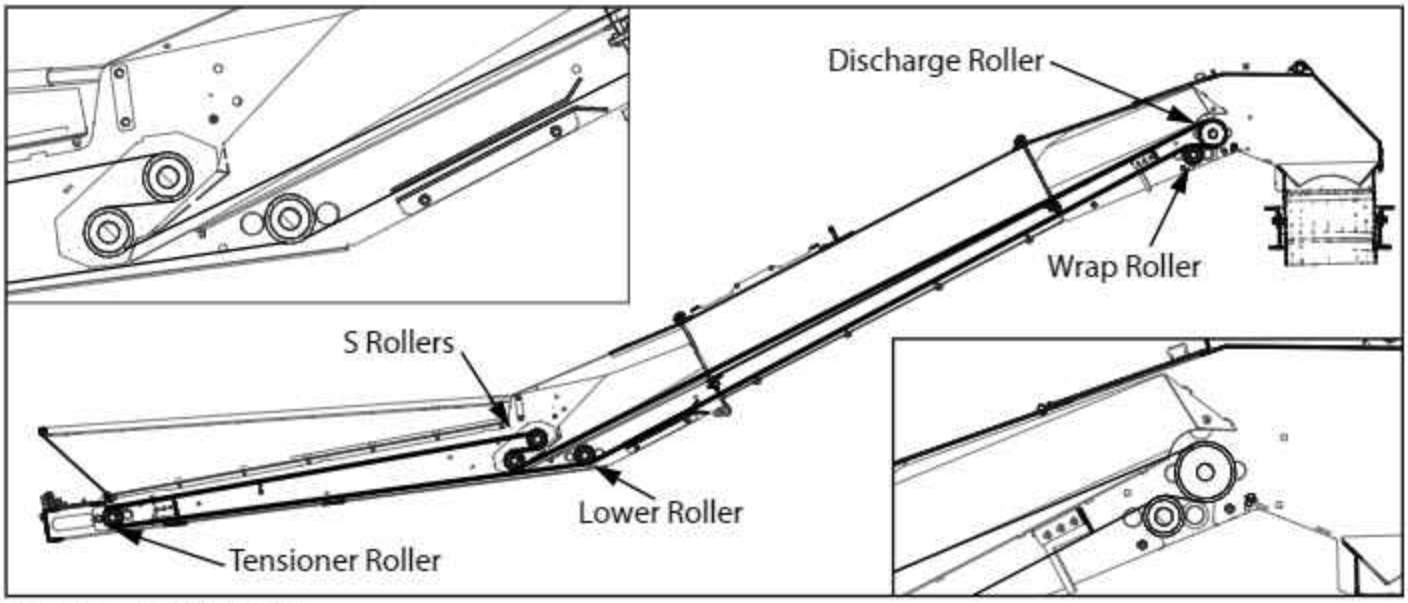


FIG. 3-75. Belt Routing

NOTICE

Notice. ***CRITICAL*** Make sure that tube assembly is properly held in position so that it doesn't fall off the stands when pulling the belt through.

8. Pull the belt through the tube and continue except for approximately 1'.

NOTE: Make sure the tensioner roller in the intake has been backed-off to it's loosest position.

9. Wrap the belt around the discharge roller, over top of the Wrap Roller and push it through the lower section of the discharge and down the underside of the tube. See Fig 3-75.

10. Bring the two ends of the belt together and connect them using the lacing pin.

11. Squeeze the portion of the outside lacing clip as shown in Fig 3-77. Make sure the clip bites into the plastic of the lacing pin to hold it in place. Do this on one lacing clip only.

12. Trim the excess pin with side cutters. Do not leave any pin extending past the edge of the belt. Apply a coating of silicone over the lacing.

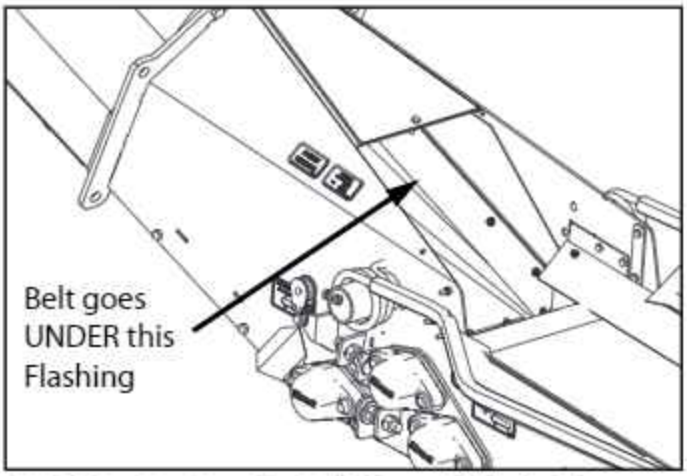


FIG. 3-76. Routing the Belt through the Intake

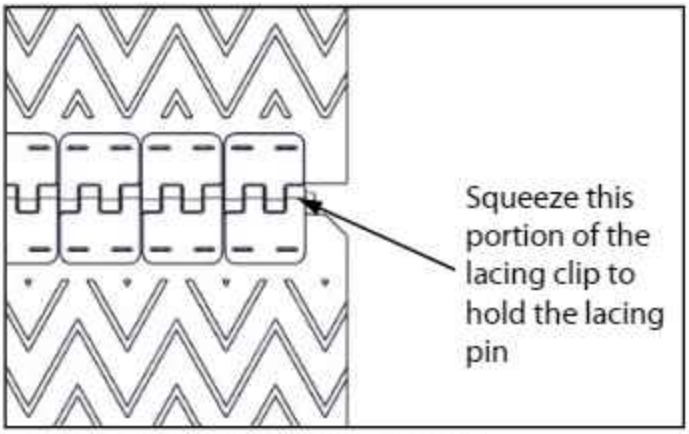


FIG. 3-77. Squeezing the Lacing Clip

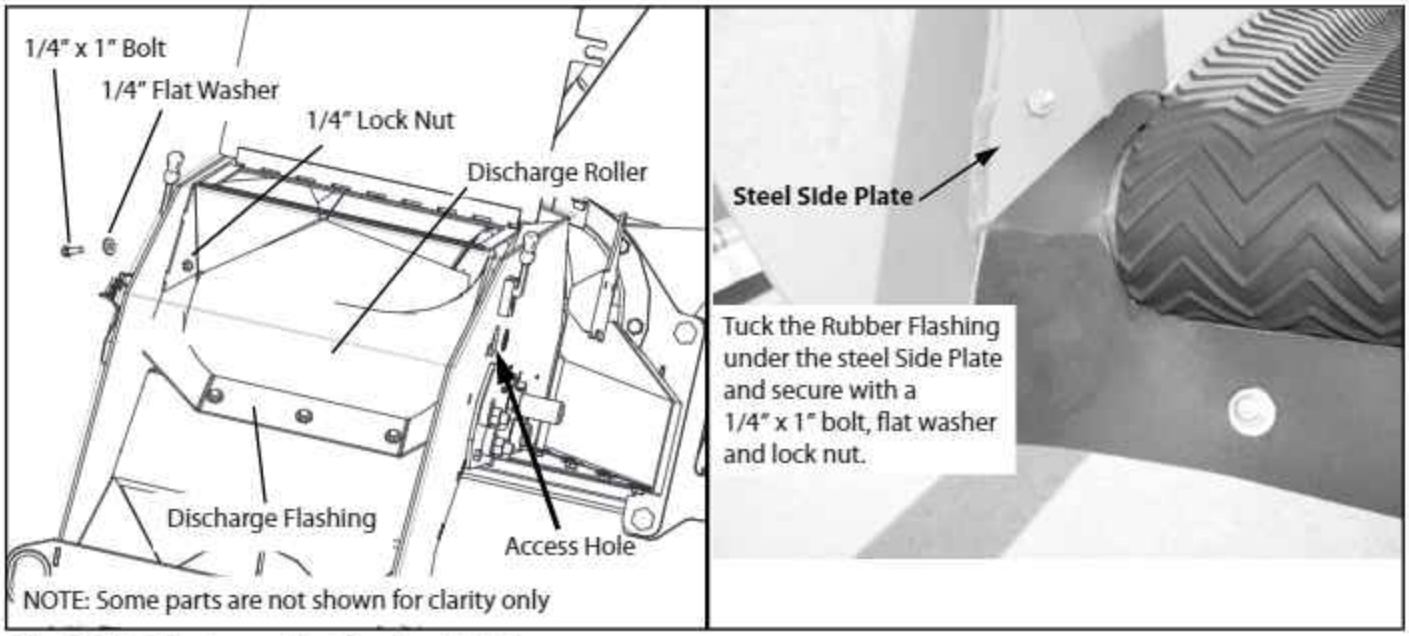


FIG. 3-78. Discharge Flashing Installation

13. Turn the Tensioner Roller Adjusting Bolts (on the Intake) to tighten the conveyor belt. Refer to Section 5.4 for proper tensioning of the conveyor belt.

Make sure the belt is centered on the rollers.

14. Attach the Discharge Flashing to the Discharge Weldment using five 1/4"x 1" bolts, flat washers and lock nuts. Ensure the flashing is tight against the metal backing. Tuck the ends under the side plates as shown. The bolts holding the flashing to the side plates are inserted from the outside, through the access holes shown. See Fig 3-78.

15. Re-tighten all intake flashing bolts and install all guards and covers previously removed.

3.16 Hopper Handle Assembly

1. Attach the Stop Plate and the Outer Retaining Plate to the plate welded to the tube using two 3/8" x 1 1/4" bolts and lock nuts. See Fig. 3-79.

2. Mount the Handle between the two plates using a 3/8"x 1 1/4" bolt, a flat washer in either side of the Handle and a 3/8" lock nut. Do not fully tighten the nut, the Handle must be able to rotate.

3. Attach the 3/16" Cable Thimble, the 1" long Buttite Spacer and a 3/8" flat washer to the Handle using a 3/8" x 2" bolt and lock nut. See Fig. 3-80.

4. Find the 3/16" cable connected to the Hopper Extension. Slide the two 3/16" Cable Clamps onto the end of the cable and wrap the cable around the thimble. With the Handle pointing toward the Hopper and the Hopper Extension in the raised position, pull the end of the cable until it is tight and secure it in place with the clamps.

NOTE: Make sure the base of the clamp is on the active side of the cable while the u-bolt side of the clamp is on the dead or short side of the cable.

5. Rotate the handle 180 degrees and the Hopper Extension should collapse. Make any necessary adjustments now.

6. Install the two Oval Grommets in the Swing Tube Discharge as shown in Fig. 3-81.

7. Install the 1 1/2" Plastic Plug in the bolt access hole in the side of the discharge.

8. Mount a P-Clip Hose Holder under the Discharge where shown using a 1/2" x 1 1/4" bolt and lock nut.

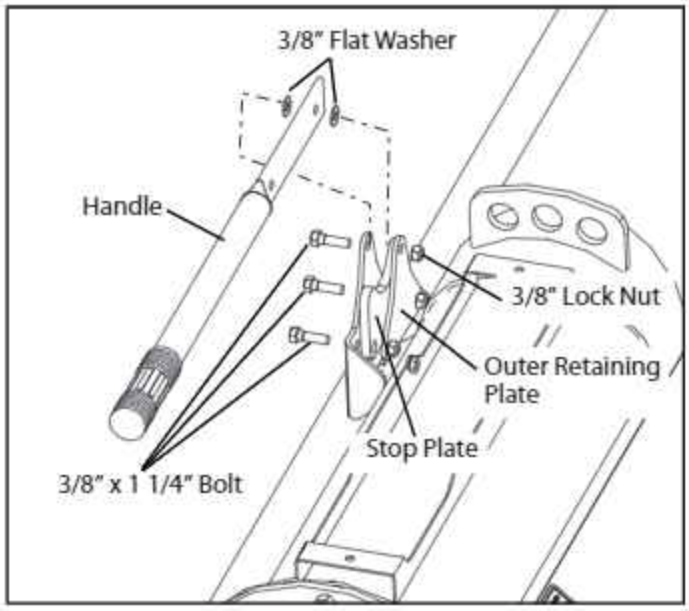


FIG. 3-79. Hopper Handle Assembly

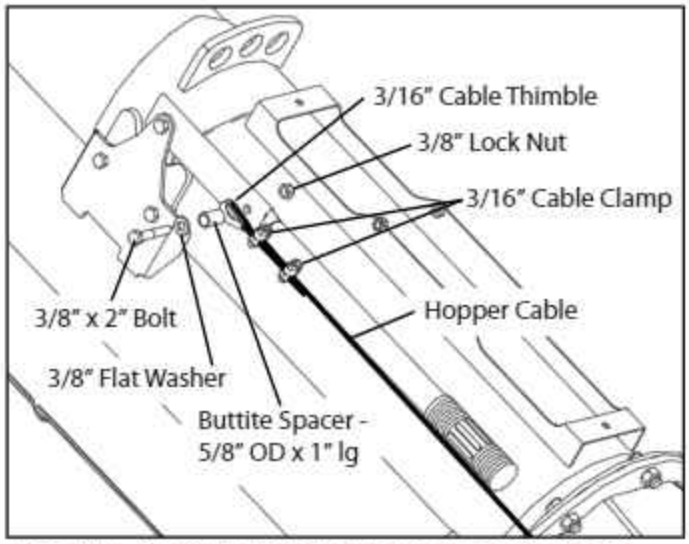


FIG. 3-80. Completing the Hopper Handle Ass'y

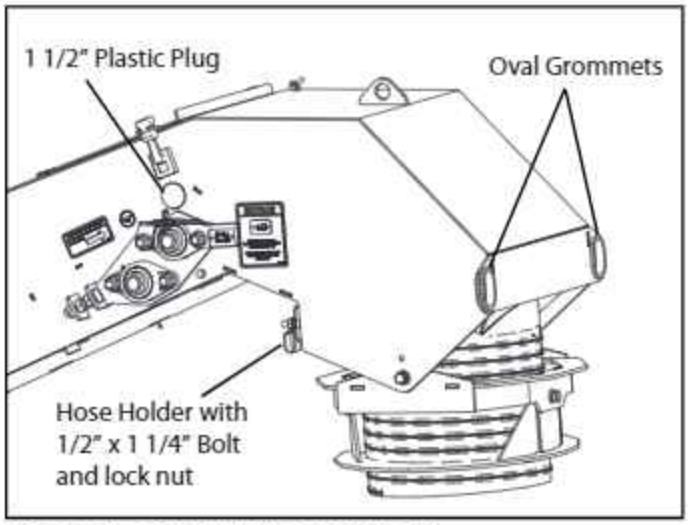


FIG. 3-81. Swing Tube Grommets

3.17 Hydraulic Motor Ass'y

1. Insert the 1/4" x 1 1/2" key into the keyway on the Drive Roller Shaft. Slide the 50-17 Sprocket x 1 1/4" bore onto the roller shaft. Do not tighten the set screws yet.
2. Attach the Hydraulic Motor to the Motor Mount using four 3/8" x 1" bolts and lock washers.
3. Slide the 50-17 Sprocket x 1" bore onto the motor shaft, making sure the key is in place. Make the sprocket flush with the end of the motor shaft and tighten the set screws. Apply medium strength thread locking compound to the set screws.
4. Attach the Motor Mount to the conveyor Discharge using four 3/8" x 1" carriage bolts and serrated flange nuts.
5. Adjust the position of the sprocket on the roller and install the 50-2 roller chain. Apply medium strength thread locking compound to the set screws in the sprocket and tighten.
6. Install the Motor Mount Covers to the top and bottom of the Motor Mount using two 3/8" x 1" bolts in each.
7. Install the Plastic Plug where shown.
8. Remove the port plugs from the motor and thread in the two #10MORB x #8MJIC Adapters.
9. Onto each adapter, thread on a #8FJIC x 2@ #8MJIC Tee and orient them as shown.
10. Onto the Tee shown, thread the #8FJIC x 1/2" FPT Adapter.
11. Thread the male end of the Check Valve into the other end of the adapter. Use teflon tape or pipe sealant on all tapered pipe threads.
12. Install the 3/8" Hydra. Hose x 20" on the middle branches of both tees. Use teflon tape or pipe sealant on all tapered pipe threads.

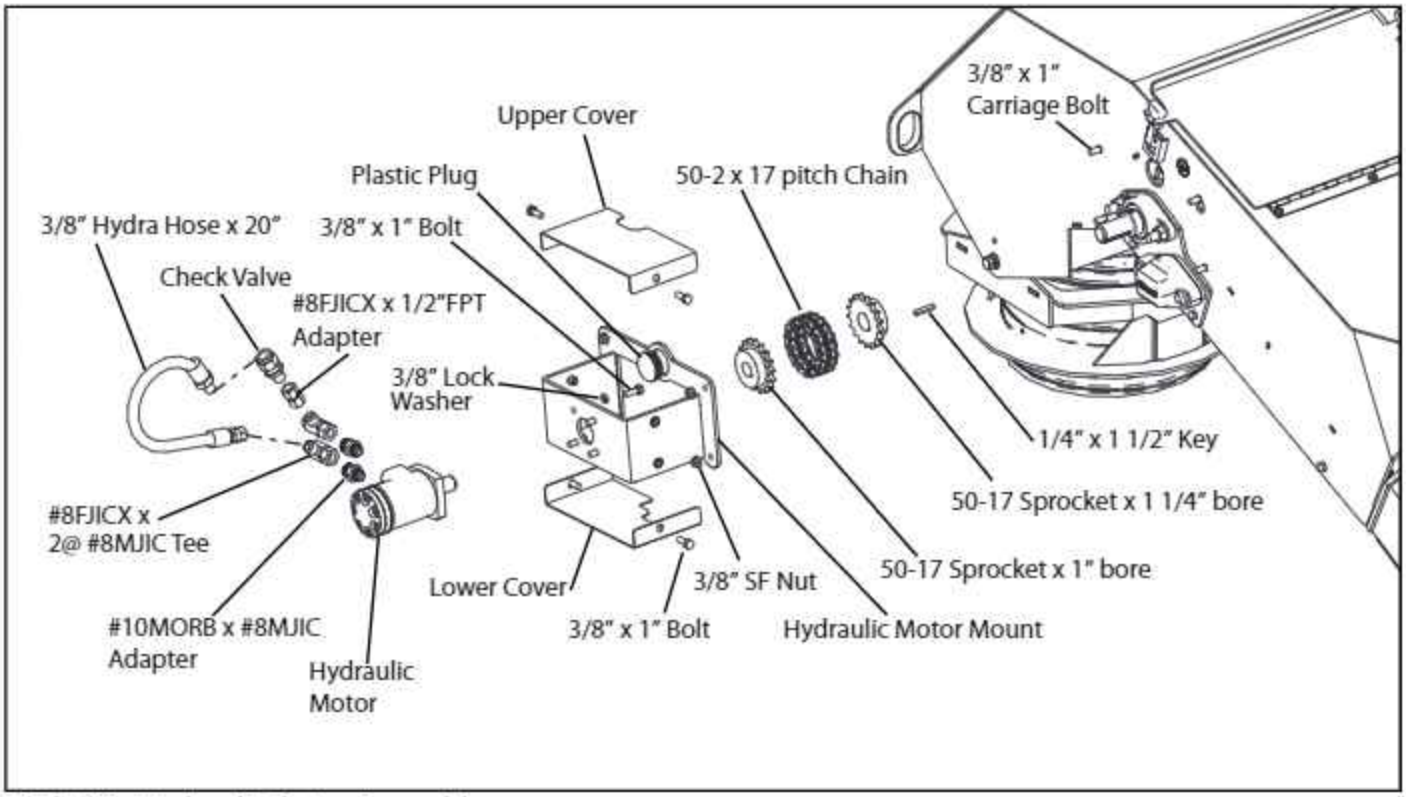


FIG. 3-82. Hydraulic Motor Assembly

3.18 Swing Conveyor Installation

1. Using a front end loader and a sling, pick up the Swing Conveyor and hang the spout over the intake boot opening.

2. Lower the spout onto the top of the boot. When the swing tube spout is seated properly, the flange on the end of the spout should lay flat onto the boot. Secure in place using the hardware illustrated in Fig. 3-83. The 3/8" I.D. x 1 3/8" O.D. x 3/8" thick plastic spacers are positioned on the boot and next to the outside of the flange, followed by the 3/8" ID x 2 3/4" O.D. x 1/4" thick steel washers, 3/8" lock washers and 3/8" x 1 1/2" bolts.

3. Install the elbow end of the 3/8" x 180" hydraulic hoses on the lower leg of the hydraulic motor tees. Route the hoses through the hose holders on the Swing Spout and install the Pioneer male tips on the ends. Use teflon tape or pipe sealant on all tapered pipe threads.

4. Oil Seed Conveyors

   Clean the area on the Swing Tube shown in Fig. 3-85. Install the Oil Seed decals as shown.

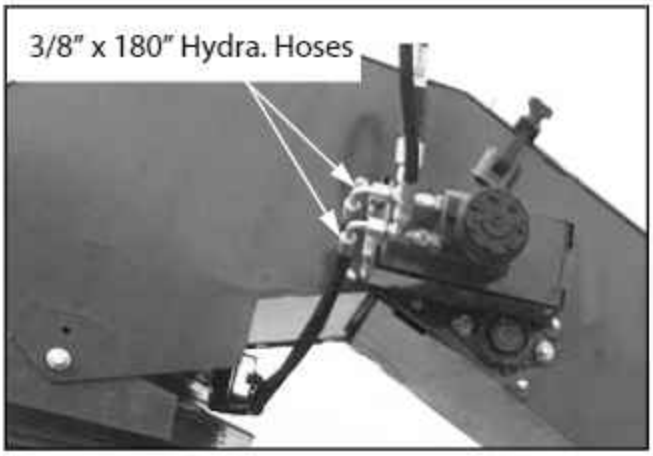


FIG. 3-84. Install the Hydraulic Hoses

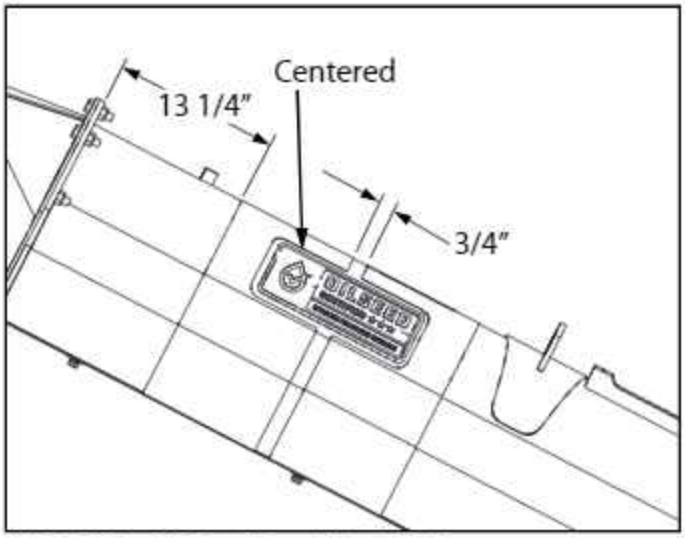


FIG. 3-85. Oil Seed Decal Installation

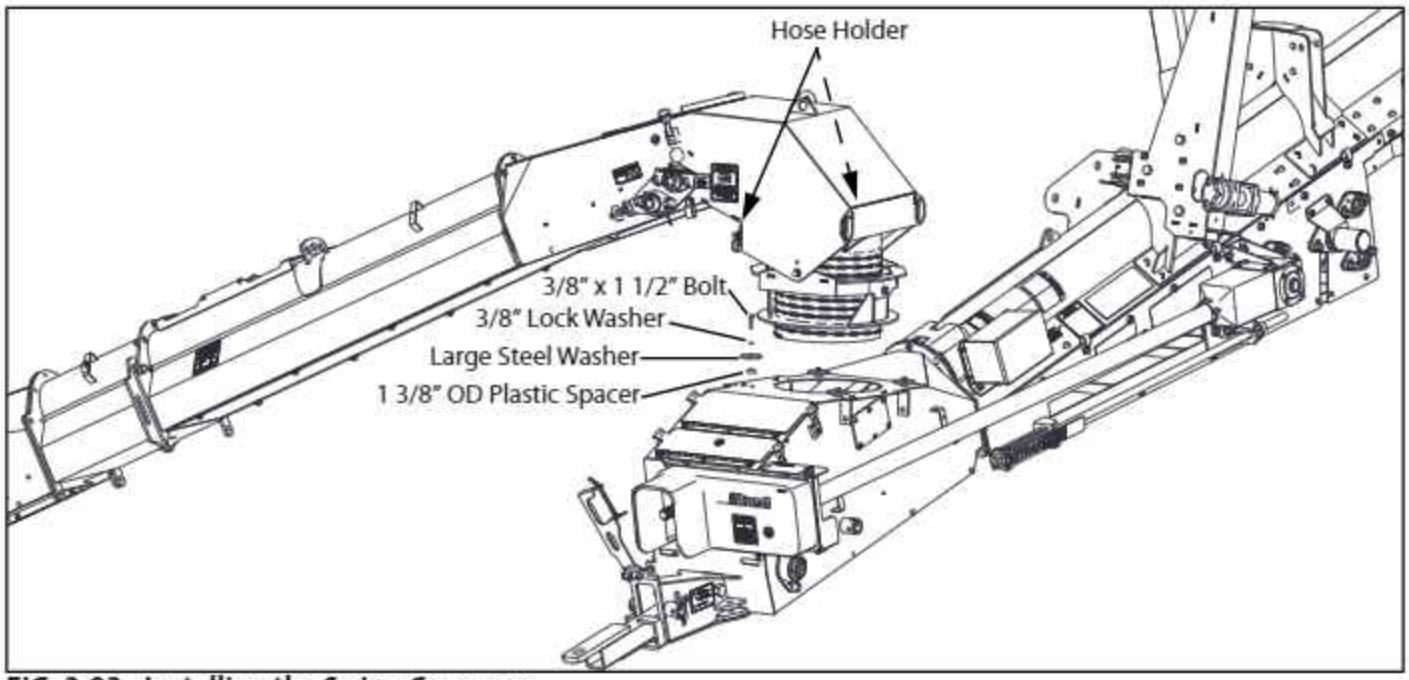


FIG. 3-83. Installing the Swing Conveyor

CHAPTER 4 Operation

4.1 Principles of Operation

The Brandt Swing Away Conveyors are used for moving products to or from a storage site. The conveyor is powered by a tractor, connected to the intake end. Power is transferred from the tractor, through a PTO shaft to the conveyor. 15 Series Harvest Conveyors are powered by the tractor's 540 or 1000 rpm PTO shaft. The tractor's hydraulic system is used to raise and lower the main conveyor.

Grain enters the main conveyor via a short, movable Swing Conveyor, pivoting on the intake end of the main conveyor. The pivoting action of the Swing Conveyor allows it to be easily moved under belly dump trailers. The Swing Conveyor is hydraulically powered by the tractor. The Swing Conveyor is raised and lowered by either an electric, hydraulic or manually powered winch.

Options include hydraulic or electrical swing conveyor mover, safety lights, work lights, a plastic down spout, a full bin alarm kit, and stainless steel tensioner bolts.

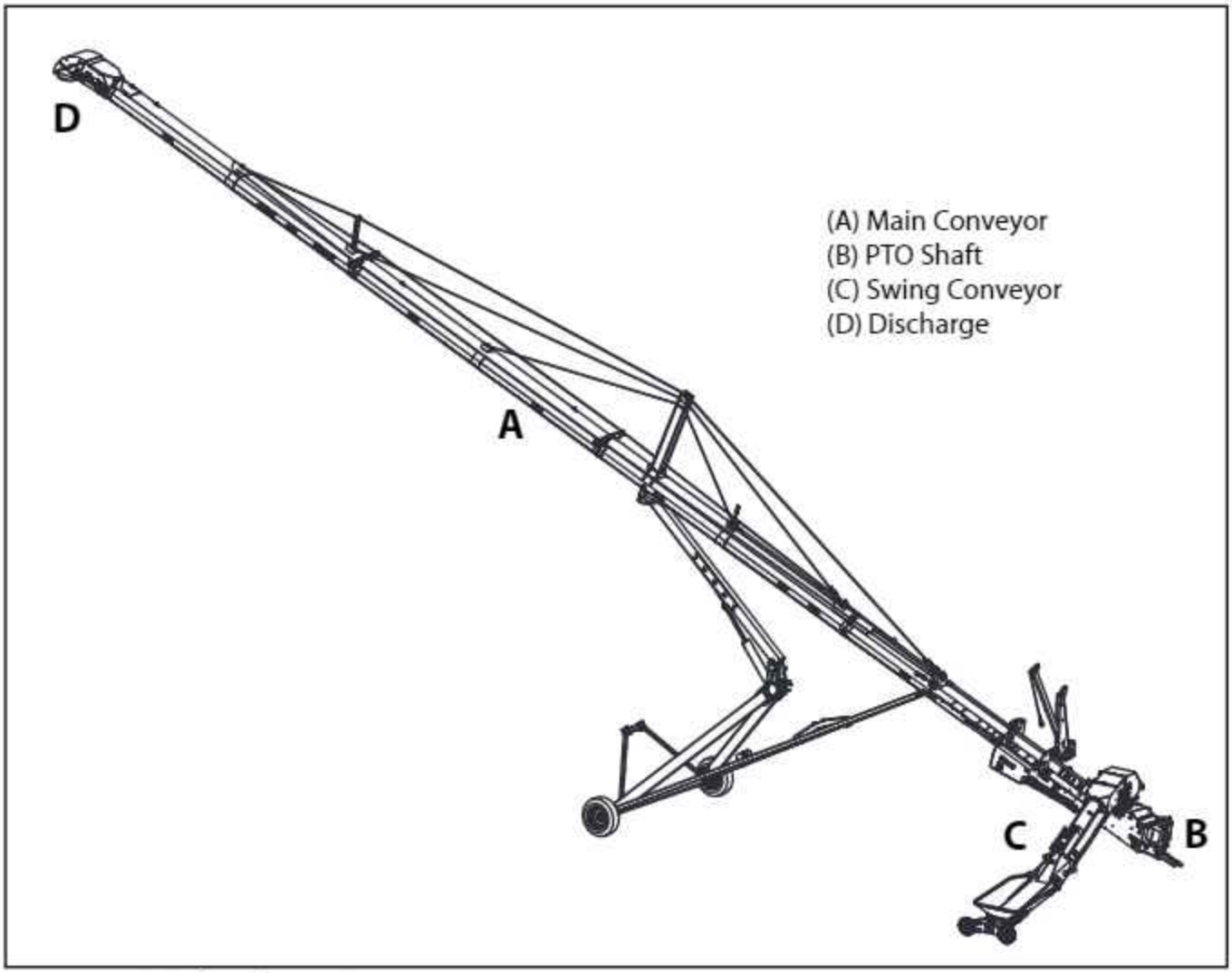


FIG. 4-1. Principles of Operation

4.2 Setup for Operation of a New Machine

4.2.1 Before running the new Conveyor

1. Read operator's manual, especially Sections 2, 4 and 5.
2. Tighten wheel bolts to specified torque.
3. Check all fasteners and ensure they are tightened to specified torque levels.
4. Make sure the tractor draw bar position has been checked. See Section 4.2.4.
5. Check the oil in the conveyor drive gearbox (PTO end drive only). The gearbox should be approximately half full of oil. Fill with S.A.E. 80W90 gear oil if required.
6. Check that all guards are in place, secure and functional.
7. Check the hydraulic lift system for leaks. Repair immediately.
8. Make sure the PTO shaft is properly attached to the tractor and the safety lock is engaged. Check by pulling and pushing on the PTO shaft several times.

⚠ WARNING

WARNING! Serious injury or death can occur if the PTO shaft is not securely attached to the tractor.

4.2.2 Determining Belt Speed

The Brandt 1580, 1590 & 15100 Belt Conveyors have been designed to the specifications in the table below.

A slower belt speed is more gentle on the product where as a higher belt speed increases capacity but may increase product damage. To determine belt speed of the conveyor, use a stop watch to find the time the belt takes to make one revolution.

⚠ CAUTION

Caution. DO NOT RUN THE BELT SPEED FASTER THAN 800 FPM. DAMAGE TO THE BELT COULD RESULT.

After reading Section 4.2.4 and 4.3, connect the tractor that will be used to run the conveyor, to the conveyor and prepare to start the belt.

Start the tractor and engage the PTO control to start the belt on the main conveyor. Use the engine speed control to change the belt speed. To determine belt speed of the conveyor, use a stop watch to find the time the belt takes to make one revolution. Use the figures in Table 1 to determine the belt speed.

