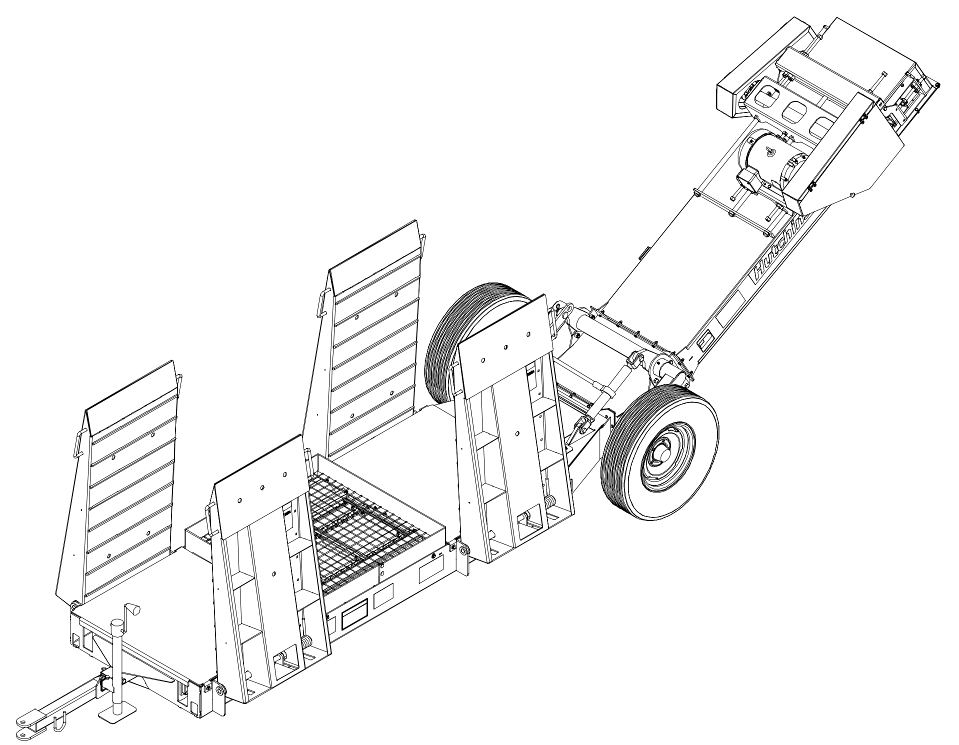
PORTABLE DRIVE-OVER CHAIN CONVEYOR

OWNER'S & OPERATOR'S MANUAL

Effective September 27, 2024 Publication No. 1046754



AGI HUTCHINSON MAYRATH

Hutchinson l Mayrath • 514 W. Crawford • Clay Center, KS. USA 67432

P 785.632.2161 • **F** 785.632.5964 • **TF** 800.523.6993

hutchinson-mayrath.com

aggrowth.com | AGI

TABLE OF CONTENTS

SAFETY

GENERAL SAFETY STATEMENT

This manual was written with the safety of the operator and others who work with the equipment as our prime concern. The instructions presented will help the reader learn **SAFE** day to day work practices. We want you as our partner in safety.

It is your responsibility as an owner, operator or supervisor to know what specific safety requirements and precautions exist and to make these known to all other personnel working with the equipment or in the area, so that they too may safely perform their duties and avoid any potentially hazardous situations.

We suggest the implementation of a Safety Program for all personnel that includes, but is not limited to, the proper use of PPE (personal protective equipment), Fall Protection Systems and Lock Out-Tag Out procedures.

Please remember safety equipment provides important protection for persons around a grain handling system that is in operation. Be sure **ALL** safety shields and protection devices are installed and properly maintained. If any shields or guards are damaged or missing, contact your dealer to obtain the correct items.

Avoid any alterations of the equipment. Such alterations may create a dangerous situation where serious injury or death may occur.

SAFETY ALERT SYMBOL

The safety symbol shown is used throughout this manual to alert you to information about unsafe actions or situations, and will be followed by the word DANGER, WARNING, or CAUTION.

DANGER - Indicates immediate hazards that may result in severe injury or death. **WARNING** - Indicates unsafe actions or situations that may cause severe injury, death and/or major equipment or property damage. **CAUTION** - Indicates unsafe actions or situations that may cause injury, and/or minor property damage.

Watch this symbol - it points out important safety precautions. It means - **ATTENTION! Become alert! Your safety and the safety of others is involved!** Read the message that follows the symbol when a warning is given, be alert to the possibility of personal injury or death.

BE ALERT!
YOUR SAFETY IS INVOLVED

Follow Safety Instructions

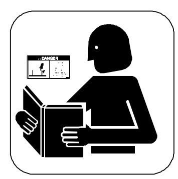
Carefully read all safety messages in this manual and safety signs on your machine. Check to ensure all Safety Decals are present and in good condition.

If a decal cannot easily be read for any reason, or has been painted over, replace the decal immediately. Safety decals are offered free of charge, and can be ordered through your Hutchinson/Mayrath dealer or directly from the factory.

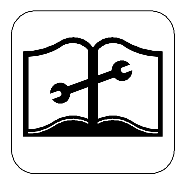
Learn how to operate the machine and how to use controls properly.

Keep your machinery in proper working condition. Understand service procedures before doing work. Never lubricate, service or adjust machine while it is in operation.

Keep work area clean, dry and free from of all debris and tools which may cause accidental tripping or falling.



Read and Understand Manual



Understand Service Procedures

Keep Work Area Clean

Prepare for Emergencies

Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

Keep a first-aid kit and fire extinguisher handy.

Be prepared if a fire starts

First Aid Equipment

Fire Extinguisher

Wear Proper PPE (Personal Protective Equipment)

Some materials can create flying debris when they are filed, cut or drilled. Safety glasses should be worn at all times to protect your eyes from such debris.

Hearing protection should be worn when operating power tools or other power equipment that could be harmful to your hearing.

Gloves should be worn to protect your hands from sharp metal and plastic edges, as well as providing protection from the handling of heavy objects.

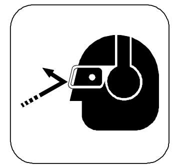
Wear steel toe boots to protect your feet from falling debris.

Wear a hard hat to help protect your head from falling objects as well as from accidental bumping.

Use caution when working at elevations greater than four (4) feet *(1.22 m)* above the ground.

Use the appropriate fall protection equipment as set forth by OSHA guidelines and regulations.

A respirator may be needed to prevent breathing potentially toxic fumes and dust, especially when working within a grain bin or storage structure.



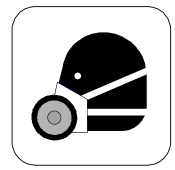
Eye & Hearing Protection

Gloves

Steel Toe Boots

Hard Hat

Fall Protection



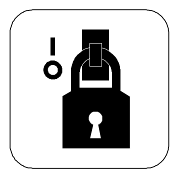
Respirator

Operate Electric Motor(s) Properly

Do not operate electric motor equipped units until motor(s) are properly grounded.

Know how to “Shutdown and Lockout” the power source. Shutdown and lockout power source before performing any service, maintenance or adjustments to the unit.

Disconnect power on electrical driven units before resetting motor overloads.



Lockout / Tagout

Electric Shock Hazard

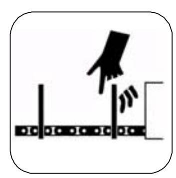
Stay Clear of Moving Parts

Keep all shields, covers and safety devices in place at all times.

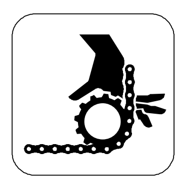
Entanglement in moving chains, rotating impeller arms and sprockets will cause serious injury or death.

Wear close fitted clothing. Keep hands, feet and clothing away from moving parts.

Shutdown and lockout power source before making adjustments, cleaning or maintaining the equipment.



Entanglement Hazards



GRAIN BIN SAFETY

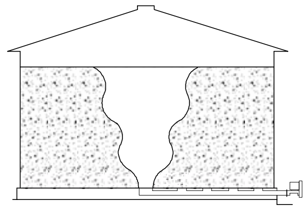
The Drive-Over Chain Conveyor is generally designed to receive grain from an unload vehicle (trailer, wagon, etc.) and discharges the grain into a conveyor system that then moves the grain into grain bins or other storage structures. **Be aware of the dangers inherent in grain bins.**

Consult the grain bin manufacturer's manual for information on the proper loading and unloading of the bins, structural stress analysis, adequate venting and other important safety information.

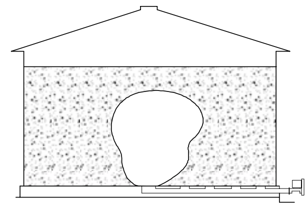
WARNING! Do Not enter the bin if the grain has "Bridged" or has not flowed normally out of the bin, See Example's 1 & 2. The grain may suddenly break loose and bury resulting in suffocation.

Do Not enter the bin unless all power driven equipment has been shut down and locked out.

Never enter the bin unless monitored by another person.



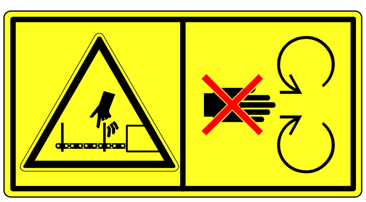
Example 1
(Abnormal Flow)

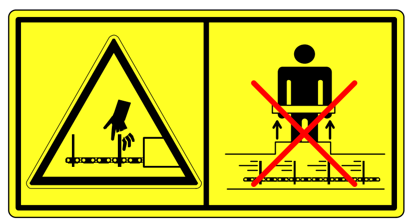


Example 2
("Bridging")

SAFETY DECALS

Check to ensure all Safety Decals are present and in good condition. If a decal cannot easily be read for any reason, or has been painted over, replace the decal immediately. Safety decals are offered free of charge, and can be ordered through your Hutchinson/Mayrath dealer or directly from the factory.





OPERATOR QUALIFICATIONS

WARNING!

Anyone who will operate or work around this machine shall first read this manual! This manual must be delivered with the equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

Operation of this conveyor system shall be limited to competent and experienced persons. In addition, anyone who will operate or work around a conveyor must use good common sense. In order to be qualified, he must also know and meet all other requirements, such as:

1. Some regulations specify that no one under the age of 16 may operate power machinery. This includes this conveyor. It is your responsibility to know what these regulations are in your area or situation.
2. Current OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in safe operation and servicing of all equipment with which the employee is, or will be involved." *
3. Unqualified persons are to stay out of the work area. See Page 9.
4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.
5. Persons operating, servicing or repairing equipment that requires above ground work shall be properly secured with the use of "fall protection" equipment as set forth by OSHA guidelines and regulations.

***Federal Occupational Safety & Health Standards for Agriculture Subpart D, Section 1928.57 (a) (6).**

SIGN OFF SHEET

As a requirement of OSHA, it is necessary for the employer to train the employee in the safe operation and safety procedures with this conveyor. We include this sign off sheet for your convenience and personal record keeping.

Training Sign-Off Sheet

Date	Employer Signature	Employee Signature

SERIAL NUMBER

To ensure efficient and prompt service, please furnish us with the model and serial number of your conveyor in all correspondence or other contact. The serial plate is located on the drive head assembly of the Drive-Over Conveyor.

RIGHT & LEFT SIDE DESIGNATION

When referencing the left, right, front or rear of the unit, it is always determined by standing at the hitch end of the conveyor and looking towards the discharge end.

GENERAL INFORMATION

MACHINE INSPECTION

After completion of assembly and before each use, inspection of the machine is mandatory. This inspection should include, but not be limited to:

1. Inspect the conveyor for loose bolts, missing chain parts, missing or damaged paddles and the overall chain condition and chain tension.
2. Check the condition and tension of drive belts and adjust as necessary.
3. Inspect sheaves for alignment and see that they are securely fastened.
4. On electric units, make sure all electrical connections are tight. Check electrical wiring for damaged insulation, exposed wires, etc.

   On hydraulic units, check hoses for damage and leaks. Ensure all fittings and connections are tight.
5. Check all safety signs and replace any that are worn, missing or illegible.
6. Check that all safety devices, guards and shields are installed and that all grates and covers are properly in place.

MACHINE FEATURES

- Low drive-over clearance, only 9” *(229 mm)* high.
- Reinforced ramps fold for narrow transport width.
- Capacity - up to 8,000 bushels per hour *(216 TPH)*.
- Extra wide 23” *(584 mm)* paddles.
- Four drive choices, 3 electric and 1 hydraulic.
- Receive from side dump wagons, as well as bottom dump and rear dump vehicles.
- Removable hitch tube.

CONVEYOR CHAIN INFORMATION

The conveyor is designed to move grain through the conveyor housing using a chain and paddle conveying system. The conveyor uses CA550 chain and 3/8” thick UHMW paddles with steel reinforcement plates.

Chain tension should be set so that the paddles have approximately 85° of rotation. Refer to the assembly instructions for the chain and paddles for proper adjustment (Page 21).

Using the recommendations in the charts for both the electric and hydraulic powered units, **maximum conveyor chain speed will be approximately 385 FPM *(1.88 mps)*.**

START-UP and BREAK-IN INFORMATION

WARNING! During initial start-up and break-in period, the operator shall be aware of any unusual vibrations or noises that would indicate a need for service or repair.

Keep all safety shields and devices in place. Keep hands, feet, and clothing away from moving parts.

The operator should have a full view of the conveyor work area and ensure that all personnel are away from the designated work areas before adding power to the equipment.

It is essential to inspect your conveyor and drive components before adding power and to know how to shut down in an emergency. During the operation of your conveyor, one person shall be in a position to monitor the operation.

During the initial start-up and break-in period, the operator should watch for any unusual vibrations or noises.

Any conveyor, when it is new or after it sits idle for a season, should go through a “break-in” period. It should be run at partial capacity at full speed until the inside of the housing becomes polished, before attempting full capacity. A failure will most likely occur when it is run at full capacity before it has a chance to “shine up”.

If at all possible, do not start or stop the conveyor under load, especially before the housing becomes well polished, as this may cause the unit to stall.

ELECTRIC MOTOR DRIVE INFORMATION

WARNING! A main power disconnect switch that can be locked in only the "OFF" position shall be provided. This shall be locked whenever work is being done on the conveyor.

The reset and starting controls must be located so that the operator has full view of the entire operation.

Do Not enter the grain bin unless all power driven equipment has been shut down and locked out.

Make certain electric motor is grounded.

Disconnect power before resetting motor overloads.

Shut off power and lockout whenever cleaning or servicing the conveyor.

Electric Power Requirements f/ Drive-Over Chain Conveyor

Always use a motor with required HP *(kw)* as stated in the chart below. Use a 60 hz motor that operates at 1750 rpm *(50 hz @ 1460 rpm)*. ***Units using 50 hz motors require different drive pulleys, consult factory for specifications.***

Electrical motor and controls shall be installed by a qualified electrician and must meet the standards set by the National Electrical Code and all local and state codes.

A magnetic starter should be used to protect your motor when starting and stopping. It should stop the motor in case of power interruption, conductor fault, low voltage, circuit interruption or motor overload. Then the motor must be restarted manually.

Some motors have built-in thermal overload protection. If this type of motor is used, use only those with a manual reset. Install with an ampmeter on motor so that the load can always be monitored to prevent overloading.

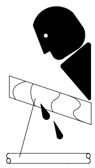
A main power disconnect switch that can be locked only in the **"Off"** position shall be installed. This shall be locked whenever work is being done to the conveyor.

Capacity, BPH *(TPH)*	Elec. HP *(kw)*	Motor Frame Size	Motor Pulley*	No. of Belts
3,500 BPH *(95 TPH)*	5 HP *(4 kw)*	184T	3.8" PD	2
5,000 BPH *(135 TPH)*	7.5 HP *(5.5 kw)*	213T	4.2" PD	2
8,000 BPH *(216 TPH)*	10 HP *(7.5 kw)*	215T	4.2" PD	3
8,000 BPH *(216 TPH)*	15 HP *(11 kw)*	254T	5.4" PD	3

***The motor pulley is furnished with the unit**
PD = Pitch Diameter

GENERAL INFORMATION

HYDRAULIC MOTOR DRIVE INFORMATION



WARNING! Do Not connect or disconnect hydraulic components while system is under pressure. Hydraulic systems are highly pressurized, escaping hydraulic oil, even an invisible pin hole leak can penetrate body tissue and cause serious injury.

Use a piece of wood or cardboard when searching for a leak, Never use the hands or other body parts.

When reassembling, make absolutely certain that all connections are tight.

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction can occur if medical attention is not received at once.

NOTE ABOUT HYDRAULIC MOTORS AND TRACTOR:

Hydraulic motors, when used properly, can be a very good source of power. Hydraulics on the other hand are a sophisticated system and can create problems if not properly installed. Ordinarily the hydraulic motors can be plugged into the standard outlets on back of a tractor and be expected to work adequately. Some tractors have an additional return port that is to be used when operating hydraulic motors (consult the tractor manual to see if this is applicable).

Most newer tractors have a hydraulic pump capable of supplying enough oil. Some problems are encountered with built-in restrictors in the stock valves (1/2" lines supplying tractor outlet - the snap couplers themselves acting as restrictors). **Speeding up the tractor to overcome any of the above areas will only result in excess heat build-up which could damage the tractor and the motor.**

The flow control valve can be adjusted to assist with maintaining the correct operational speed. Adjust accordingly.

When making the hydraulic connection to the system, connect the hydraulic hoses to the tractor hydraulic couplers so the motor operates with the control lever in the "Lower/Retract" position.

The motor can then be turned off in the forward "Float" position. Turning the motor off in "Float" instead of "Neutral" allows the hydraulic system pressure to equalize and reduces the occurrence of damaging pressure spikes.

The return line should be connected to a low pressure return port if available. The low pressure return port returns oil directly to the oil reservoir reducing pressure in the return line. Pressure reduction in the return line extends the motor seal life and increases the motors operating efficiency. Consult your tractor dealer for low pressure return options.

If the conveyor chain is traveling in the wrong direction, it's possible the tractor connections need to be reversed, or assembly of the hoses from the motor to the control valve may be incorrect.

The hydraulic hoses that connect to the tractor are **not** furnished (the minimum hose requirement from valve to tractor is 1/2" I.D. hydraulic type with a 3000 PSI working pressure. If the hydraulic power source is very far from the valve, a larger diameter size hose may be necessary). The hose end connection from the tractor to the valve is a 1/2" male NPT.

IMPORTANT! Use a tractor which has the proper hydraulic capacity of 20 gal. per minute *(76 LPM)* minimum, and a hydraulic oil pressure of 2000 PSI *(13790 kPa).*

Recommended Hydraulic System Pressure	Recommended Hydraulic System Capacity
2,000 PSI *(13790 kPa)*	20 GPM *(76 LPM)*

Hydraulic hoses for the conveyor-to-tractor connection are **Not** furnished. Minimum hose size of 1/2" diameter is recommended.
Connection to the adapter & tee on the control valve is 1/2" NPT

DESIGNATED WORK AREA

WARNING! Under no circumstances should persons not involved in the operation be allowed to trespass into the work area.

It shall be the duty of all operators to see that children and/or other persons stay out of the work areas!

Trespass into the work area by anyone not involved in the actual operation, or trespass into a hazard area by anyone shall result in immediate shutdown by the operator.

It shall be the responsibility of all operators to see that the work area has secure footing, is clean and free of debris and tools which might cause accidental tripping and/or falling.

It shall also be their responsibility to keep the area clean and orderly during the operation.

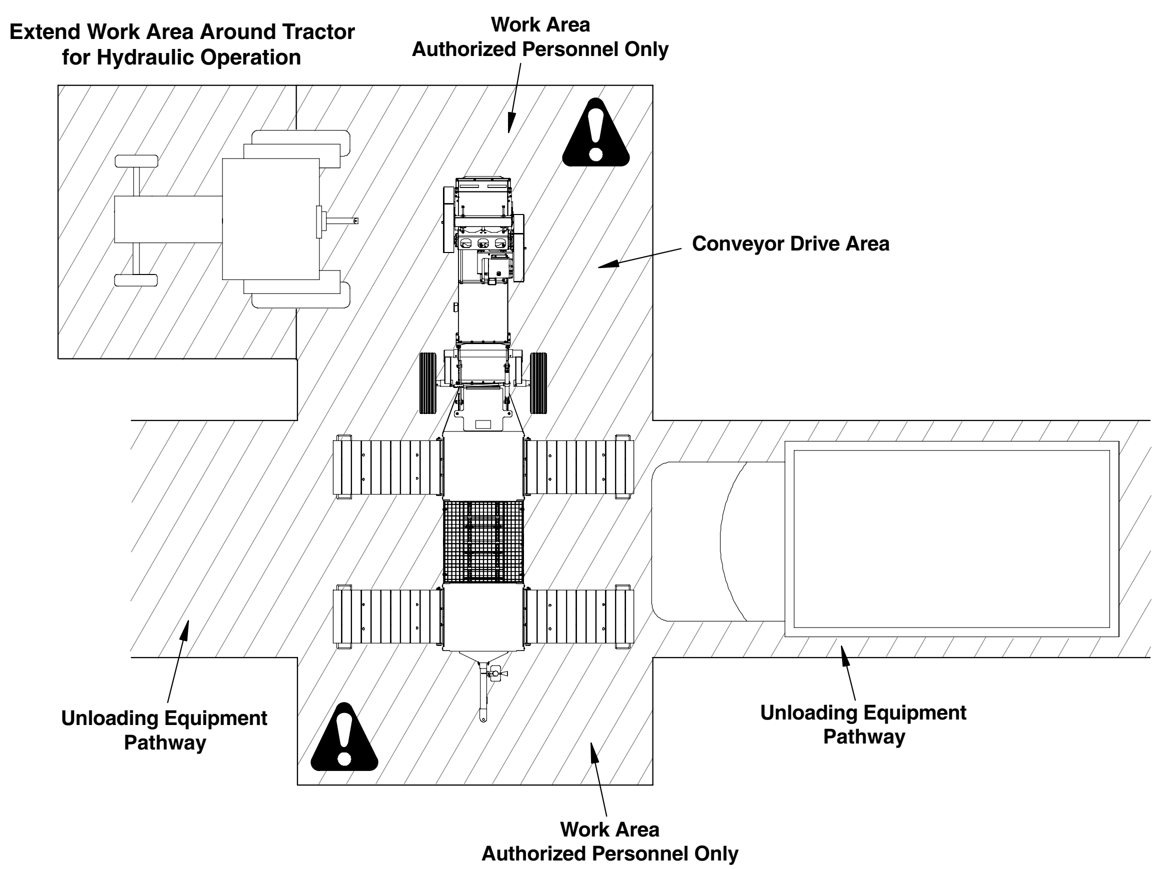
Before starting the conveying operation, a designated work area should be established and properly marked.

The diagram below shows the manufacturers designated work area. These areas shall be marked off with colored nylon or plastic rope hung as portable barriers to define the designated work areas.

It shall be the responsibility of the operators to keep unauthorized persons out of the work areas. It shall also be their responsibility to make sure the work areas are clean and free of tools and debris which could cause accidental tripping and/or falling.

If unauthorized persons do enter the area, the operator shall shutdown the operation immediately, until such person(s) have left the work area.

Use caution and good sense during conveying operations. Be aware of what is going on around the unloading process. Know how to shutdown in case of an emergency (See the "Shutdown & Lockout" section in this manual).



TRANSPORTING

HITCHING TO TRACTOR INSTRUCTIONS

CAUTION! Never stand between tractor and conveyor when hitching or unhitching, unless all controls are in neutral and the brakes locked.

Before retracting or removing hitch jack for conveyor transport, the hitch must be secured to the vehicle/tractor drawbar to prevent the hitch end from dropping to the ground.

Never raise the intake end higher than what is necessary to attach to the towing vehicle.

The hitch jack is intended to lift the intake end for hitching and unhitching purposes. The jack should be positioned as vertical to the ground as possible.

Raise and secure the ramps *before* hitching to a towing vehicle. A short section of chain is furnished for each set of ramps. Connect the hooked end of the chain to the handles on the ramps making sure the spring clip on the chain hook closes properly.

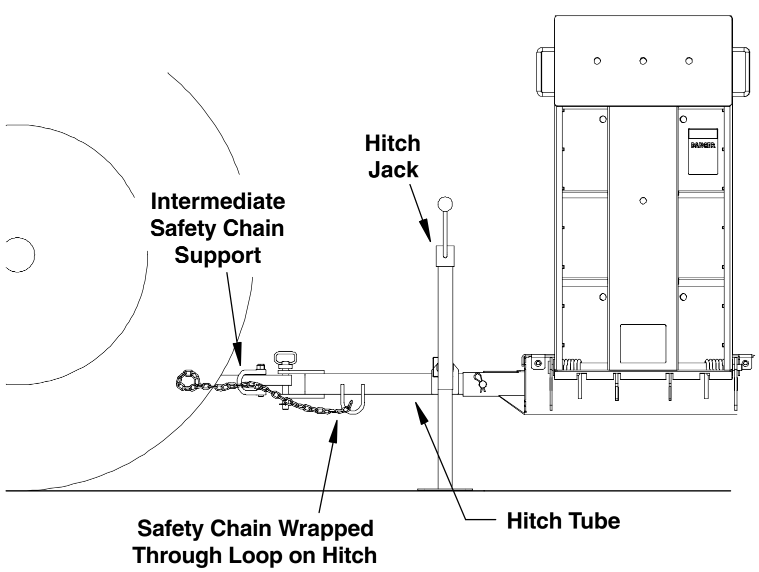
Crank the jack handle clockwise to extend the jack, thus raising the intake. Raise only as high as necessary to attach to the drawbar of the towing vehicle.

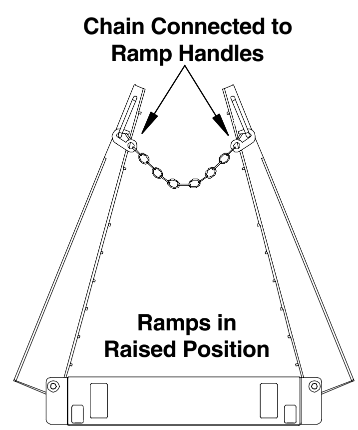
1. Using the hitch jack, raise the intake end of the conveyor high enough to attach to the tractor drawbar. Make certain the hitch pin is securely attached.
2. An auxiliary attachment system (safety chain) is required on public roads to retain connection between the towing and towed machines in the event of separation of the primary attachment system.

   The safety chain should be routed through the safety chain loop on the hitch tube and fastened to the tractor.

   A clevis or intermediate chain support should be fastened to the tractor drawbar no further than 6" *(152 mm)* from the hitch pin (See illustration below).

   Allow no more slack than what is necessary for articulation. Store the safety chain when unhitched from the tractor, **the safety chain is not furnished with the conveyor.**
3. After the conveyor has been properly secured to the towing vehicle, retract the hitch jack completely, or the jack can be removed from the conveyor and stored for transport.





Shown for Reference Only

MOVING THE CONVEYOR

WARNING! Before moving conveyor, the operator should make sure all personnel are clear of the Moving Hazard Area (see diagram below).

Make sure entire area above the conveyor and in the line of travel is clear of overhead obstructions and electrical wires. Failure to do so may result in electrocution.

Maintain at least 10 feet *(3.05 m)* of clearance from electrical wires, electrocution can occur without direct contact of wires.

Never allow persons to ride on the conveyor while it is being transported.

Observe safe driving and operation practices and comply with your state and local regulations governing marking, towing and maximum width.

Move the conveyor with tractor to or from the work area. A pick-up or other suitable vehicle can be used for transporting the conveyor over greater distances.

Comply with your state and local regulations governing marking, towing and maximum width.

1. Once the conveyor is connected to the towing vehicle and the ramps have been raised and secured, lower the conveyor wheels for transport.
2. Use the ratchet jack located above the right side tire, to lower the wheels (raising the conveyor for ground clearance). Lower the wheels far enough so the transport bar can be pinned into place.

   Secure the transport bar using one 1” x 21/2” long washerhead pin and hair pin.

   The conveyor can now be transported. Make sure everyone is clear of the “moving hazard area” before transporting the conveyor.

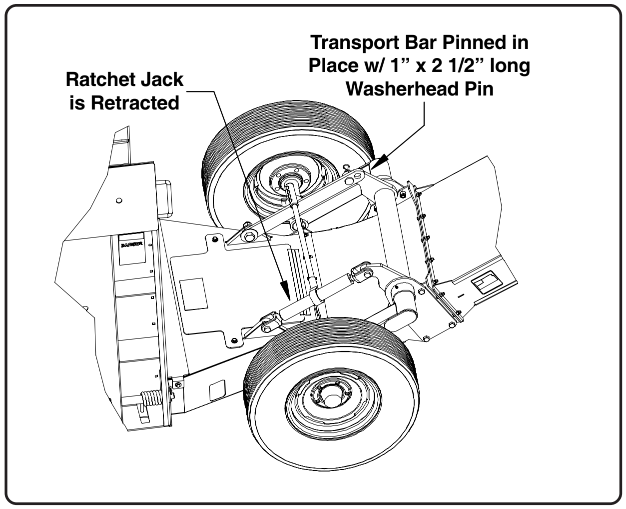
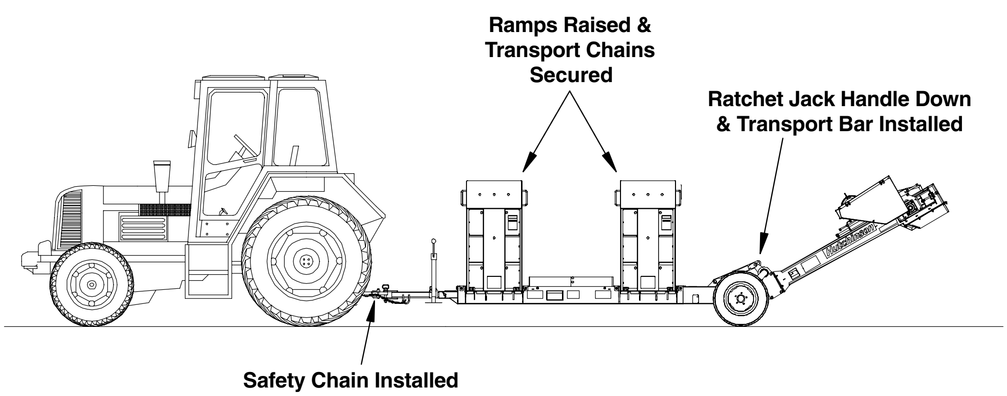
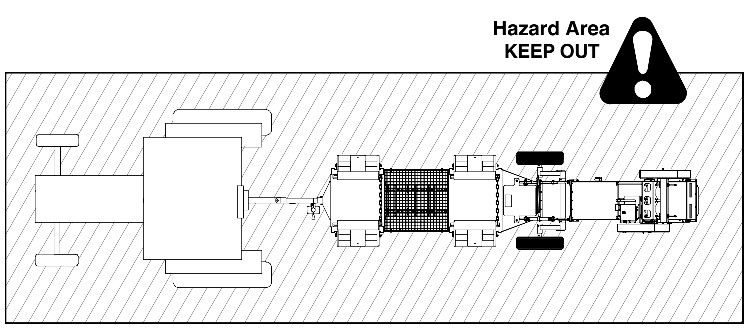


Fig. 1





TRANSPORTING

PLACEMENT OF CONVEYOR

CAUTION! Make certain everyone is clear of the work area when moving the conveyor.

Step 1

Move the drive-over conveyor slowly toward working position with a tractor. Locate the drive-over on level ground with discharge opening positioned over inlet of equipment to be fed by drive-over.

Leave adequate room for loaded vehicles to reach the conveyor intake area conveniently.

Step 2

Using the ratchet jack, pivot the axle assembly enough to remove the 1” x 2 1/2” pin from the transport bar. Continue using the ratchet jack to lower the conveyor to the ground (the wheels should be raised above the ground high enough to allow the conveyor itself to rest on the ground).

Use the hitch jack to raise the inlet end and unhitch the tractor from the conveyor. Use the hitch jack to lower inlet end of conveyor to the ground. Once conveyor is resting on the ground, either pivot the jack out of the way, or remove the jack and store in towing vehicle.

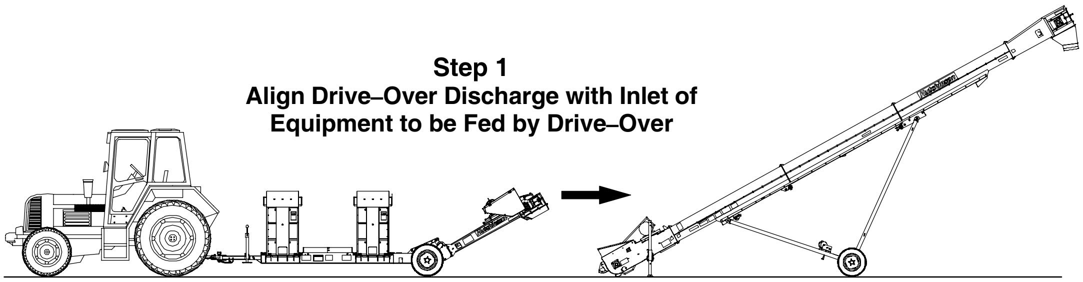
WARNING! The ramps are heavy. To avoid personal injury, use assistance when raising or lowering the ramps.

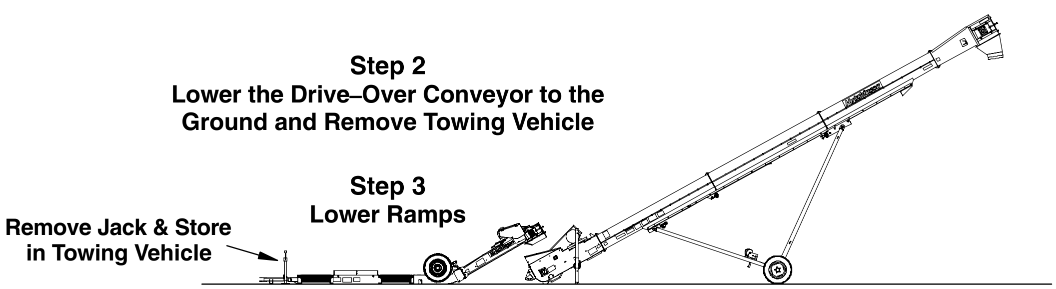
The transport chains on the ramp handles should be removed and stored on the tractor when not in use, and removed before raising or lowering the ramps.

Step 3

Remove the transport chains from the ramp handles . Lower the ramps to the ground (the ramps are heavy, they should be raised and lowered by two people).

The ramp chains should be stored on the tractor when not in use. They should also be removed from the handles before raising and after lowering the ramps. If left on the handles, the chains could swing and strike someone, or they could be snagged on clothing creating a hazardous situation.





LUBRICATION

WARNING! Shut off power and lockout power source to adjust, service or clean the equipment.

Never lubricate the machine while it is in operation.

For economical and efficient operation, it is important to maintain regular lubrication and service intervals on your conveyor. Neglect leads to reduced efficiency, excessive wear and needless downtime.

Make sure the lubrication fittings (grease zerks) are clean and free of dirt or other debris before greasing, other wise dirt can be passed into the bearing race which can lead to bearing damage.

Use a good quality SAE lithium based type grease for all lubrication points.

RATCHET JACK

There are two lubrication fittings on the ratchet jack cylinder. Lubricate with two to three pumps **twice annually**. Apply a thin layer of grease to the exposed threads if desired. Operate the jack a few times to help spread the grease around the threaded shafts.

AXLE PIVOT ASSEMBLY

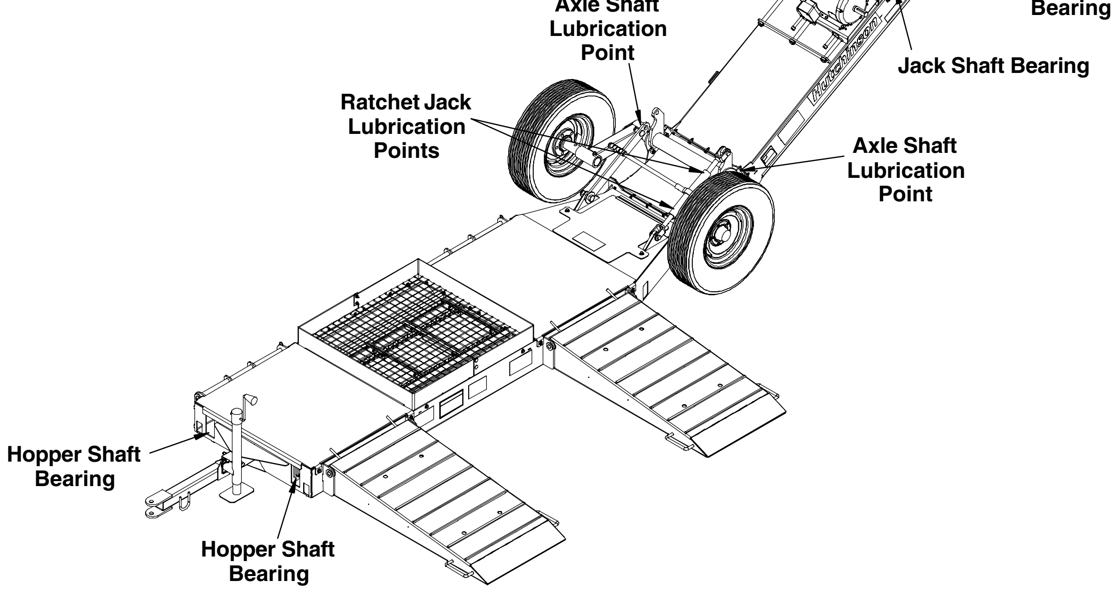
The axle pivot assembly has two lubrication fittings, one located on each side of the top portion of the axle weldment. Insert **two to three pumps** of grease into each fitting after **every 30 hours** of operation and again before storing the unit at seasons end. Use the ratchet jack to raise and lower the wheels to help spread the grease evenly around the shaft.