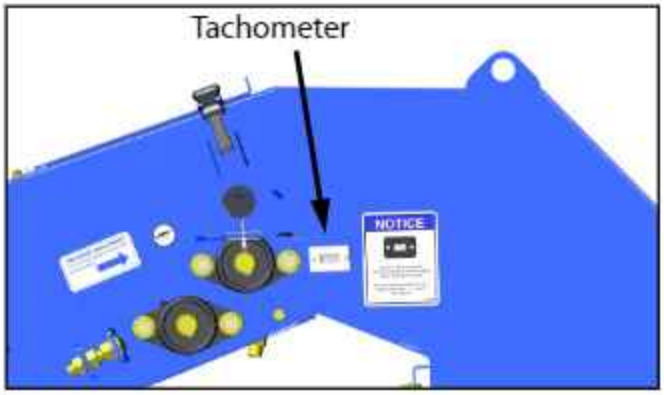
	Tractor PTO Speed (rpm)	
Belt Speed ft/min	15 Series Swing 540 rpm Drive	15 Series Swing 1000 rpm Drive
400	291 rpm	478 rpm
500	364 rpm	598 rpm
600	437 rpm	717 rpm
700	509 rpm	837 rpm
800	582 rpm	956 rpm

Belt Speed	Time required to make 1 Revolution (Sec.)					
(FPM)	1580 Std/SA Intake	1580 LP Intake	1590 Std/SA Intake	1590 LP Intake	15100 Std/SA Intake	15100 LP Intake
400	24.0	25.5	27.0	28.5	30.0	31.5
500	19.2	20.4	21.6	22.8	24.0	25.2
600	16.0	17.0	18.0	19.0	20.0	21.0
700	13.7	14.6	15.4	16.3	17.1	18.0
800	12.0	12.8	13.5	14.3	15.0	15.8

Once the belt speed of the main conveyor has been found and adjusted, engage the hydraulic valve that will run the motor on the Swing Conveyor. Keep the tractor speed the same as when running the main conveyor. The belt speed of the Swing Conveyor is set independent of the main conveyor.

Before setting the Swing Conveyor's belt speed for maximum capacity, allow the belt to break in by running it at 300 rpm for at least 15 minutes.

To set the Swing Conveyor belt speed, use the flow control adjuster on the tractor's hydraulic valve that the swing conveyor motor is connected to and adjust the flow to bring the drive roller speed to a range between 565 and 615 rpm, as read on the small tachometer on the side of the swing conveyor spout.



Note: The belt speed will reduce when the belt is loaded with product, do not exceed 615 rpm belt speed at any time.

NOTICE

Notice. Limit the hydraulic oil flow to 25 gpm to reduce the risk of over-speeding the hydraulic motor.

4.2.3 Initial Belt Break-in

While the conveyor is running, be aware of any unusual noises or vibrations.

NOTICE

Notice. A new belt will tend to wear slightly at the edges and throw out small pieces of belting for approximately the first 5 minutes of use. This is normal. Check the belt tension and alignment closely during this period.

1. Re-torque all fasteners and hardware.
2. Check the conveyor belt for tension and alignment.
3. Check the conveyor drive belts for tension and alignment.

4.2.4 Checking the Tractor Hitch for a Conveyor with the End Drive Kit

NOTICE

Notice. Read this section carefully!

The Conveyor must be attached to a tractor for all operations including transport, raising, placement and conveying grain. Failure to adjust the tractor hitch properly could result in damage to the conveyor and the tractor.

Tractor Draw Bar Positioning

The Brandt Grain Belt Tube Conveyor equipped with the End Drive Kit is designed to become an integral unit with the tractor during placement and operation. Because of length and position changes during lifting and turning, the measurement between the tractor draw bar and the PTO shaft becomes very important. Fig. 4-2 shows the required measurements on the tractor. Most tractors fall in the range shown. Be sure to measure your tractor before hook-up and adjust as required. If your tractor does not fall in the ranges shown, see the potential problems and their solutions.

1. **Dimension "A" Shorter than 14" or 16".** The PTO drive shaft may bottom out when the conveyor is raised or when turning corners. This will damage the PTO drive shaft, the tractor drive shaft, the conveyor drive and the mounting bracket.

   Solution: Lengthen the tractor draw bar to obtain the required 14" or 16" from the end of the PTO stub and the center of the draw pin.

2. **Dimension "A" Longer Than 14" or 16".** The PTO drive shaft may separate with the conveyor in the lowered position and cause damage to equipment and injury to personnel.

   Solution: Shorten tractor draw bar to get the required 14" or 16" from the end of the PTO stub and the center of the draw pin.

3. **Dimension "B" More than 13.75".** The PTO drive shaft may bottom out as the conveyor is raised or when turning corners. This will damage the PTO drive shaft, the tractor PTO shaft, the conveyor drive and the mounting bracket.

   Solution: Reposition the tractor draw bar or use spacers between the hitch clevis of the conveyor and the tractor draw bar.

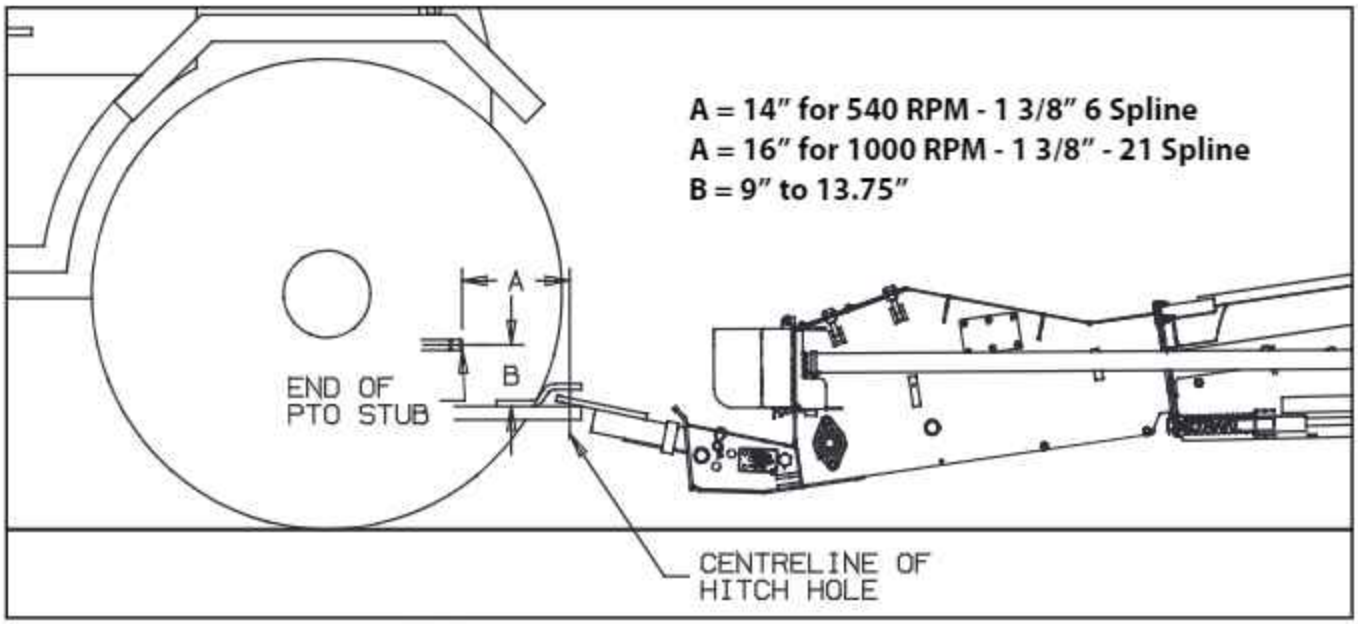


FIG. 4-2. Tractor Draw Bar Positioning

Conveyor Hitch Positioning

The conveyor hitch has three different positions available, two working positions and one transport position.

To determine where to position the hitch, measure from the ground to the top of the tractor's draw bar. If the distance is less than 15", use the middle hole (lower working position). If the distance is 15" or greater, use the upper hole. The lowest hole is only used when transporting the conveyor a long distance.

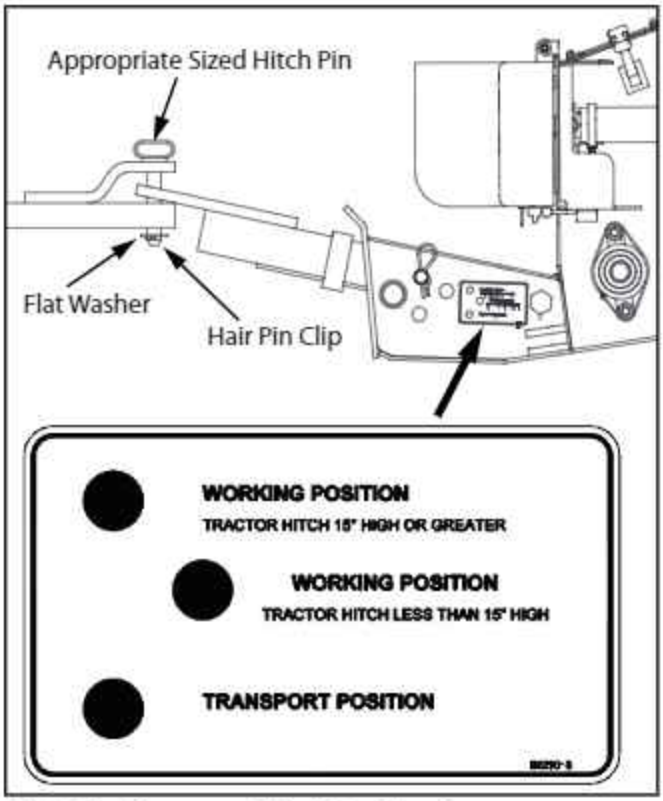


FIG. 4-3. Conveyor Hitch Positioning

4.3 Attaching the Conveyor to the Tractor

1. Attach the conveyor to the tractor using a 1 1/4" dia. draw pin. Make sure the clevis strap is installed on the draw bar. See Fig. 4-3.
2. Lower the implement jack and rotate it 90 degrees into transport position. Secure it in place with the pin provided.
3. Once the tractor hitch has been checked for the dimensions shown in Section 4.2.4, you can attach the PTO drive shaft to the conveyor. First attach the non-shear bolt 6 spline end to the conveyor and then the other end to the tractor PTO stub. Make sure the PTO shaft is properly attached and the safety locks are engaged. Check by pulling and pushing on the PTO shaft several times.

⚠ DANGER

DANGER! Serious injury or death can occur if the PTO shaft is not securely attached to the tractor.

4. Connect the hydraulic hose(s) to the tractor. Check your tractor manual or with your dealer regarding the correct type of quick coupler to be placed on the end of the hydraulic hoses. Clean the end of the hose of all dirt and foreign material before adding the quick coupler.

4.4 Pre-Operation Checklist

Before operating the Conveyor and each time thereafter, the following areas should be checked.

1. Ensure the conveyor belt slides freely inside the tube.
2. Ensure the PTO driveline shield turns freely on the PTO Shaft.
3. The PTO shaft is properly connected to both the tractor and conveyor and is secure.
4. Service the machine as per the schedule in the maintenance section of this manual.
5. Make sure all guards and shields are in place and in good repair.
6. Check the tires for proper inflation and be sure they are in safe road condition.
7. Check the conveyor belt for tension, alignment and condition.
8. Check the condition of the belt lacing and the lacing pin.
9. Check and clear the conveyor of any obstructions.
10. Check the hydraulic lift system for leaks. Repair immediately.
11. Check the swing conveyor lift winch cable for fraying. If the cable is frayed at all, replace immediately.
12. Check the winch brake. Repair if necessary.
13. Operators are aware of all safety precautions.
14. A second qualified person is present during operation.

4.5 Work Area Placement

4.5.1 Moving the Conveyor into Working Position

1. Clear the entire area of all debris.
2. Make sure the conveyor is securely attached to the tractor. See Section 4.2.4.
3. If sharp turns are required when positioning the conveyor at the storage facility, the PTO Shaft must be disconnected from the tractor and placed in the PTO Shaft Holder.

⚠ WARNING

WARNING! Disconnect the PTO Shaft from the tractor before moving from bin to bin or to road transport. Failure to do so can cause damage or injury.

4. Check that the hydraulic connections are tight. If there are leaks or damage to the hoses, repair or replace before proceeding.
5. Ensure that the conveyor is on reasonably level ground and that the entire line of travel, on the ground and overhead, is clear of all obstructions or electrical wires.

⚠ DANGER

DANGER! Keep clear of all electrical wires. Electrocution can occur without direct contact with electrical wires.

6. Use extreme caution when moving the conveyor into working position. Make sure everyone is clear of the work area, especially children.
7. With the conveyor fully down, back it into position, just in front of the storage facility.
8. Raise the swing conveyor high enough to allow one to remove the transport pin from the transport mount.

⚠ WARNING

WARNING! Make sure to shut off the tractor and remove the ignition key before entering the area between the Swing Conveyor and the main Conveyor Tube.

9. Lower the swing conveyor until it is approximately 12" (30 cm) above the ground. Leave enough clearance so that the swing conveyor will not drag along the ground when the machine is moved.
10. Open the shut off valve on the lift cylinder hydraulic hose.
11. Raise the main conveyor as required.
12. Carefully and slowly, move the conveyor into position over the storage facility.

⚠ DANGER

DANGER! Do not unhitch from the tractor and attempt to move the conveyor by hand.

⚠ DANGER

DANGER! Never attempt to increase the height of the conveyor by positioning the wheels on lumber, blocks or by any other means! To do so may result in equipment damage or personal injury.

13. When in position, leave the discharge end slightly above the bin roof and tie it down to the bin to prevent the wind upsetting the conveyor. Close the shut off valve in the lift cylinder hydraulic hose.

⚠ WARNING

WARNING! If the shut off valve remains open, a loss of hydraulic pressure with the tractor system will allow the conveyor to lower inadvertently damaging equipment and/or causing personal injury.

⚠ CAUTION

Caution. NEVER leave the conveyor in the raised position for an extended period of time (over night). Always lower the conveyor into transport position when not in use.

14. The tractor should be positioned in line with the conveyor so that the PTO drive shaft is as straight as possible.
15. Chock the conveyor wheels on both sides and apply parking brake (or chock tractor wheels) to prevent movement during operation.
16. Lower the Swing Conveyor to the ground and disconnect the lift cable. Raise the lift arm so the lift cable and hook do not become a tripping hazard.
17. Couple the PTO Shaft to the tractor.
18. Make sure the PTO shaft is properly attached to the tractor and the safety lock is engaged. Check by pulling and pushing on the PTO shaft several times.

⚠ DANGER

DANGER! Serious injury or death can occur if the PTO shaft is not securely attached to the tractor.

4.5.2 Moving the Conveyor out of Working Position

1. Clear the entire area of all debris. Make sure everyone is clear of the work area, especially children. Make sure you are aware of any obstructions or electrical wires.

⚠ DANGER

DANGER! Keep clear of all electrical wires. Electrocution can occur without direct contact with electrical wires.

2. Make sure the conveyor is securely attached to the tractor. See Section 4.3.
3. If sharp turns are required when moving the conveyor away from the storage facility, the PTO Shaft must be disconnected from the tractor and placed in the PTO Shaft Holder.

⚠ CAUTION

Caution. Damage to the tractor and conveyor can occur if the PTO shaft bottoms out while moving or raising.

4. Check that the hydraulic connections are tight. If there are leaks or damage to the hoses, repair or replace before proceeding.
5. If the discharge end of the conveyor was tied down to the bin roof, remove the tie down now.
6. Move the swing conveyor under the Lift Arm. Connect the Lift Cable to the tube as shown in Fig. 4-4 and raise it off the ground using the winch.
7. Remove the chocks from the conveyor and tractor wheels.
8. Open the shut off valve on the lift cylinder hydraulic hose.
9. Raise the conveyor high enough to clear the roof of the storage facility.
10. Carefully and slowly, move the conveyor away from the storage facility.
11. When the conveyor is clear of the storage facility, stop and lower it into transport position. The swing conveyor will have to be raised to keep it off the ground.
12. If the conveyor will be transported on a public road, the swing conveyor must be placed in road transport position. See Section 4.15.

FIG. 4-4. Connecting the Lift Cable

4.6 Hydraulic Lift Shut-off Valve

A shut-off valve located on the end of the hydraulic lift hose has been provided to hold the conveyor at what ever height is needed.

Make sure the valve is open whenever raising or lowering the conveyor.

FIG. 4-5. Hydraulic LIft Shut-off Valve

4.7 Discharge Hood Adjustment

The angle of the Discharge Hood is adjustable. Depending on the height the conveyor will most frequently be used at, you can change the angle by removing the upper mounting bolt and tilting the hood to the best angle. The figure shows which hole to use depending on the angle of the conveyor.

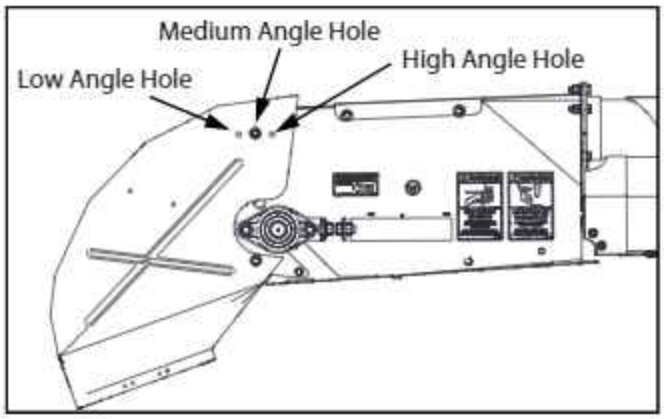


FIG. 4-6. Discharge Hood Adjustment

4.8 Conveyor Drives and Lock Out

It is essential to inspect your conveyor drive before adding power and know how to shut it down in case of an emergency.

Whenever you must service or adjust the conveyor, make sure to stop the engine and lock out the power source!

4.8.1 End Drive PTO

1. Never use a PTO shaft without a rotating shield in good working order. Also see that the power drive system safety shields are in place at the conveyor and the power source.
2. Be certain that the PTO shaft is securely attached to the conveyor and the power source.
3. Before starting the power source, make sure the power to the PTO is off.
4. Stay out of the hazard area of the operating PTO shaft.
5. Keep all guards and shields in place.

LOCK OUT

Remove the ignition key or coil wire from the power source. If this is impossible, remove the PTO shaft from the work area.

4.9 Full Load Operating

During the regular operation of your conveyor, one person must be in position to monitor the operation.

It is also good practice to visually inspect the conveyor periodically during the actual operation. You should be alert for unusual vibrations, noises and loosening of fasteners.

⚠ WARNING

WARNING! Clear the area of all bystanders especially children.

1. Keep all safety shields and devices in place.
2. Make certain everyone is clear before operating or moving the machine, especially children.
3. Keep hands, feet and clothing away from moving parts.
4. Start the conveyor and begin introducing product into the Swing Conveyor. Regulate the amount of grain entering the conveyor to keep it from overloading. Using the flow control adjuster on the tractor's hydraulic valve that the swing conveyor is connected to, adjust the flow to bring the drive roller speed to a maximum of 615 rpm, as read on the small tachometer on the side of the swing conveyor spout. See Fig. 4-7.

NOTICE

Notice. Limit the hydraulic oil flow to 25 gpm to reduce the risk of over-speeding the hydraulic motor.

Note: In certain situations when conveying small grained product, leakage may be observed at the discharge end of the conveyor. This may be caused be product getting behind the belt at the intake end. If this is observed, try slowing the belt speed and decreasing the amount of product being conveyed. Keep in mind that different temperatures, different moisture contents and different products can all effect the capacity of the conveyor.

5. Check the conveyor belt tracking under load.
6. After the truck or trailer is empty, shut off the power to the conveyor and lock out the power source. Check the belt tension by observing the Belt Tension Gages. See Section 5.4.

FIG. 4-7. Swing Conveyor Drive Roller Speed

4.10 PTO Shaft Shear Bolt

Before you service or adjust your equipment, make sure you stop your engine and lock out your power source!

⚠ CAUTION

Caution. Lock Out the power source by removing the ignition key or coil wire before servicing. If this is not possible, remove the PTO shaft from the work area!

The driveline is protected by a shear bolt inside the bell of the PTO Shaft where it connects to the tractor as shown in Fig. 4-8. If the shear bolt fails:

1. Shut down and lock out tractor.
2. Check for obstructions and clean away as much grain as possible.
3. Install a new shear bolt. See Fig. 4-8.

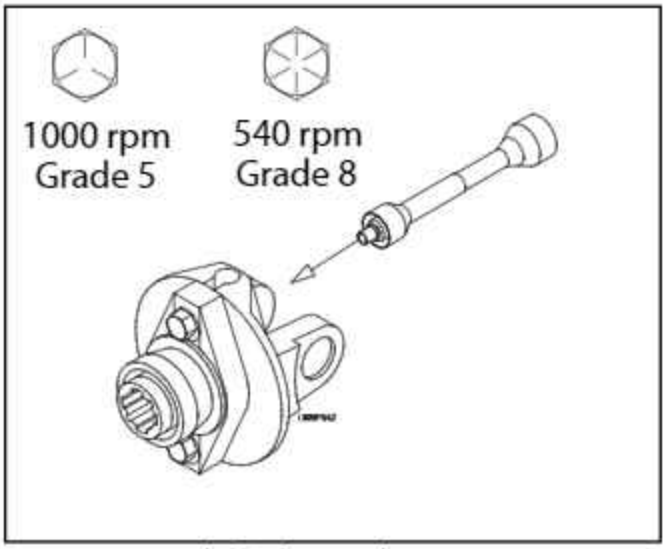


FIG. 4-8. PTO Shaft Shear Bolt

4. Clear as much product from the hopper and tube as possible. Never attempt to start the conveyor when full.

⚠ CAUTION

Caution. Attempting to start the unit under load may result in damage to the conveyor. Such damage is considered abuse of the equipment and is not covered under warranty.

5. Slowly engage the PTO drive and allow the conveyor to clean out.

⚠ WARNING

WARNING! Do not replace the shear bolt with a larger or stronger one. Damage to other conveyor components and/or injury may result.

⚠ DANGER

DANGER! Do not remove the PTO shaft guard.

4.11 Oilseed & Fertilizer Operation

The conveying of different products will cause the belt to either shrink or stretch. The oil from crushed Oilseed or the dust from fertilizer can penetrate the fabric side of the belt (the under side of the belt) and cause the belt to shrink during use. The top side of the belt is fully protected by the rubber or PVC cover. Heavy grains such as corn and wheat can cause the belt to stretch during use.

When conveying oilseeds and fertilizer, it is recommended that two things be done during operation to reduce the shrinkage on the belt:

1. Make every effort to keep the product in the hopper below the edges of the belt - i.e. less than full capacity. This will make it difficult for the product to get to the backside of the belt and therefore reduce the shrinkage that **will** occur.

2. The lacing is another area on the conveyor where product can get to the backside of the belt. Fine seeded crops such as canola and flax can fall through the openings of the lacing. To minimize this, coat the lace with a layer of silicone to fill the gaps.

NOTICE

Notice. The spring tension gauge located on the side of the conveyor allows the operator to react to the shrinkage or expansion of the belt.

During use in all products but especially in oilseeds and fertilizers, be sure that the tension gauge is in the green zone when the conveyor belt is stopped. Adjust as necessary to maintain consistent belt tension and reduce the potential for lacing, belt, and bearing failures. See Section 5.4

4.12 Cold Weather Operation

Before any cold weather operation, make sure to remove all snow and ice from the conveyor intake.

1. Clear as much snow and ice away as possible from where the intake end of the conveyor will be positioned before starting.
2. Run the conveyor empty at a slow speed for approximately 2 minutes before putting any product through the machine to allow the belt to warm up.
3. After all the product has been conveyed, run the conveyor empty at a slow speed for approximately 2 minutes to remove any moisture that has built up on and under the belt.

4.13 Conveyor Shutdown

4.13.1 Normal Shutdown

1. Reduce the flow of grain into the conveyor slowly.
2. Make sure the hopper and tube are empty before stopping the unit.
3. Before the operator leaves the work area, the power source must be locked out.

4.13.2 Emergency Shutdown

1. Immediately, shut down the tractor.
2. Should it be necessary to shutdown the conveyor under load, disconnect and lock out the power source. Clear as much product from the hopper and tube as possible. Never attempt to start the conveyor when full.

⚠ CAUTION

Caution. Starting the unit under load may result in damage to the conveyor. Such damage is considered abuse of the equipment and is not covered under warranty.

4.14 Clean Up and Storage

When the operation has been completed, it is recommended that you move the conveyor to the new work area or storage area.

1. Clean the entire area.
2. Remove all anchors, supports and wheel chocks.
3. Move the conveyor slowly out of working position with a towing vehicle - **NOT BY HAND**.
4. If not already in transport position, lower the conveyor to the full down position immediately upon clearance of any obstruction.
5. Transport the conveyor to the new work area or storage area. It is recommended that the conveyor be stored in the fully down position with the intake end anchored to the ground.
6. **Never leave the conveyor resting against a bin or storage building.**

4.15 Transport

⚠ DANGER

DANGER! Keep children and all unauthorized personnel away.

⚠ DANGER

DANGER! Attach a Slow Moving Vehicle (SMV) emblem before moving equipment. Do not tow faster than 20 MPH(32 KM/H). Be sure to comply with all local regulations governing marking, towing and maximum width.

⚠ DANGER

DANGER! Use extreme caution in turning and cornering.

⚠ DANGER

DANGER! Do not tow conveyor across slopes greater than 20 degrees.

⚠ DANGER

DANGER! Do not allow persons to ride on the conveyor when it is being transported.

⚠ DANGER

DANGER! Always tow the conveyor in the fully lowered position, with the tube on the transport rest.

⚠ DANGER

DANGER! Be alert for overhead electrical lines. Electrocution can occur without direct contact with power lines.

1. The Brandt Swing Away Conveyor is designed to be transported and operated while hitched to a tractor. Observe all safety precautions before transporting the conveyor.
2. Before transporting the conveyor, ensure that the main conveyor is in the full down position, with the ladder tube seated on the transport rest.
3. The hitch must be rotated into the transport position and secured, as shown in Fig. 4-9. Brandt Industries Ltd. recommends the use of a safety chain for added safety when transporting the conveyor. Refer to Section 2.5.

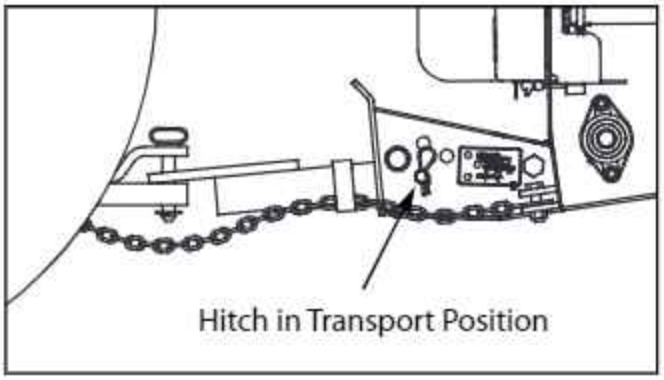


FIG. 4-9. Hitch in Transport Position

4. The swing conveyor on this unit transports as shown in Fig. 4-10. To secure it in this position, follow the sequence detailed on the next page.

FIG. 4-10. Swing Conveyor in Transport Position

- First attach the hook to the lifting lug on the swing tube as shown in Fig. 4-11.

FIG. 4-11. Connecting Lift Cable to Swing Tube

- Lift the swing conveyor with the winch until the swing conveyor is high enough to attach it to the mount on the main conveyor as shown in Fig. 4-12.

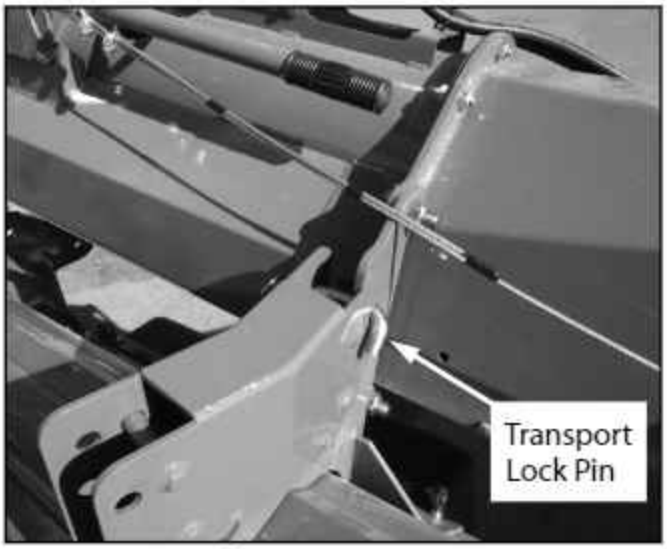


FIG. 4-12. Pinned In Transport Position

- Once the swing conveyor is pinned to the main conveyor, lower the swing conveyor with the winch. The transport pin must support all of the weight of the swing conveyor, however, the lift cable should have slight tension on it to prevent the swing conveyor from whipping when in transport. Do not remove the lifting hook while in transport position.

5. Make certain the PTO Shaft has been disconnected from the tractor and placed in the transport holder.

CHAPTER 5 Maintenance

5.1 Fluids and Lubricants

1. Grease - For all points except the PTO Shaft. Use an SAE multipurpose high temperature grease with extreme-pressure (EP) rating. Also acceptable is an SAE multipurpose lithium based grease.
2. Grease - For PTO Shaft. Use a good quality Lithium Soap Compatible E.P. grease containing no more than 1% Molybdenum Disulfide.
3. End Drive Gear Box - Use EP 80-90 Gear Oil.
4. Storing Lubricants - Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

5.2 Lubrication

1. Use the provided Maintenance Checklist to keep a record of all scheduled maintenance.
2. Use a hand held grease gun for all greasing.
3. Wipe fittings clean before greasing to avoid injecting dirt and grit.
4. Use a single shot of grease unless otherwise noted.
5. Repair and replace broken or missing fittings immediately.
6. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

NOTE: DO NOT OVER GREASE AS THIS MAY DAMAGE THE BEARING.

5.3 Service Intervals

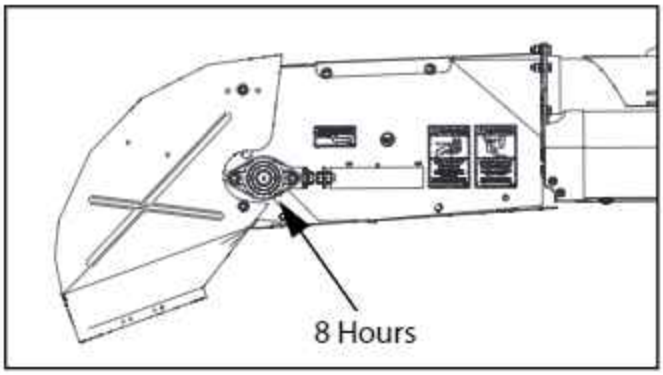
These service intervals are listed in addition to the new machine break in items as described in the first Operation Section on Section 4.1.

5.3.1 8 Hours or Daily

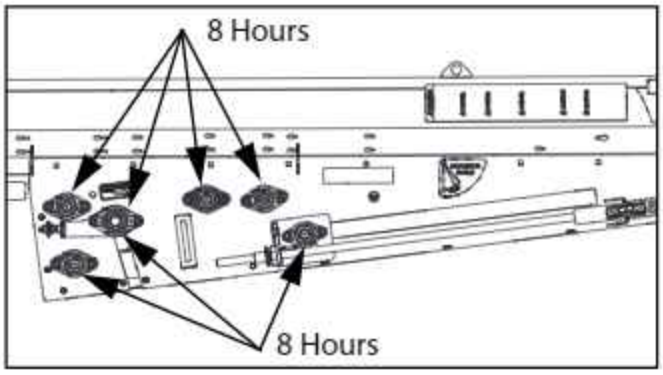
1. Lubricate all roller bearings.
2. Check the conveyor belt tension and alignment. See Section 5.4.

Note: Due to belt shrinkage or stretching, the belt tension will be effected. Adjust the belt as required to maintain proper belt tension.

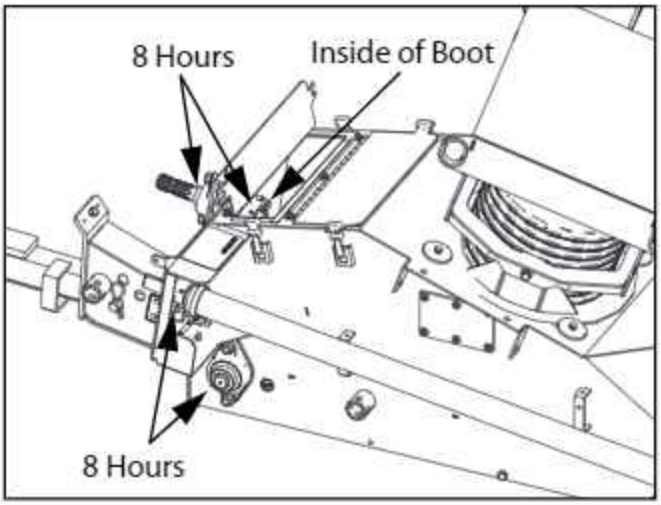
3. Check the conveying belt lacing.