HEAD BEARING, JACK SHAFT BEARING and HOPPER BEARINGS

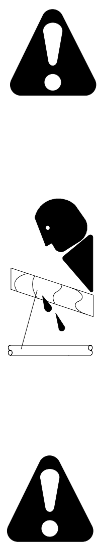
These bearings are self contained and have been pre-lubricated at the factory. Insert one to two pumps of grease into the lubrication fittings **once annually**. Do not over-grease, as this can damage the bearing seals.

When lubricating the bearings, check to make sure all hardware and fasteners securing the bearings and the other components in that vicinity are tight.

Head Shaft Bearing – Once annually
Jack Shaft Bearing – Once annually
Axle Shaft – Twice annually
Hopper Shaft Bearing – Once annually
Ratchet Jack – Twice annually



HYDRAULIC COMPONENTS



WARNING! Do Not connect or disconnect hydraulic components while system is under pressure. Hydraulic systems are highly pressurized, escaping hydraulic oil, even an invisible pin hole leak can penetrate body tissue and cause serious injury.

Use a piece of wood or cardboard when searching for a leak, Never use the hands or other body parts.

When reassembling, make absolutely certain that all connections are tight.

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction can occur if medical attention is not received at once.

A hydraulic motor is used to power the hydraulic drive conveyor. Hydraulic motors are built to extremely high standards and should be treated as such.

Hydraulic motors are designed and manufactured to strict tolerances and assembled under closely controlled conditions. If properly installed and with minimal attention, it will give long trouble-free service.

So they meet the highest quality repair and test standards, only trained personnel should repair and test motors. The motor should be returned to your nearest service center or to the factory if in need of repair.

To help keep your hydraulic system in good working condition:

- Avoid nuisance fluid leaks. Make sure all connections and fittings are tight.
- Check hoses periodically for cuts and/or other damage. Replace if necessary.
- Use adequate filtration in the system (10 micron or finer).

WHEEL BEARINGS

Tapered roller type bearings are used on the wheels and should be repacked with grease **annually or as needed determined by usage.**

To repack bearings:

1. Remove the wheels and tires from the conveyor.
2. Remove the dust cover by prying around its edges (See Fig. 2).
3. Remove the cotter pin, slotted nut and flat washer from the end of the axle spindle. Remove the hub from the spindle being careful so the outer bearing doesn't fall to the ground.

   Clean the bearing with solvent and inspect the bearing for wear or damage, replace if necessary.

   To inspect the inner bearing, you will need to remove the seal from the rear of the hub (the seal may be become damaged during this procedure, replace as necessary, see Parts List in back of this manual for replacement seal information).

   With the seal removed you can now remove the bearing. Clean the bearing with solvent and inspect for wear and damage, replace if necessary.
4. Clean the hub cavity with solvent before reassembly. Using a good automotive type axle grease, repack the bearings. Insert the inner bearing into the hub and press in the seal.

   Reinstall the hub onto the axle spindle being careful not to damage the lip of the seal during installation.
5. Fill the hub cavity with grease until about 1/3 full, then reinstall the outer bearing.
6. Reinstall the flat washer and slotted nut. Tighten the slotted nut to seat the bearings. Keep tightening the nut until the wheel begins to bind as you rotate it. Back off the slotted nut to the next slot and install a new 5/32" x 1 1/4" cotter pin. Reinstall the dust cap.

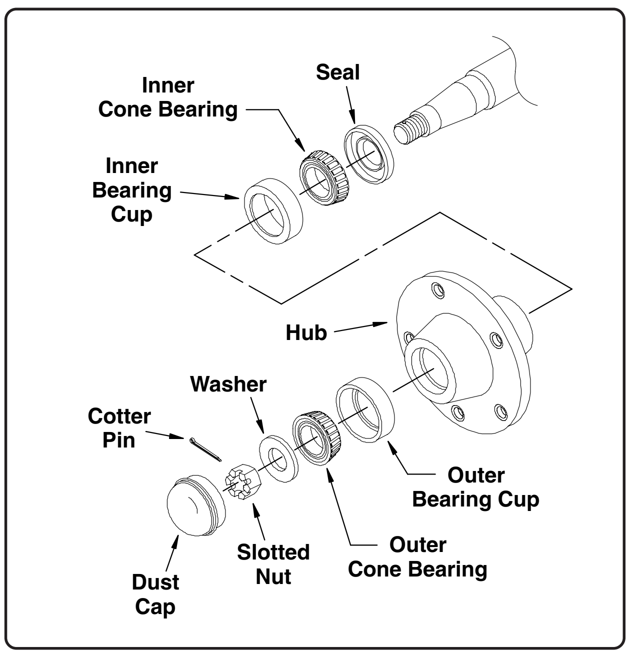


Fig. 2

CHAIN & PADDLE ADJUSTMENT

Pages 20 and 21 contain information on paddle and chain assembly as well how to initially tighten the chain. Although this initial tightening process is satisfactory, the chain may still require further adjustment once the conveyor has been operated. Refer to Page 31 for detailed information on this procedure.

ELECTRIC DRIVE COMPONENTS

WARNING! Keep all safety shields and devices in place. Replace any that are damaged or missing.

Shut off power and lockout power source to adjust, service, or clean the unit. Never clean, adjust or service with the unit in operation or with the power source on.

Check to make sure all safety shields are in place and secure. Replace any that are damaged or missing.

Drive belts should be checked for proper tension at the beginning of each day of operation. Belt tension must be sufficient to avoid any slippage or abnormal wear on the belts.

When checking belt tension, also inspect the belts for any cracks, fraying, or any other damage that would require belt replacement.

Belt tension should be approximately **1/4” *(7 mm)* of deflection** on each belt when they are firmly pressed at the center of the span between the pulleys.

There are two separate sets of drive belts, the electric motor-to-jack shaft and the jack shaft-to-head shaft.

MOTOR BELT ADJUSTMENT

1. Loosen the jam nuts on the motor mount adjustment rods, See Fig. 3).
2. Tighten the adjustment rods evenly until there is approximately 1/4” *(7 mm)* of deflection on the belts when they are firmly pressed in the center of the span between the pulleys. Once properly tensioned, tighten the jam nuts to secure into place.

JACK SHAFT BELT ADJUSTMENT

1. Loosen the jam nuts on the jack shaft adjustment rods, See Fig. 4).
2. Tighten the adjustment rods evenly until there is approximately 1/4” *(7 mm)* of deflection on the belts when they are firmly pressed in the center of the span between the pulleys. Once properly tensioned, tighten jam nuts to secure into place.

Motor Belt Adjustment

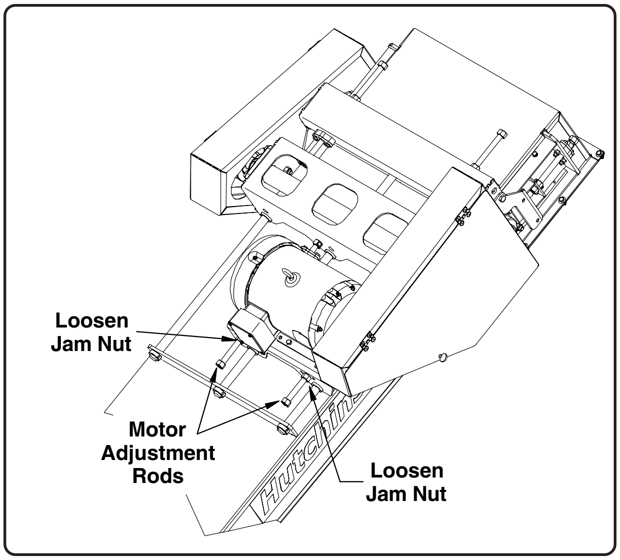


Fig. 3

Jack Shaft Belt Adjustment

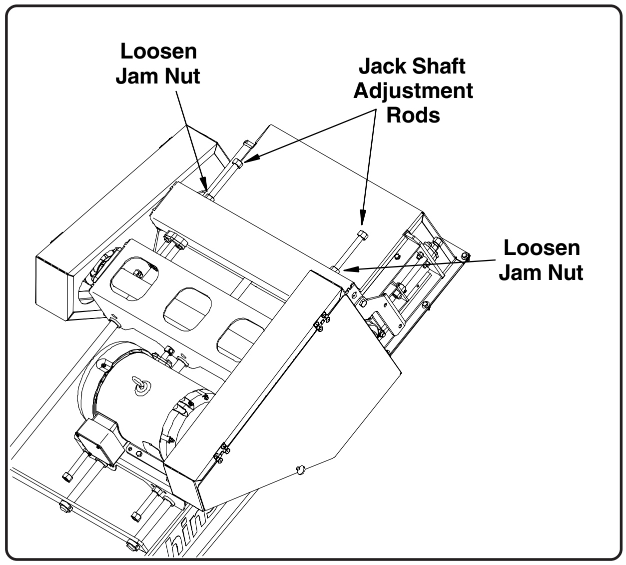


Fig. 4

CONVEYOR HOUSING

WARNING! Wear the proper personal protective gear (ie. safety glasses, gloves, ear protection, etc.).

Keep the assembly and work area clean and free of tools and objects that could cause unsafe situations.

Some parts are heavy, use assistance when lifting and assembling these parts.

Electric motors and controls shall be installed by a qualified electrician and must meet the Standards set by the National Electrical Code and all local and state codes.

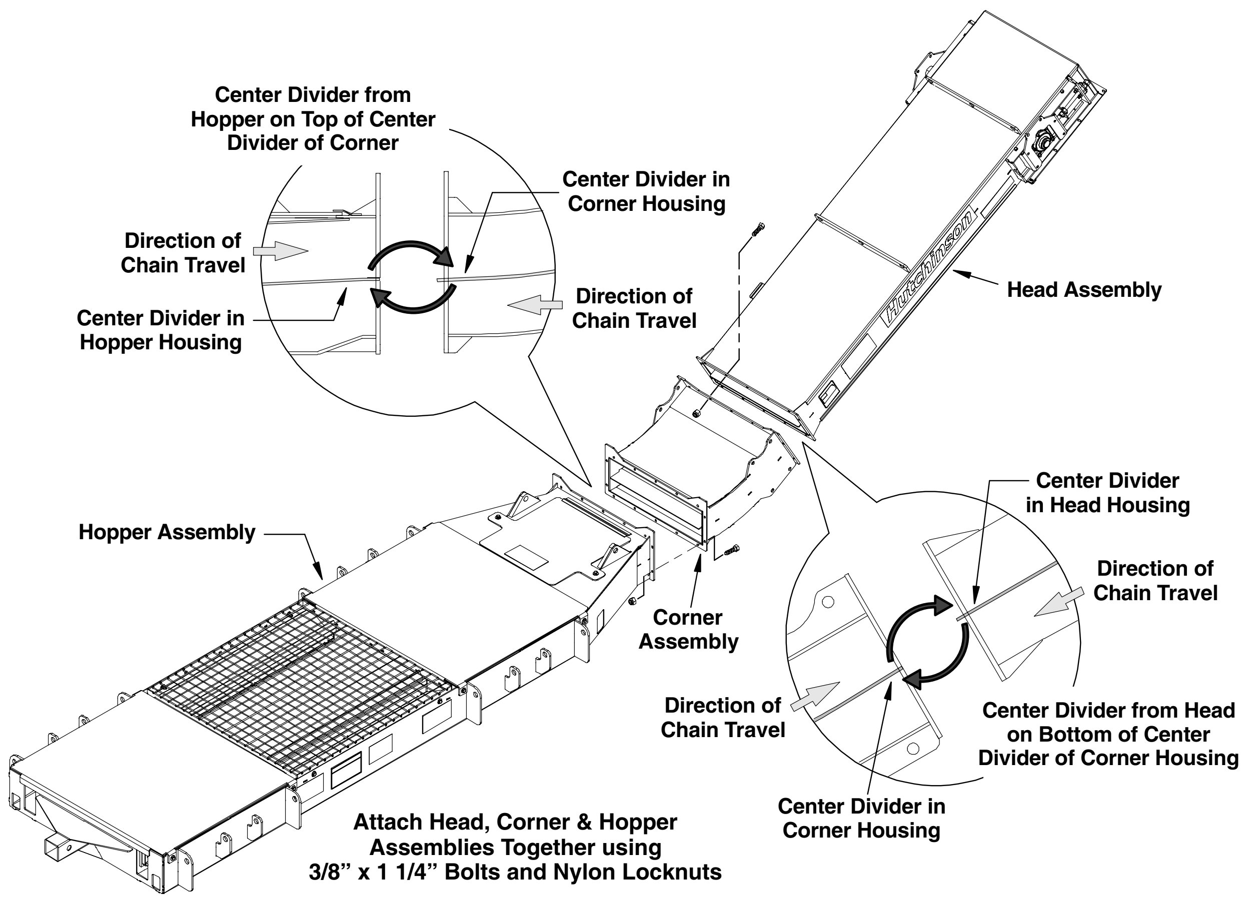
Keep hands, feet and other body parts out from under the conveyor and its parts when they are being raised by the hoist or by any other means.

Whenever reference is made to the left, right, front or rear of the conveyor, it is always determined by standing at the intake end and looking towards the discharge end.

1. Connect the main hopper assembly to the corner assembly, and the corner to head assembly.

   Note the center divider panel inside each of the housings. It is critical to overlap the divider panel as shown in the illustration below (the head assembly divider panel needs to be on bottom of the corner panel, and the corner divider panel needs to be on the bottom of the hopper panel).

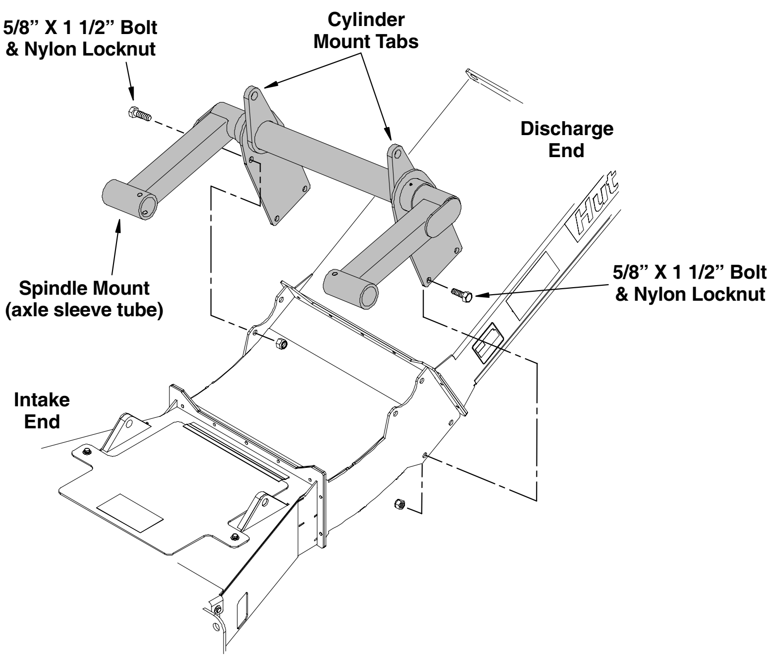
   Secure the head, corner and hopper housings together using 3/8" x 1 1/4" bolts and nylon locknuts.

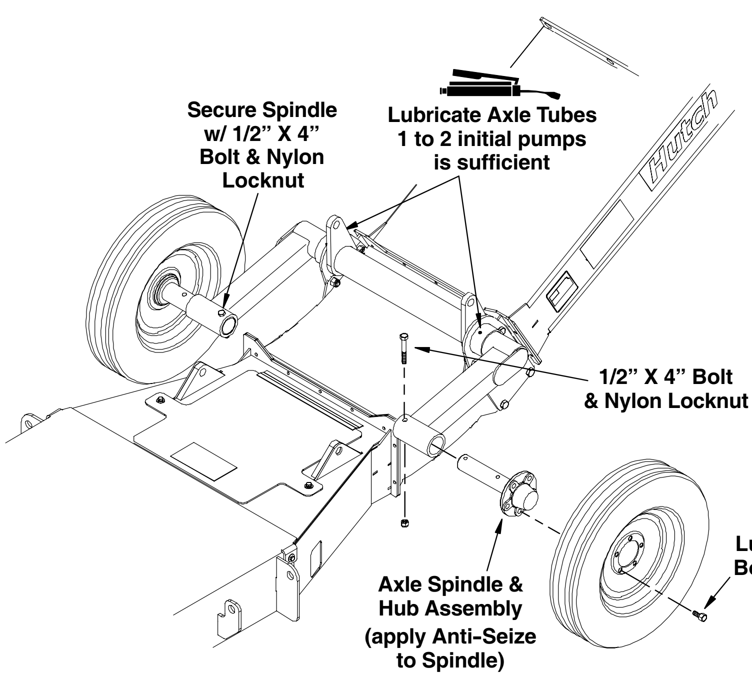


AXLE ASSEMBLY

1. Attach the axle weldment to the conveyor housing using 5/8” x 1 1/2” bolts and nylon locknuts. **NOTE: Position axle so the spindle mounts (axle sleeve tubes) are facing the inlet end of the conveyor and the cylinder mount tabs are facing up, See illustration below.**
2. **Apply anti-seize compound** to the axle spindles and insert the spindles into the spindle mounts (axle sleeve tubes). Align the holes in the spindles with the holes in the sleeve tubes and secure into place using 1/2” x 4” bolts and nylon locknuts.

   Using a good quality lithium based grease, lubricate each of the grease zerks on the axle pivot arm with 1 to 2 pumps, then rotate the axle a few times to help distribute the grease.
3. Install the tire and rims and secure using the lug bolts provided.

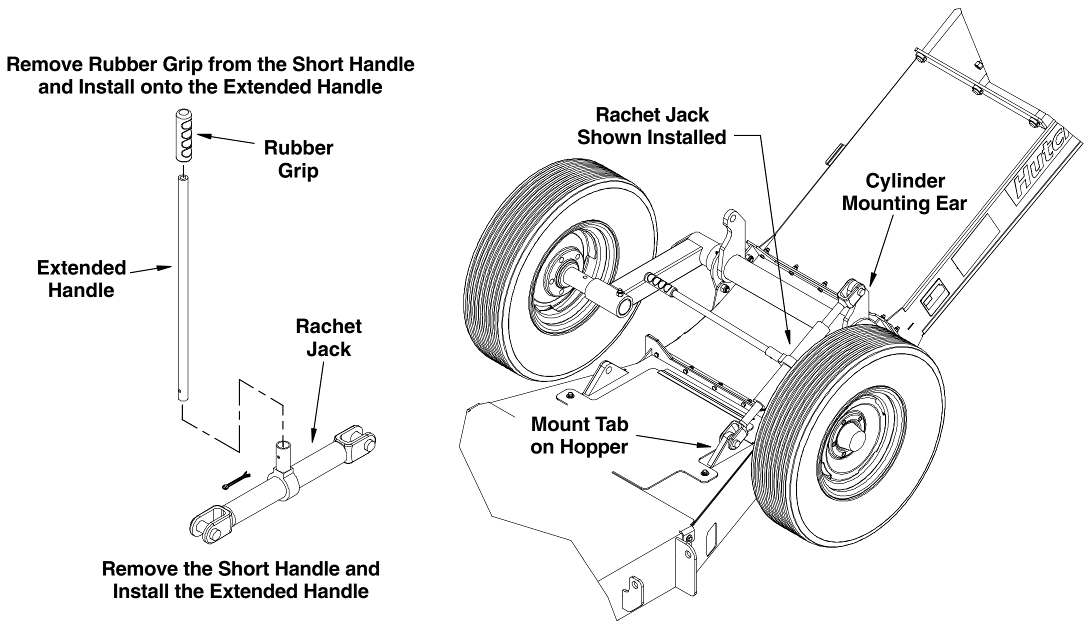




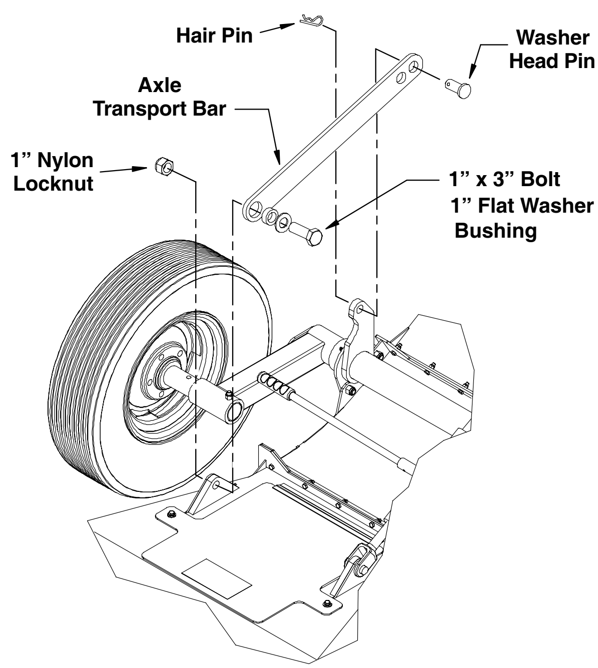
ASSEMBLY INSTRUCTIONS

AXLE ASSEMBLY (con't.)

4. Remove the short handle from the ratchet jack assembly and replace it with the 24" *(610 mm)* extended handle included in the box of parts. If the rubber grip has not already been installed onto the extended handle, install it at this time (See illustration below).
5. Using the pins provided with the ratchet jack, connect the ratchet jack between the cylinder mounting ear on the axle and the mounting tab on the main hopper weldment (use the mounting ear and tab on the right hand side of the conveyor, See illustration below).



6. On the left hand side of the conveyor, install the axle transport bar (the bar will installed on the inside of the mounting tabs). Using the largest hole in the transport bar, bolt the bar to the mounting tab on the main hopper using one 1" x 3" bolt, 1" flat washer, one bushing and a 1" nylon locknut (See illustration below). When the unit is raised into the transport position (wheels lowered) the other end of the transport bar will be secured to the axle mounting tab with one 1" washer head pin and hair pin.

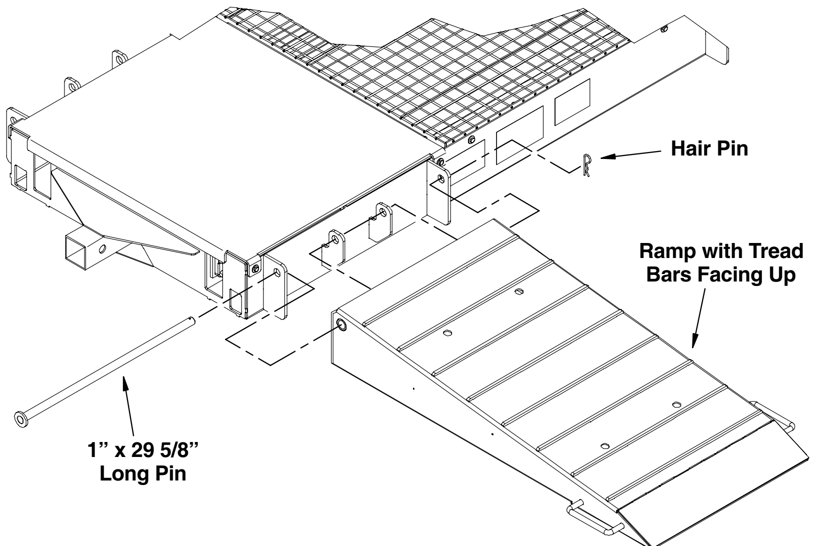


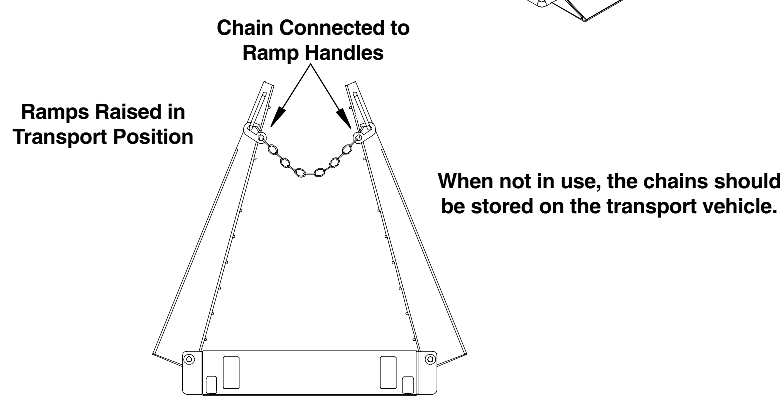
RAMP INSTALLATION

> **CAUTION! The ramps are heavy, to avoid personal injury, use assistance during assembly and when raising or lowering the ramps.**

1. Slide the ramps over the tabs on the hopper sides so that the tread bars on the ramps are facing up.
2. Align the holes in the ramps with the holes in the mounting tabs and insert a 1" x 29 5/8" long pin through the holes and secure with the provided hair pins (See illustration below). Repeat these procedures for the other three ramps.

   The ramps are provided with a set of transport chains. When the ramps are in the raised transport position, the chains will be attached to the handles on the ramps to prevent them from falling during transport. When not in use, the chains should be stored on the transport vehicle.





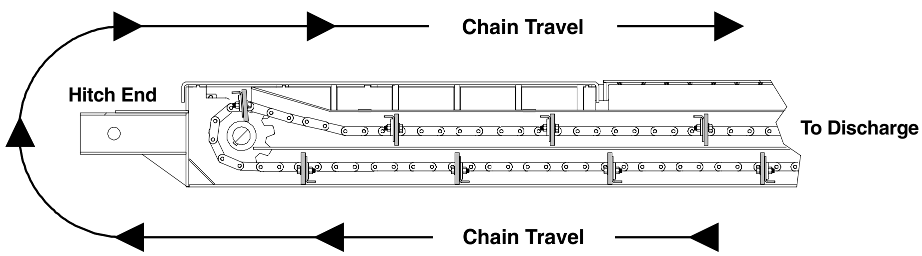
Shown for Reference Only

CHAIN & PADDLE INSTALLATION

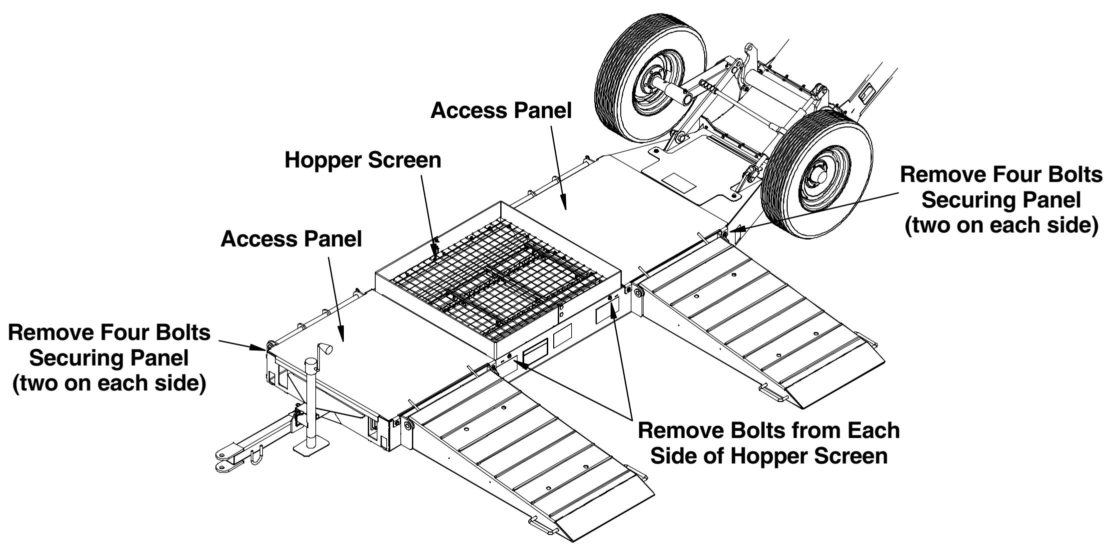
The conveyor chains are shipped in 10’-10 7/16” *(3.31 m)* lengths. The chains will need to be connected in order to achieve the length required for each side of the conveyor, 292 links which is approx. 476” *(12.09 m)* long per side. One of the chains on each of the sides will also need to be cut to a specific length as detailed in the instructions below.

The model number of the chain is stamped on the side of the chain links, **make sure all of the conveyor chain is of the same type.** This conveyor uses CA550 chain w/brackets and 3/8” *(10 mm)* thick UHMW paddles and are reinforced with metal backing plates.

The conveyor is designed to move grain in the **top** portion of the housing with the chain returning through the bottom portion of housing. Be sure the chain is traveling in the correct direction during operation (See illustration below).

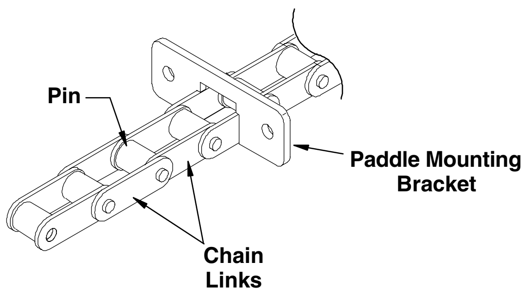


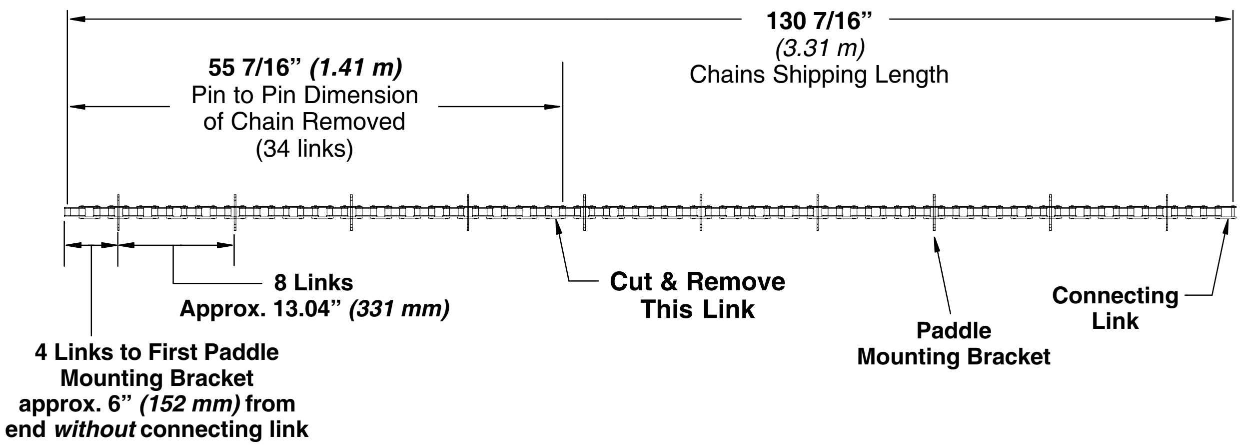
1. Remove the access panels and center hopper screen to make installation and assembly of the chains and paddles easier (See illustration below). The paddles can be attached to the chain before installing the chain into the housing, or the chain can be installed into the housing and around the sprockets without the paddles attached (the following instructions will use this method of installation).
2. Attach the sections of chains together (four sections for each side of the conveyor). The chains have a connecting link on one end, begin by attaching the next section of chain to this connecting link, keeping the paddles oriented in the same position as the previous length of chain.



3. Once the chain sections have been connected, go back to the first length of chain you began with (the end of this chain does not have a connecting link, See illustration on following page). Count off 34 links, approximately 55 7/16” *(1.41 m)* from pin to pin, this will be the link that will be cut. Verify it is the correct link, then make your cut. Repeat this same procedure for the chain on the opposite side of the conveyor.

CHAIN & PADDLE INSTALLATION (con't.)





4. After the cuts have been made, insert the chains into the housing (either through the discharge end or through one of the access panels).

   Route the chains around the head and tail shaft sprockets with the paddle mounting brackets facing up. Continue routing until the ends of the chains meet near the center of the hopper.

5. Join the ends of the chains together using the connecting links provided **(in order for the paddles to be correctly installed, make sure the connecting link on the left side is directly across from the connecting link on the right side).** Half-links are provided if needed.

   NOTE: It may be necessary to loosen the head shaft in order for the ends of the chains to be connected with the connecting links. (See Fig. 5). **If this is done, loosen each side in equal increments in order to keep the shafts square. They will then be tightened in the same manner after the paddles have been installed.**

   Chain tension may also have to be readjusted once the drive has been installed and the conveyor run.

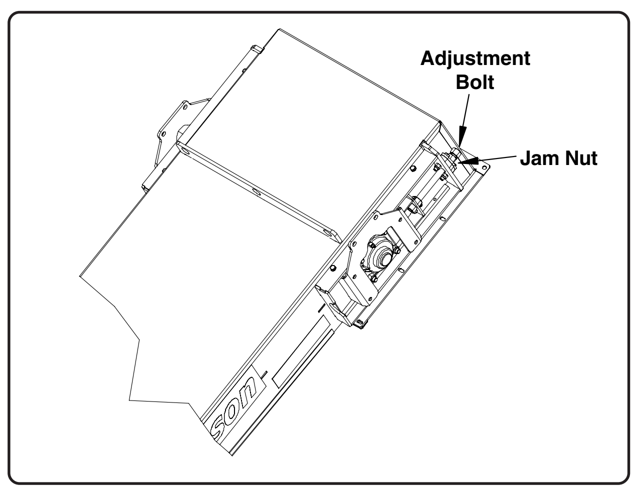


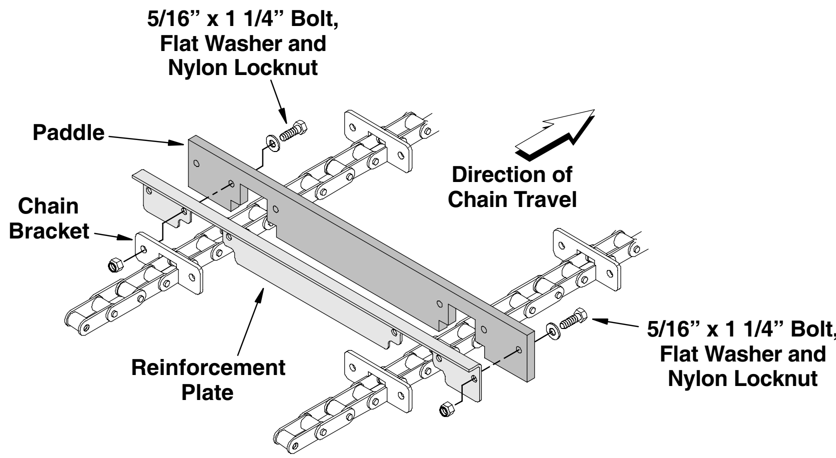
Fig. 5

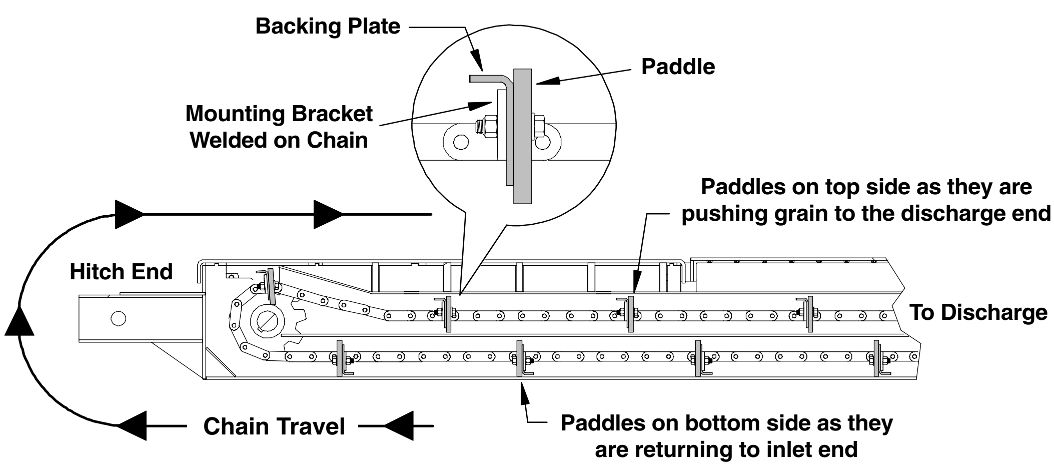
ASSEMBLY INSTRUCTIONS

CHAIN & PADDLE INSTALLATION (con't.)

6. Attach the backing plates and paddles to the paddle mounting brackets as shown in the illustration below. Secure each paddle and backing plate using six 5/16" x 1 1/4" bolts, flat washers and nylon locknuts (the flat washers go against the paddle). **IMPORTANT! Do not overtighten the bolts when attaching the paddles and backing plates. Excessive tightening can deform the paddles. Recommended torque for the paddle bolts and hardware is 15 to 20 ft. lbs. *(20.1 to 26.8 N·m)*.**

   Install the paddles so the mounting bracket welded to the chain is behind the paddle as the grain is being moved up the conveyor housing. The assembly illustration below shows the paddles on the top side as they are pushing grain to the discharge end.





CHAIN & PADDLE INSTALLATION (con't.)

7. After all paddles have been properly installed, the chain tension will need to be adjusted. Loosen the adjustment bolt jam nuts, See Fig. 6).
8. Verify the sprockets at the intake and discharge ends are centered in the housing. Make sure the set screws in the sprocket hubs are tight against the sprocket shaft. Also check the bearing mounting hardware to ensure they are tight as well.