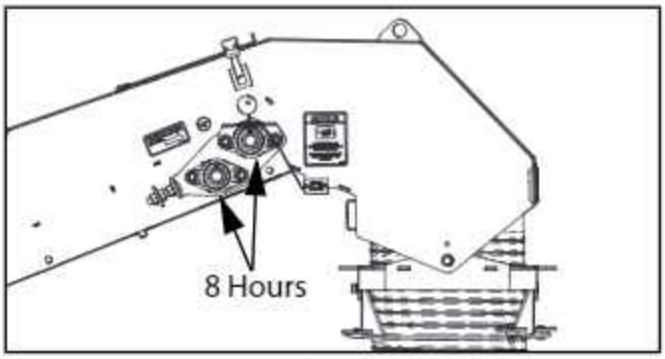
Main Conveyor Discharge



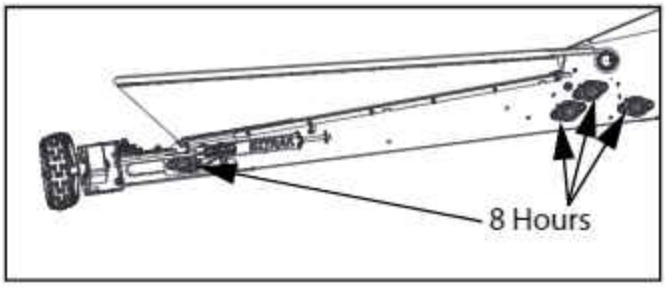
Main Conveyor S-Drive



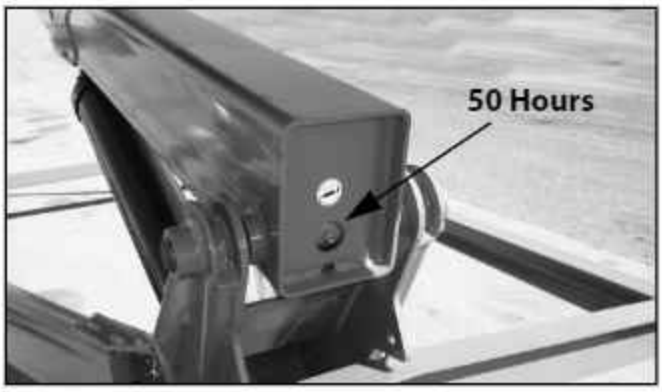
Main Conveyor End Drive and Boot



Swing Conveyor Discharge



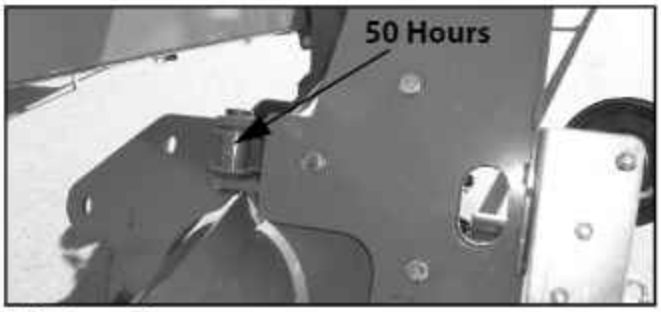
Swing Conveyor Intake



Ladder Pivot

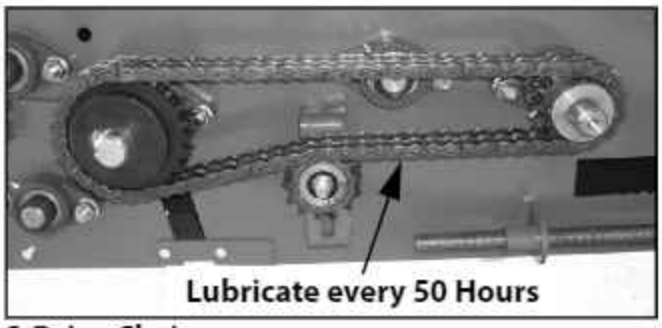
5.3.2 50 Hours or Weekly

1. Lubricate the Ladder Pivot
2. Lubricate the Lift Arm Pivot.
3. Lubricate the End Drive chain.
4. Lubricate the S-Drive chain.
5. Inspect the Hopper lift cables. Replace if any signs of fraying.
6. Lubricate the PTO Shaft.

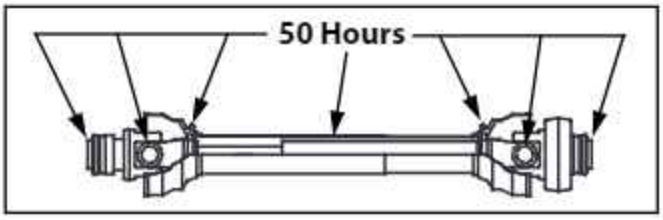


Lift Arm Pivot

End Drive Chain



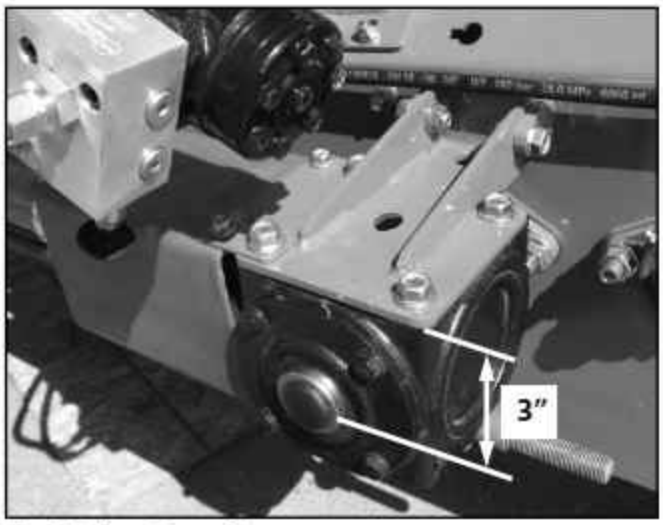
S-Drive Chain



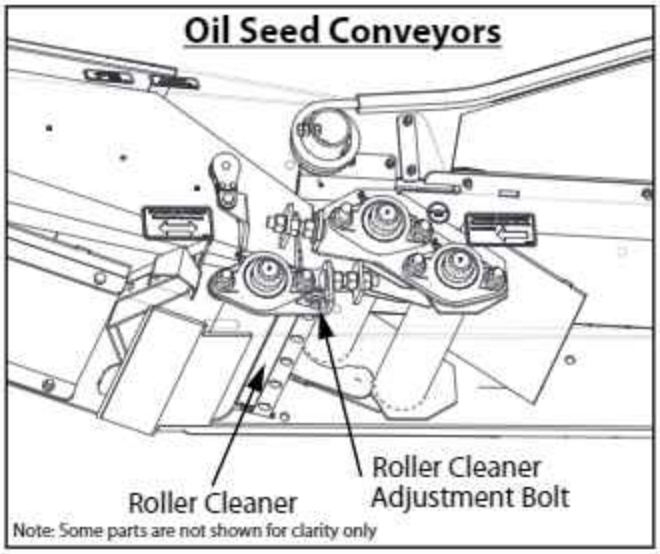
PTO Shaft

5.3.3 Annually

1. Inspect the oil level in end drive gearbox. See section 5.1 for oil type.
2. Inspect the seals in the gearbox for weeping oil and replace seals as required.
3. Inspect the Hopper lift cable and replace any frayed cables immediately.
4. Oil the cable sheave pins on the hopper lift arm. Inspect the sheaves, pins and side plates for wear and replace if necessary.
5. Re-tension the tube truss to maintain auger tube straightness. See section 3.4.4 and section 3.6.
6. Repack wheel bearings with lithium based grease.
7. Lubricate the bushings, drum shaft and ratchet on the winch with a film of grease.
8. Inspect the hydraulic hoses and replace any cracked hoses.
9. Inspect the sprockets and drive chains for wear and replace as required.
10. Run conveyor for several minutes. Inspect all bearings for heat and seal weeping. Replace as required.
11. Inspect the hydraulic cylinders for leaks; replace seals as required.
12. Inspect tires and adjust air pressure as required.
13. Check that all hardware is properly tightened and secure.
14. Check the wheel bolts for proper torque.
15. Inspect the Oilseed Roller Scrapers. If clearance is observed, adjust the scrapers to remove the clearance.



End Drive Gear Box



Oil Seed Roller Scrapers

5.4 Conveying Belt Tension and Alignment

Proper belt tension depends on several factors but is primarily due to the commodity being conveyed and the capacity at which the conveyor is running. The more capacity the tighter the belt will need to be to prevent slippage. The heavier the product being conveyed the tighter the belt will need to be.

The tension and alignment of the belt should be checked daily, or more often if required, to be sure it does not slip or run to one side. Particular care should be taken with a new conveyor belt.

A new belt will require much closer observation than a belt that has been used for a period of time. The new belt needs to "break in". This means that stretching or contracting (stretching due to loading the product on the belt and contracting due to oil and dust penetrating the back side of the belt) takes place during the first 10 hours of operation. Once broken in, the belt tension will require much less observation.

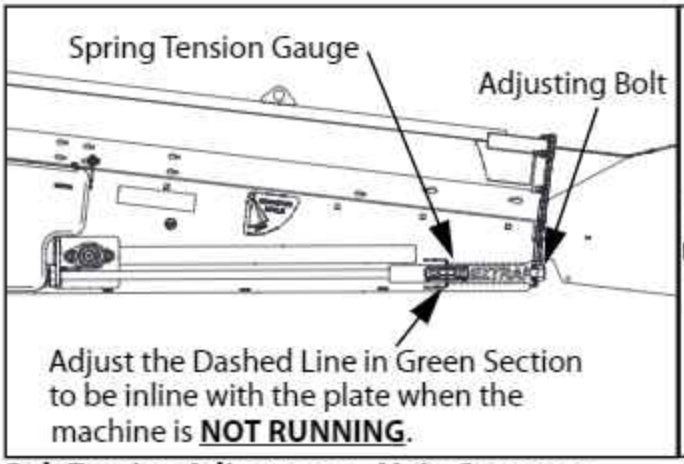
A properly tensioned belt will not slip when it is operating. It is the operators responsibility to ensure that the conveyor belt is not slipping during operation.

IMPORTANT: Belt tension is affected by belt shrinkage and stretching. If your belt is too tight, bearing failure and/or belt failure will result. If your belt is too loose, damage to the drive roller and or conveyor belt will result. Adjust the belt as required, to maintain proper belt tension.

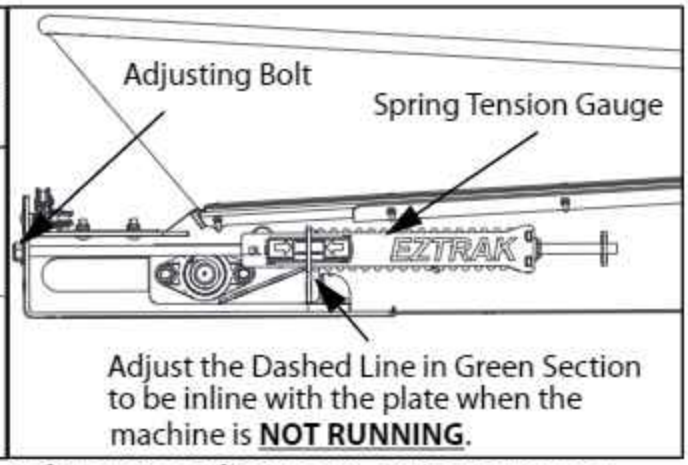
5.4.1 Adjusting the Belt Tension

Follow this belt tension procedure to adjust the conveyor belt tension. **Please note that this is a starting point only.** The belt tension must be carefully monitored during the first 10 hours of operation and daily there after.

1. Disable the power source before adjusting the belt tension.
2. Adjust the compression spring until the dashed line in the green section of the decal on the left Spring Tension Gauge is in-line with the edge of the plate where the Tension Gauge goes through the slot in the Tensioner Mount. Make sure to adjust both bolts the same amount or tracking problems will occur.



Belt Tension Adjustment - Main Conveyor



Belt Tension Adjustment - Swing Conveyor

3. Run the conveyor for 1 minute then stop it and lock out the power source. Examine the Spring Tension Gauge and readjust if necessary.

Note: While the machine is running, the dashed line on the gauge **WILL NOT** be in-line with the plate. The dashed line should only be in-line with the plate when the machine has stopped.

IMPORTANT: Do not adjust the belt tension with the conveyor running. This will cause the belt to be over-tensioned and will cause damage to the belt, bearings and/or rollers. The belt tension should only be examined and tensioned when the machine is stopped.

4. Repeat steps 2 and 3 until the edge of the plate remains in the center of the green section when the machine is stopped.

5. If you notice the belt slipping at any time during operation, shut the conveyor down immediately and examine the Tension Gauge. You can determine if the belt is slipping by listening to the belt go through the tube or by watching the intake roller. If the belt is slipping, the intake roller will be changing speeds throughout the belt revolution.

6. Run a load through the conveyor and monitor belt slippage.

5.4.2 Belt Alignment

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

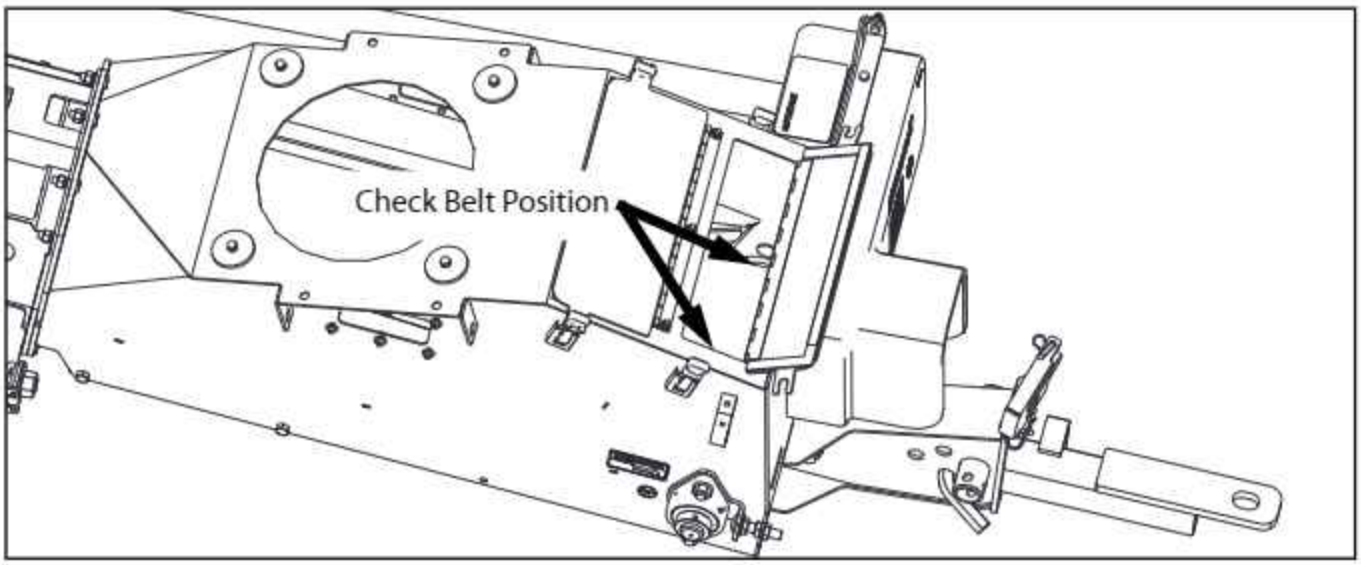
Check frequently during the first few minutes of operation and several times during the first 10 hours of operation.

Note: It is normal for the belt to wander from side to side on the rollers. It should not, however, push hard to one side and stay there.

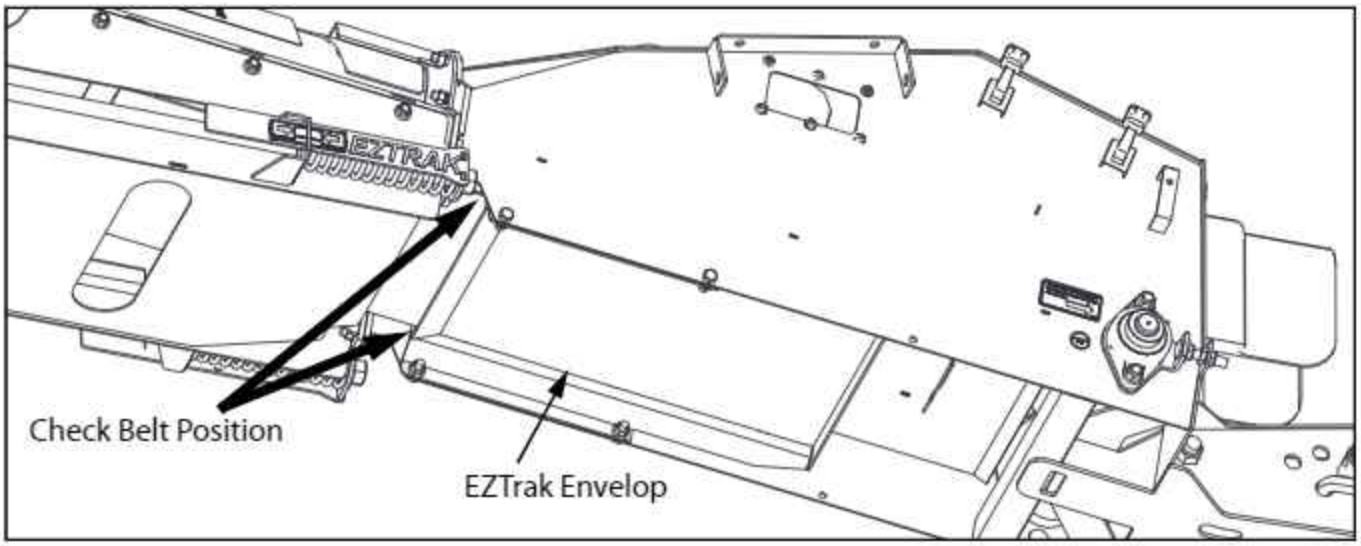
5.4.2.1 Main Conveyor

Step 1 - Checking the Alignment at the Intake

1. Check the belt alignment at the end of the Intake by opening the access door to determine if the belt is centered on the Roller. Do not make any adjustments at this time.



2. Check the belt alignment under the intake as shown below, to determine if the belt is running through the center of the EZTrak envelope.

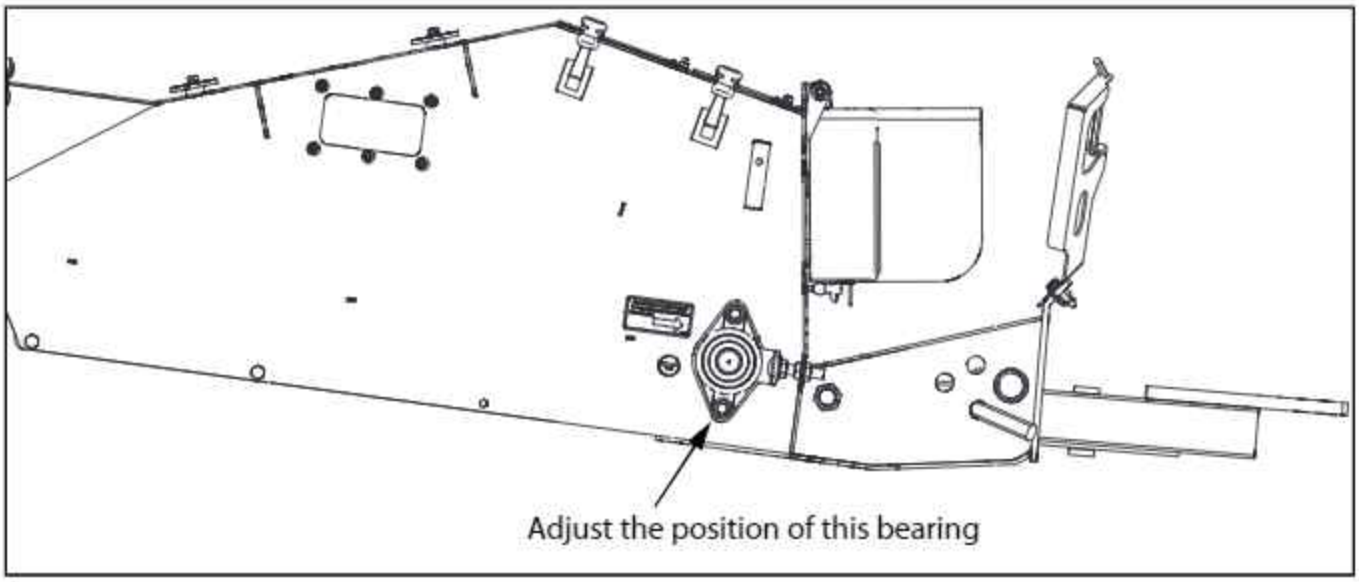


3. If adjustment is required at the EZ Trak Envelop, loosen the fasteners on the bearing shown below and use the adjustment bolt to move the roller in the required direction. Adjust the bearing location a little at a time.
4. Using the tractor, run the belt several revolutions, Stop the belt and check the belt position in the EZ Trak Envelop.

⚠ DANGER

DANGER! DO NOT MAKE BEARING POSITION ADJUSTMENTS WHILE THE BELT IS RUNNING. STOP THE BELT AND THEN MAKE ADJUSTMENTS.

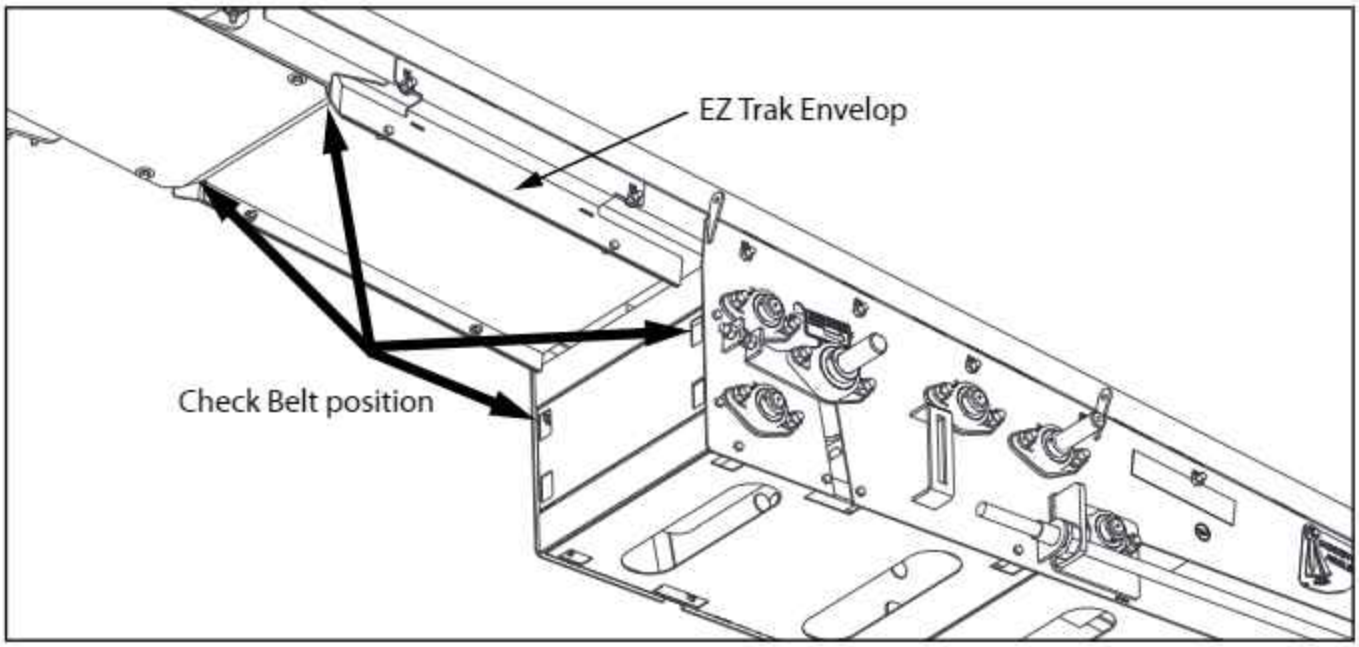
Repeat the adjustments until the belt runs in the middle of the EZ Trak Envelop. Secure the adjustment bolt in place and tighten the bearing mounting fasteners.



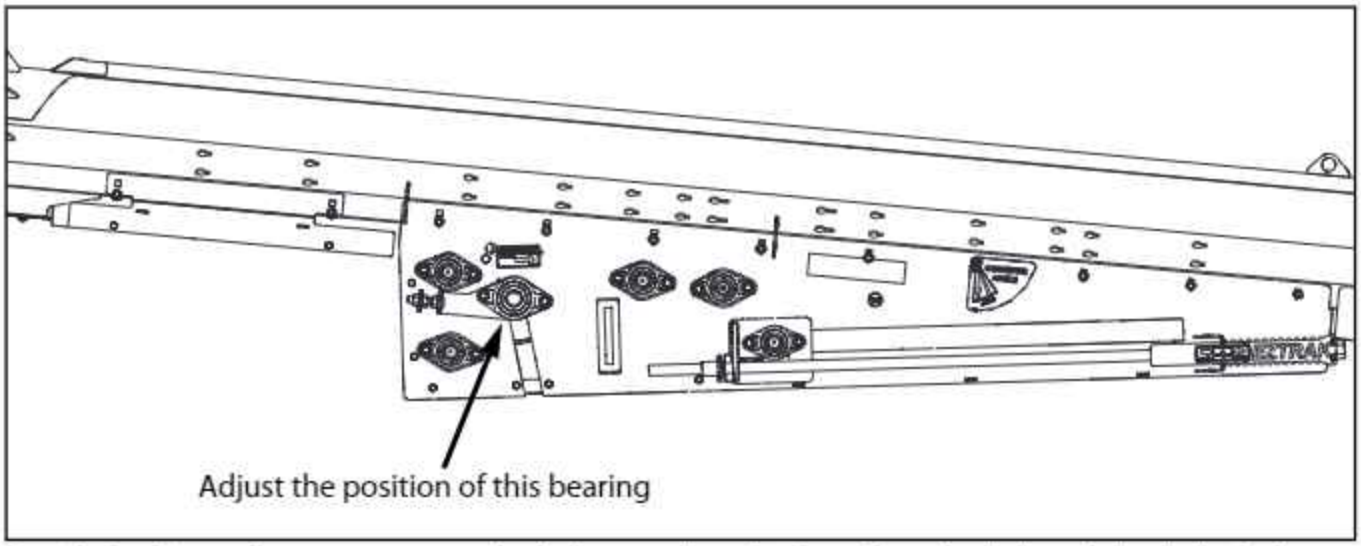
5. Recheck the belt alignment at the end of the Intake to determined if the belt is centered on the roller. If not centered, loosen the fasteners on the bearing shown above and use the adjustment bolt to move the roller in the required direction. Adjust the bearing location a little at a time.
6. Using the tractor, run the belt several revolutions, Stop the belt and check the belt position on the roller. Repeat the adjustments until the belt runs in the middle of the roller. Secure the adjustment bolt in place and tighten the bearing mounting fasteners.

Step 2 - Checking the Alignment at the S-Drive

1. Observe the belt as it goes into the EZ Trak envelop and around the S Drive Rollers to determine if the belt is centered.



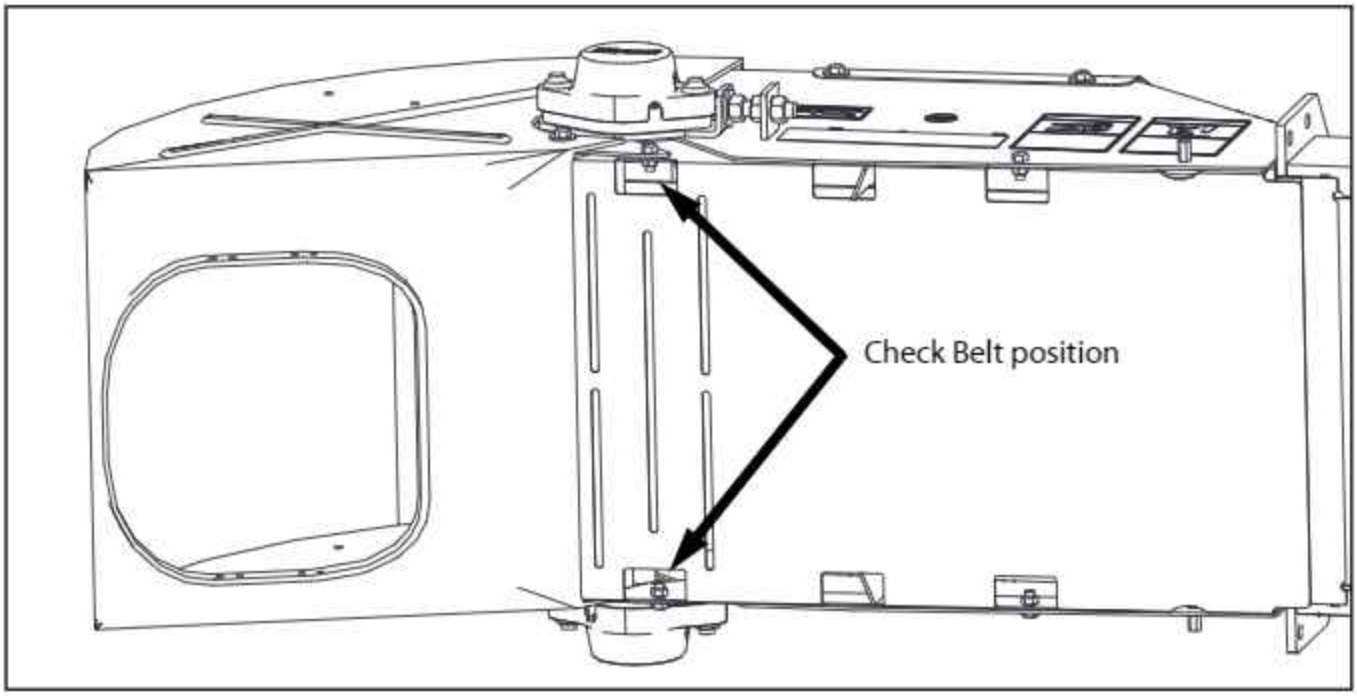
2. Check the belt alignment in the EZ Trak Envelop and the Main Drive Roller to determined if the belt is centered. If not centered, loosen the fasteners on the bearing shown below and use the adjustment bolt to move the roller in the required direction. Adjust the bearing location a little at a time.



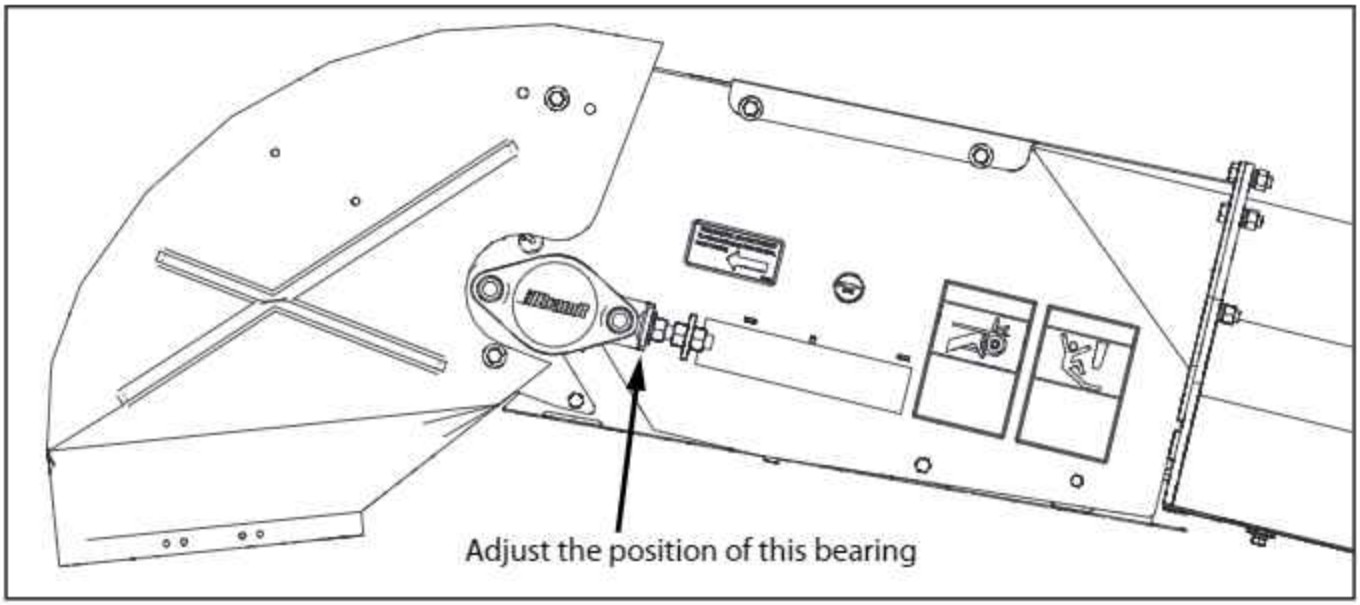
3. Using the engine or motor, run the belt several revolutions, Stop the belt and check the belt position in the envelop and on the roller. Repeat the adjustments until the belt runs in the middle of the envelop and roller. Secure the adjustment bolt in place and tighten the bearing mounting fasteners.

Step 3 - Checking the Alignment at the Discharge

1. Check the belt alignment at the end of the Discharge by looking in the open slots to determine if the belt is centered on the Discharge Roller.



2. If adjustment is required at the discharge location, loosen the fasteners on the bearing shown below and use the adjustment bolt to move the roller in the required direction. Adjust the bearing location a little at a time.