   If the access panels were removed, reinstall them at this time (the hopper screen can remain loose until the rubber belting has been installed around it, then it can be reinstalled),
9. In equal increments, tighten the adjustment bolts on the each side of the conveyor. **Continue adjustment until there is approximately 85° of rotation when the paddle is rotated back and forth (See Fig. 6).**

   Chain tension may have to be readjusted once the drive has been installed and the conveyor is run (See Page 31 for more information).

   After proper adjustment has been established, tighten the jam nuts to lock head shaft into place.

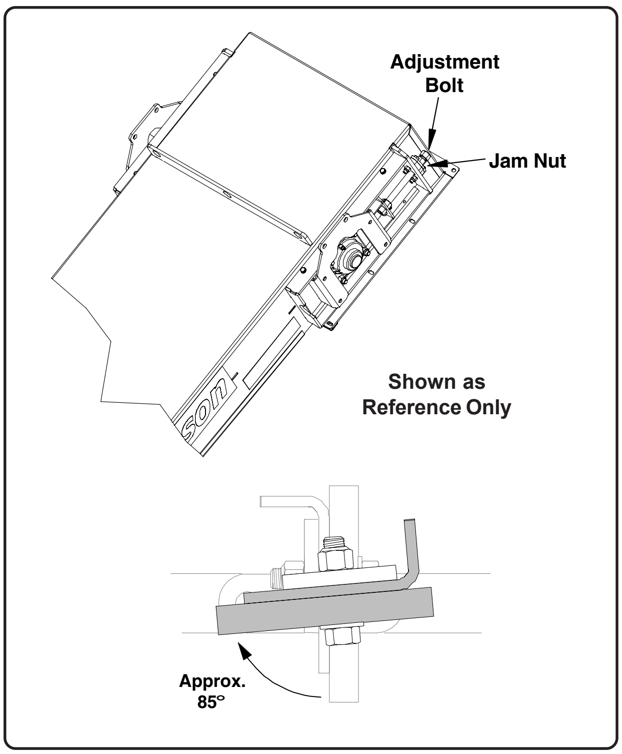


Fig. 6

HOPPER BELTING INSTALLATION

1. If the hopper screen has not been removed yet, remove the four 3/8" x 1 3/4" bolts and hardware securing the sides of the screen and remove the screen from the hopper.
2. Wrap one piece of the rubber belting around the screen aligning the holes in the belting with the holes in the screen (position the ends of the belting towards the center of the longer sides of the screen, See Fig. 7 below).
3. Use twelve 1/4" x 1 1/4" elevator bolts (inserted from the outside), flat washers and non-lock nuts (the flat washers and nuts go to the inside of the hopper screen).
4. Install the other piece of belting in the same manner. Once both pieces have been attached to the hopper screen, use four more 1/4" x 1 1/4" elevator bolts, flat washers and non-lock nuts to attach the two pieces of belting to each other.
5. Reinstall the screen into the hopper and secure using the hardware previously removed.

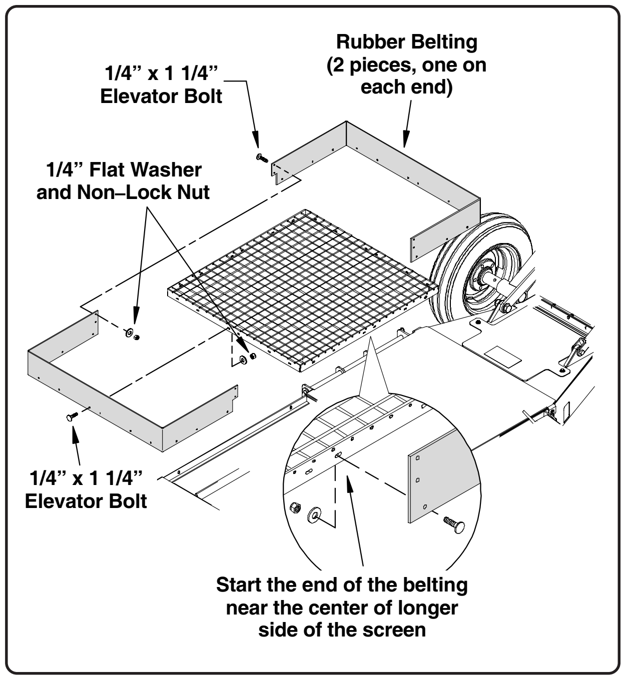


Fig. 7

ASSEMBLY INSTRUCTIONS

ELECTRIC DRIVE ASSEMBLY

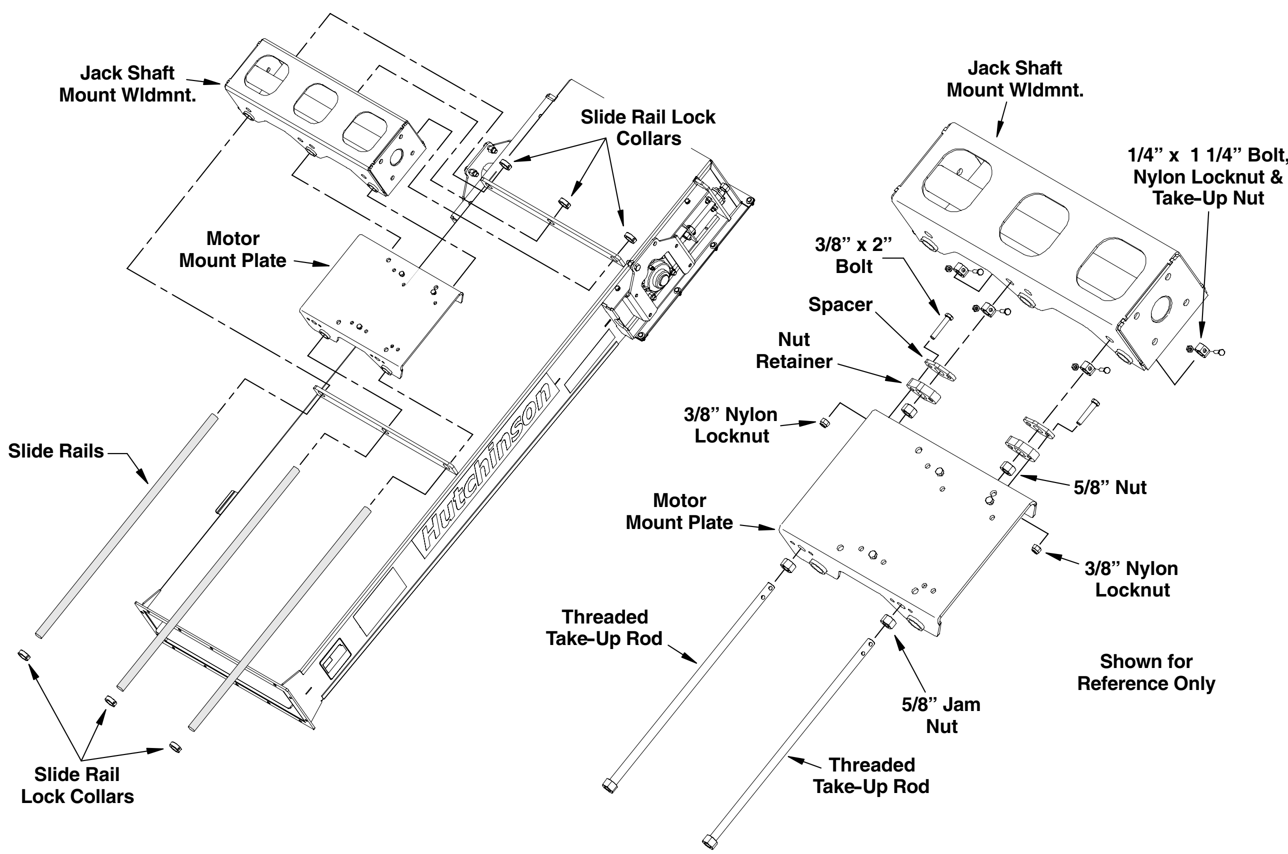
1. The motor mount plate and the jack shaft mount weldment will be installed onto the head assembly using three slide rails. Position the motor mount plate and the jack shaft mount on top of the head assembly as shown below. The motor mount plate will use the two slide rails on the right and the jack shaft mount will use all three slide rails (See illustration below).

   Insert the slide rails through the slide rail mount plate, through the motor mount plate; through the jack shaft mount weldment and through the other slide rail mount plate. Install a locking collar on each end of the slide rails to secure into place.

2. Install the 20 5/16" *(516 mm)* long motor mount adjustment rods. Thread a 5/8" non-lock nut onto each of the threaded take-up rods far enough to allow the rods to be inserted through the motor mount plate and into the jack shaft mount.

   Insert the rods into the smaller holes on each end of the motor mount plate (See illustration below). After the rods pass through the motor mount plate, install another 5/8" non-lock nut, the nut retainer and spacer plate. Secure the retainers and spacers to the motor mount plate using 3/8" x 2" bolts and nylon locknuts.

   Thread the adjustment rods further so they extend far enough past the spacer plates to allow one of the take-up nuts to be installed onto the adjustment rod (install over the second hole and secure with the 1/4" x 1 1/4" bolt and nylon lock nut). Insert the ends of the rods through the jack shaft mount and install another take-up nut to secure the rods to the jack shaft mount (these last two take-up nuts will be on the inside of the jack shaft mount, See illustration below).



ELECTRIC DRIVE ASSEMBLY (con't.)

3. Install cross support weldment to the top of the head assembly as shown below. Secure the cross support to the mount tabs located above each bearing using 1/2" x 1 1/2" bolts and nylon locknuts.

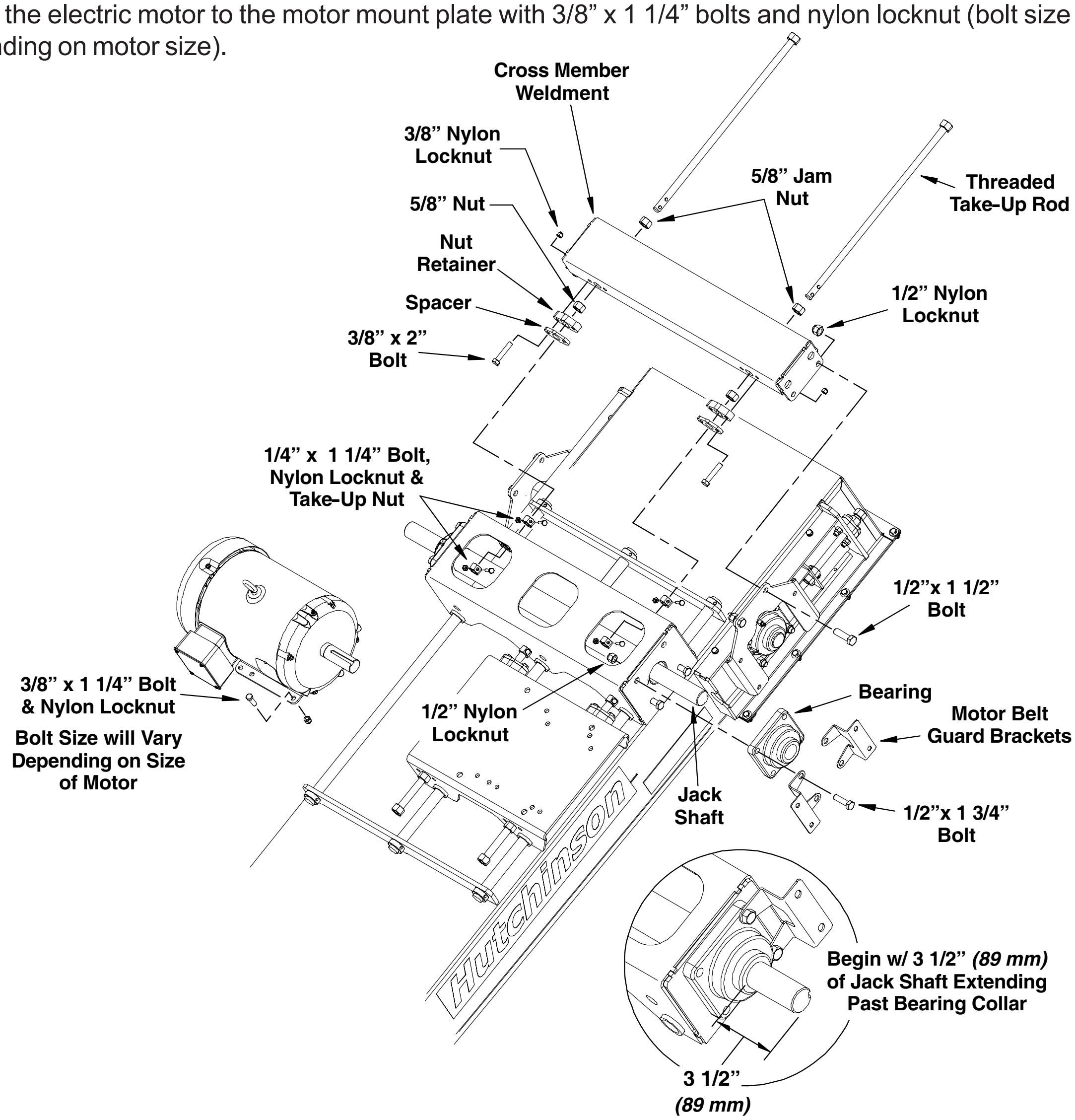
   Remove the two take-up nuts from the end of the 15 13/16" *(402 mm)* long take-up rods (note the order & orientation of the take-up nuts when removing them). Thread a 5/8" non-lock nut onto the rods far enough to allow the rods to be inserted through the cross support weldment and into the jack shaft mount.

   Insert the rods into the holes on each end of the cross support (See illustration below). After the rods pass through the cross support, install another 5/8" non-lock nut, the nut retainer and spacer plate. Secure the retainers and spacers to the cross support using 3/8" x 2" bolts and nylon locknuts.

   Thread the adjustment rods so they extend far enough past the spacer plates to allow one of the take-up nuts to be installed onto the adjustment rod (install over the second hole and secure with the 1/4" x 1 1/4" bolt and nylon lock nut). Insert the ends of the rods through the jack shaft mount and install another take-up nut to secure the rods to the jack shaft mount (these last two take-up nuts will be on the inside of the jack shaft mount, See illustration below).

4. Install the jack shaft through the jack shaft mount and secure into position with the four-bolt flange bearings [extend the shaft approx. 3 1/2" *(89 mm)* past the bearing on the right hand side, and install the belt guard brackets on the right side bearing as shown below].

5. Install the electric motor to the motor mount plate with 3/8" x 1 1/4" bolts and nylon locknut (bolt size will vary depending on motor size).



BELT GUARD & SHEAVE INSTALLATION

Motor Side

1. Install the belt guard to the mount brackets as shown below. Secure using 3/8” x 1” bolts, flat washers and nylon locknuts.
2. Install the bushings, drive keys and sheaves to the motor shaft and jack shaft (the sheave sizes will differ depending on size of electric motor).

   Align the sheaves with each other and secure into place. When aligning the sheaves, place a straight edge across the face of the sheaves and adjust accordingly. After sheaves are secured into place, check the jack shaft bearing to ensure the lock collar is tight.
3. Install the belts, belt tension will be set after the sheaves have been installed on the jack shaft side.

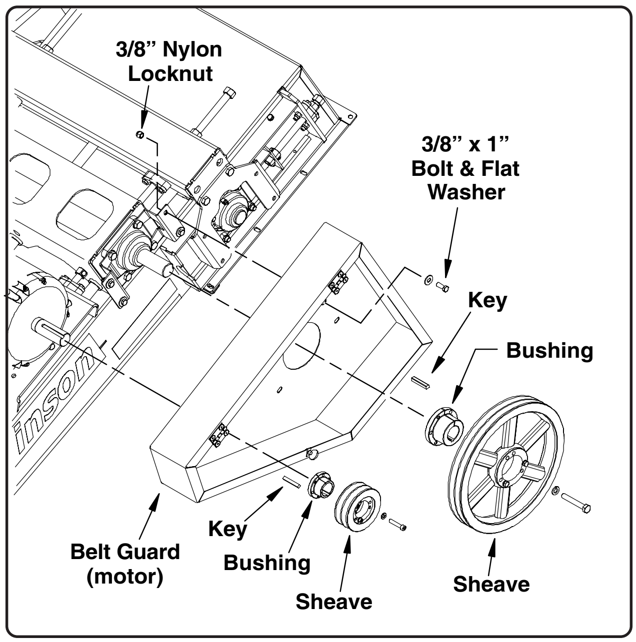


Fig. 8

Motor Side Components

5 HP *(4 kw)*, 3500 BPH *(95 TPH)*
Driven Sheave, 15.4 PD 2B
Driven Key, 3/8” x 2”
Drive Sheave, 3.8 PD 2B
Drive Key, 1/4” x 1 3/4”

7.5 HP *(5.5 kw)*, 5000 BPH *(135 TPH)*
Driven Sheave, 13.6 PD 2B
Driven Key, 3/8” x 2”
Drive Sheave, 4.2 PD 2B
Drive Key, 5/16” x 2”

10 HP *(7.5 kw)*, 8000 BPH *(216 TPH)*
Driven Sheave, 11.0 PD 3B
Driven Key, 3/8” x 2”
Drive Sheave, 4.2 PD 3B
Drive Key, 5/16” x 2”

15 HP *(11 kw)*, 8000 BPH *(216 TPH)*
Driven Sheave, 13.6 PD 3B
Driven Key, 3/8” x 2”
Drive Sheave, 5.4 PD 3B
Drive Key, 3/8” x 2”

BELT GUARD & SHEAVE INSTALLATION (con't.)

Jack Shaft Side

1. Install the belt guard to the mount plate as shown below. Secure using 3/8" x 1" bolts, lock washers and flat washers (the holes in the mount plates are already threaded). The jack shaft belt guard has a tear-drop shaped opening.
2. Install the bushings, drive keys and sheaves to the jack shaft and head shaft (the sheave sizes will differ depending on size of electric motor).