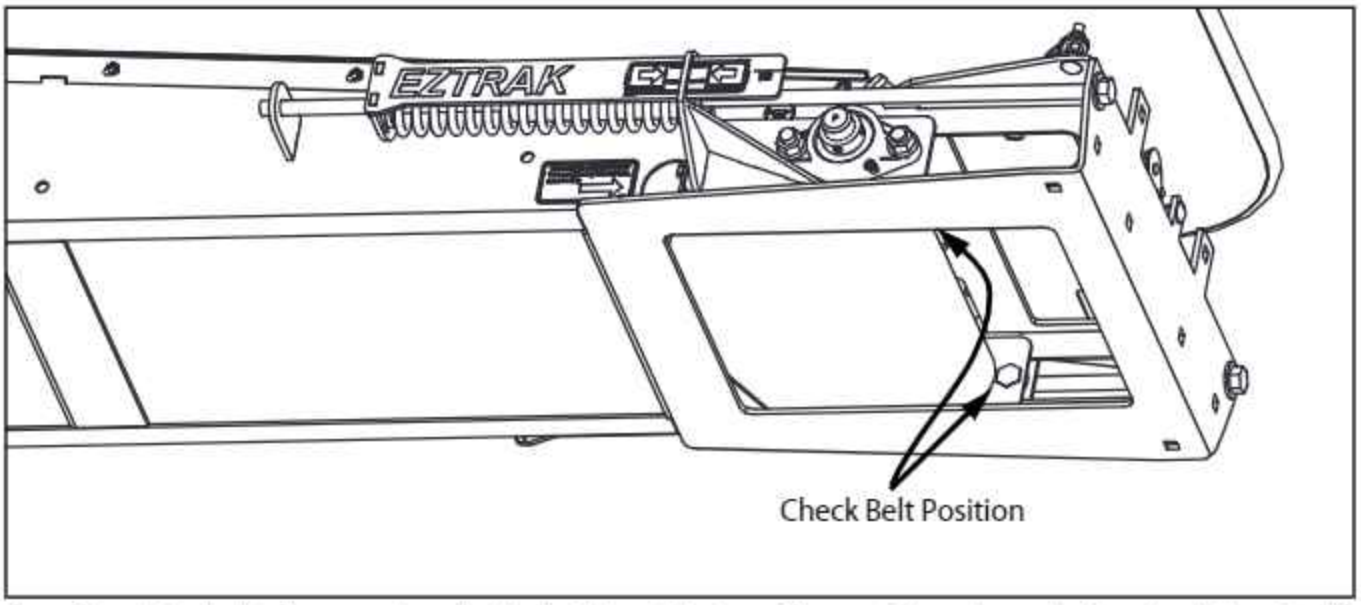


3. Using the engine or motor, run the belt several revolutions, Stop the belt and check the belt position on the discharge roller. Repeat the adjustments until the belt runs in the middle of the roller. Secure the adjustment bolt in place and tighten the bearing mounting fasteners

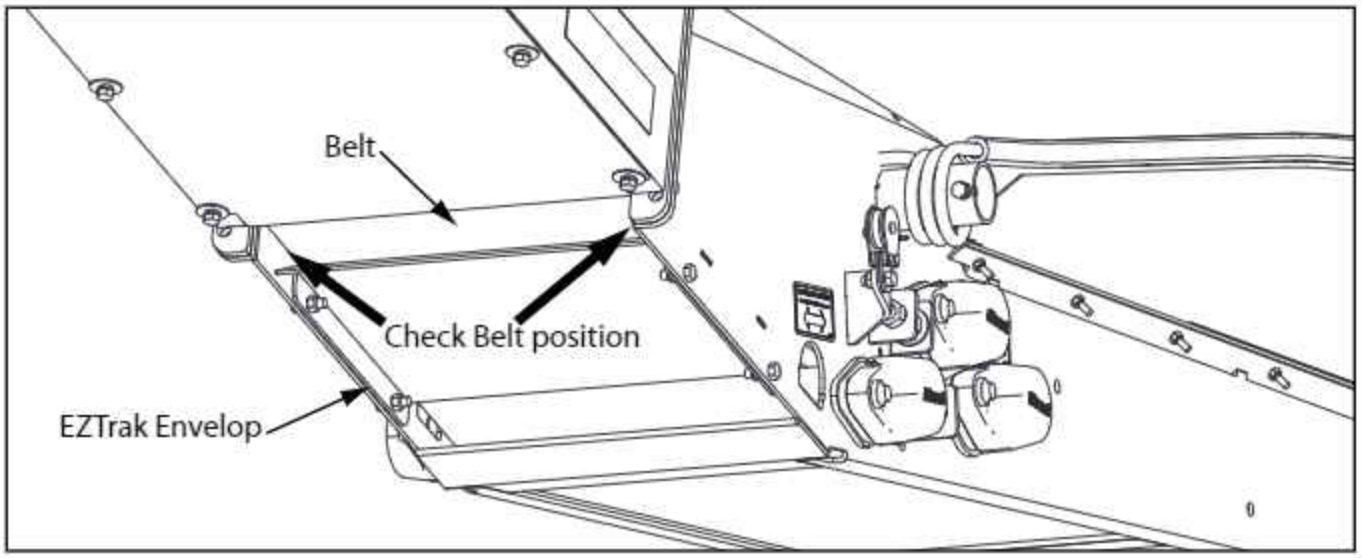
5.4.2.2 Swing Conveyor

Step 1 - Checking the Alignment at the Intake

1. Check the belt alignment at the end of the Intake by looking at the underside of the intake to determine if the belt is centered on the Roller. Do not make any adjustments at this time.



2. Check the belt alignment under the intake at the transition point as shown below, to determine if the belt is running through the center of the EZTrak envelope.

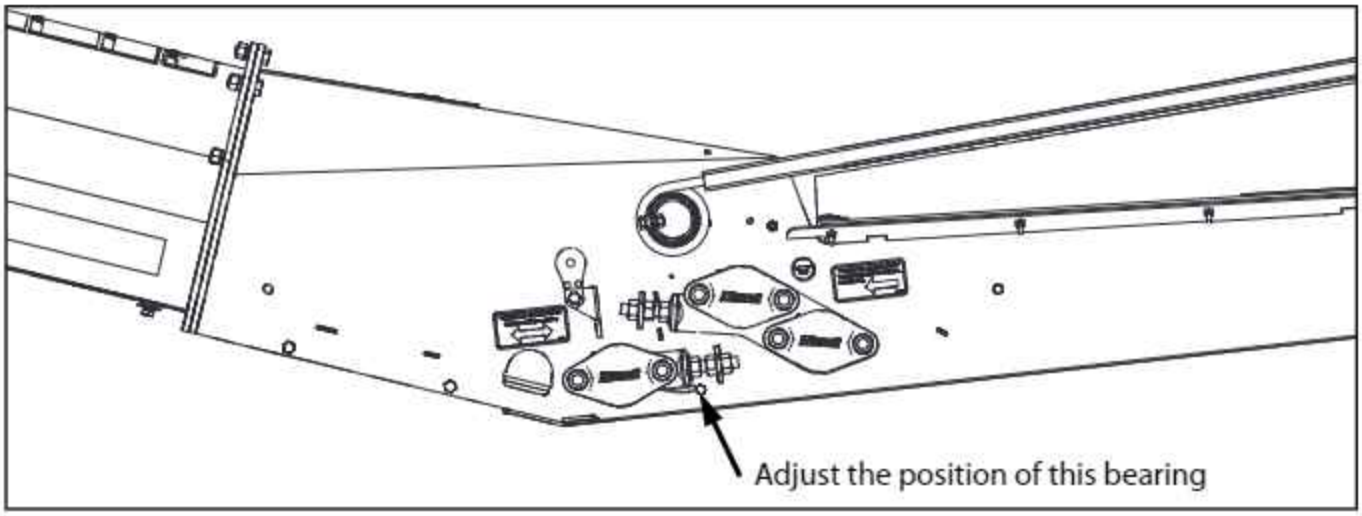


3. If adjustment is required at the transition location, loosen the fasteners on the bearing shown below and use the adjustment bolt to move the roller in the required direction. Adjust the bearing location a little at a time.
4. Using the tractor hydraulics, run the belt several revolutions, Stop the belt and check the belt position in the EZTrak envelop.

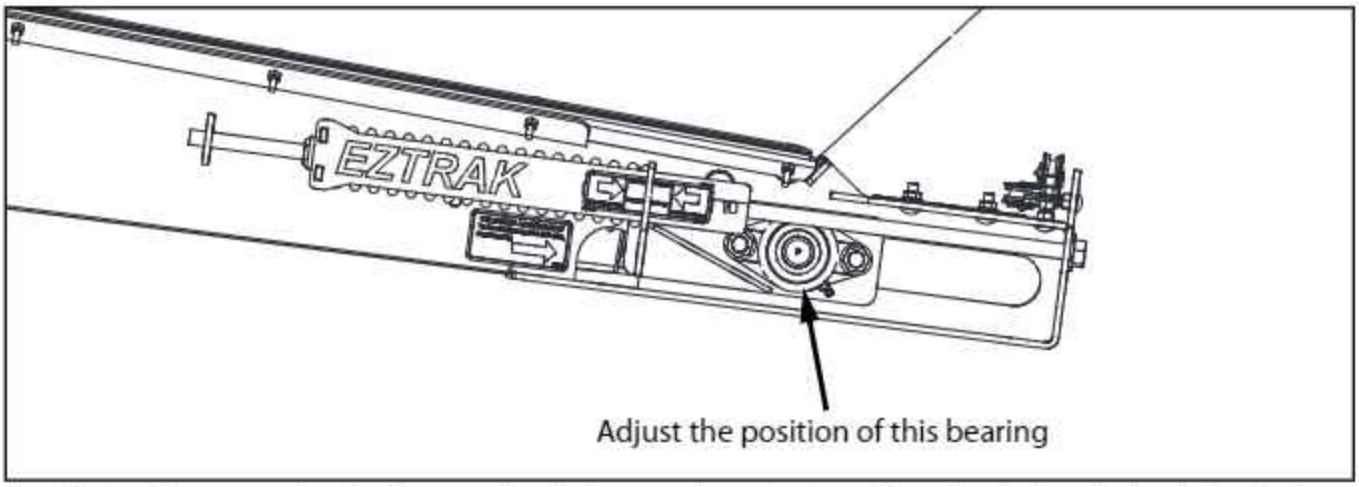
⚠ DANGER

DANGER! DO NOT MAKE BEARING POSITION ADJUSTMENTS WHILE THE BELT IS RUNNING. STOP THE BELT AND THEN MAKE ADJUSTMENTS.

Repeat the adjustments until the belt runs in the middle of the EZTrak envelop. Secure the adjustment bolt in place and tighten the bearing mounting fasteners.

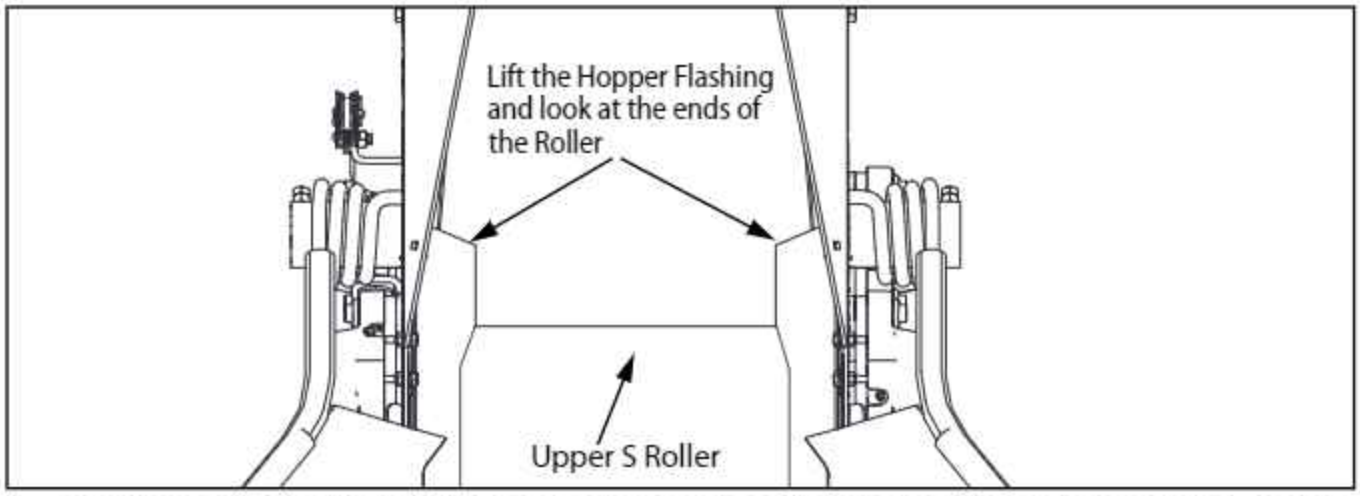


5. Recheck the belt alignment at the end of the Intake to determined if the belt is centered on the roller. If not centered, use the long adjustment bolt to move the roller in the required direction. Adjust the bearing location a little at a time.

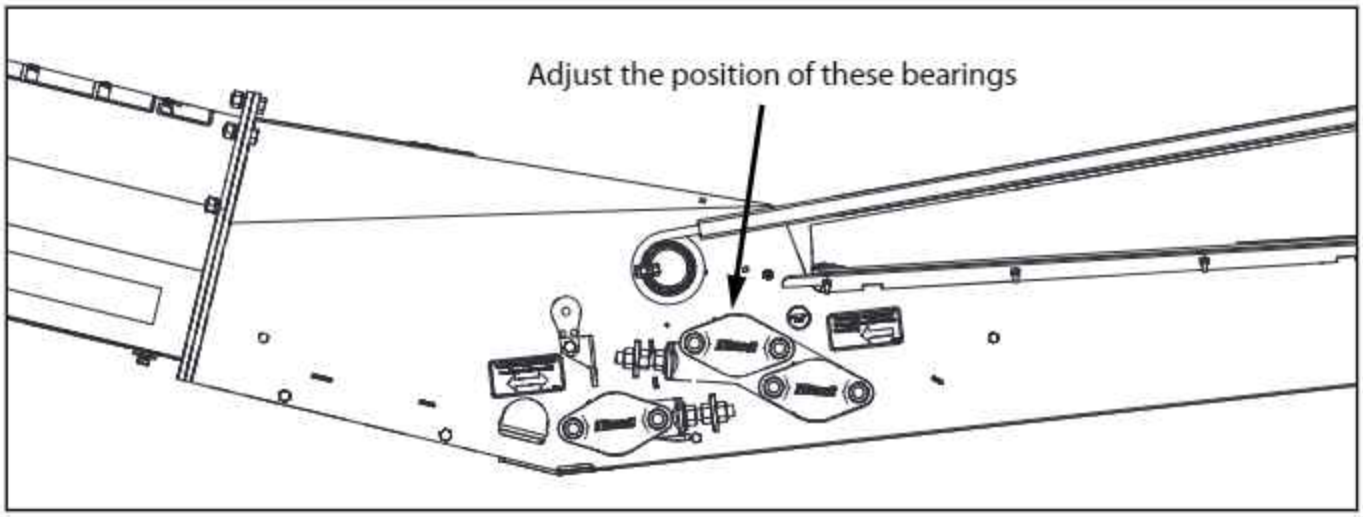


6. Using the tractor hydraulics, run the belt several revolutions, Stop the belt and check the belt position on the roller. Repeat the adjustments until the belt runs in the middle of the roller.

7. Check the belt alignment on the S Rollers by lifting the ends of the hopper flashing as shown below.



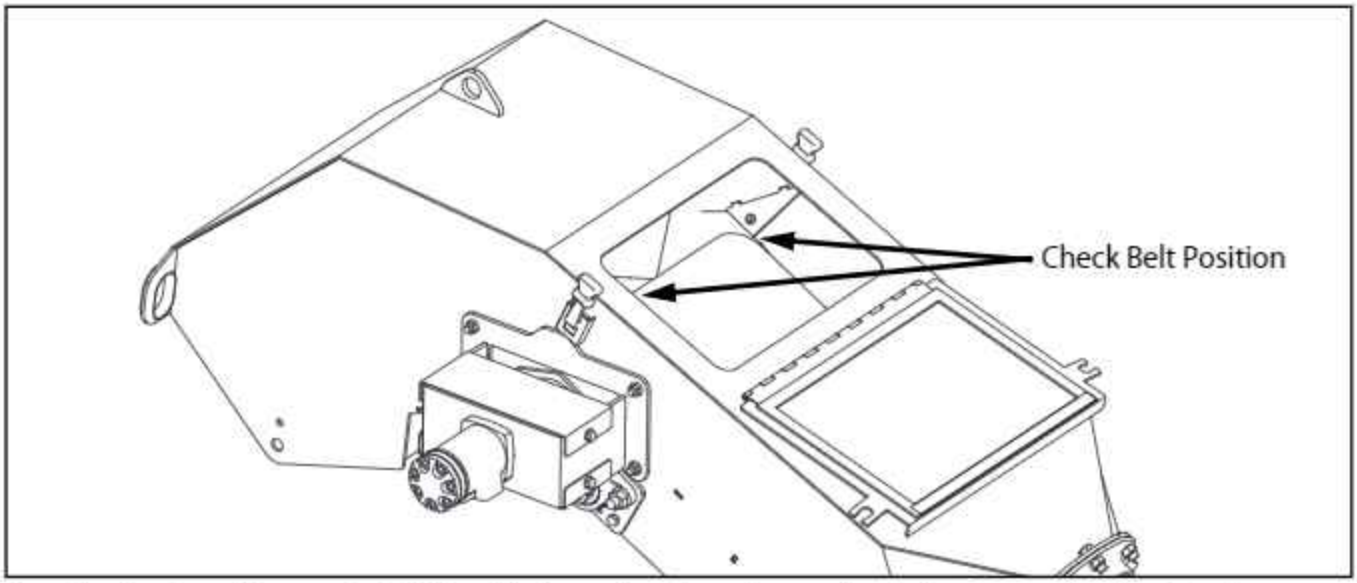
8. If adjustment is required at this location, loosen the fasteners on the bearings shown below and use the adjustment bolt to move the rollers in the required direction. Adjust the bearing location a little at a time.



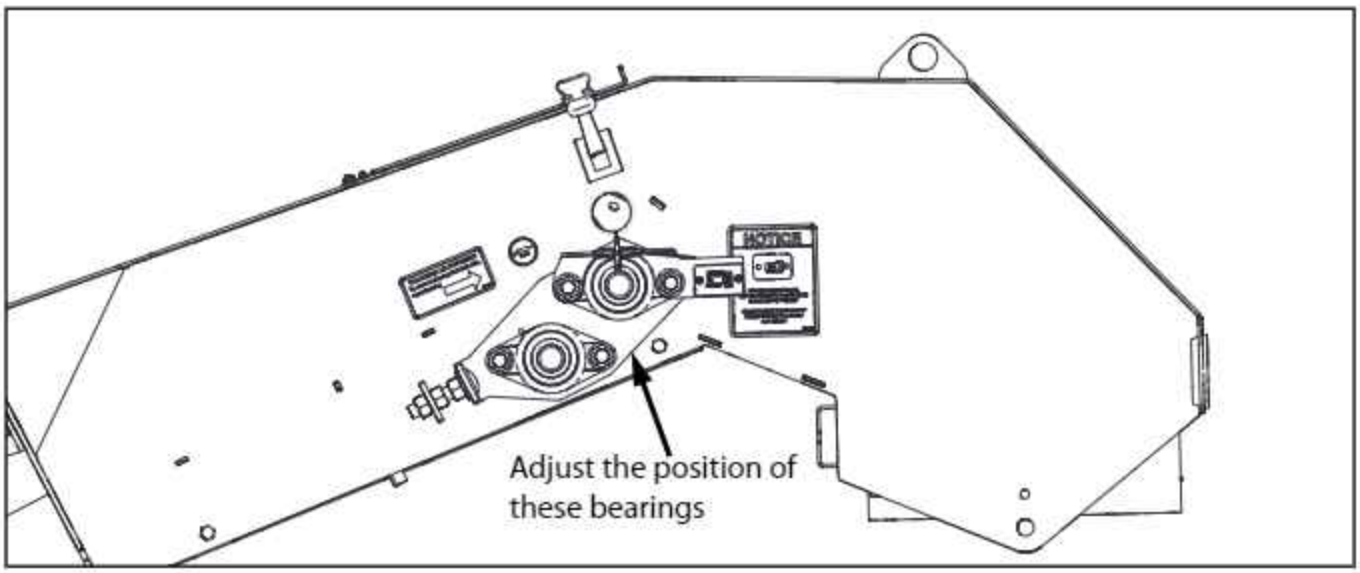
9. Using the tractor hydraulics, run the belt several revolutions, Stop the belt and check the belt position on the roller. Repeat the adjustments until the belt runs in the middle of the roller. Secure the adjustment bolt in place and tighten the bearing mounting fasteners.

Step 2 - Checking the Alignment at the Discharge

1. Check the belt alignment at the end of the Discharge by opening the access door to determine if the belt is centered on the Discharge Roller.

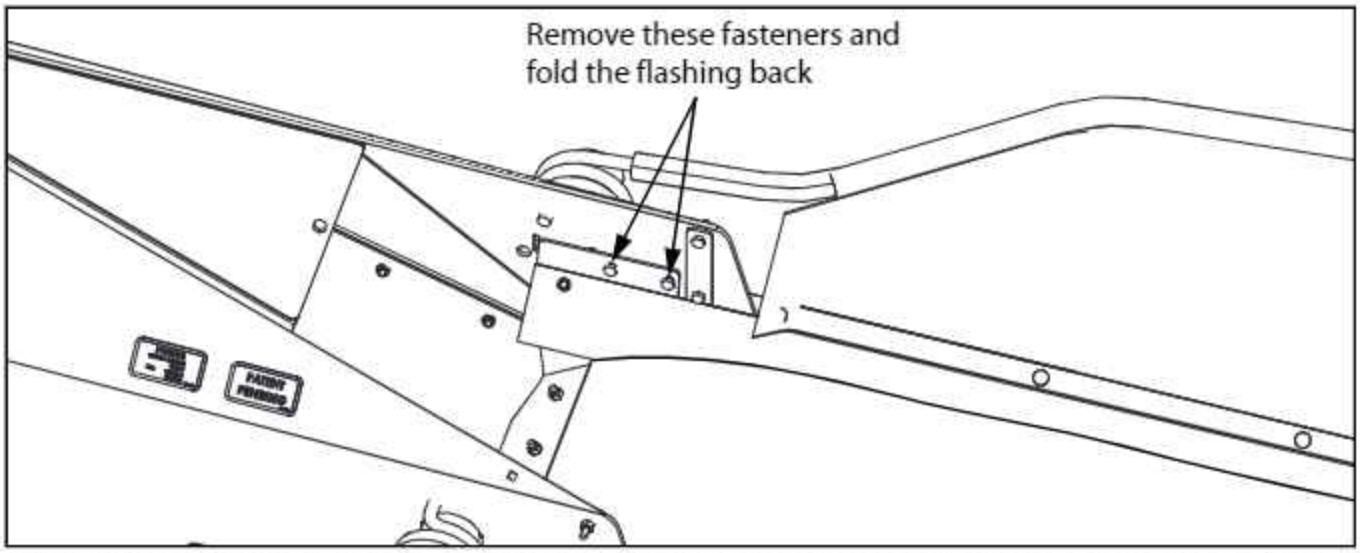


2. If adjustment is required at the discharge location, loosen the fasteners on the bearing shown below and use the adjustment bolt to move the roller in the required direction. Adjust the bearing location a little at a time.
3. Using the tractor hydraulics, run the belt several revolutions, Stop the belt and check the belt position on the discharge roller. Repeat the adjustments until the belt runs in the middle of the roller. Secure the adjustment bolt in place and tighten the bearing mounting fasteners

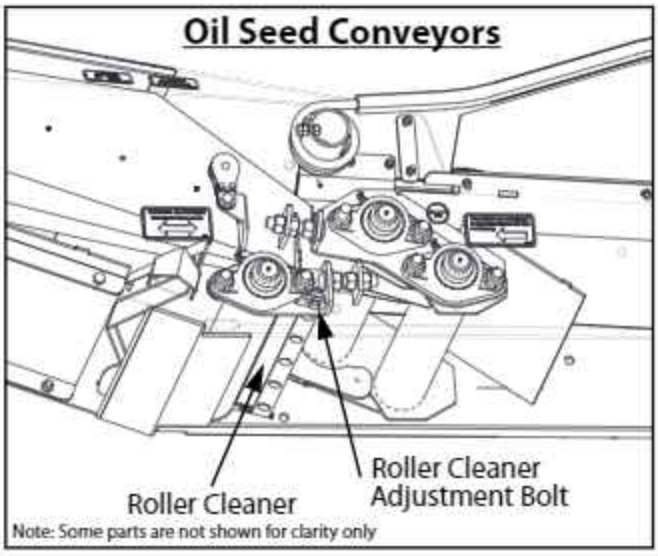


Oil Seed Conveyors

When dealing with an Oil Seed Conveyor, follow all the previous steps. However, in order to view the ends of the rollers in the hopper transition area, the bolts shown below must be removed and the flashing folded back.



Note: Oil Seed Conveyors have a roller cleaner on the intake roller shown in the graphic below. If tracking adjustments must be done on this roller, loosen the bolts holding the Roller Cleaner before adjusting the tracking, otherwise the roller could contact the cleaner. After the tracking is adjusted, reposition the Roller Cleaner so it lightly touches the roller and tighten the bolts.



5.5 Belt Replacement

1. Remove the first wind guard cover above the intake from the conveyor.
2. Rotate the belt until the belt lacing is in this portion of the conveyor.
3. Move the tensioning roller to its loosest position and pull the slack to the seam area.
4. Remove the wire connector and open the belt.

Note: Check the lacing staples on the new belt for proper crimping.

5. Attach one end of the new belt to the belt being removed.
6. Pull the old belt out and the new belt will be threaded into place.
7. Disconnect the old belt and connect the ends of the new belt and secure with the new pin. See Section 3.9, Fig. 3-37 and follow steps 8 to 11 of the Assembly Section.
8. Set the belting tension.
9. Check and set the belting alignment.
10. Remount the Wind Guard Covers.

5.6 Lacing Inspection

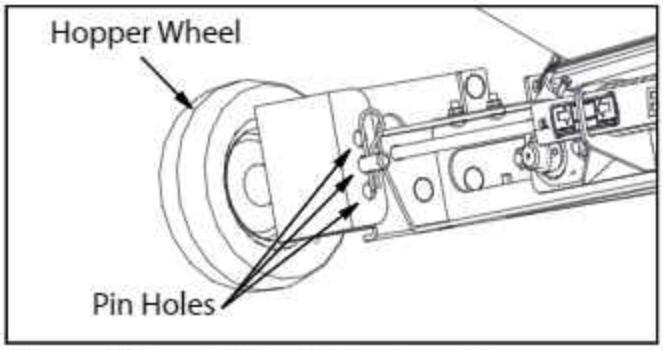
Particular attention should be paid to the belt lacing. Because of the flexing motion of the belt, the lacing is always in motion.

Things to look for are:

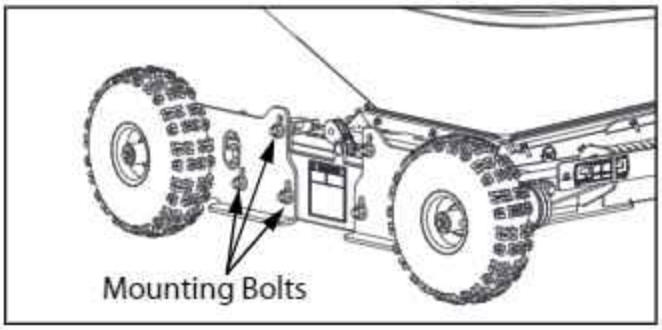
1. Wear in the joining pin.
2. The lacing can pull out of the belt.
3. The staples which hold the lacing on the belt can become loose or bent. To check this, you must look on the back side of the belt. Any staples that are broken, must be replaced. Any that are bent, can be straightened and re-crimped.
   When installing a new belt, check that all the staples are crimped properly before installing in the tube.

5.7 Hopper Wheel Height Adjustment

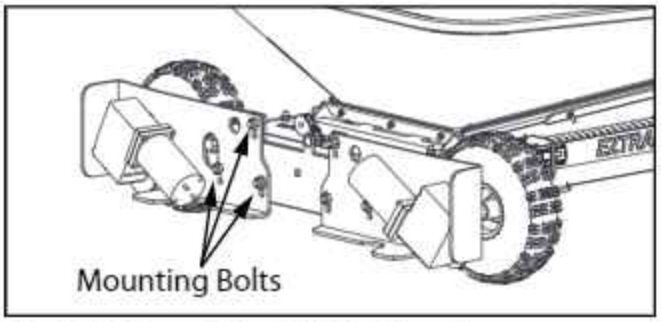
To adjust the hopper wheel height, consult the appropriate graphic below.



Manual Mover Wheel Adjustment



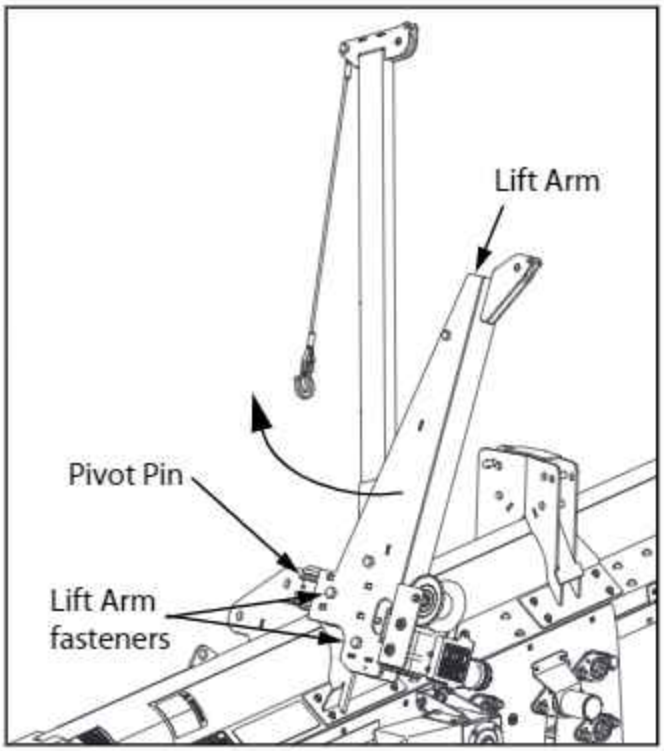
Hydraulic Mover Wheel Adjustment



Electric Mover Wheel Adjustment

5.8 Swing Conveyor Location - Adjusting to the Right or Left Side of Conveyor

1. Lower the swing hopper to the ground and disconnect the conveyor from the tractor.
2. Remove the two fasteners shown.
3. Rotate the lift arm to the opposite side. The Lift Arm will pivot on the center pin.
4. Re-install the lift arm retaining fasteners.
5. Rotate the swing conveyor around the front of the boot to the opposite side.



Repositioning the Lift Arm

5.9 PTO Shear Bolt

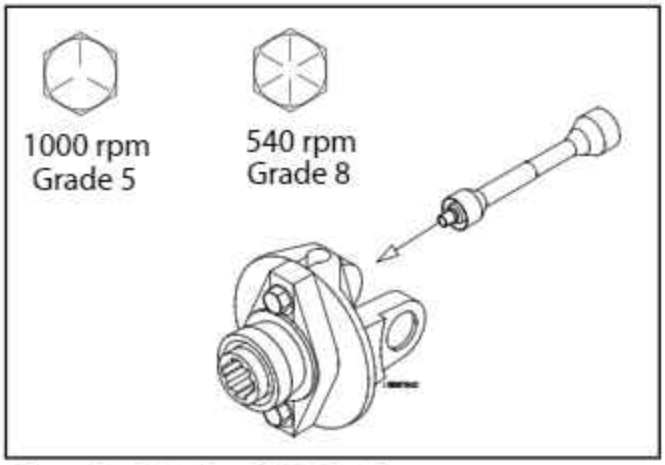
Before you service or adjust your equipment, make sure you stop your engine and lock out your power source!

⚠ CAUTION

Caution. Lock Out the power source by removing the ignition key or coil wire before servicing. If this is not possible, remove the PTO shaft from the work area!

The driveline is protected by a shear bolt inside the bell of the PTO driveshaft where it connects to the tractor as shown. If the shear bolt fails:

1. Shut down and lock out tractor.
2. Check for obstructions and clean away as much grain as possible.
3. Install the new shear bolt.



Shear bolt in the PTO Shaft

NOTICE

Notice. The PTO shaft requires one 1/4" x 1" bolt and lock nut.

4. Slowly engage the PTO drive and allow the conveyor to clean out.

⚠ WARNING

WARNING! Do not replace the shear bolt with a larger or stronger one. Damage to other conveyor components and/or injury may result.

⚠ DANGER

DANGER! Do not remove the PTO shaft guard.

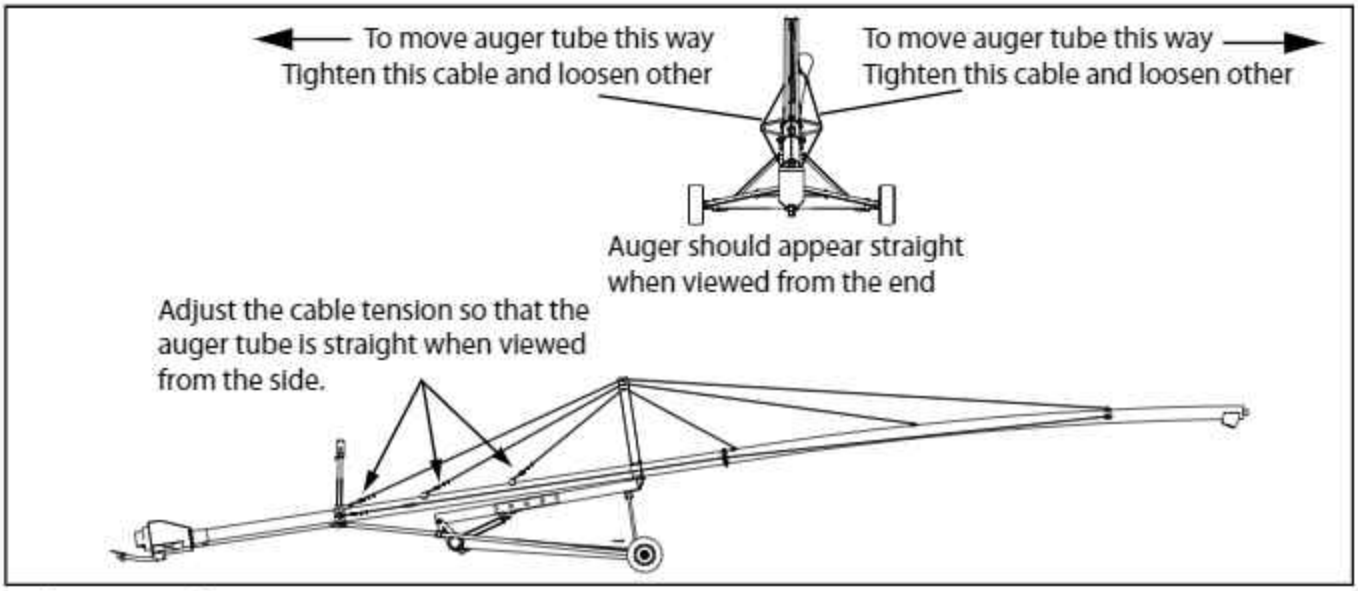
5.10 Tube Truss Adjustment

After using the conveyor for some time, it may be necessary to retension the truss cables in order to maintain the conveyor tube straightness. Proceed as follows.

1. Hook up the conveyor to the drawbar of a tractor to provide stability to the conveyor while performing this operation.
2. With a front end loader, remove the weight off the under carriage by raising the discharge end of the conveyor slightly by lifting in the centre of the top tube.
3. Loosen the cable clamps on the top of the Truss Tower.
4. With a chalk line fixed to the top side of conveyor ends and drawn taut, measure the perpendicular vertical distance between the chalk line and the upper tube face at both ends and in the middle. The distance should be the same at all three locations. If the tube is bowed down, ie, the middle measurement is less than both ends, then tighten the upper truss cables evenly until the middle dimension is slightly greater than both end measurements (approximately 3/4").
5. Move the chalk line to either the left or ride side of the conveyor ends and with the chalk line taut, measure the horizontal perpendicular distance between the chalk line and the tube side face at both ends and in the middle. This measurement should be equal at all locations.

   a) If the tube is bowing to the right, then the truss cable on the right should be loosened evenly and at the same time the left truss cable should be tightened until the middle dimension is the same as the end dimensions.

   b) If the tube is bowing to the left, then the truss cable on the left should be loosened evenly and at the same time the right truss cable should be tightened until the middle dimension is the same as the end dimensions.
6. Once the tube has been straightened in the above described manner, check all the tube flange bolts for tightness. If any tightening is required, do it in a sequence that tightens one bolt, moves to the bolt on the opposite side of the tube and tighten it the same amount, move around to the bolt adjacent to the first one and tighten it similarly and proceed in this manner until all bolts have been tightened.
7. Re-tighten the cable clamps on the top of the Truss Tower.



Tube Truss Adjustment

5.11 Wheel Hub Installation

5.11.1 Adjusting the Hub Tightness

To adjust the 6 bolt wheel hub tightness, use the following instructions.

1. Remove the dust cap from the hub. Remove the cotter pin holding the castle nut in place.
2. Torque the castle nut to 100 ft-lbs. Turn the hub one full rotation to seat the cups and cones. Repeat this process of tightening and rotating four times. This will ensure the cones are properly seated in the cups.
3. Loosen the castle nut one full turn or until the nut can be turned by hand.
4. Torque the castle nut to 30 ft-lbs. Turn the hub one full rotation to seat the cones in the cups.
5. Loosen the castle nut until the first castellation lines up with the cotter pin hole. This should be no more than 1/6 of a turn.
6. Install the cotter pin but do not bend the ends yet.
7. Turn the hub and make sure it rotates freely.

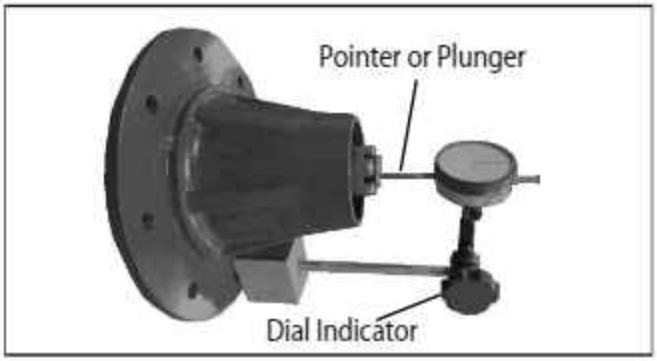
   If the hub is the proper tightness, bend the ends of the cotter pin, pack the dust cap with grease and install.

   If the hub seems too loose in the axial direction, check the endplay to verify it is within 0.001" to 0.005", as shown in Section 5.11.2.

5.11.2 Checking Endplay of an Installed Hub

Note: Endplay must be checked with a Dial Indicator.

1. Ensure the hub has been installed using the previous installation instructions.
2. Attach the base of the Dial Indicator to the mounting face of the hub.



3. Adjust the Dial Indicator plunger or pointer so it is parallel with the spindle axis.
4. Grasp the hub assembly at the 3 o'clock and 9 o'clock positions. Push and pull on the hub and read the bearing end play as the total indicator movement.
5. End play must be within the range of 0.001" to 0.005". If it is, proceed to step 8.
6. If the endplay measurement exceeds 0.005", repeat the procedure in Section 5.11.1 and recheck the endplay.
7. If the endplay still exceeds 0.005" after repeating the instructions in Section 5.11.1, tighten the castle nut to the next castellation. This should not exceed 1/6 of a turn.
8. Install the cotter pin and check to ensure the hub rotates freely.
9. Pack the dust cap with grease and install.

5.12 Service Record

Use this table to record the service work done to the machine. See Lubrication Section 5.2 for details of service.

Table Codes C - Check L - Lubricate

Hours									
Serviced by, Intial									
Service Schedule									
10 Hours or Daily									
L - All Roller Bearings									
C - Conveyor Belt Tension									
C - Conveying Belt Lacing									
50 Hours or Weekly									
L - Complete PTO Shaft									
L - Ladder Pivot									
L - Lift Arm Pivot									
L - End Drive Chain									
L - S-Drive Chain									
C - Swing Conveyor Lift Cables									
Annually									
C - Oil Level in the gearbox									
C - Gearbox Seals for weeping									
C - Roller Bearings for Heat & Seal Leakage									
C - Swing Conveyor Lift Cables									
L - Cable Sheaves on Swing Conveyor Lift									
L - Winch Bushings, Drum Shaft & Ratchet									
L - Repack Wheel Bearings									
C- Drive Sprockets and Chains for wear									
C - Tube Truss Tension									
C - Conveyor Lift Cylinder for leaking									
C - All Hydraulic Hoses									
C - Tire Pressure and Wear									
C - All hardware for tightness									
C - Wheel bolts for proper torque									

CHAPTER 6 Additional Information

6.1 General Torque Specifications

Use the following guidelines when tightening bolts.

- Tighten all bolts to the torques specified in charts unless otherwise noted throughout this manual.
- Check the tightness of the bolts periodically, using the bolt-torque chart as a guide.
- Replace hardware with the same strength bolt.
- Torque figures are valid for non-greased or non-oiled threads and heads unless otherwise specified. Do not grease or oil bolts or cap screws unless specified in this manual. When using locking elements, increase the torque values by 5%.

6.1.1 Unified Inch Bolt and Screw Torque Values

TS1671 –UN–01MAY03

TABLE 6-1. Unified Inch Bolt and Screw Torque Values

Bolt or Screw Size	SAE Grade 1				SAE Grade 2 [a]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]	
	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in
1/4	3.7	33	4.7	42	6	53	7.5	66	9.5	84	12	106	13.5	120	17	150
													N.m	lb-ft	N.m	lb-ft
5/16	7.7	68	9.8	86	12	106	15.5	137	19.5	172	25	221	28	20.5	35	26
									N.m	lb-ft	N.m	lb-ft				
3/8	13.5	120	17.5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
			N.m	lb-ft	N.m	lb-ft	N.m	lb-ft								
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
	N.m	lb-ft														
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[a] Grade 2 applies for hex cap screws (not hex bolts) up to 6 in. (152mm) long. Grade 1 applies for hex cap screws over 6 in. (152mm) long and for all other types of bolts and screws of any length.

[b] Lubricated means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C zinc flake coating.

[c] Dry means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B zinc flake coating.

6.1.2 Metric Bolt and Screw Torque Values

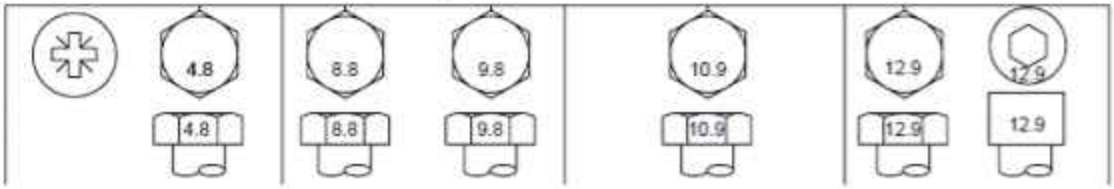


TABLE 6-2. Metric Bolt and Screw Torque Values

Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]	
	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									N.m	lb-ft	N.m	lb-ft	N.m	lb-ft	N.m	lb-ft
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			N.m	lb-ft	N.m	lb-ft	N.m	lb-ft								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	N.m	lb-ft														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown int he chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. If higher property class fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[b] Lubricated means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C zinc flake coating.

[c] Dry means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B zinc flake coating.

6.1.3 Suggested Torque for Hydraulic Fittings

TABLE 6-3. Suggested Torque for Hydraulic Fittings

Fitting Size	Dash Size	Torque					
		37° JIC		ORB		ORF	
		ft-lb	N-m	ft-lb	N-m	ft-lb	N-m
1/4	04	12	15	14	20	12	15
3/8	06	20	25	23	30	25	35
1/2	08	40	55	40	55	55	75
5/8	10	60	80	45	60	75	100
3/4	12	80	110	75	100	130	175
7/8	14	-	-	85	115	170	230
1	16	110	150	120	165	210	285
1-1/4	20	130	175	155	210	250	340
1-1/2	24	165	225	170	230	320	435

6.1.4 Suggested Torque for Tapered Pipe Thread Hydraulic Fittings

TABLE 6-4. Tapered Pipe Thread Torque

Suggested Wrenching Torque for Tapered Pipe Thread Fittings						
Tapered Pipe Thread with Sealant*				Tapered Pipe Thread without Sealant		
Thread Size	N-m	lb-ft		Thread Size	N-m	lb-ft
1/16-27 UNF	15	10		1/16-27 UNF	20	15
1/8-27 UNF	20	15		1/8-27 UNF	25	20
1/4-18 UNF	25	20		1/4-18 UNF	35	25
3/8-18 UNF	35	25		3/8-18 UNF	45	35
1/2-14 UNF	45	35		12-14 UNF	60	45
3/4-14 UNF	60	45		3/4-14 UNF	75	55
1-11 1/2 UN	75	55		1-11 1/2 UN	90	65
1-1/4-11 1/2 UN	95	70		1-1/4-11 1/2 UN	110	80
1-1/2-11 1/2 UN	110	80		1-1/2-11 1/2 UN	130	95
2- 11 1/2 UN	130	95		2- 11 1/2 UN	160	120
*SUGGESTED WRENCHING TORQUE FOR TAPERED PIPE THREAD chart meets FUNK Engineering Procedures Manual Torque Specifications QS04.01.4 (YZS-101)						

6.1.5 Cable Clamps

TABLE 6-5. Cable Clamp Torque Values

Cable Clamp Size	Min. Number of Clamps	Amount of Cable to turn back in inches	Torque in lb-ft
3/16"	2	3 3/4"	7.5
1/4"	2	4 3/4"	15
5/16"	2	5 1/4"	30
3/8"	2	6 1/2"	45
1/2"	3	11 1/2"	45
5/8"	3	12"	90

6.2 SAE-to-Metric Conversions

This manual provides values and measurements in units according to the standards of the Society of Automotive Engineers (SAE). Table 6-6 provides the conversion factor for SAE units to SI units (metric system).

TABLE 6-6. SAE-to-Metric Conversion

SAE Unit	Conversion Factor	SI Units (Metric)
ft/min	x 0.3048	Metres/min (m/min)
ft/s	x 0.3048	Metres/s (m/s)
US gallon	x 3.7854	Litres (L)
US gal/min (GPM)	x 3.7854	Litres/min (L/min)
hp	x 0.7457	Kilowatts (kW)
in	x 2.54	Centimetres (cm)
in	x 25.4	Millimetres (mm)
in^3	x 16.3871	Cubic centimetres (cm^3 or cc)
lb	x 0.4535	Kilogram (kg)
lbf	x 4.4482	Newtons (N)
lbf.ft *or* ft-lb	x 1.3558	Newton metres (N.m)
lbf.in *or* in-lb	x 0.1129	Newton metres (N.m)
mph	x 1.6063	Kilometres/hour (km/h)
oz	x 29.5735	Millilitres (ml)
psi	x 0.06894	Bar
psi	x 6.8948	Kilopascals (kPa)
psi	x 0.00689	Megapascals (MPa)

6.3 Acronyms and Abbreviations

TABLE 6-7. Acronyms and Abbreviations

Term / Symbol	Definition
'	Foot
"	Inch
A	Ampere
API	American Petroleum Institute
ASABE	American Society of Agricultural and Biological Engineers
ASTM	American Society of Testing and Materials
F	Fahrenheit
ft	Foot
ft/min	Feet per minute
ft/s	Feet per second
GPM	U.S. gallons per minute
hp	Horsepower
HPU	Hydraulic power unit
Hz	Hertz
in^3	Cubic inches
ID	Inside diameter
lb	Pound
lbf	Pounds force
lbf.ft *or* ft-lb	Pound feet *or* foot pounds
lbf.in *or* in-lb	Pound inches *or* inch pounds
mph	Miles per hour
N/A	Not applicable
OD	Outside diameter
OEM	Original Equipment Manufacturer
oz	Ounce
PH	Phase
psi	Pounds per square inch
RPM	Revolutions per minute
SAE	Society of Automotive Engineers
VAC	Volts, alternating current
VDC	Volts, direct current

CHAPTER 7 Troubleshooting

The Brandt Grain Belt Tube Conveyors have been designed to give long and trouble-free use. Minor problems do, however, occur from time to time. In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter. If you encounter a problem that is difficult to solve, even after reading through this trouble shooting section, please contact your local Brandt dealer. Before you call, please have this manual and the serial number from your Conveyor at hand.

Symptom	Possible Cause	Solution
Conveyor will not run.	Conveyor belt loose.	Tighten and align the belt.
	Belting frozen to the tube from operating in high humidity conditions in extreme cold.	Clear away all snow from the intake end before start up. Run the conveyor empty after use to allow the belt to dry prior to shut down.
	Chain Failure	Replace Chain
	Chain Skipping	Adjust Chain Tension
Conveyor belt edge is fraying.	Conveyor belt is not aligned.	Re-align the conveyor belt.
Poor capacity	Angle is too steep.	If possible, reposition with a lower angle.
	Slow operating speed.	Increase operating speed.
	Conveyor belt slipping.	Tighten and align the conveyor belt.
Leakage at the hopper.	Flashing wore out or not positioned properly.	Replace or reposition the flashing.
	Angle is too steep	Decrease angle of conveyor
	Too much roll back of product in the transition area of the intake.	Reduce the feed rate into the intake.
	Conveyor is not level from side to side	Ensure conveyor is level from side to side.
	Lacing is torn	Replace lacing
	Feeding too close to the transition area	Re-position so the grain is introduced closer to the middle of the hopper.

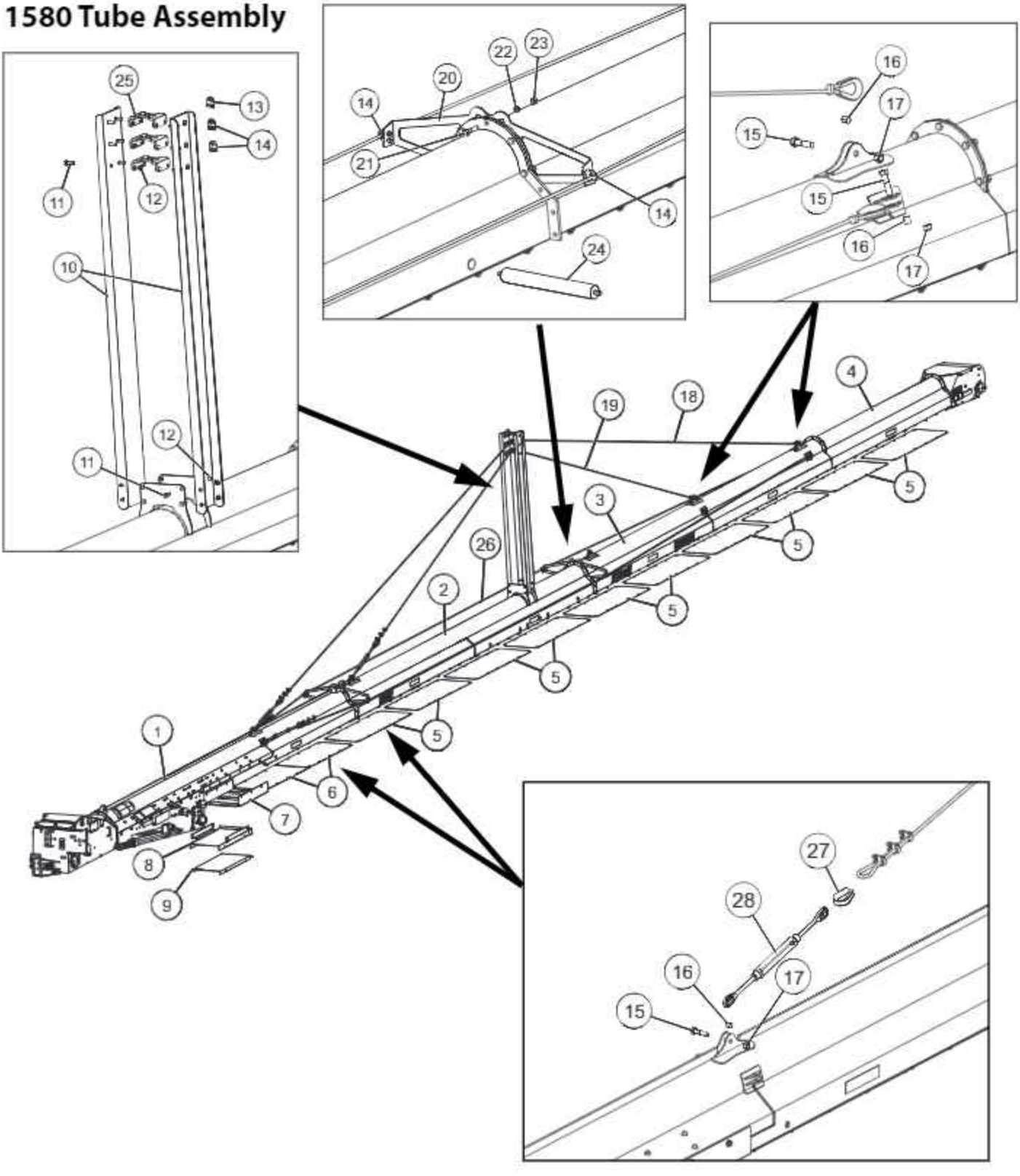
Symptom	Possible Cause	Solution
Leakage at the discharge.	Belt speed too high.	Reduce belt speed.
	Discharge Wiper worn out or not positioned properly.	Replace or reposition the discharge wiper.
	Over feeding the hopper. Product getting behind the belt.	Reduce the amount of incoming product.
	Tube Flanges are not aligned.	Check Intake and Discharge flanges for alignment. Grind belt path flush if necessary.
	Lacing is torn.	Replace lacing.

CHAPTER 8 Parts List

8.1 Drawing List

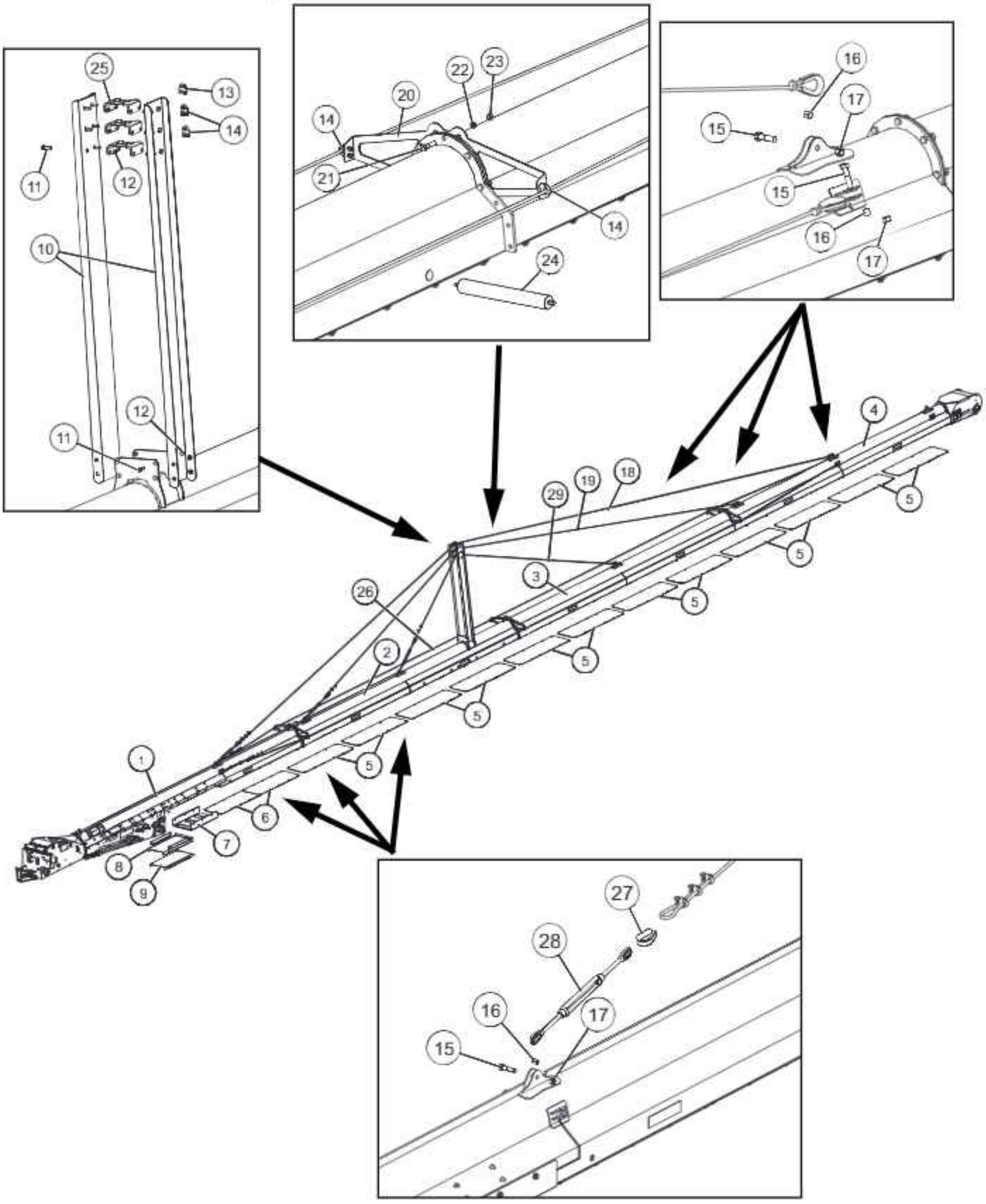
NS Items not shown in drawing.

1580 Tube Assembly



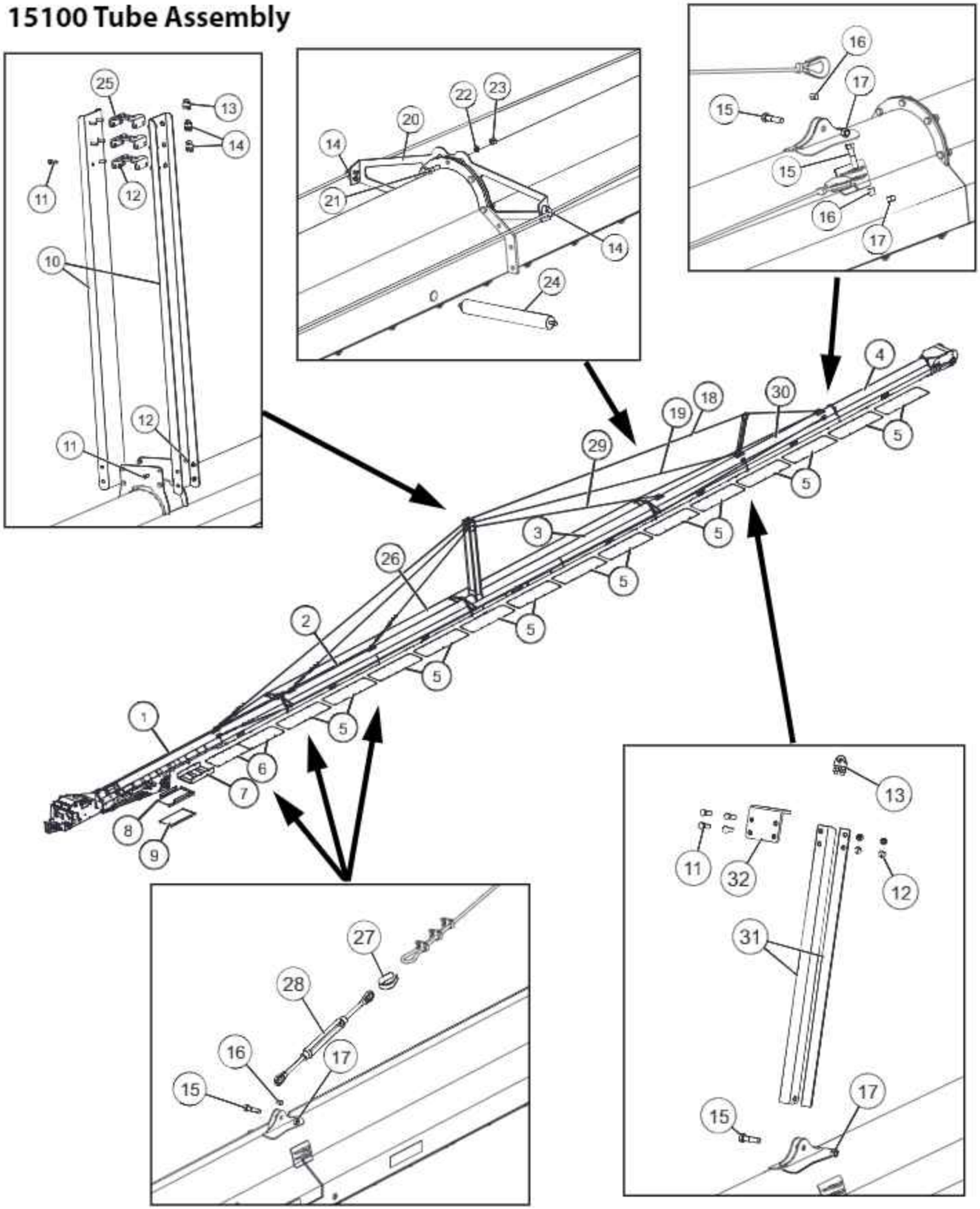
REF #	PART NO.	DESCRIPTION	QTY
1	2066022	LOWER TUBE ASSEMBLY C/W DECALS	1
2	2066036	SUSPENSION TUBE ASSEMBLY C/W DECALS	1
3	2066029	COMMON TUBE ASSEMBLY c/w DECALS	1
4	2066031	UPPER TUBE ASSEMBLY c/w DECALS	1
5	2066040	COMMON WINDGUARD PAN	10
6	2075351	SHORT WINDGUARD PAN	2
7	C2179484	LOWER TUBE BELT COVER	1
8	C2179486	UPPER EZTRAK ENVELOP	1
9	C2179485	LOWER EZTRAK PLATE	1
10	2064511	MAIN TRUSS TOWER	1
11	B001041	1/2" x 1 1/2" BOLT - GR.5	20
12	B001134	1/2" STOVER LOCK NUT	20
13	B008085	1/2" CABLE CLAMP	1
14	B008080	3/8" CABLE CLAMP	12
15	B001071	5/8" x 2 1/2" BOLT - GR.5	8
16	B002311	BUTTITE SPACER - 5/8" ID x 3/4" LONG	8
17	B0011415	5/8" STOVER LOCK NUT	8
18	B008313	3/8" CABLE x 49' LONG c/w LOOP	1
19	B008308	3/8" CABLE x 32.5' LONG c/w LOOP	1
20	C2179469	SIDE CABLE TRUSS	2
21	B001044	1/2" x 2" BOLT - GR.5	10
22	B001167	1/2" LOCK WASHER	40
23	B001135	1/2" NUT	40
24	B021257	RETURN ROLLER - 1.9" OD x 15 1/8" LONG	4
25	2064512	TRUSS TOWER SUPPORT	3
26	B008311	3/8" CABLE x 47' LONG c/w LOOP	2
27	B008081	3/8" CABLE THIMBLE	4
27	B008086	1/2" CABLE THIMBLE	NR
28	B008475	5/8" x 12" TURNBUCKLE	4
NS	B018660	STANDARD RUBBER BELT - 15" WIDE x 159' 11" LONG	1
NS	2075637	OIL SEED RUBBER BELT - 15" WIDE x 159' 11" LONG	1
NS	C204176	15" BELT LACING KIT	AR
NS	C204584	15" LACING PIN KIT	AR
NS	B018623	STANDARD RUBBER BELT - 15" WIDE x 5' LONG	AR
NS	2079933	OIL SEED RUBBER BELT - 15" WIDE x 5' LONG	AR
NS	B018612	STANDARD RUBBER BELT - 15" WIDE x 10' LONG	AR
NS	2079934	OIL SEED RUBBER BELT - 15" WIDE x 10' LONG	AR
NS	B018614	STANDARD RUBBER BELT - 15" WIDE x 20' LONG	AR
NS	2079935	OIL SEED RUBBER BELT - 15" WIDE x 20' LONG	AR