   Align the sheaves with each other and secure into place. When aligning the sheaves, place a straight edge across the face of the sheaves and adjust accordingly. After sheaves are secured into place, check the jack shaft bearing to ensure the lock collar is tight.
3. Install the drive belts and set belt tension **(Refer to Page 15 in the "Lubrication & Maintenance" section in this manual for proper procedures).**

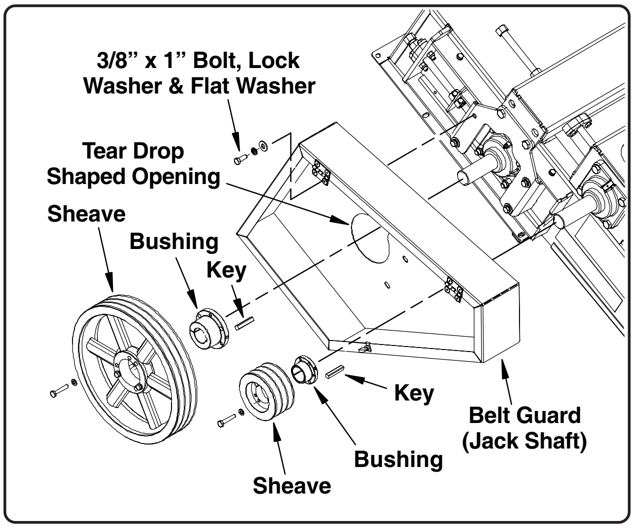


Fig. 9

Jack Shaft Side Components

5 HP *(4 kw)*, 3500 BPH *(95 TPH)*
Driven Sheave, 15.4 PD 3B
Driven Key, 3/8" x 2"
Drive Sheave, 4.2 PD 3B
Drive Key, 3/8" x 2"

7.5 HP *(5.5 kw)*, 5000 BPH *(135 TPH)*
Driven Sheave, 13.6 PD 3B
Driven Key, 3/8" x 2"
Drive Sheave, 4.4 PD 3B
Drive Key, 3/8" x 2"

10 HP *(7.5 kw)*, 8000 BPH *(216 TPH)*
Driven Sheave, 11.0 PD 4B
Driven Key, 3/8" x 2"
Drive Sheave, 4.6 PD 4B
Drive Key, 3/8" x 2"

15 HP *(11 kw)*, 8000 BPH *(216 TPH)*
Driven Sheave, 13.6 PD 4B
Driven Key, 3/8" x 2"
Drive Sheave, 5.6 PD 4B
Drive Key, 3/8" x 2"

ASSEMBLY INSTRUCTIONS

HYDRAULIC DRIVE ASSEMBLY

1. As you position the motor housing over the head shaft, slide the 1 1/2” bore coupling sprocket with the 3/8” x 2” long key onto the shaft (note the radius cut-out on the top edge of the mount plate, this needs to be facing up, See illustration below).

   Secure the motor housing to the mount plate using 3/8” x 1” bolts, lock washers and flat washers (the holes in the mount plate are already threaded).

2. As you position the hydraulic motor into the opening in the housing, slide the 1 1/4” bore coupling sprocket onto the shaft (make sure the key is properly installed, the key is provided with the hydraulic motor).

   With the ports in the motor facing up, secure the motor to the housing using two 1/2” x 1 1/2” bolts, flat washers and nylon locknuts.

3. Slide the coupling sprockets so they are aligned with the edge of their respective shafts, then position the sprockets in equal increments so there is approximately a 1/16” *(2 mm)* gap between them.

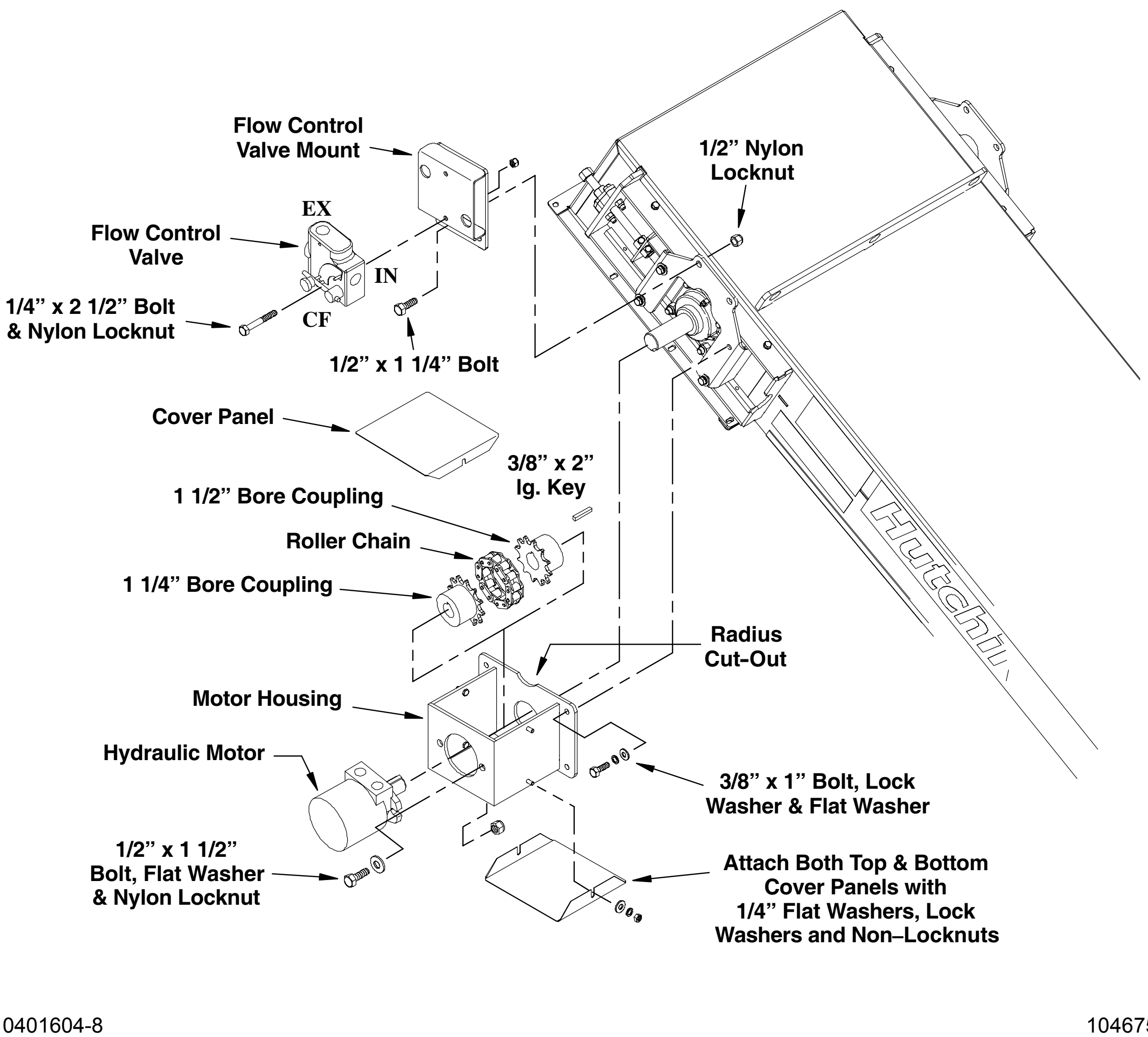
4. Install the coupler chain around the sprockets connecting the ends together with the connecting link provided. Ensure the chain is correctly installed and tighten setscrews in sprockets.

5. Secure the cover panels using 1/4” flat washers, lock washers and non-lock nuts.

6. The control valve mount bracket will bolt directly above the hydraulic motor housing. Secure the mount bracket to the conveyor using 1/2” x 1 1/4” bolts and nylon locknuts (See illustration below).

7. Position the flow control valve so the port marked “IN” is facing towards the main hopper. The port marked “EX” should be facing up and the port marked “CF” should be at the bottom of the valve. Secure the valve to the valve mount bracket using two 1/4” x 2 1/2” bolts and nylon locknuts.

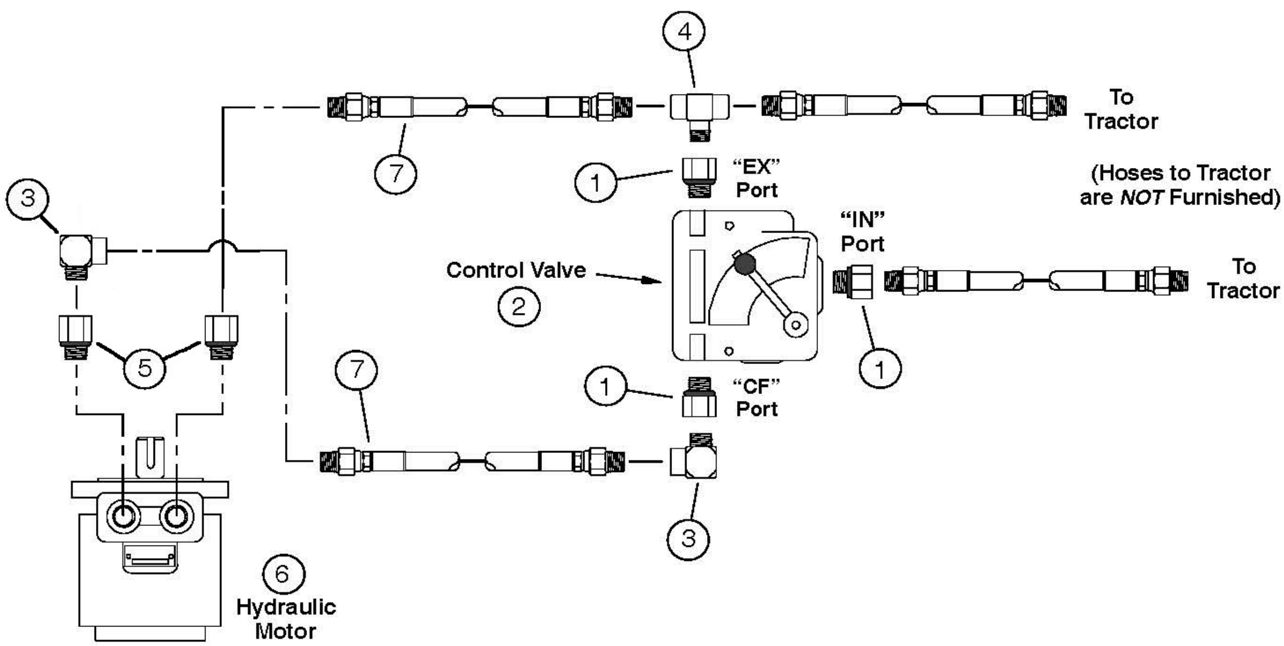
   Continue with hydraulic hose and component assembly on the following page.



HYDRAULIC DRIVE ASSEMBLY (con't.)

The following assembly instructions show a number in parenthesis ( ), this number refers to the item shown in the assembly illustration below.

8. Install a 1 1/16" male o-ring to 1/2" female NPT adapter (Ref. 1) into all three ports on the flow control valve (Ref. 2).
9. Apply a thread sealant to the threads on one of the 1/2" 90° elbow fittings (Ref. 3) and install into the adapter in the "CF" port on the bottom of the control valve (when tight, the elbow should be facing towards the discharge end of the conveyor).
10. Apply a thread sealant to the threads of the tee fitting (Ref. 4) and install the tee into the adapter in the "EX" port on top of the control valve (when tight the openings on the tee fitting should face the front and rear of the conveyor).
11. Install two 7/8" male o-ring to 1/2" female NPT adapters (Ref. 5) into the ports on top of the hydraulic motor (Ref. 6).
12. Apply a thread sealant to the threads on the other 1/2" - 90° elbow fitting (Ref. 3) and install it into the adapter closest to inlet end on top of the hydraulic motor (when tight the elbows should be angled as such, so the hoses can be properly connected to the fittings on the control valve).
13. Apply a thread sealant to the threads on the ends of both the 2'-6" long hoses (Ref. 7). Connect one hose to the elbow fitting on the hydraulic motor and the other to the adapter in the hydraulic motor.
14. Route the hose closest to the discharge end of the motor to the tee on the "CF" port on top of the flow control valve.
    Route the hose closest to the inlet end of the motor to the elbow on the "EX" port on bottom of the flow control valve.
    When routing the hoses, let the hoses form in their natural coil, do not twist or bend the hoses allowing them to kink or become pinched where it would reduce the flow of oil through the hoses.
15. **The hoses for connection to the tractor are not furnished.** When connecting the tractor hoses to the control valve, one hose will connect to the tee fitting on top of the control valve and one hose will connect to the "IN" port on the side of the valve.
    For tractor connection, determine the length of hose you want based on where the conveyor will be in relation to the tractor during operation.
    The hose ends required for connection to the control valve fittings are 1/2" male NPT, minimum hose requirements from valve to tractor are 1/2" I.D. hydraulic type hose with a 3000 PSI *(20684 kPa)* working pressure.
    If the hydraulic power source is very far from the valve, a larger size hose may be necessary.
    NOTE: The hydraulic hoses from the tractor to the control valve can be routed through the conveyor housing, See Page 30 for routing information.



HYDRAULIC SYSTEM CONNECTION

When making the connection to the hydraulic system, connect the hoses to the tractor hydraulic couplers so the motor operates with the control lever in the “Lower/Retract” position. The motor can than be turned off in the forward “Float” position. Turning the motor off in “Float” instead of in “Neutral” allows the hydraulic system pressure to equalize and reduces the occurrence of damaging pressure spikes.

The return line should be connected to a low pressure return port if available. The low pressure return port returns oil directly to the oil reservoir reducing pressure in the return line. Pressure reduction in the return line extends the motor life and increases the motor’s operating efficiency. Consult your tractor dealer for low pressure return options.

ROUTING HYDRAULIC HOSE THROUGH HOPPER HOUSING

There are channels along each side of the hopper housing that allow the hydraulic hoses to be routed through the hopper. This not only provides an alternate option for locating the tractor during conveyor operation (the tractor can be parked in line with the conveyor), but also provides protection of the hoses from internal moving parts and from unload vehicles at the work site.

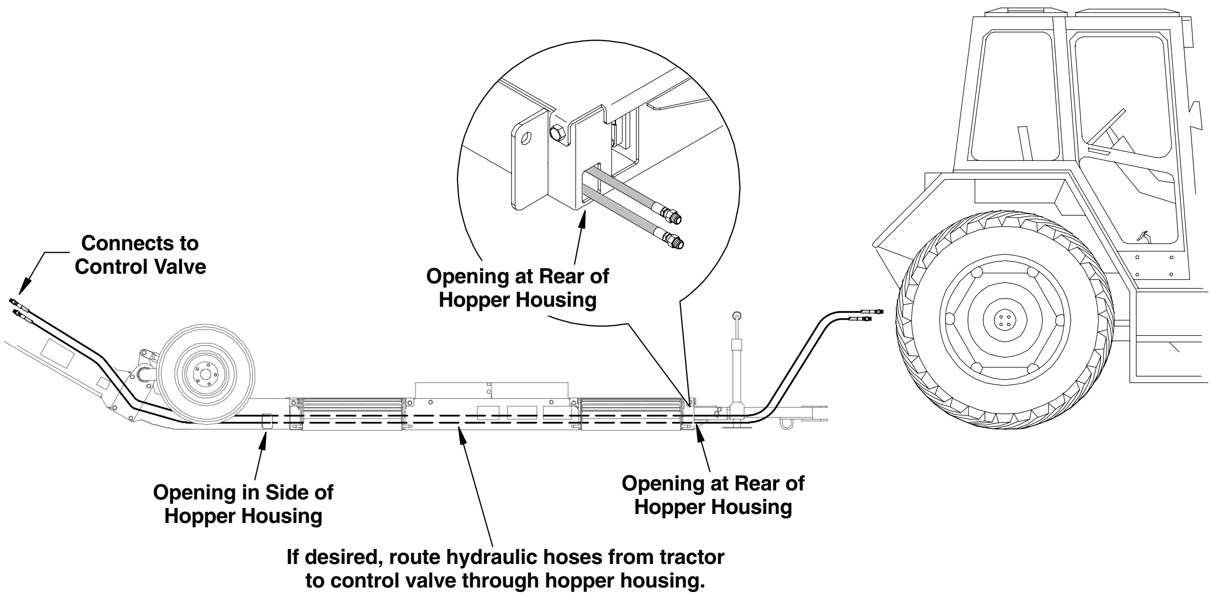
Keep in mind that it is still necessary to make sure the hoses outside of the housing are protected from pinch points and other potential hazards which could damage the hoses.

If the hoses remain attached to the control valve when transporting the conveyor, make certain the hoses are properly secured to prevent damage when lowering the wheels and during transport.

The front openings are located on each side of the hopper housing directly behind the tires. The rear openings are the outer most openings located on the back side of the hopper housing (See illustration below).

1. Cover the threaded portion of the hose ends to help protect them from damage as they are being routed through the channel.

   Route the hoses through the channel and connect hoses to the control valve and to the tractor **(the hoses and tractor connection fittings are not furnished).**



CHAIN TENSION ADJUSTMENT

Once the conveyor has been assembled, it should be run prior to the actual grain moving operation. This will ensure the conveyor is fully operational with all adjustments properly taken care of.

For electric drive units, make sure the power source has been properly installed as detailed on Page 7. **Never service or make adjustments to the unit while it is in operation.**

WARNING! Whenever you must service or adjust the equipment, make sure you stop the motor and lockout the power source.

A main power disconnect switch capable of being locked in only the "Off" position shall be provided. This shall be locked whenever work is being done to the auger.

The rest and starting controls must be located so that the operator has full view of entire operation.

Make certain electric motor is properly grounded.

Disconnect power before resetting motor overloads.

For hydraulic drive conveyors, Refer to Page 8 for hydraulic drive information. **Never service or make adjustments to the unit while it is in operation.**

WARNING! Do Not connect or disconnect hydraulic components while system is under pressure. Hydraulic systems are highly pressurized, escaping hydraulic oil, even an invisible pin hole leak can penetrate body tissue and cause serious injury.

Use a piece of wood or cardboard when searching for a leak, Never use the hands or other body parts.

When reassembling, make absolutely certain that all connections are tight.

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction can occur if medical attention is not received at once.

1. Check the unit to ensure all hardware is tight and all safety shields and devices are in place.

   Verify the chain sprockets at the intake and discharge ends are centered in the housing.

   Check paddles for minimal movement. Adjust until there is approximately 85° of rotation when the paddle is rotated back and forth (See Fig. 10).

2. Start the conveyor making sure the chain and paddles are traveling in the correct direction.

   Electric Drive Units, if the chain is traveling in the wrong direction, it's probable the wiring is wrong and needs to be corrected.

   Hydraulic drive units, if the chain is traveling in the wrong direction, it's possible the tractor connections need to be reversed, or assembly of the hoses from the motor to the control valve is incorrect. The control valve can be adjusted to reduce or increase operational speed according to your preference.

3. If the conveyor is overly noisy due to the paddles "slapping" the top of the housing, try loosening the chain in small increments **(CAUTION: Make sure the power source is shut down and locked out before making any adjustments).**

4. **To adjust chain,** loosen the jam nuts on the threaded adjustment rods (See Fig. 10). Turn the adjustment rods equally in small increments to obtain desired adjustment, tighten the jam nuts.