1590 Tube Assembly



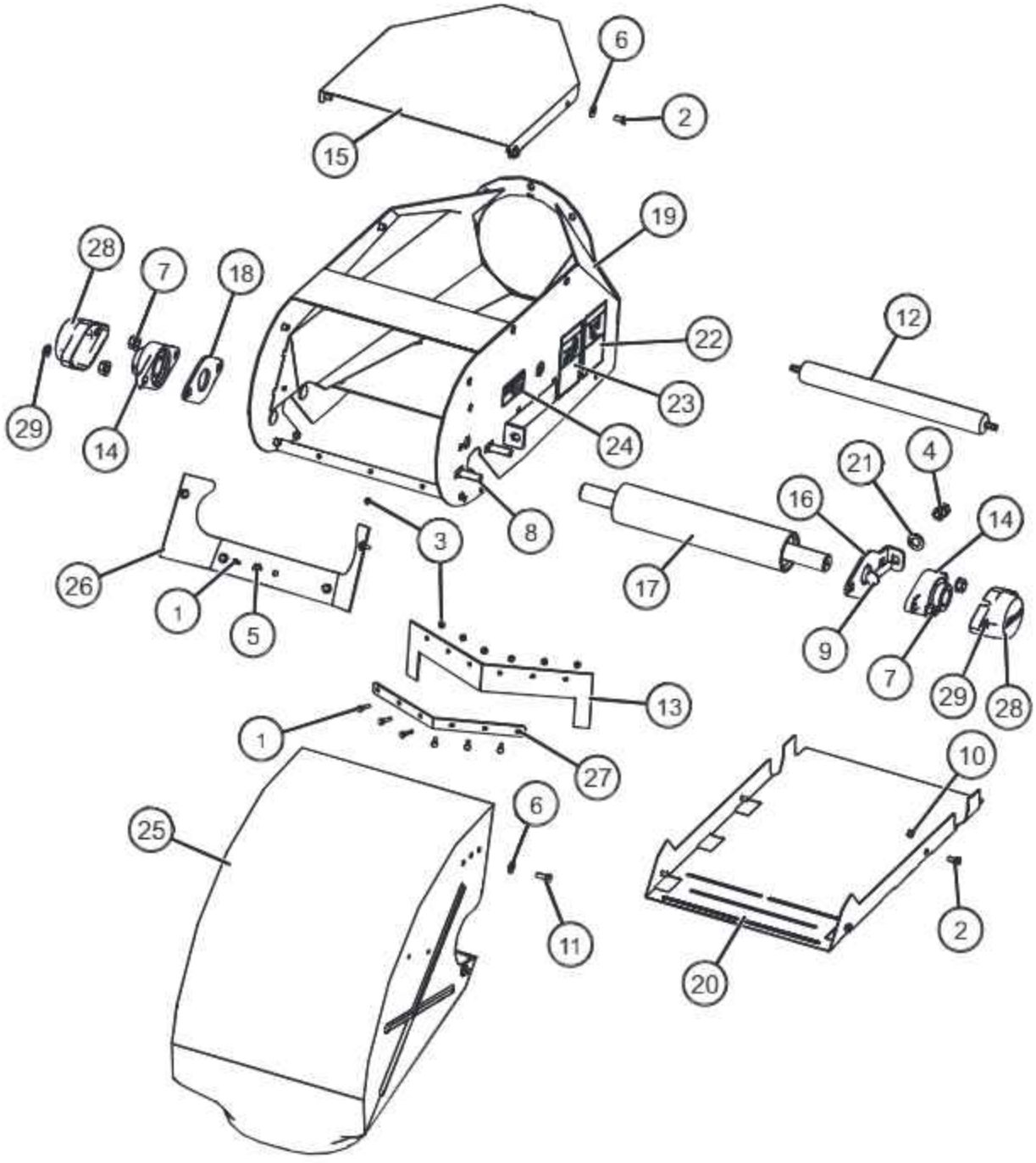
Ref #	Part No.	Description	QTY
1	2066022	LOWER TUBE ASSEMBLY C/W DECALS	1
2	2066033	SUSPENSION TUBE ASSEMBLY C/W DECALS	1
3	2066035	COMMON TUBE ASSEMBLY c/w DECALS	1
4	2066029	UPPER TUBE ASSEMBLY c/w DECALS	1
5	2066040	COMMON WINDGUARD PAN	12
6	2075351	SHORT WINDGUARD PAN	2
7	C2179484	LOWER TUBE BELT COVER	1
8	C2179486	UPPER EZTRAK ENVELOP	1
9	C2179485	LOWER EZTRAK PLATE	1
10	2064511	MAIN TRUSS TOWER	1
11	B001041	1/2" x 1 1/2" BOLT - GR.5	20
12	B001134	1/2" STOVER LOCK NUT	20
13	B008085	1/2" CABLE CLAMP	4
14	B008080	3/8" CABLE CLAMP	14
15	B001071	5/8" x 2 1/2" BOLT - GR.5	8
16	B002311	BUTTITE SPACER - 5/8" ID x 3/4" LONG	8
17	B0011415	5/8" STOVER LOCK NUT	8
18	B0083091	1/2" CABLE x 60' LONG c/w LOOP	1
19	B0083081	3/8" CABLE x 43' LONG c/w LOOP	1
20	C2179469	SIDE CABLE TRUSS	2
21	B001044	1/2" x 2" BOLT - GR.5	10
22	B001167	1/2" LOCK WASHER	40
23	B001135	1/2" NUT	40
24	B021257	RETURN ROLLER - 1.9" OD x 15 1/8" LONG	5
25	2064512	TRUSS TOWER SUPPORT	3
26	B0081085	3/8" CABLE x 61' LONG c/w LOOP	2
27	B008081	3/8" CABLE THIMBLE	4
27	B008086	1/2" CABLE THIMBLE	1
28	B008475	5/8" x 12" TURNBUCKLE	5
29	B0083084	3/8" CABLE x 25' LONG c/w LOOP	1
NS	B018662	STANDARD RUBBER BELT - 15" WIDE x 179' 11" LONG	1
NS	2075638	OIL SEED RUBBER BELT - 15" WIDE x 179' 11" LONG	1
NS	C204176	15" BELT LACING KIT	AR
NS	C204584	15" LACING PIN KIT	AR
NS	B018623	STANDARD RUBBER BELT - 15" WIDE x 5' LONG	AR
NS	2079933	OIL SEED RUBBER BELT - 15" WIDE x 5' LONG	AR
NS	B018612	STANDARD RUBBER BELT - 15" WIDE x 10' LONG	AR
NS	2079934	OIL SEED RUBBER BELT - 15" WIDE x 10' LONG	AR
NS	B018614	STANDARD RUBBER BELT - 15" WIDE x 20' LONG	AR
NS	2079935	OIL SEED RUBBER BELT - 15" WIDE x 20' LONG	AR

15100 Tube Assembly



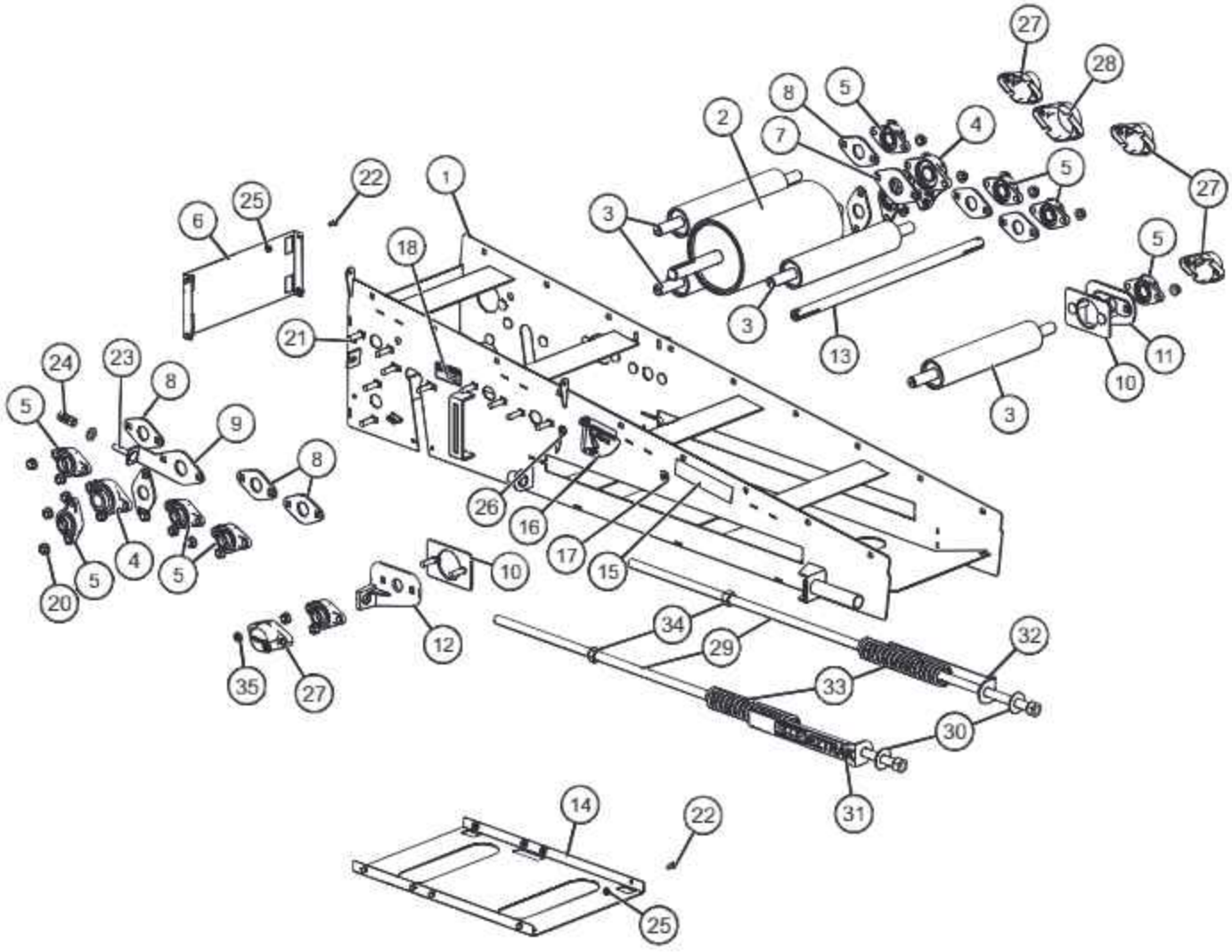
Ref #	Part No.	Description	QTY
1	2066022	LOWER TUBE ASSEMBLY C/W DECALS	1
2	2066025	TUBE ASSEMBLY C/W DECALS	1
3	2066027	TUBE ASSEMBLY c/w DECALS	1
4	2066031	UPPER TUBE ASSEMBLY c/w DECALS	1
5	2066040	COMMON WINDGUARD PAN	14
6	2075351	SHORT WINDGUARD PAN	2
7	C2179484	LOWER TUBE BELT COVER	1
8	C2179486	UPPER EZTRAK ENVELOP	1
9	C2179485	LOWER EZTRAK PLATE	1
10	2064511	MAIN TRUSS TOWER	1
11	B001041	1/2" x 1 1/2" BOLT - GR.5	24
12	B001134	1/2" STOVER LOCK NUT	24
13	B008085	1/2" CABLE CLAMP	4
14	B008080	3/8" CABLE CLAMP	16
15	B001071	5/8" x 2 1/2" BOLT - GR.5	8
16	B002311	BUTTITE SPACER - 5/8" ID x 3/4" LONG	8
17	B0011415	5/8" STOVER LOCK NUT	8
18	B0083088	1/2" CABLE x 69' LONG c/w LOOP	1
19	B0081077	3/8" CABLE x 51' LONG c/w LOOP	1
20	C2179469	SIDE CABLE TRUSS	3
21	B001044	1/2" x 2" BOLT - GR.5	15
22	B001167	1/2" LOCK WASHER	50
23	B001135	1/2" NUT	50
24	B021257	RETURN ROLLER - 1.9" OD x 15 1/8" LONG	7
25	2064512	TRUSS TOWER SUPPORT	3
26	B0081086	3/8" CABLE x 68' LONG c/w LOOP	2
27	B008081	3/8" CABLE THIMBLE	4
27	B008086	1/2" CABLE THIMBLE	1
28	B008475	5/8" x 12" TURNBUCKLE	5
29	B0083082	3/8" CABLE x 35' LONG c/w LOOP	1
30	2066029	TUBE ASSEMBLY C/W DECALS	1
31	2064508	SMALL TRUSS UPRITE	2
32	2054510	SMALL TRUSS TOP	1
NS	B018664	STANDARD RUBBER BELT - 15" WIDE x 199' 11" LONG	1
NS	2075639	OIL SEED RUBBER BELT - 15" WIDE x 199' 11" LONG	1
NS	C204176	15" BELT LACING KIT	AR
NS	C204584	15" LACING PIN KIT	AR
NS	B018623	STANDARD RUBBER BELT - 15" WIDE x 5' LONG	AR
NS	2079933	OIL SEED RUBBER BELT - 15" WIDE x 5' LONG	AR
NS	B018612	STANDARD RUBBER BELT - 15" WIDE x 10' LONG	AR
NS	2079934	OIL SEED RUBBER BELT - 15" WIDE x 10' LONG	AR
NS	B018614	STANDARD RUBBER BELT - 15" WIDE x 20' LONG	AR
NS	2079935	OIL SEED RUBBER BELT - 15" WIDE x 20' LONG	AR

Discharge Assembly



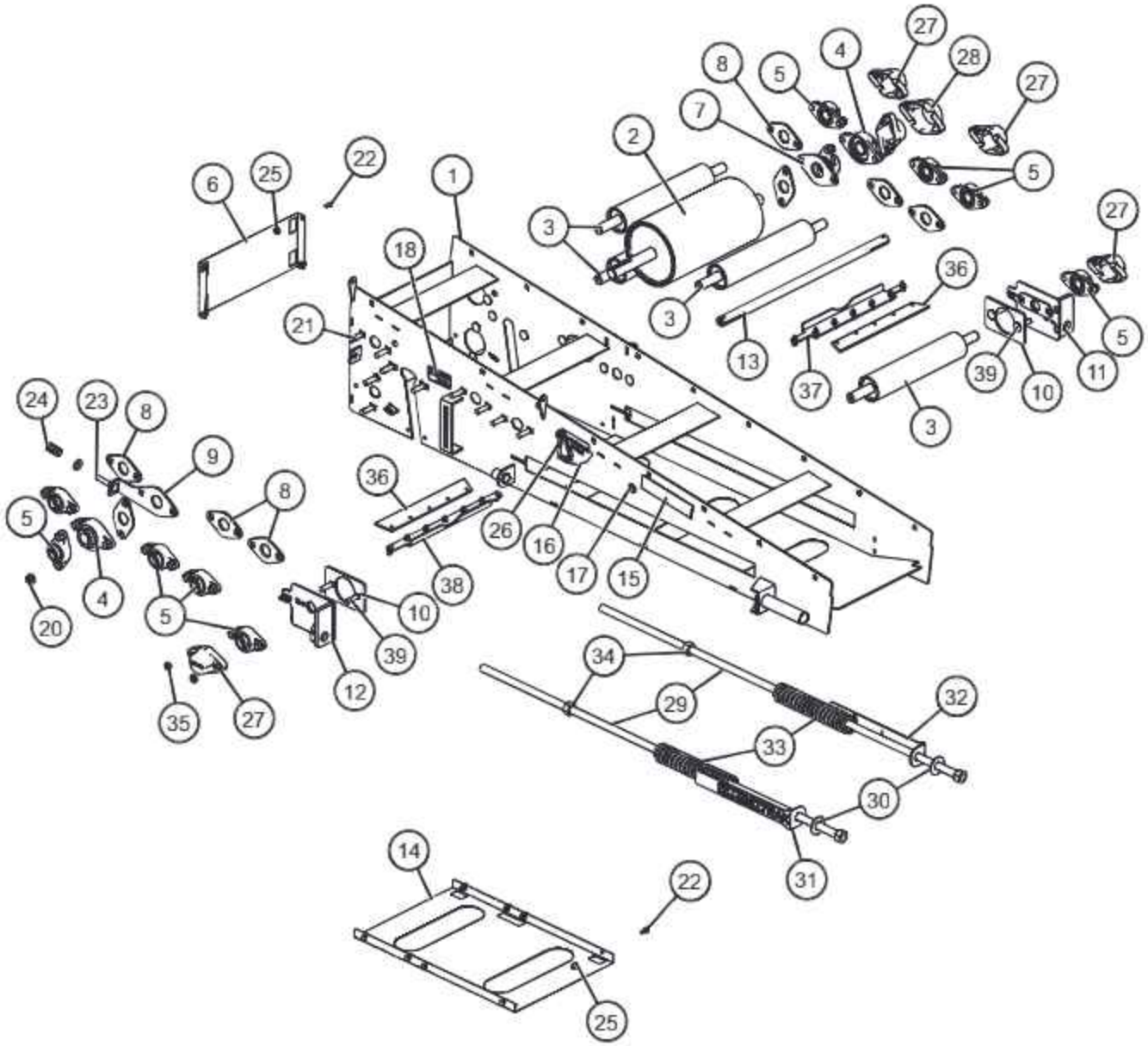
Ref #	Part No.	Description	Qty
1	B001003	1/4" x 1" BOLT	11
2	B001023	3/8" x 3/4" BOLT	8
3	B001124	1/4" LOCK NUT	11
4	B001139	5/8" HEX NUT	3
5	B001147	1/4" FLAT WASHER	5
6	B001149	3/8" FLAT WASHER	8
7	B001410	5/8" SERRATED FLANGE NUT	4
8	B001094	5/8" x 2 1/4" CARRIAGE BOLT	4
9	B0010951	5/8" x 3" CARRIAGE BOLT - FULL THREAD	1
10	B0011325	3/8" STOVER LOCK NUT	4
11	B001024	3/8" x 1" BOLT	4
12	B021250	ROLLER - 1.9" OD x 18"	1
13	2069522	15+ DISCHARGE DOZER WIPER	1
14	B0172235	1 1/2" DIA - 2 BOLT FLANGE BEARING	2
15	C200644	MAIN DISCHARGE CAP	1
16	C215611	1 1/2" BEARING ADJUSTMENT PLATE	1
17	C2060003	3 1/2" ROLLER - 1 1/2" SHAFT	1
18	C2150032	1 1/2" BEARING SPACER PLATE	1
19	C2158057A	15+ DISCHARGE WELDMENT c/w DECALS	1
20	C2158058	15+ DISCHARGE BOTTOM PLATE	1
21	B001157	3/4" SAE FLAT WASHER	1
22	B029967	DOWNSPOUT WARNING DECAL	2
23	B029966	CONVEYOR DISCHARGE DECAL	2
24	B0294501	LEFT TRACKING DECAL	1
25	B027600	15 SERIES DISCHARGE HOOD	1
26	B0275199	15+ DISCHARGE WIPER	1
27	2066639	WIPER SUPPORT	1
28	2067875	BEARING COVER	2
29	2071356	BEARING COVER NUT	4

Standard S-Drive Assembly



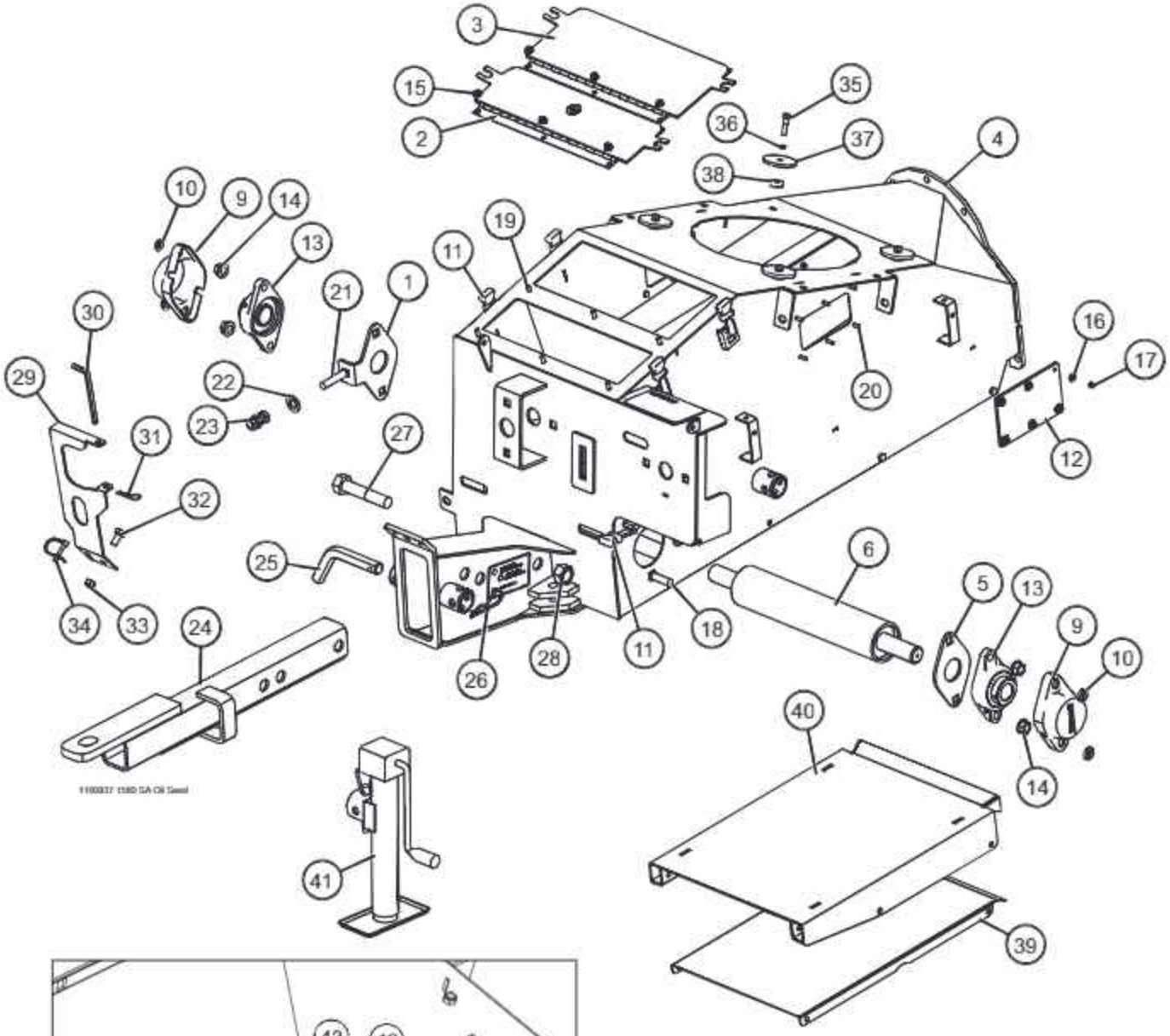
Ref #	Part No.	Description	Qty
1	2074403	S DRIVE WELDMENT	1
2	2075931	DRIVE ROLLER - LAGGED	1
3	C200708	ROLLER - 3 1/2" x 16 1/2"	4
4	B0172235	1 1/2" BEARING - 2 BOLT FLANGE	2
5	B0172015	1 1/4" BEARING - 2 BOLT FLANGE	10
6	C2179468	S-DRIVE END GUARD	1
7	C2150032	1 1/2" BEARING SPACER PLATE	1
8	C2167927	1 1/4" BEARING SPACER PLATE	8
9	C2179463	DRIVE ROLLER ADJUSTER PLATE	1
10	C2179464	TENSION ROLLER BACKING PLATE	2
11	2064221	TENSION ROLLER BEARING MOUNT - RIGHT	1
12	2064220	TENSION ROLLER BEARING MOUNT - LEFT	1
13	C2179465	JACK SHAFT	1
14	C2179467	S-DRIVE BOTTOM GUARD	1
15	B0210276	AMBER REFLECTIVE TAPE	2
16	B029701	ANGLE INDICATOR DECAL	1
17	B029950	GREASE DECAL - 8 HRS	3
18	B029450	TRACKING DECAL - RIGHT	1
19	B029456	BELT ROUTING DECAL	1
20	B001410	5/8" SERRATED FLANGE NUT	24
21	B001094	5/8" x 2 1/4" CARRIAGE BOLT	24
22	B001023	3/8" x 3/4" BOLT - GR.5	12
23	B0010951	5/8" x 3" CARRIAGE BOLT	1
24	B001139	5/8" HEX NUT	3
25	B001405	3/8" SERRATED FLANGE NUT	14
26	C2148005	ANGLE POINTER	1
27	2067858	BEARING COVER - 1 1/4" BEARING	4
28	2067875	BEARING COVER - 1 1/2" BEARING	1
29	C2179495	1' ADJUSTMENT ROD x 65"	2
30	B001159	1" FLAT WASHER	2
31	C2179488R	BELT TENSION INDICATOR - RIGHT	1
32	C2179488L	BELT TENSION INDICATOR - LEFT	1
33	B0210731	COMPRESSION SPRING	2
34	B001077	1" HEX NUT	2
35	2071356	BEARING COVER NUT	10

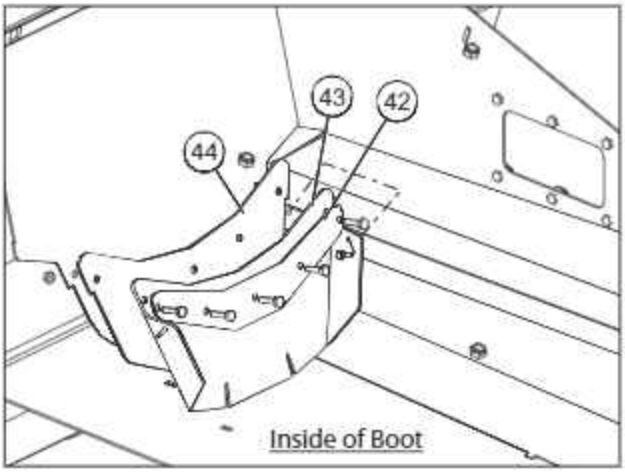
Oil Seed S-Drive Assembly



Ref #	Part No.	Description	Qty
1	2074403	S DRIVE WELDMENT	1
2	2075931	DRIVE ROLLER - LAGGED	1
3	C200708	ROLLER - 3 1/2" x 16 1/2"	4
4	B0172235	1 1/2" BEARING - 2 BOLT FLANGE	2
5	B0172015	1 1/4" BEARING - 2 BOLT FLANGE	10
6	C2179468	S-DRIVE END GUARD	1
7	C2150032	1 1/2" BEARING SPACER PLATE	1
8	C2167927	1 1/4" BEARING SPACER PLATE	8
9	C2179463	DRIVE ROLLER ADJUSTER PLATE	1
10	C2179464	TENSION ROLLER BACKING PLATE	2
11	2074396	TENSION ROLLER BEARING MOUNT - RIGHT	1
12	2074395	TENSION ROLLER BEARING MOUNT - LEFT	1
13	C2179465	JACK SHAFT	1
14	C2179467	S-DRIVE BOTTOM GUARD	1
15	B0210276	AMBER REFLECTIVE TAPE	2
16	B029701	ANGLE INDICATOR DECAL	1
17	B029950	GREASE DECAL - 8 HRS	3
18	B029450	TRACKING DECAL - RIGHT	1
19	B029456	BELT ROUTING DECAL	1
20	B001410	5/8" SERRATED FLANGE NUT	24
21	B001094	5/8" x 2 1/4" CARRIAGE BOLT	24
22	B001023	3/8" x 3/4" BOLT - GR.5	12
23	B0010951	5/8" x 3" CARRIAGE BOLT	1
24	B001139	5/8" HEX NUT	3
25	B001405	3/8" SERRATED FLANGE NUT	14
26	C2148005	ANGLE POINTER	1
27	2067858	BEARING COVER - 1 1/4" BEARING	4
28	2067875	BEARING COVER - 1 1/2" BEARING	1
29	C2179495	1' ADJUSTMENT ROD x 65"	2
30	B001159	1" FLAT WASHER	2
31	C2179488R	BELT TENSION INDICATOR - RIGHT	1
32	C2179488L	BELT TENSION INDICATOR - LEFT	1
33	B0210731	COMPRESSION SPRING	2
34	B001077	1" HEX NUT	2
35	2071356	BEARING COVER NUT	10
36	2061775	ROLLER SCRAPER	2
37	2074666	SCRAPER MOUNT	1
38	2061793	SCRAPER MOUNT	1
39	8000485	5/8" x 2 1/2" CARRIAGE BOLT	4

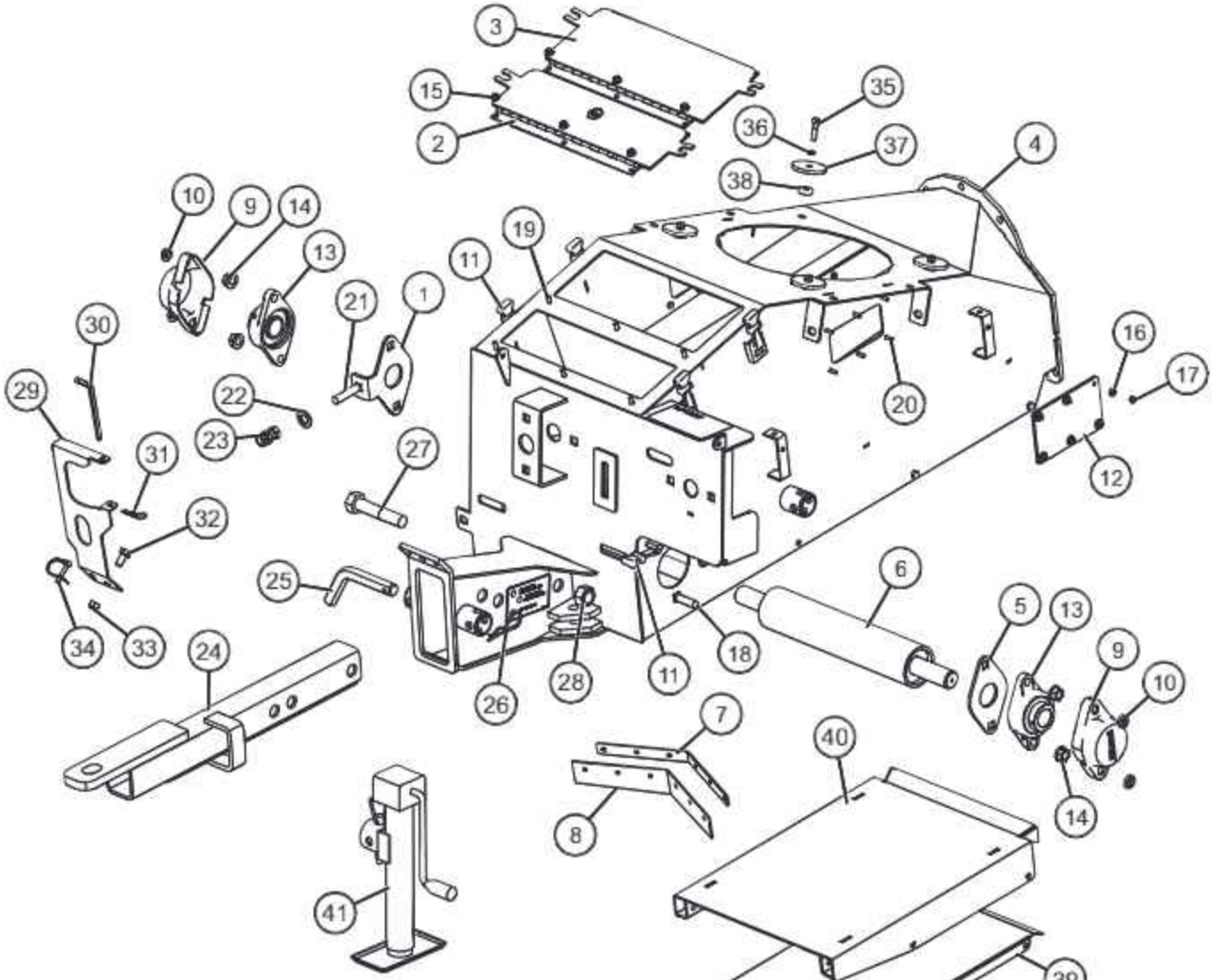
Standard Intake Parts

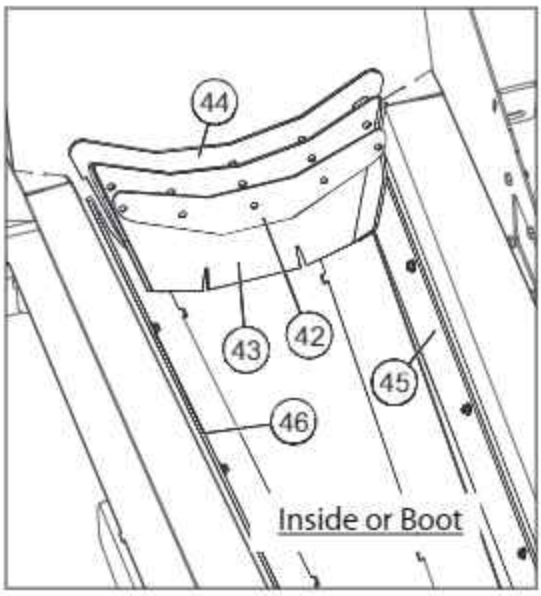




Ref #	Part No.	Description	Qty
1	C2179506	BOOT ROLLER ADJUSTMENT PLATE	1
2	C2179502A	SMALL HINGED DOOR	1
3	C2179501A	LARGE HINGED DOOR	1
4	2074388	SWING AWAY BOOT	1
5	C2150032	1 1/2" BEARING SPACER PLATE	1
6	C2060003	INTAKE ROLLER	1
9	2067875	BEARING COVER	2
10	2071356	COVER NUT	4
11	B0219992	RUBBER LATCH	5
12	B021146	CLEAR PLASTIC WINDOW	2
13	B0172235	1 1/2" BEARING - 2 BOLT FLANGE	2
14	B001410	5/8" SERRATED FLANGE NUT	4
15	B001400	5/16" SERRATED FLANGE NUT	6
16	B001147	1/4" FLAT WASHER	12
17	B0011245	1/4" STOVER LOCK NUT	12
18	B001094	5/8" x 2 1/4" BOLT - GR.5	4
19	B001009	5/16" x 3/4" BOLT - GR.5	6
20	B001002	1/4" x 3/4" BOLT - GR.5	12
21	B0010951	5/8" x 3" CARRIAGE BOLT	1
22	B001157	3/4" SAE FLAT WASHER	1
23	B0011395	5/8" JAM NUT	3
24	C2179561	HITCH	1
25	B0020318	1" x 4" L-PIN	1
26	B002091	3/16" x 3 3/4" HAIR PIN CLIP	1
27	B0011157	1" x 5" BOLT - GR.5	1
28	B001075	1" STOVER LOCK NUT	1
29	C2179574	PTO SHAFT HOLDER	1
30	B496655	PTO STORGE KEEPER PIN	1
31	B002092	.094" x 2 1/4" HAIR PIN CLIP	1
32	B001039	1/2" x 1" BOLT - GR.5	1
33	B001134	1/2" LOCK NUT	1
34	B0020961	1/4" x 1 3/8" LOCK PIN	1
35	B001031	3/8" x 1 1/2" BOLT - GR.5	4
36	B001165	3/8" LOCK WASHER	4
37	B198361	LARGE WASHER	4
38	B027498	PLASTIC SPACER WASHER	4
39	C205149	UPPER INTAKE TRACKING PLATE	1
40	C205143	LOWER INTAKE TRACKING BOX	1
41	B030500	IMPLEMENT JACK	1
42	C200612	FLASHING PLATE	1
43	B027572	OUTER FLASHING	1
44	B027571	INNER FLASHING	1

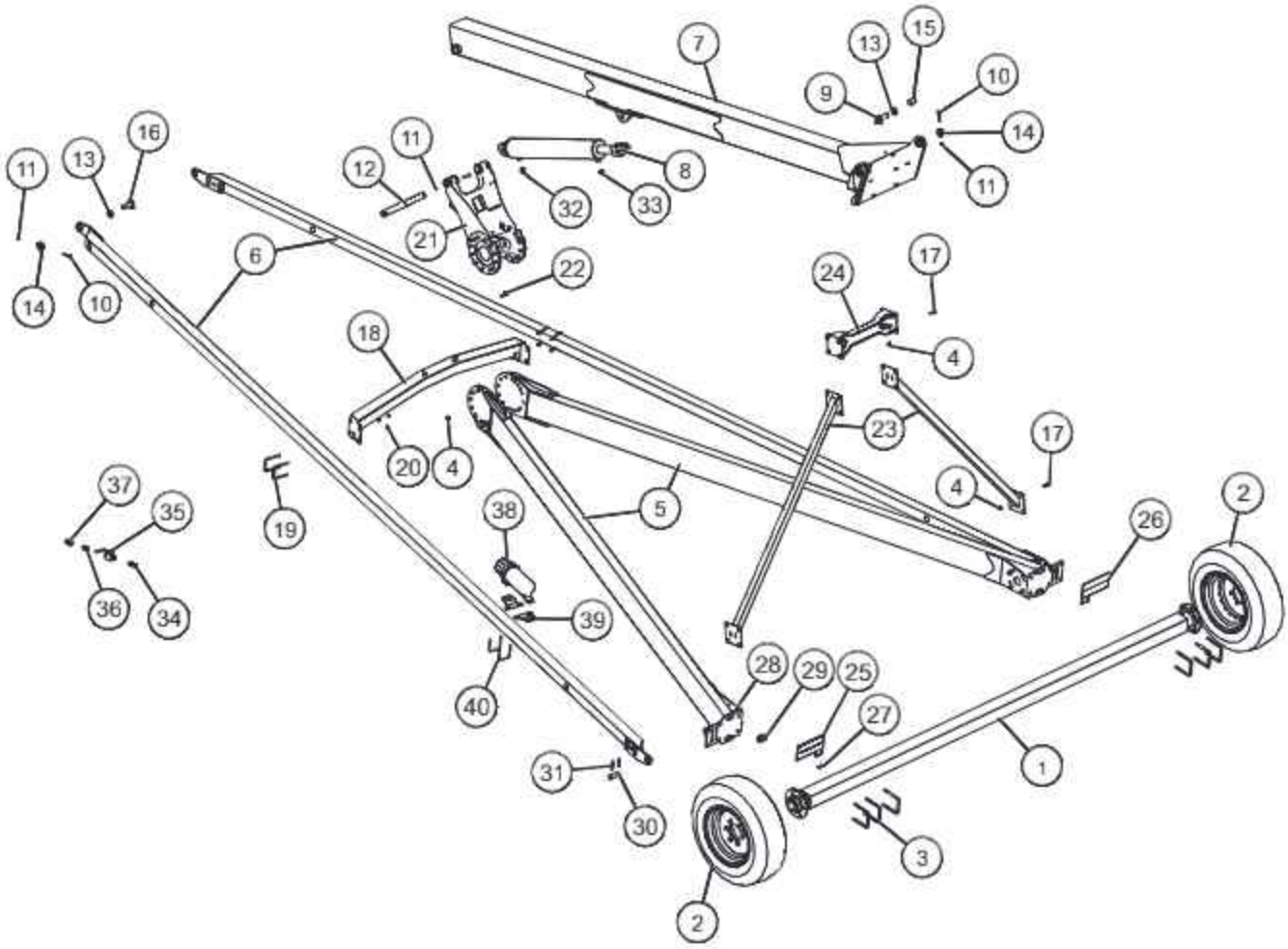
Oil Seed Intake Parts





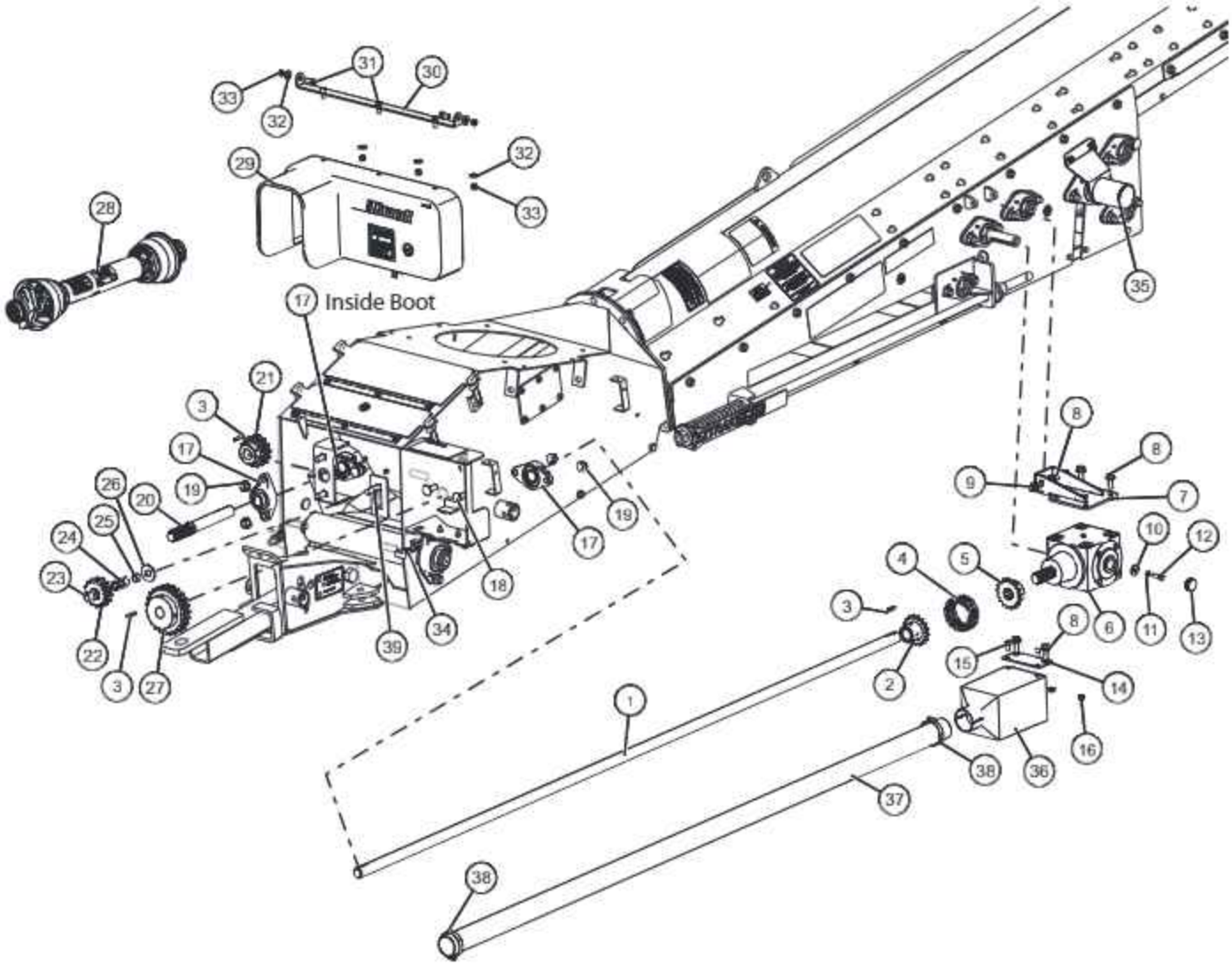
Ref #	Part No.	Description	Qty
1	C2179506	BOOT ROLLER ADJUSTMENT PLATE	1
2	C2179502A	SMALL HINGED DOOR	1
3	C2179501A	LARGE HINGED DOOR	1
4	2074388	SWING AWAY BOOT	1
5	C2150032	1 1/2" BEARING SPACER PLATE	1
6	C2060003	INTAKE ROLLER	1
7	2066639	WIPER STRAP	1
8	2074348	WIPER	1
9	2067875	BEARING COVER	2
10	2071356	COVER NUT	4
11	B0219992	RUBBER LATCH	5
12	B021146	CLEAR PLASTIC WINDOW	2
13	B0172235	1 1/2" BEARING - 2 BOLT FLANGE	2
14	B001410	5/8" SERRATED FLANGE NUT	4
15	B001400	5/16" SERRATED FLANGE NUT	6
16	B001147	1/4" FLAT WASHER	12
17	B0011245	1/4" STOVER LOCK NUT	12
18	B001094	5/8" x 2 1/4" BOLT - GR.5	4
19	B001009	5/16" x 3/4" BOLT - GR.5	6
20	B001002	1/4" x 3/4" BOLT - GR.5	12
21	B0010951	5/8" x 3" CARRIAGE BOLT	1
22	B001157	3/4" SAE FLAT WASHER	1
23	B0011395	5/8" JAM NUT	3
24	C2179561	HITCH	1
25	B0020318	1" x 4" L-PIN	1
26	B002091	3/16" x 3 3/4" HAIR PIN CLIP	1
27	B0011157	1" x 5" BOLT - GR.5	1
28	B001075	1" STOVER LOCK NUT	1
29	C2179574	PTO SHAFT HOLDER	1
30	B496655	PTO STORGE KEEPER PIN	1
31	B002092	.094" x 2 1/4" HAIR PIN CLIP	1
32	B001039	1/2" x 1" BOLT - GR.5	1
33	B001134	1/2" LOCK NUT	1
34	B0020961	1/4" x 1 3/8" LOCK PIN	1
35	B001031	3/8" x 1 1/2" BOLT - GR.5	4
36	B001165	3/8" LOCK WASHER	4
37	B198361	LARGE WASHER	4
38	B027498	PLASTIC SPACER WASHER	4
39	C205149	UPPER INTAKE TRACKING PLATE	1
40	C205143	LOWER INTAKE TRACKING BOX	1
41	B030500	IMPLEMENT JACK	1
42	2074540	FLASHING PLATE	1
43	2074546	OUTER FLASHING	1
44	B027571	INNER FLASHING	1
45	2072187	SIDE FLASHING	1
46	2074466	SIDE FLASHING	1

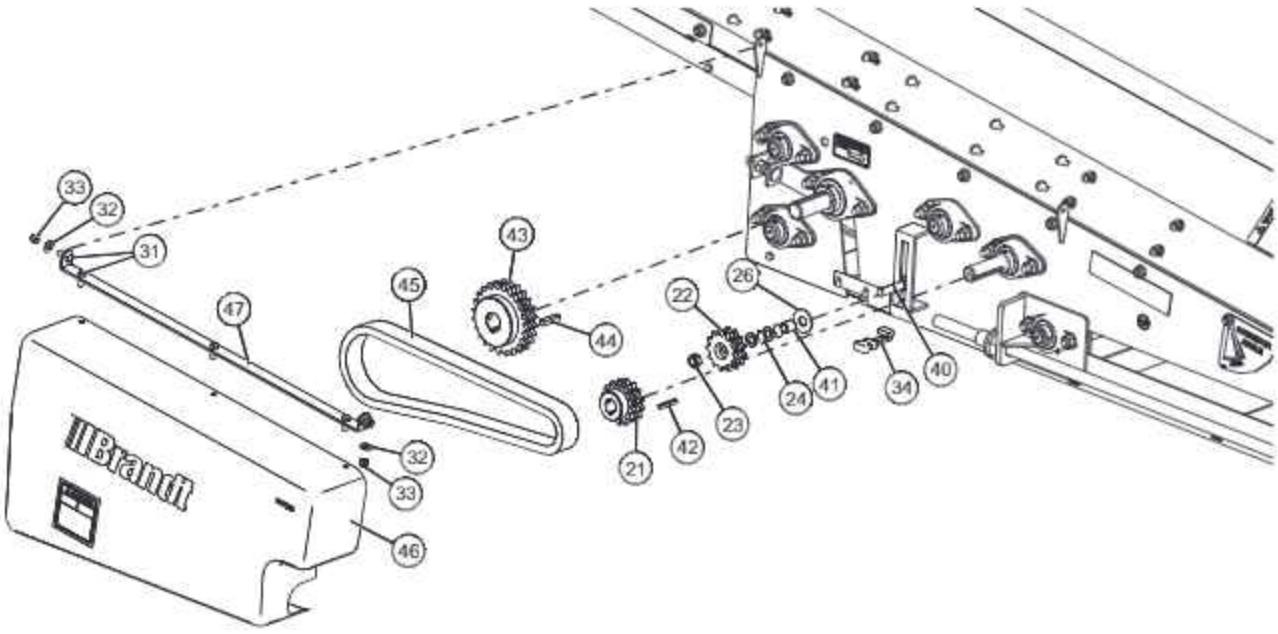
Undercarriage Parts



Ref #	Part No.	Description	Qty
1	C116410A	AXLE ASSEMBLY - 6 BOLT HUB	1
2	B011221	ST225/75R15 8 PLY TIRE & 6 BOLT RIM	2
3	B0020177	1/2" x 4" U-BOLT x 5" LG	6
4	B001134	1/2" STOVER LOCK NUT	52
5	C2179443	LIFT ARM WELD - 1580	2
5	C2179430	LIFT ARM WELD - 1590	2
5	C116507	LIFT ARM WELD - 15100	2
6	2075831	AXLE ARM ASSEMBLY - 1580	2
6	2075837	AXLE ARM ASSEMBLY - 1590	2
6	2075804	AXLE ARM ASSEMBLY - 15100	2
7	C2179444A	LADDER ASS'Y - 1580 & 90	1
7	C2179442A	LADDER ASS'Y - 15100	1
8	B0198655	4 1/2" x 30" HYDRAULIC CYLINDER - 1580	1
8	B0191684	5 1/2" x 30" HYDRALIC CYINDER - 1590 & 15100	1
9	C2179494	LONG UNDERCARRIAGE PIN	2
10	B001032	3/8" x 2 1/2" BOLT	4
11	B0011325	3/8" LOCK NUT	6
12	C114418	LIFT CROSS PIN	1
13	B001159	1" FLAT WASHER	4
14	C2179492	UNDERCARRIAGE PIN COLLAR	4
15	B017733	LADDER BUSHING	2
16	C2179491	SHORT UNDERCARRIAGE PIN	2
17	B001040	1/2" x 1 1/4" BOLT	16
18	C2179611	AXLE ARM CROSS BRACE - 1580	1
18	C2179568	AXLE ARM CROSS BRACE - 1590	1
18	C2179577	AXLE ARM CROSS BRACE - 15100	1
19	B0020163	3/8" x 3" U-BOLT x 4" LG (1580 & 1590)	4
19	B0020101	3/8" x 4" U-BOLT x 4" LG (15100)	4
20	B001405	3/8" SERRATED FLANGE NUT	8
21	2077338	LIFT CROSS	1
22	B001043	1/2" x 1 3/4" BOLT	24
23	C2179497	TRANSPORT UPRITE	2
24	C311277	TRANSPORT REST CROSS MEMBER	1
25	C116485	RIGHT RELECTOR ASSEMBLY	1
26	C116486	LEFT REFLECTOR ASSEMBLY	1
27	B001002	1/4" x 3/4" BOLT	4
28	B001124	1/4" LOCK NUT	4
29	B0211395	OVAL GROMMET	2
30	C114420	AXLE ARM PIN - 1" x 3" LG	2
31	B002059	5/16" x 2" ROLL PIN	4
32	B0194165	#8 MORB x #6 MJIC ADAPTER - 1/16" REST	1
33	B0193052	#8 MORB BREATHER	1
34	B019293	3/8" HYDRA. HOSE x 66' - 1580 & 90	1
34	B0192611	3/8" HYDRA. HOSE x 70' - 15100	1
35	B019300	SHUT OFF VALVE - 3/8" FPT	1
36	B019516	3/8" MPT x 1/2" MPT REDUCER NIPPLE	1
37	B019200	PIONEER MALE TIP - 1/2" FPT	1
38	B0275102	LARGE TUBE MANUAL HOLDER	1
39	C314500	MANUAL HOLDER BRACKET	2
40	B0020115	1/4" x 3" U-BOLT x 4" LG	2

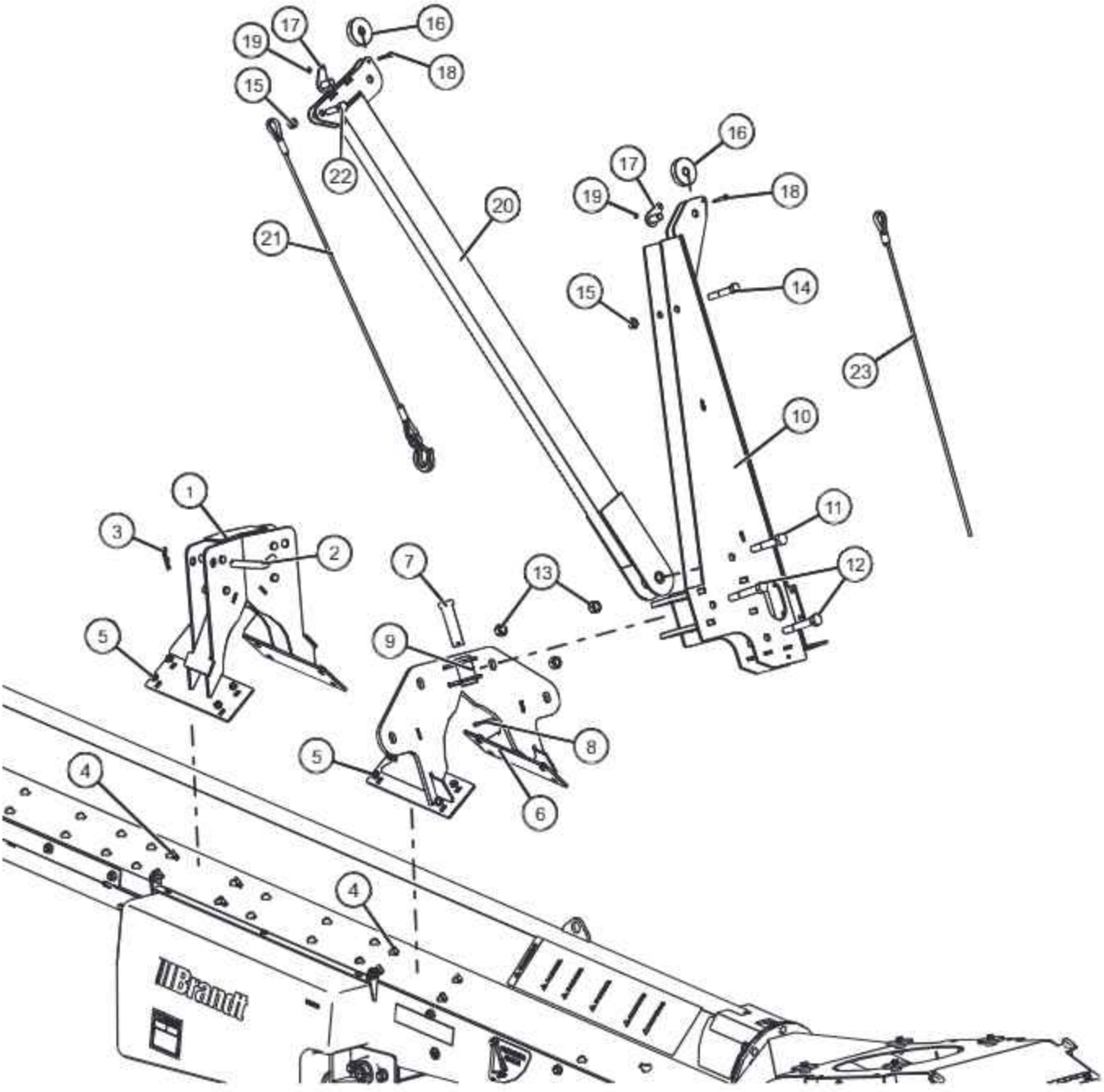
End Drive Assembly





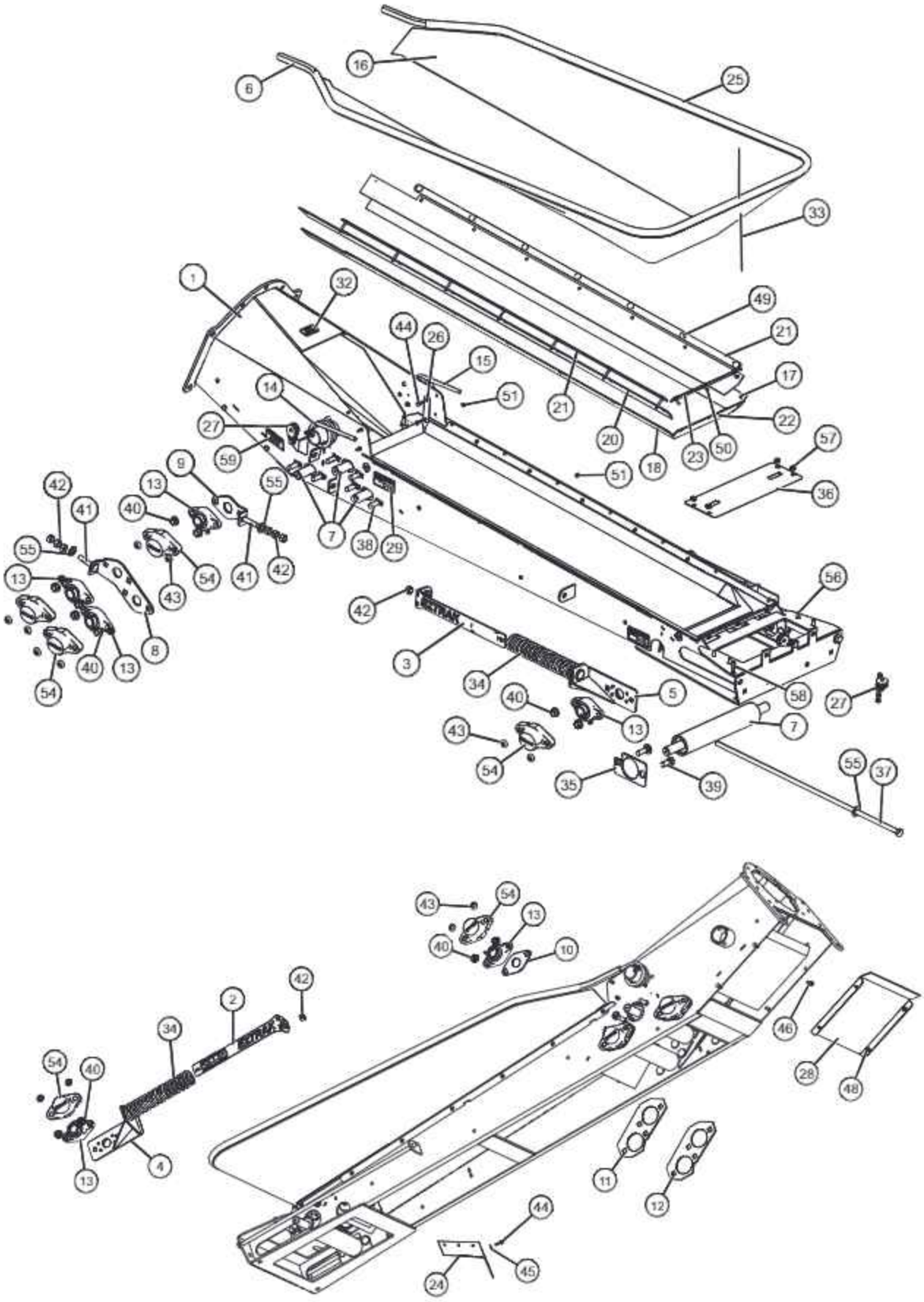
Ref	Part No.	Description	Qty	Ref	Part No.	Description	Qty
1	C2179590	END DRIVE DRIVESHAFT	1	29	B027068A	END DRIVE GUARD	1
2	C808562	1 1/4" OUTER COUPLER SPROCKET	1	30	C2158033	END DRIVE GUARD MOUNT	1
3	B689169	1/4" KEY x 1 1/2" LONG	3	31	B001024	3/8" x 1" BOLT - GR.5	14
4	B009601	60-2 x 17 ROLLER CHAIN	1	32	B001149	3/8" FLAT WASHER	14
5	D311154	GEARBOX COUPLING SPROCKET	1	33	B001132	3/8" LOCK NUT	14
6	B0030294	END DRIVE GEARBOX	1	34	B0219992	RUBBER GUARD HOLD DOWN	2
7	C2179529	GEARBOX MOUNT	1	35	C2179490	SHAFT COVER	1
8	B001454	1/2" x 1 1/4" SF BOLT	6	36	B027015	COUPLER COVER	1
9	B001409	1/2" SF NUT	2	37	C2179530	DRIVESHAFT GUARD	1
10	C205373	KEY STOP WASHER	1	38	B024215	2 1/2" HOSE CLAMP	2
11	B001165	3/8" LOCK WASHER	1	39	B0010943	5/8" x 2 1/2" CARRIAGE BOLT	1
12	B001025	3/8" x 1 1/4" BOLT	1	40	B001095	5/8" x 3" CARRIAGE BOLT	1
13	B0281874	1" PLASTIC PLUG	1	41	C2158101	LONG IDLER BUSHING	1
14	D312110	COUPLER COVER PLATE	1	42	B884505	1/4" KEY x 2" LONG	2
15	B001023	3/8" x 3/4" BOLT	2	43	B009072	D60B40 SPROCKET x 1.5" B (540 RPM)	1
16	B0011326	3/8" FLANGE LOCK NUT	2	43	8026136	D60B48 SPROCKETx1.5" B (1000 RPM)	1
17	B0172015	1 1/4" BEARING - 2 BOLT FLANGE	3	44	C200649	3/8" KEY x 2" LONG	1
18	B0010941	5/8" x 1 1/2" CARRIAGE BOLT	6	45	2081612	R60-2 x83P CHAIN (540 RPM)	1
19	B001410	5/8" SF NUT	6	45	2081611	R60-2 x86P CHAIN (1000 RPM)	1
20	C2179591	SPLINED INPUT SHAFT	1	46	B027066A	S-DRIVE GUARD	1
21	B009067	D60B21 SPROCKET - 1.25B	2	47	C2179481	S-DRIVE GUARD MOUNT	1
22	B009077	D60B13 IDLER SPROCKET x 5/8" BORE	2				
23	B0011415	5/8" LOCK NUT	2				
24	B0020675	MACH. BUSHING - 5/8"ID x 14 GA	7				
25	C2179592	SHORT IDLER BUSHING	1				
26	B001155	3/4" FLAT WASHER	2				
27	B009067	D60B21 SPROCKET - 1.25B (540 RPM)	1				
27	B009078	D60B24 SPROCKET- 1.25B(1000 RPM)	1				
NS	2079295	R60-2 x 63P CHAIN (540 RPM)	1				
NS	B009620	R60-2 x 61P CHAIN (1000 RPM)	1				
28	B003065	PTO SHAFT - 540 RPM DRIVE	1				
28	B0030655	PTO SHAFT - 1000 RPM KIT	1				

Lift Arm and Transport Base



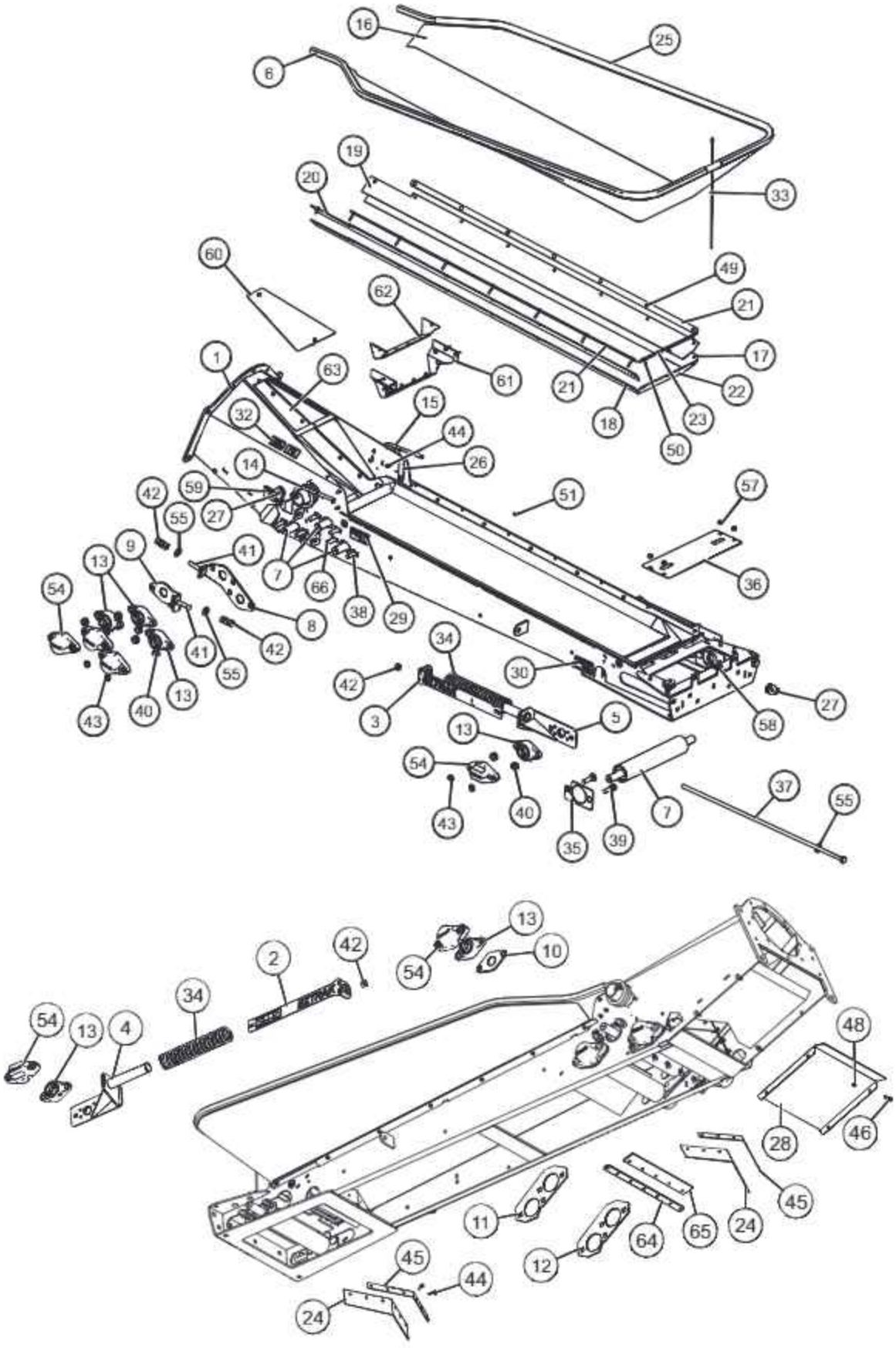
Ref #	Part No.	Description	Qty
1	C2179564	SWING TRANSPORT MOUNT	1
2	B0020315	3/4" x 4 1/8" L-PIN	1
3	B002094	3/16" x 3 3/4" HAIR PIN CLIP	1
4	B001082	3/8" x 1" CARRIAGE BOLT	16
5	B001405	3/8" SERRATED FLANGE NUT	16
6	C2179562	SWING HOIST MOUNT	1
7	BC1160	HOIST PIVOT PIN	1
8	B002054	3/16" x 2" COTTER PIN	1
9	B002084	GREASE ZERK	1
10	C2179563	LIFT ARM BASE	1
11	B001106	3/4" x 4 1/2" BOLT - GR.5	1
12	B001110	3/4" x 5" BOLT - GR.5	2
13	B001154	3/4" LOCK NUT	3
14	B001074	5/8" x 4" BOLT - GR.5	1
15	B0011415	5/8" LOCK NUT	3
16	C2158181A	3" CABLE SHEAVE c/w BUSHING	2
17	C2147875	CABLE SHEAVE PIN	2
18	B001005	1/4" x 2" BOLT - GR.5	2
19	B0011245	1/4" LOCK NUT	2
20	C2179566	LIFT ARM	1
21	B0083077	LIFT ARM CABLE	1
22	B0010705	5/8" x 2 1/4" BOLT - GR.5	1
23	B008111	5/16" CABLE x 28' - MANUAL WINCH	1
23	B008120	5/16" CABLE x 19.5' - HYDRAULIC WINCH	1