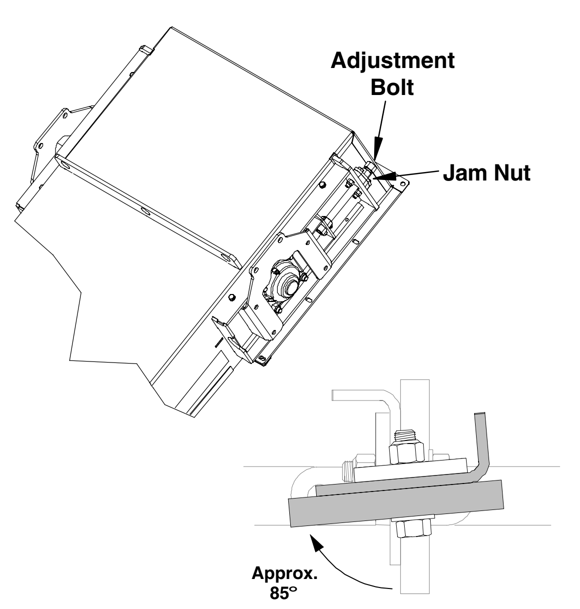


Fig. 10

ASSEMBLY INSTRUCTIONS

SPOUT INSTALLATION

1. Position the spout below the discharge opening as shown in Fig. 11.
2. Attach the spout using 5/16” x 1” bolts, flat washers, lock washers and non-lock nuts.

   Note how the flange on the spout is slid into position onto the top of the lip of the head flange (See illustration below).

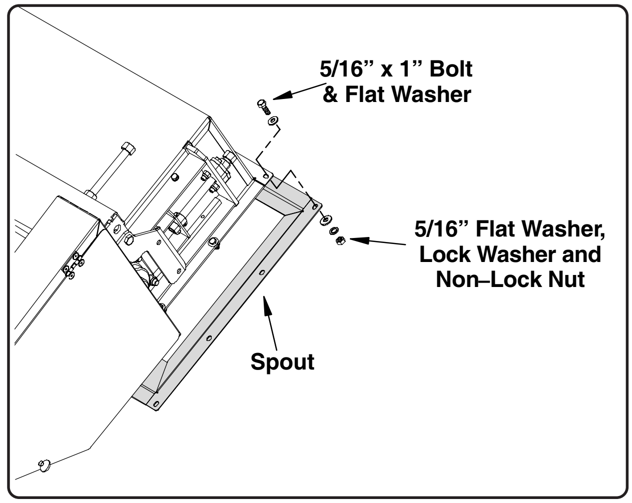
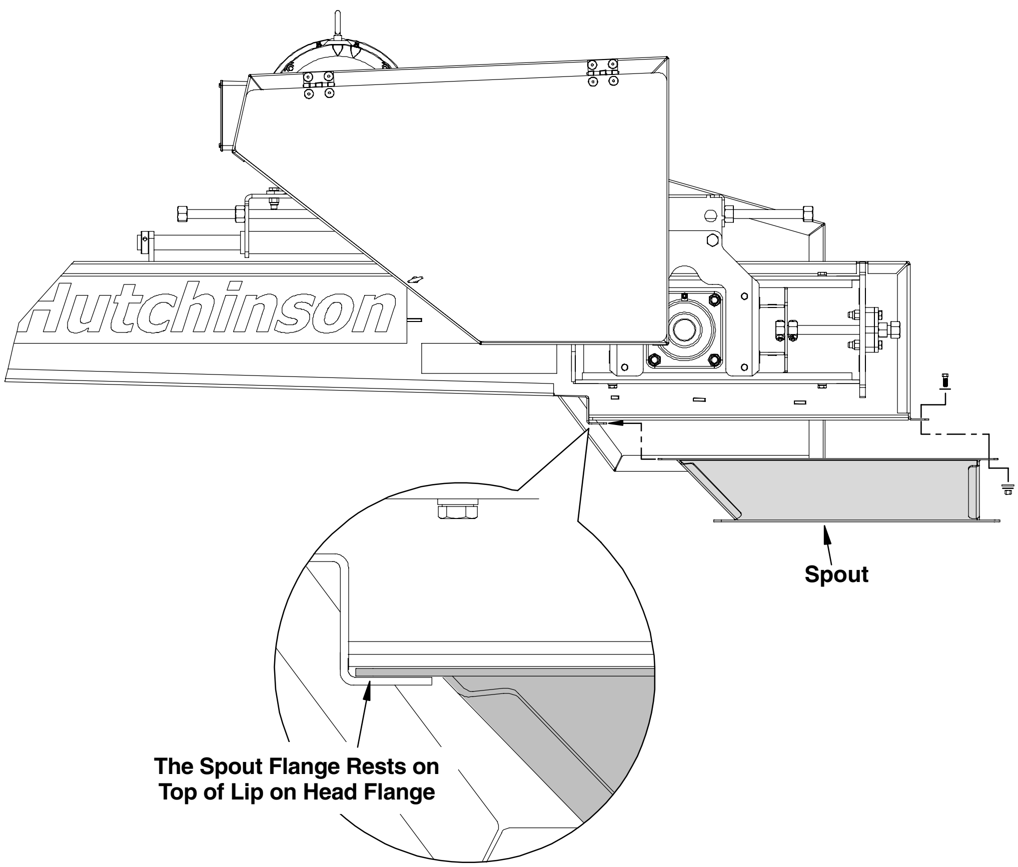


Fig.11



HITCH & JACK INSTALLATION

1. Attach the hitch to the back of the main hopper using the 1” x 5 1/2” long hitch pin an two of the provided hair pins (See Fig. 12).
2. Attach the jack to the mounting tube located on the side of the hitch. Secure the jack using the pin supplied with the jack.

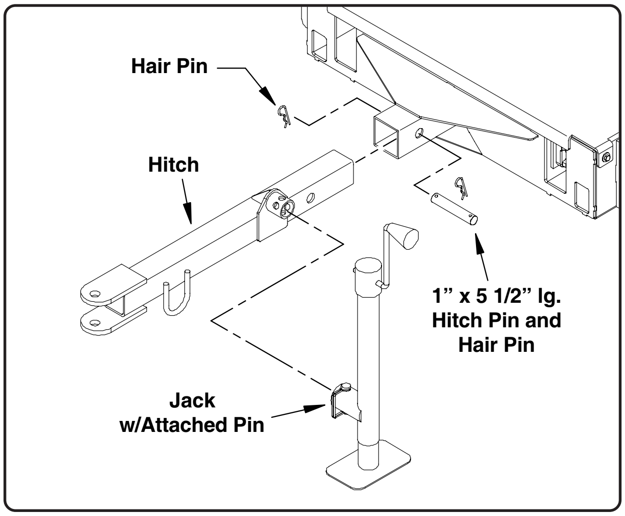


Fig. 12

OPTIONAL SIDE INLET HOPPER

The conveyor can also be quipped with the optional Side Inlet Hopper. To install the hopper:

1. Remove the two 3/8” x 1-1/4” bolts, lock washers and flat washers from the cover panel on the conveyor housing, and remove cover (See Fig. 13).
2. Position the side inlet hopper over the exposed opening and secure using the 3/8” x -1/4” bolt and hardware previously removed.

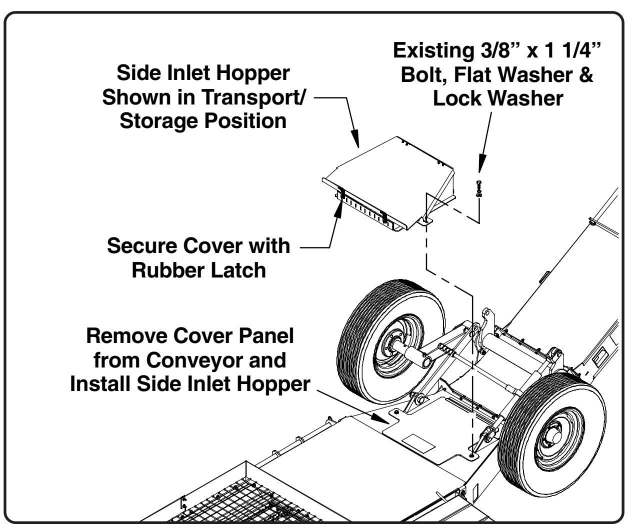


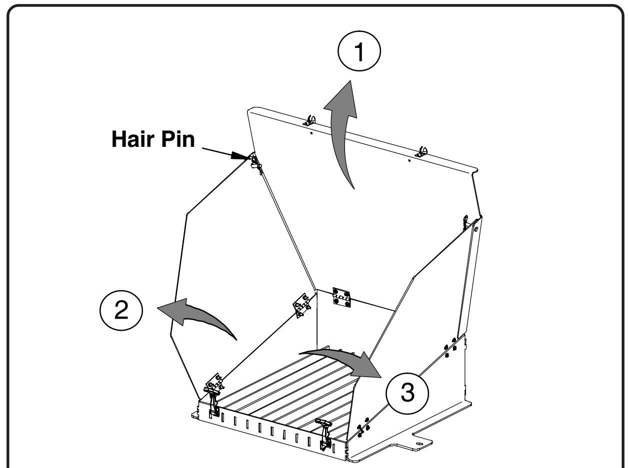
Fig. 13

OPTIONAL SIDE INLET HOPPER (con’t.)

3. To open the hopper, release the two rubber latches securing the hopper panels.

   Raise the first panel (rear panel) into position and remove the hair pins from the studs welded to each side of the hopper panel (See Fig. 14).
4. Raise the side panels inserting the studs into the holes in the upper portion of the panels. Secure using the hair pins previously removed.

   Reverse the above procedures to close the hopper (the hair pins can be stored in the studs when the hopper is in the closed position.)
5. Always close the inlet hopper when not in use. Make sure the cover panel is latched when transporting and when the conveyor is in storage.



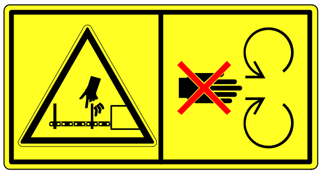
Raise Rear Panel (1), Unfold Sides (2 & 3) and Secure to Rear Panel with Hair Pins

Fig. 14

PARTS LIST TABLE OF CONTENT

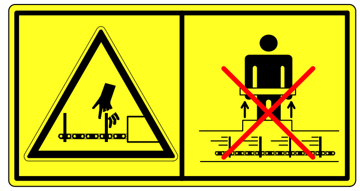
DECALS, SAFETY SIGNS, SERIAL NO. PLATE

1



2

3



4

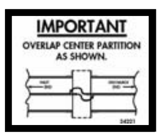
5

7

6

8 9 10

11

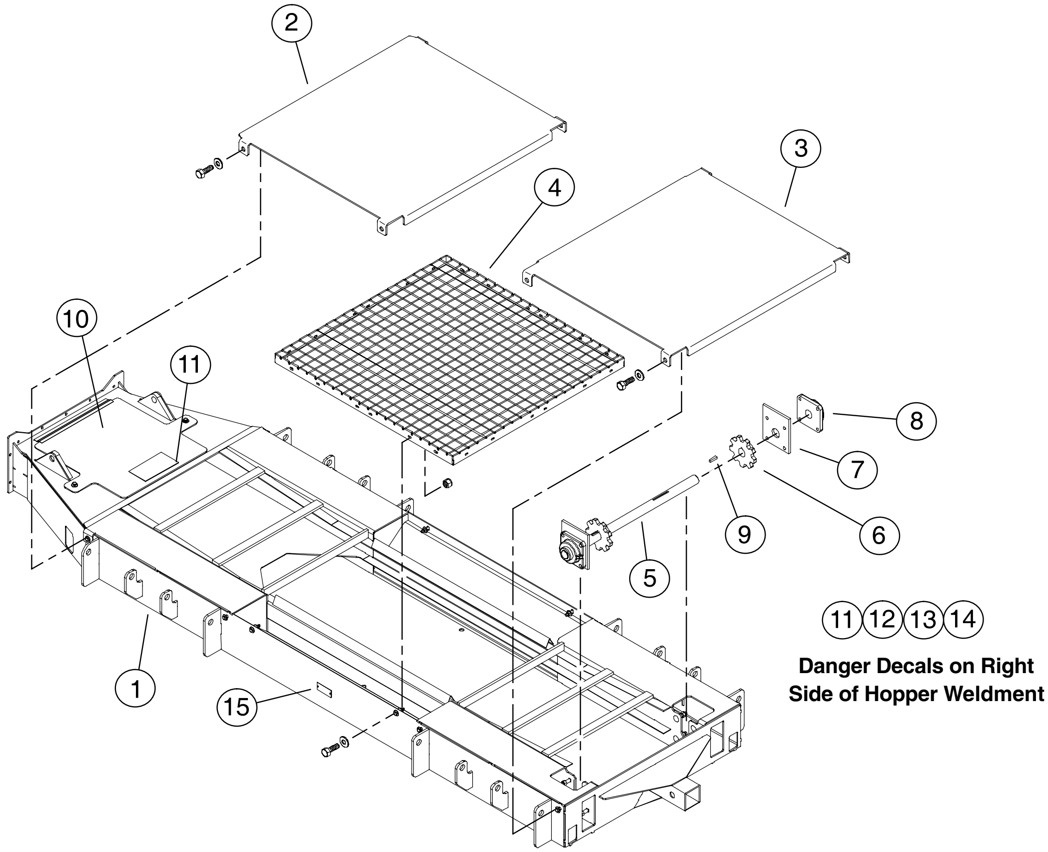


12

Ref. No.	Part No.	Description
1	1002311	Decal, Danger: Moving Chain and Paddle...
2	1005324	Decal, Danger: If Any Guards...
3	1012872	Decal, Danger: Do Not Operate...
4	1035676	Decal, Danger: Crushing Hazard...
5	1002301	Decal, Caution: General Information
6	1001974	Decal, Danger: Escaping Hydraulic Oil...
7	1001973	Decal, Caution: For Portable Equipment
8	1021179	Transport Decal, Red
9	1021180	Transport Decal, Yellow
10	1021181	Transport Decal, Red/Orange
11	34221	Decal, Trunk Alignment
12	34687	Serial No. Plate

PARTS LIST

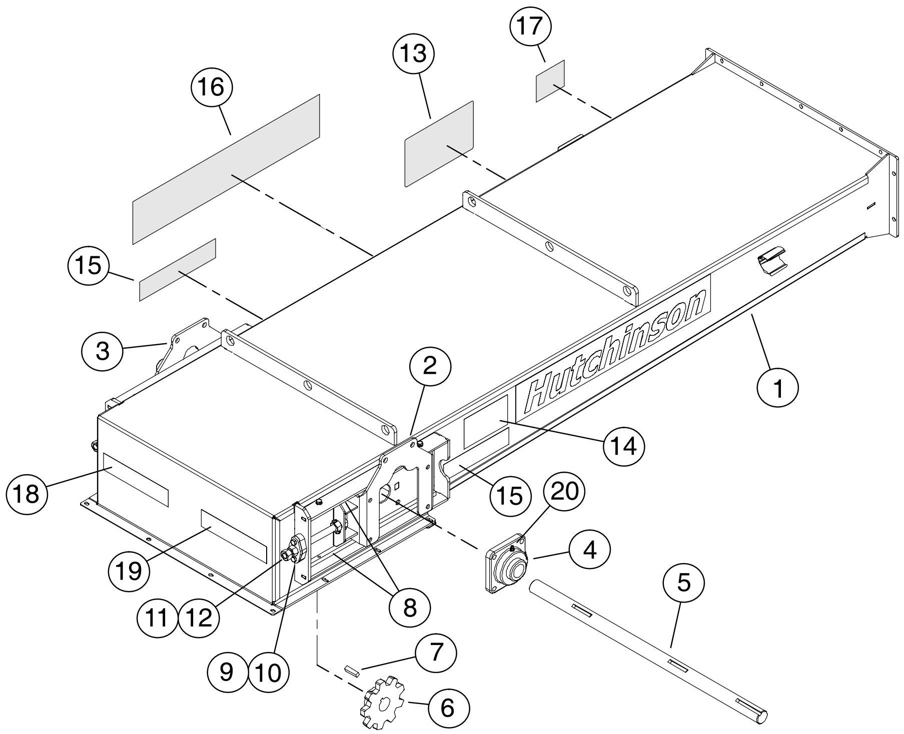
HOPPER ASSEMBLY COMPONENTS



The hopper can be obtained as a complete assembly,
Order Part No. 1046139

Ref. No.	Part No.	Description
1	1046140	Hopper Weldment
2	1034782	Upper Cover Plate (Access Panel)
3	1046703	Lower Cover Plate (Access Panel)
4	1046712	Inlet Screen
5	1034371	Tail Shaft
6	1034759	Sprocket, CA550, 9-tooth 1 1/2” bore
7	1035490	Bearing Seal, UHMW
8	1010A	Bearing, 4-Hole Flange, 1 1/2” bore
9	4049A1	Key, 3/8” sq. x 1 1/2” long
10	1036505	Cover, Side Inlet Hopper
11	1012872	Decal, Danger: Do Not Operate...
12	1002311	Decal, Danger: Moving Chain & Paddle...
13	1001973	Decal, Caution: For Portable Equipment...
14	1005324	Decal, Danger: If Any Guards...
15	34687	Serial Number Plate

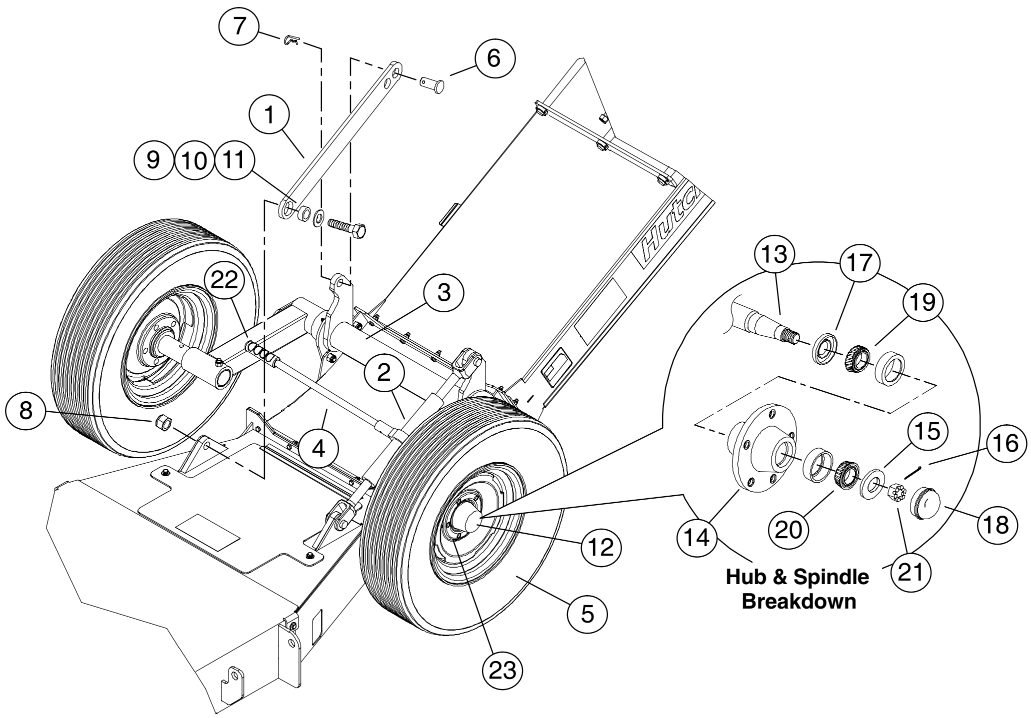
HEAD ASSEMBLY COMPONENTS



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	1046325	Head Weldment	11	1046344	Take-Up Bolt f/ Head Assembly
2	1046334	Take-Up Plate (left)	12	D1170	Nut, 5/8” Non-lock
3	1046335	Take-Up Plate (right)	13	1002301	Decal, General Operator...
4	1010A	Bearing, 4-Hole Flange, 1/2” bore	14	1001974	Decal, Escaping Hydraulic Oil
5	1034740	Head Shaft	15	1021180	Transport Decal, Yellow
6	1034759	Sprocket, CA550 9-tooth, 1 1/2” bore	16	1001125	Decal, HUTCHINSON
7	4049A1	Key, 3/8” sq. x 1 1/2” long	17	1041833	Decal, USA Flag
8	1046740	Take-Up Guide Bar	18	1021179	Transport Decal, Red
9	1041629	Retainer f/ 5/8” Nut	19	1021181	Transport Decal, Red/Orange
10	1041630	Spacer f/ 5/8” Nut	20	1022438	Grease Zerk, 45°