Standard Swing Hopper Assembly



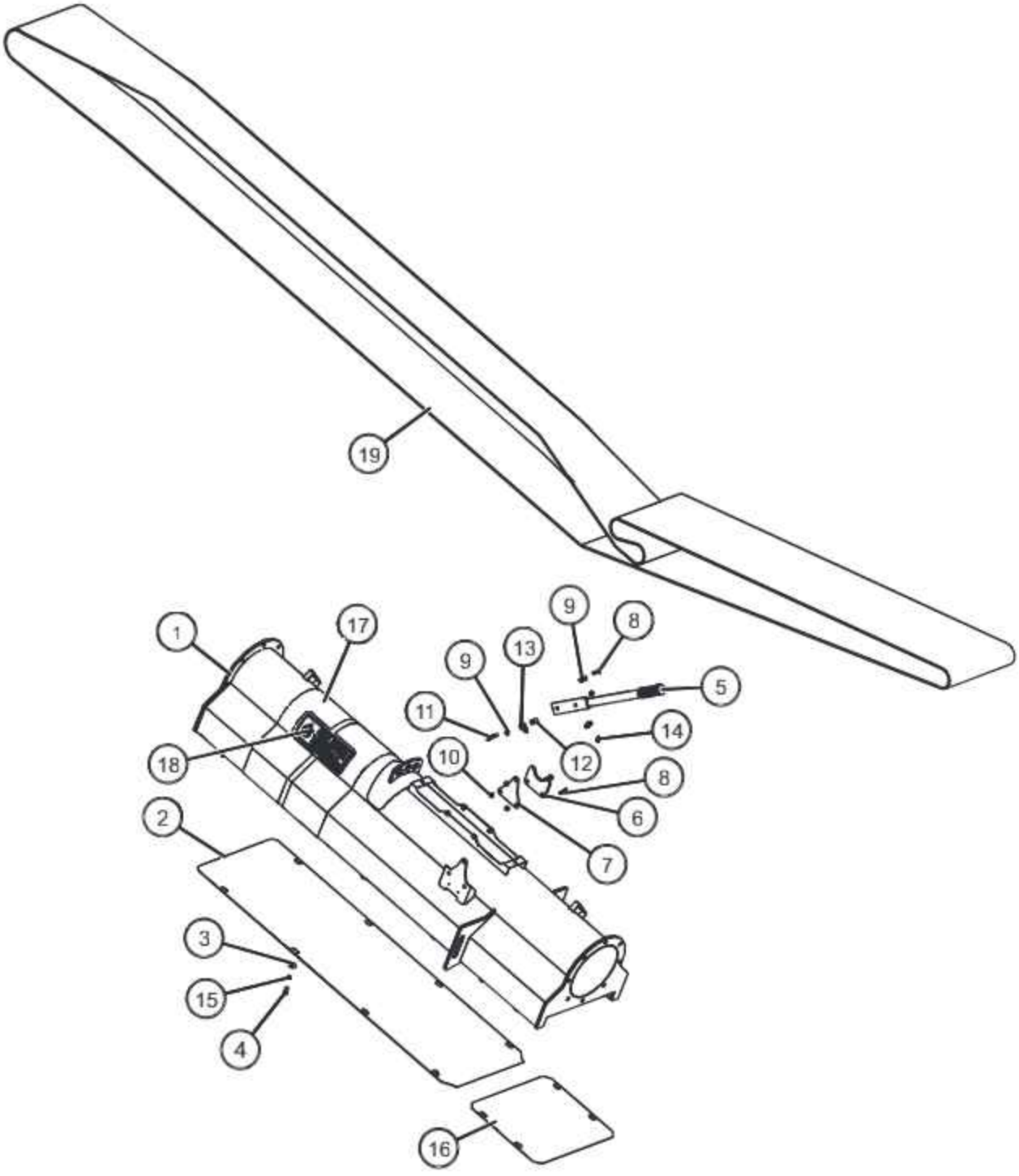
Ref	Part No.	Description	Qty	Ref	Part No.	Description	Qty
1	2076070	LP INTAKE WELDMENT	1	36	C2179542	INTAKE COVER	1
2	C2179539R	TENSION INDICATOR - RIGHT	1	37	B0026019	5/8" x 35" BOLT - GR.5	2
3	C2179539L	TENSION INDICATOR - LEFT	1	38	B0010939	5/8" x 2" CARRIAGE BOLT	14
4	C2179541R	TENSIONER BEARING MOUNT - RIGHT	1	39	B001069	5/8" x 1 1/2" BOLT - GR.5	2
5	C2179541L	TENSIONER BEARING MOUNT - LEFT	1	40	B001410	5/8" SERRATED FLANGE NUT	16
6	C2158011	HOPPER RAIL	1	41	B0010951	5/8" x 3" CARRIAGE BOLT	2
7	C215030	INTAKE ROLLER	4	42	B001139	5/8" HEX NUT	8
8	C2137860	INTAKE S ROLLER ADJUST PLATE	1	43	2071356	BEARING COVER NUT	8
9	C211615	ROLLER ADJUSTMENT PLATE	1	44	B001003	1/4" x 1" BOLT - GR.5	10
10	C2147927	1 1/4" BEARING SPACER	3	45	B001147	1/4" FLAT WASHER	6
11	B027569R	S ROLLER FLASHING - RIGHT	1	46	B001024	3/8" x 1" BOLT - GR.5	7
12	B027569L	S ROLLER FLASHING - LEFT	1	47	B001131	3/8" x 1" BOLT - GR.5	2
13	B0172015	1 1/4" BEARING - 2 BOLT	8	48	B0011325	3/8" LOCK NUT	13
14	B021740L	HOPPER SPRING - LEFT	1	49	8000138	1/4" x 1 3/4" ELEVATOR BOLT	14
15	B021740R	HOPPER SPRING - RIGHT	1	50	8031986	1/4" x 1 1/4" ELEVATOR BOLT	3
16	B021415	HOPPER CANVAS	1	51	B001124	1/4" LOCK NUT	27
17	B027561R	LOWER HOPPER FLASHING - RIGHT	1	52	B0020367	#10 x 1" TEK SCREW	2
18	B027561L	LOWER HOPPER FLASHING - LEFT	1	53	B0011459	#10 FLAT WASHER	2
19	B027562R	UPPER HOPPER FLASHING - RIGHT	1	54	2067858	BEARING COVER	8
20	B027562L	UPPER HOPPER FLASHING - LEFT	1	55	B001157	3/4" SAE FLAT WASHER	4
21	C2137862	INTAKE FABRIC STRAP	2	56	B001082	3/8" x 1" CARRIAGE BOLT	4
22	B027563	HOPPER END FLASHING	1	57	B001405	3/8" SERRATED FLANGE NUT	4
23	C2158012	HOPPER END STRAP	1	58	B001085	3/8" x 2" CARRIAGE BOLT	2
24	B027564	INTAKE DOZER FLASHING	1	59	8022197	TRACKING DECAL	1
25	B024085	HOPPER RAIL CONDUIT	1				
26	C211796	SHORT FABRIC CLAMP	2				
27	B008097	FIXED PULLEY BLOCK	3				
28	C2158013	INTAKE EZ TRAK BOTTOM	1				
29	B0294501	LEFT TRACKING DECAL	1				
30	B029450	RIGHT TRACKING DECAL	1				
31	B029950	8 HR GRREASE DECAL	4				
32	B029494	PATENT PEDING DECAL	1				
33	B008405	3/16" CABLE x 14'7"	1				
34	B0210731	TENSION SPRING	2				
35	C2179543	TENSION RETAINER	2				

Oil Seed Swing Hopper Assembly



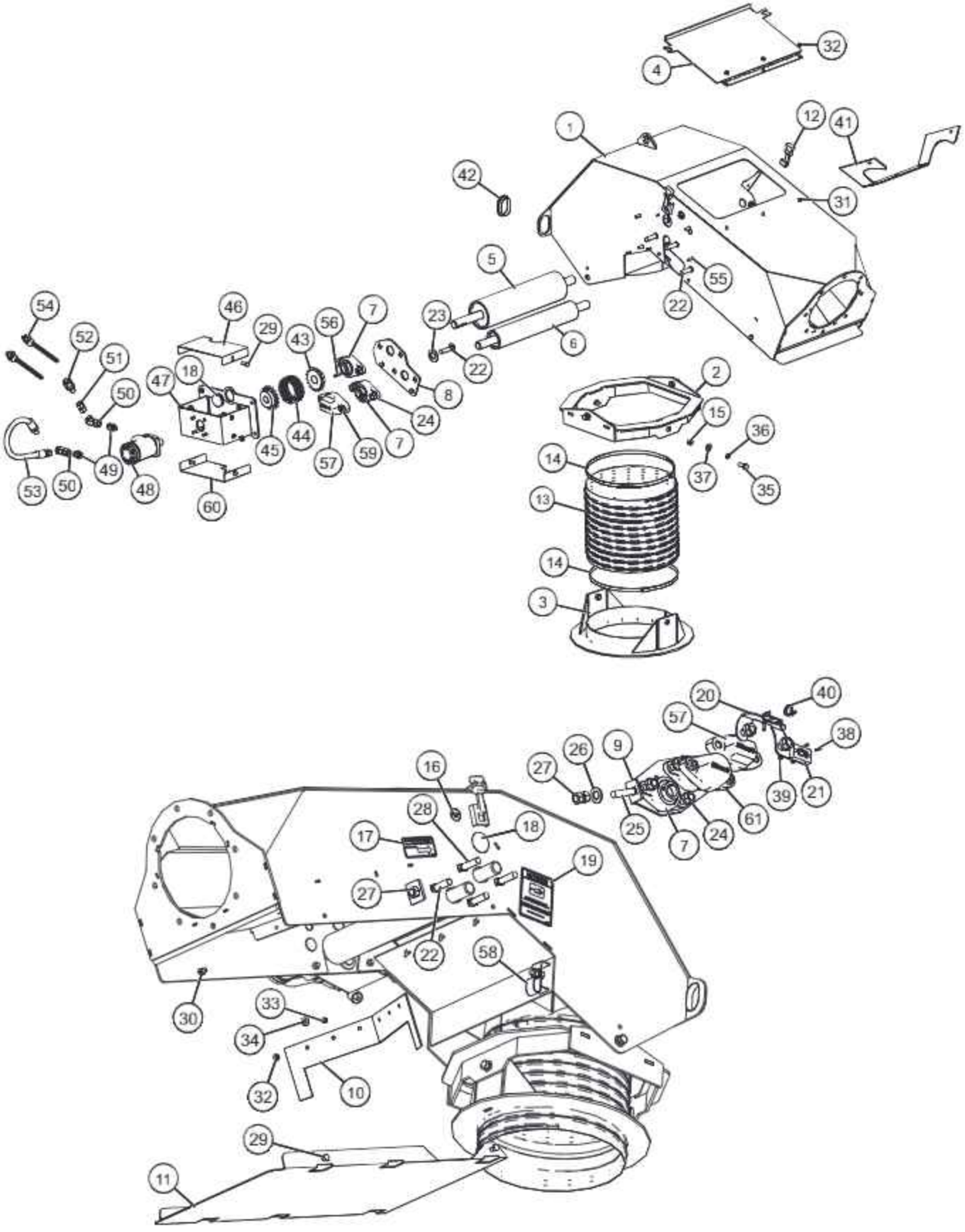
Ref	Part No.	Description	Qty	Ref	Part No.	Description	Qty
1	2067262	LP INTAKE WELDMENT	1	36	C2179542	INTAKE COVER	1
2	C2179539R	TENSION INDICATOR - RIGHT	1	37	B0026019	5/8" x 35" BOLT - GR.5	2
3	C2179539L	TENSION INDICATOR - LEFT	1	38	B001094	5/8" x 2 1/4" CARRIAGE BOLT	14
4	C2179541R	TENSIONER BEARING MOUNT - RIGHT	1	39	B001070	5/8" x 2" BOLT - GR.5	2
5	C2179541L	TENSIONER BEARING MOUNT - LEFT	1	40	B001410	5/8" SERRATED FLANGE NUT	16
6	C2158011	HOPPER RAIL	1	41	B0010951	5/8" x 3" CARRIAGE BOLT	2
7	C215030	INTAKE ROLLER	4	42	B001139	5/8" HEX NUT	8
8	C2137860	INTAKE S ROLLER ADJUST PLATE	1	43	2071356	BEARING COVER NUT	16
9	2061525	ROLLER ADJUSTMENT PLATE	1	44	B001003	1/4" x 1" BOLT - GR.5	10
10	C2147927	1 1/4" BEARING SPACER	3	45	2066340	WIPER RETAINER	2
11	B027569R	S ROLLER FLASHING - RIGHT	1	46	B001024	3/8" x 1" BOLT - GR.5	7
12	B027569L	S ROLLER FLASHING - LEFT	1	47	B001131	3/8" NUT	2
13	B0172015	1 1/4" BEARING - 2 BOLT	8	48	B0011325	3/8" LOCK NUT	13
14	B021740L	HOPPER SPRING - LEFT	1	49	8000138	1/4" x 1 3/4" ELEVATOR BOLT	14
15	B021740R	HOPPER SPRING - RIGHT	1	50	8031986	1/4" x 1 1/4" ELEVATOR BOLT	3
16	B021415	HOPPER CANVAS	1	51	B001124	1/4" LOCK NUT	27
17	B027561R	LOWER HOPPER FLASHING - RIGHT	1	52	B0020367	#10 x 1" TEK SCREW	2
18	B027561L	LOWER HOPPER FLASHING - LEFT	1	53	B0011459	#10 FLAT WASHER	2
19	B027562R	UPPER HOPPER FLASHING - RIGHT	1	54	2067858	BEARING COVER	8
20	B027562L	UPPER HOPPER FLASHING - LEFT	1	55	B001157	3/4" SAE FLAT WASHER	4
21	C2137862	INTAKE FABRIC STRAP	2	56	B001082	3/8" x 1" CARRIAGE BOLT	4
22	B027563	HOPPER END FLASHING	1	57	B001405	3/8" SERRATED FLANGE NUT	4
23	C2158012	HOPPER END STRAP	1	58	B001085	3/8" x 2" CARRIAGE BOLT	2
24	2061897	INTAKE DOZER FLASHING	2	59	8022197	TRACKING DECAL	1
25	B024085	HOPPER RAIL CONDUIT	1	60	2061539	COVER	1
26	C211796	SHORT FABRIC CLAMP	2	61	2061544	WIPER MOUNT	1
27	B008097	FIXED PULLEY BLOCK	3	62	20615545	WIPPER	1
28	C2158013	INTAKE EZ TRAK BOTTOM	1	63	2061667	INTAKE FLASHING - RIGHT	1
29	B0294501	LEFT TRACKING DECAL	1	NS	2061666	INTAKE FLASHING - LEFT	1
30	B029450	RIGHT TRACKING DECAL	1	64	2061541	SCRAPER MOUNT	1
31	B029950	8 HR GRREASE DECAL	4	65	2061546	ROLLER SCRAPER	1
32	B029494	PATENT PEDING DECAL	1	66	8000485	5/8" x 2 1/2" CARRIAGE BOLT	2
33	B008405	3/16" CABLE x 14'7"	1				
34	B0210731	TENSION SPRING	2				
35	C2179543	TENSION RETAINER	2				

Swing Tube Assembly



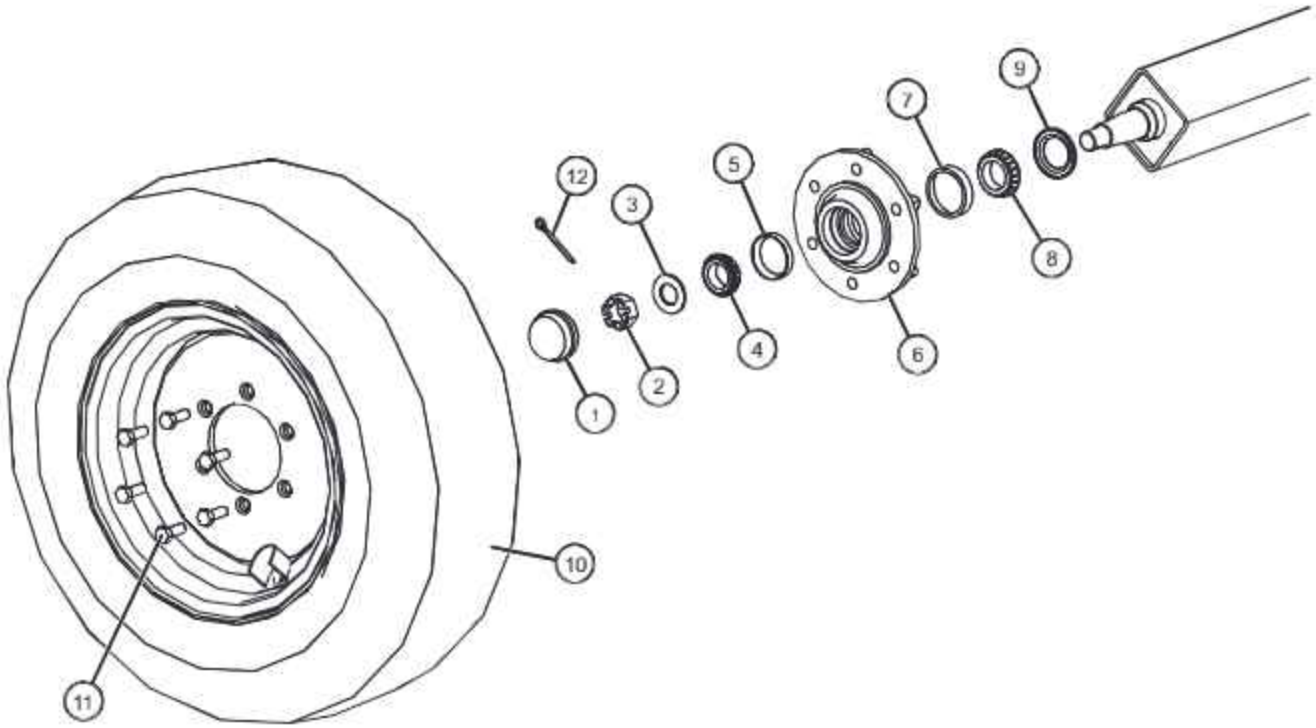
Ref #	Part No.	Description	QTY
1	2062128	SWING TUBE ASSEMBLY C/W DECALS	1
2	2076048	WINDGUARD PAN	1
3	B0011499	FLAT WASHER - 3/8" ID x 1 1/4" OD	12
4	B001024	3/8" x 1" BOLT	12
5	C2149041	HOPPER HANDLE	1
6	C2158136	HANDLE SPACER	1
7	C2158068	HOPPER HANDLE MOUNT	1
8	B001025	3/8" x 1 1/4" BOLT GR.5	3
9	B001149	3/8" FLAT WASHER	3
10	B0011325	3/8" LOCK NUT	4
11	B001028	3/8" x 2" BOLT - GR.5	1
12	B002310	SPACER - 5/8" OD x 1" LONG	1
13	B008061	3/16" CABLE THIMBLE	1
14	B008060	3/16" CABLE CLAMP	2
15	B001165	3/8" LOCK WASHER	12
16	2075667	WINDGUARD PAN	1
17	2077602	DECAL - BLACK STRIPE	1
18	2077601	DECAL - OIL SEED BADGE	2
19	2062710	STANDARD RUBBER BELT - 15" WIDE x 37' 0" LONG	1
19	2075635	OIL SEED RUBBER BELT - 15" WIDE x 37' 0" LONG	1
NS	C204176	15" BELT LACING KIT	AR
NS	C204584	15" LACING PIN KIT	AR
NS	B018623	RUBBER BELT - 15" WIDE x 5' LONG	AR
NS	2079933	OIL SEED RUBBER BELT - 15" WIDE x 5' LONG	AR
NS	B018612	RUBBER BELT - 15" WIDE x 10' LONG	AR
NS	2079934	OIL SEED RUBBER BELT - 15" WIDE x 10' LONG	AR

Swing Discharge Assembly



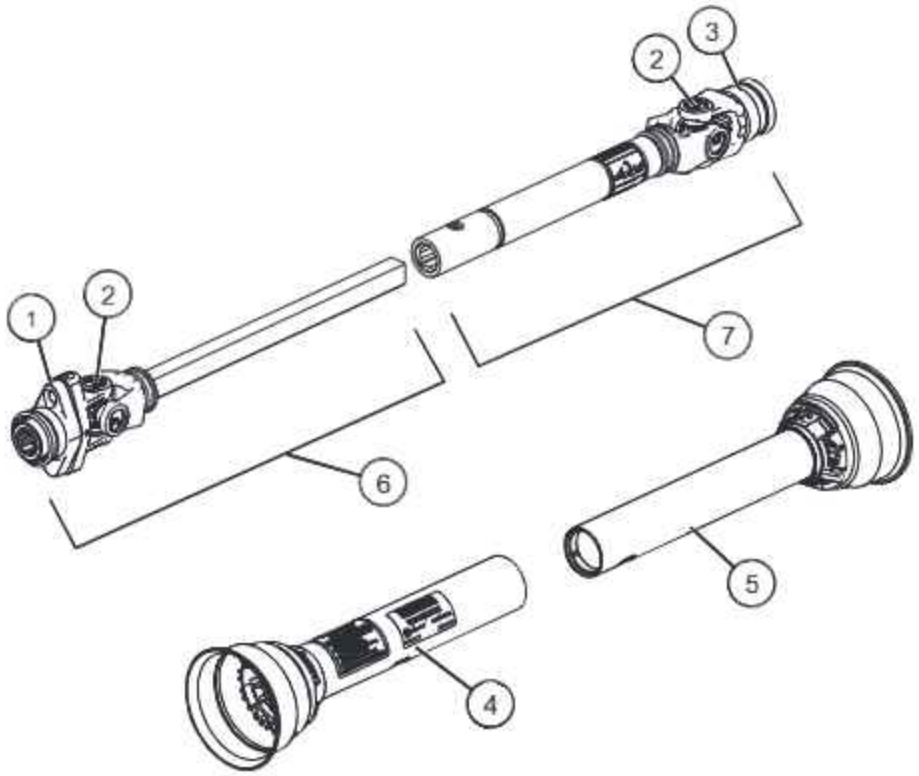
Ref	Part No.	Description	Qty	Ref	Part No.	Description	Qty
1	C2179533	SWING DISCHARGE WELDMENT	1	36	B001167	1/2" LOCK WASHER	4
2	C2179549	SPOUT KNUCKLE	1	37	B001152	1/2" SAE FLAT WASHER	4
3	C306777	LOWER SPOUT SWIVEL	1	38	B0020333	#6 x 5/8" SCREW	2
4	C2179548A	SPOUT HINGED DOOR	1	39	B0011203	#6 LOCK NUT	2
5	C2179558	5" DRIVE ROLLER - LAGGED	1	40	B021603	7" PLASTIC TIE STRAP	1
6	C2179557	3" ROLLER	1	41	B0275196	DISCHARGE WIPER	1
7	B0172015	1 1/4" BEARING - 2 BOLT	4	42	B021139	PLASTIC OVAL GROMMET	2
8	C2179551	DISCHARGE BEARING COVER	1	43	B009409	50-17 SPROCKET - 1 1/4" BORE	1
9	C2179552	ROLLER ADJUSTMENT PLATE	1	44	B009601	R50-2 x 17 ROLLER CHAIN	1
10	2069522	RETURN WIPER	1	45	B009410	50-17 SPROCKET x 1" BORE	1
11	C2179553	BOTTOM DISCHARGE GUARD	1	46	C2179559	DRIVE MOUNT COVER	1
12	B0219992	RUBBER LATCH	2	47	C2179560A	HYDRAULIC MOTOR MOUNT	1
13	C300785	DOWNSPOUT HOSE - 14" ID x 12"	1	48	8023035	HYDRAULIC MOTOR	1
14	B024214	14" HOSE CLAMP	2	49	B019434	#10 MORB x #8MJIC ADAPTER	2
15	C306042	SWIVEL BUSHING	4	50	B019407	#8 FJICX x2@ #8 MJIC TEE	2
16	B029950	GREASE DECAL - 8 HR	2	51	B0194638	#8 FJICX x 1/2" FPT ADAPTER	1
17	B029450	RIGHT TRACKING DECAL	1	52	B019537	CHECK VALVE	1
18	B0281871	2" PLASTIC PLUG	2	53	B0192605	3/8" HYD. HOSE x 20"	1
19	B0290206	SWING SPEED DECAL	1	54	B0192682	3/8" HYD. HOSE x 15'	2
20	2074761	TACH MOUNTING BRACKET	1	55	B001082	3/8" x 1" CARRIAGE BOLT	4
21	B026190	TACH/HOUR METER	1	56	B689169	1/4" KEY x 1 1/2" LONG	1
22	B001094	5/8" x 2 1/4" CARRIAGE BOLT	6	57	20744875	BEARING COVER	2
23	B001158	1" SAE FLAT WASHER	1	58	B021908	P-CLIP HOSE HOLDER	1
24	B001410	5/8" SF NUT	10	59	2071356	BEARING COVER NUT	4
25	B0010951	5/8" x 3" CARRIAGE BOLT	1	60	2074930	BOTTOM COVER	1
26	B001157	3/4" SAE FLAT WASHER	1	61	2067858	BEARING COVER	1
27	B001139	5/8" HEX NUT	3				
28	B0010945	5/8" x 2 1/2" CARRIAGE BOLT	2				
29	B001024	3/8" x 1" BOLT - GR.5	12				
30	B0011325	3/8" LOCK NUT	4				
31	B001001	1/4" x 1/2" BOLT - GR.5	3				
32	B0011246	1/4" FLANGE LOCK NUT	9				
33	B001002	1/4" x 3/4" BOLT - GR.5	6				
34	B001147	1/4" FLAT WASHER	6				
35	B001040	1/2" x 1 1/4" BOLT - GR.5	4				

Axle Parts - All Sizes



Ref #	Part No.	Description	QTY
1	B011503	DUST CAP - 6 BOLT HUB	1 per hub
2	B011681	1" CASTLE NUT	1 per hub
3	B001158	1" FLAT WASHER	1 per hub
4	B011603	OUTER CONE - 6 BOLT HUB	1 per hub
5	B011602	OUTER CUP - 6 BOLT HUB	1 per hub
6	B011003	6 BOLT HUB c/w BEARINGS	1 per hub
7	B011652	INNER CUP - 6 BOLT HUB	1 per hub
8	B011651	INNER CONE - 6 BOLT HUB	1 per hub
9	B011650	GREASE SEAL - 6 BOLT HUB	1 per hub
10	B011221	ST225/75R15 TIRE & RIM	1 per hub
11	B011504	WHEEL BOLT	6 per hub
12	B002054	3/16" x 2" COTTER PIN	1 per hub

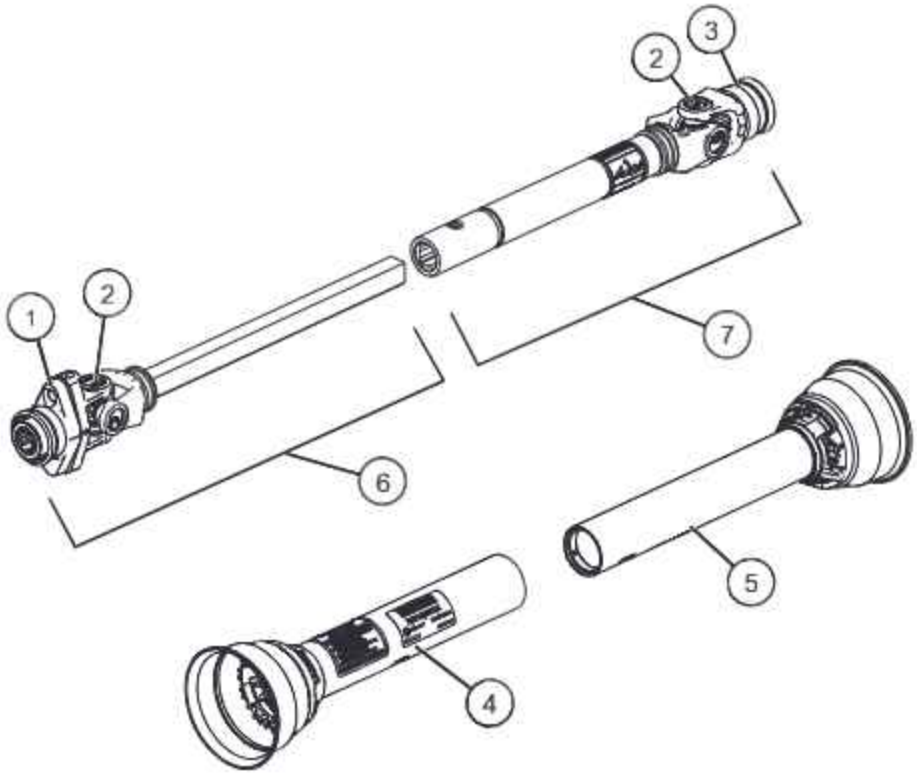
PTO Shaft Parts - 540 rpm Kit



Weasler Series 14E

Ref #	Part No.	Description	QTY
1	8026661	SHEAR YOKE - 6 SPLINE	1
2	B0037101	CROSS & BEARING KIT	2
3	B003772	IMPLEMENT YOKE - 6 SPLINE	1
4	B003847	OUTER SHIELD	1
5	B003848	INNER SHIELD	1
6	8026662	TRACTOR HALF OF SHAFT c/w GUARD - 6 SPLINE	1
7	B003841	IMPLEMENT HALF OF SHAFT c/w GUARD	1
NS	B003065	PTO SHAFT - 540 RPM	1
NS	800003	SHEAR BOLT - 1/4" x 1" BOLT - GR.8	1
NS	8000055	SHEAR NUT - 1/4" STOVER LOCK NUT	1

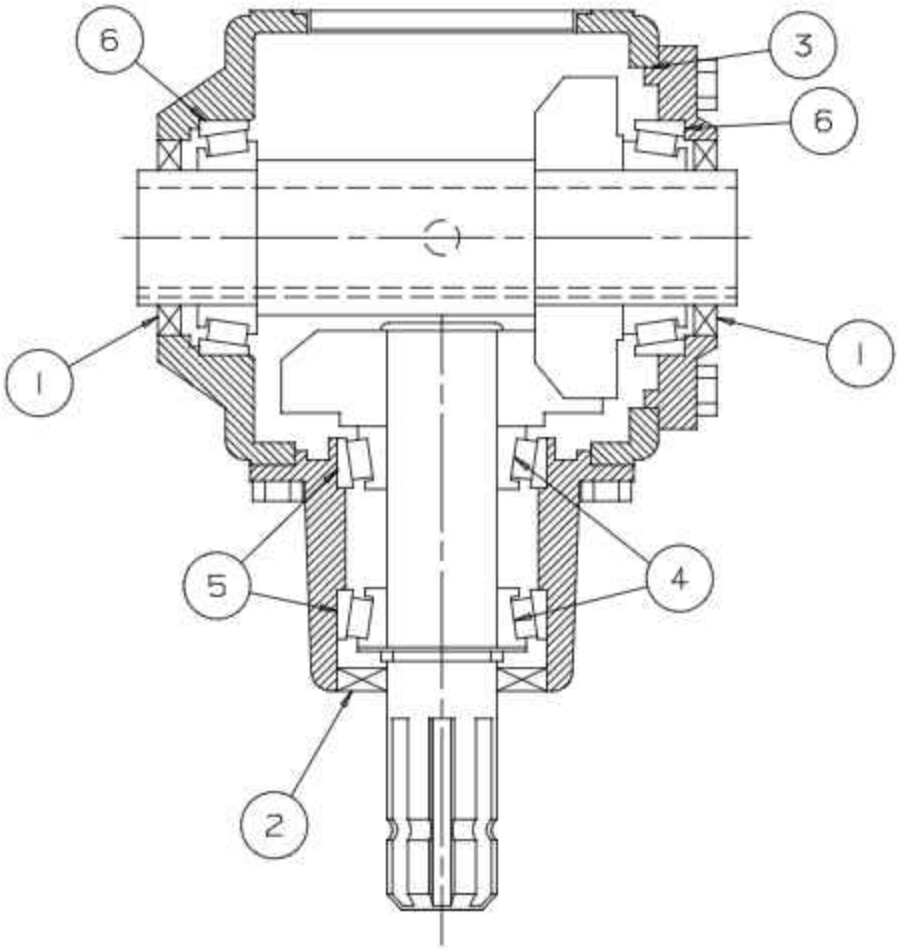
PTO Shaft Parts - 1000 rpm Kit



Weasler Series 14E

Ref #	Part No.	Description	QTY
1	8026663	SHEAR YOKE - 21 SPLINE	1
2	B0037101	CROSS & BEARING KIT	2
3	B003772	IMPLEMENT YOKE - 6 SPLINE	1
4	B003847	OUTER SHIELD	1
5	B003848	INNER SHIELD	1
6	8026664	TRACTOR HALF OF SHAFT c/w GUARD - 21 SPLINE	1
7	B003841	IMPLEMENT HALF OF SHAFT c/w GUARD	1
NS	B0030655	PTO SHAFT - 1000 RPM	1
NS	8000124	SHEAR BOLT - 1/4" x 1" BOLT - GR.5	1
NS	8000055	SHEAR NUT - 1/4" STOVER LOCK NUT	1

Gearbox Parts



Ref #	Part No.	Description	QTY
1	B003029411	OIL SEAL - OUTPUT SHEEVE	2
2	B003023510	OIL SEAL - INPUT SHAFT	1
3	B003023518	O-RING	2
4	B011656	BEARING CONE	2
5	B011657	BEARING CUP	2
6	B003029405	BEARING	2
NS	B0030294	GEARBOX - COMPLETE	1

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