PARTS LIST

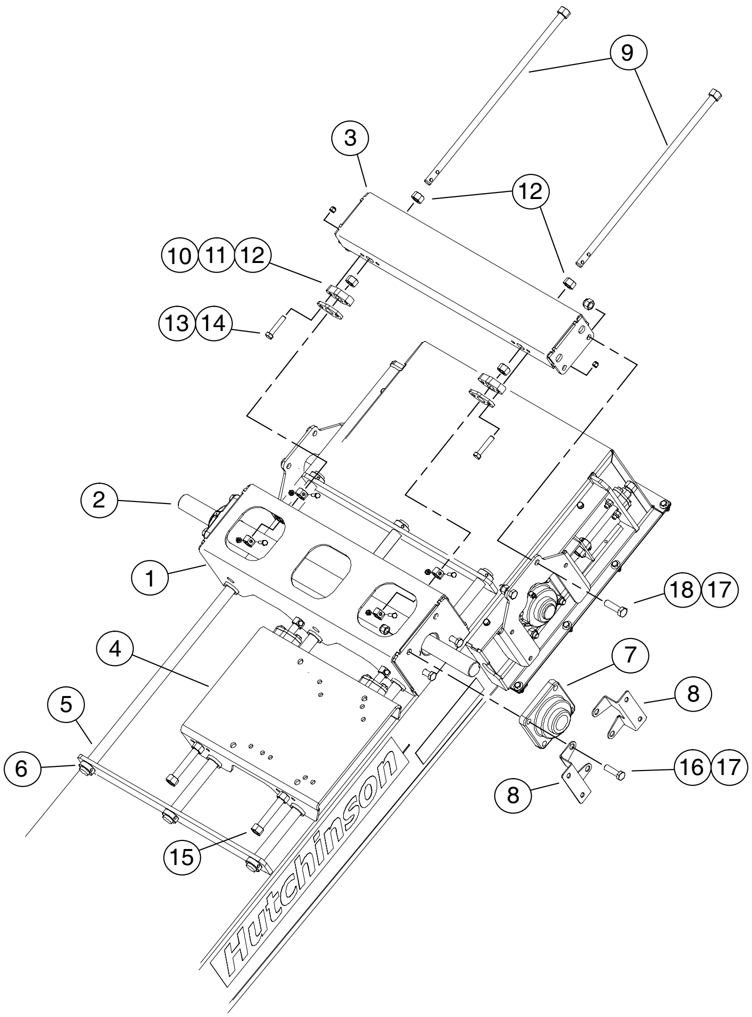
AXLE WELDMENT, RATCHET JACK, HUB & SPINDLE



Ref. No.	Part No.	Description
1	1034754	Transport Lock Bar
2	1008424	Ratchet Jack
3	1034708	Axle Weldment
4	1035700	Extended Handle
5	1014234	Tire & Rim Assembly
	107225	•Rim, 15” x 6” (5-bolt)
	1012040	•Tire, 15” 22 8-Ply
6	4127A1	Pin, Washer Head, 1” x 2 1/2”
7	D1166	Hair Pin
8	1007943	Nut, Nylon Lock, 1”
9	D1160	Flat Washer, 1”
10	1009208	Bushing, 1 3/8” O.D. x 25/32” I.D.
11	1012188	Bolt, 1-8 x 3”
12	1003104	Hub & Spindle Assembly
13	1001004	•Spindle
14	1003103	•Hub, 5-Bolt (w/ bearing cups)
15	107229	•Flat Washer, 2” x 13/16”
16	107230	•Cotter Pin, 5/32” x 1 3/4”
17	107233	•Seal, Grease
18	107234	•Dust Cap
19	3078R1	•Bearing Cone, 1 3/8” (Timken #LM48548)
20	3079R1	•Bearing Cone, 1 1/4” (Timken #LM67048)
21	6360C	•Nut, 3/4-16 UNF Castle
22	1043899	Grip, Rubber Handle
23	106241	Lug Bolt

• Indented Parts Names Indicate these Parts are Included in the Previous Assembly.

JACK SHAFT MOUNT, JACK SHAFT, ELECTRIC MOTOR MOUNT PLATE

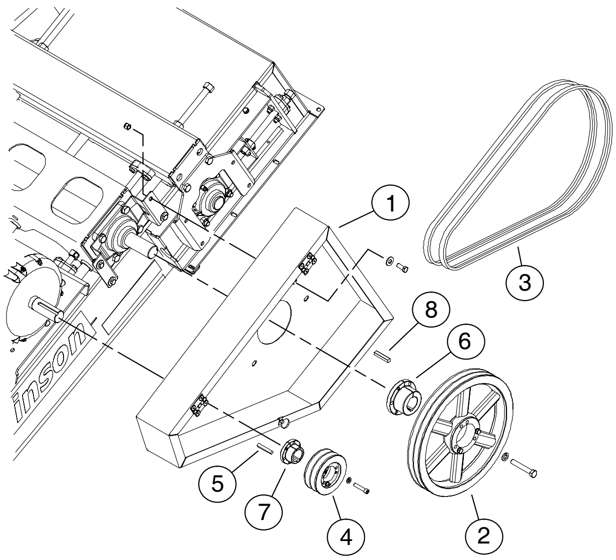


Ref. No.	Part No.	Description
1	1046346	Jack Shaft Mount Weldment
2	1046345	Jack Shaft
3	1046350	Cross Member Weldment
4	1046341	Motor Mount Plate
5	1046340	Slide Rod
6	3324A1	Collar f/ Slide Rod
7	1010A	Bearing, 4-Hole Flange
8	1034930	Bracket, Motor Belt Guard
9	1041625	Take-Up Rod f/ Jack Shaft

Ref. No.	Part No.	Description
10	1041629	Spacer f/ 5/8” Nut
11	1041630	Retainer f/ 5/8” Nut
12	D1170	Nut, 5/8-11 Non-Lock
13	1002199	Bolt, 3/8-16 x 2”
14	33136	Nut, 3/8-16 Nylon Lock
15	1046342	Take-Up Bolt f/ Motor Plate
16	33247	Bolt, 1/2-13 x 1 3/4
17	33138	Nut, 1/2-13 Nylon Lock
18	1002227	Bolt, 1/2-13 x 1 1/2”

PARTS LIST

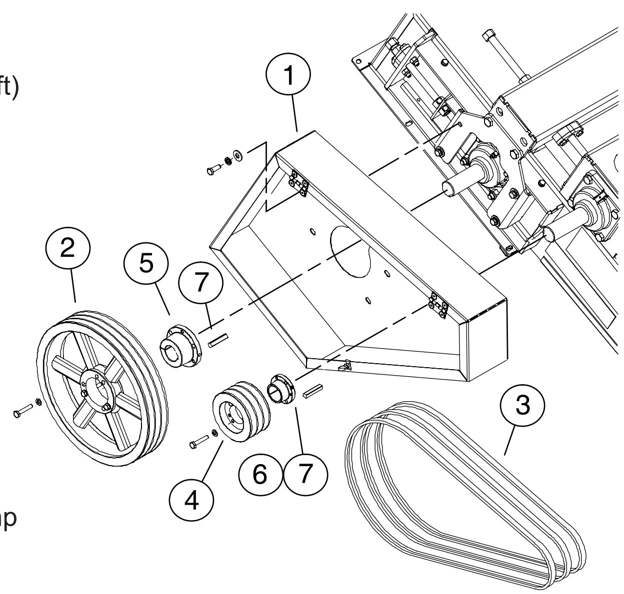
DRIVE BELTS, BELT GUARD, SHEAVES f/ MOTOR



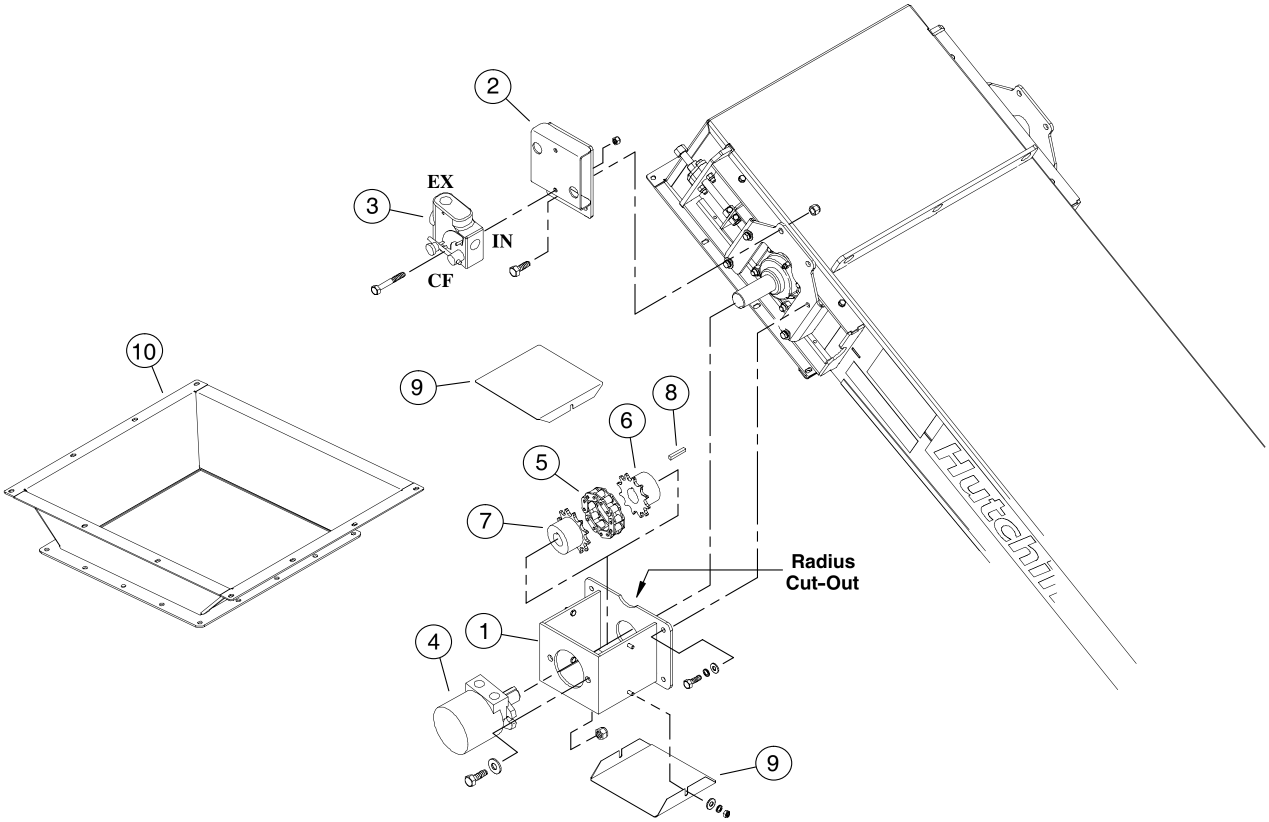
Ref. No.	Part No.	Description
1	1047586	Belt Guard f/ 5 hp Motor
(1)	1047586	Belt Guard f/ 7.5 hp Motor
(1)	1046352	Belt Guard f/ 10 hp Motor
(1)	1051419	Belt Guard f/ 15 hp Motor
2	40646	Sheave, 15.4” PD 2B f/ 5 hp
(2)	1047499	Sheave, 13.6” PD 2B f/ 7.5 hp
(2)	3271A1	Sheave, 11.0” PD 3B f/ 10 hp
(2)	1040318	Sheave, 13.6” PD 3B f/ 15 hp
3	1023004	Belt, B-59 f/ 5 hp & 15 hp
(3)	40120	Belt, B-57 f/ 7.5 hp
(3)	40118	Belt, B-52 f/ 10 hp
4	3232A1	Sheave, 3.8” PD 2B f/ 5 hp
(4)	1024515	Sheave, 4.2” PD 2B f/ 7.5 hp
(4)	1024516	Sheave, 4.2” PD 3B f/ 10 hp
(4)	3276A1	Sheave, 5.4” PD 3B f/ 15 hp
5	1006204	Key, 1/4” sq. x 1 3/4” lg. f/ 5 hp
(5)	4048A1	Key, 5/16” sq x 2” lg. f/ 7.5 & 10 hp
(5)	1038D	Key, 3/8” sq. x 2” lg. f/ 15 hp
6	3295A1	Bushing, 1 1/2” SK f/ 5, 7.5, 10 & 15 hp
7	3079A1	Bushing, 1 1/8” SH f/ 5 hp
(7)	3086A1	Bushing, 1 3/8” SH f/ 7.5 & 10 hp
(7)	3089A1	Bushing, 1 5/8” SD f/ 15 hp
8	1038D	Key, 3/8” sq. x 2” f/ 5, 7.5, 10 & 15 hp

DRIVE BELTS, BELT GUARD, SHEAVES f/ JACK SHAFT

Ref. No.	Part No.	Description
1	1047591	Belt Guard f/ 5, 7.5 & 15 hp (jack shaft)
(1)	1046357	Belt Guard f/ 10 hp (jack shaft)
2	40652	Sheave, 15.4” PD 3B f/ 5 hp
(2)	1040318	Sheave, 13.6” PD 3B f/ 7.5 hp
(2)	3274A1	Sheave, 11.0” PD 4B f/ 10 hp
(2)	1025830	Sheave, 13.6” PD 4B f/ 15 hp
3	1023004	Belt, B-59 f/ 5 hp
(3)	40120	Belt, B-57 f/ 7.5 & 15 hp
(3)	40118	Belt, B-52 f/ 10 hp
4	1024516	Sheave, 4.2” PD 3B f/ 5 hp
(4)	1047956	Sheave, 4.4” PD 3B f/ 7.5 hp
(4)	3100A1	Sheave, 4.6” PD 4B f/ 10 hp
(4)	420079	Sheave, 5.6” PD 4B f/ 15 hp
5	3295A1	Bushing, 1 1/2” SK f/ 5, 7.5, 10 & 15 hp
6	40117	Bushing, 1 1/2” SH f/ 5 & 7.5 hp
(6)	3293A1	Bushing, 1 1/2” SD f/ 10 & 15 hp
7	1038D	Key, 3/8” sq. x 2” f/ 5, 7.5, 10 & 15 hp



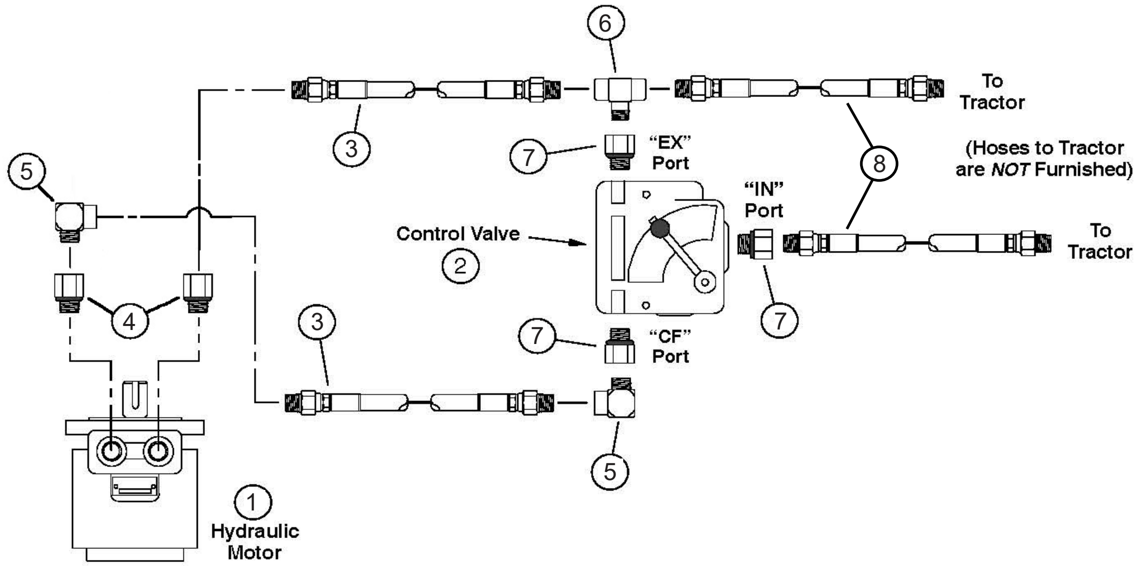
HYDRAULIC DRIVE COMPONENTS, CONVEYOR SPOUT



Ref. No.	Part No.	Description
1	1048002	Hydraulic Motor Mount
2	1048007	Control Valve Mount
3	1048046	Hydraulic Flow Control Valve
4	1025063	Hydraulic Motor, 12.9 C.I.
5	41051	Roller Chain, #80 (12 links)
6	1022080	Coupling Half, 12-tooth, 1 1/2” bore
7	1025349	Coupling Half, 12-tooth, 1 1/4” bore
8	1038D	Key, 3/8” sq. x 2” long
9	1048006	Coupling Guard Panel (cover)
10	1046386	Spout

PARTS LIST

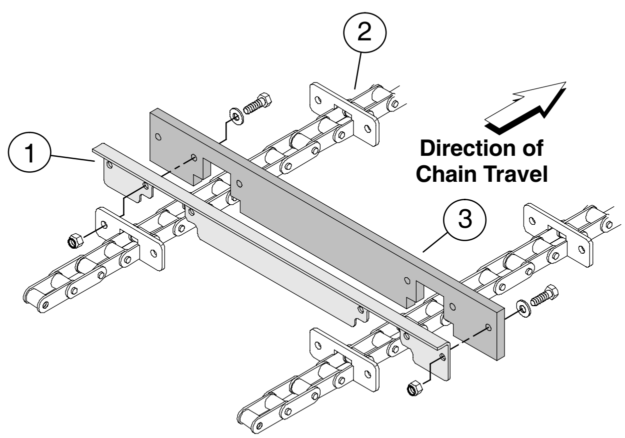
HYDRAULIC HOSES & FITTINGS



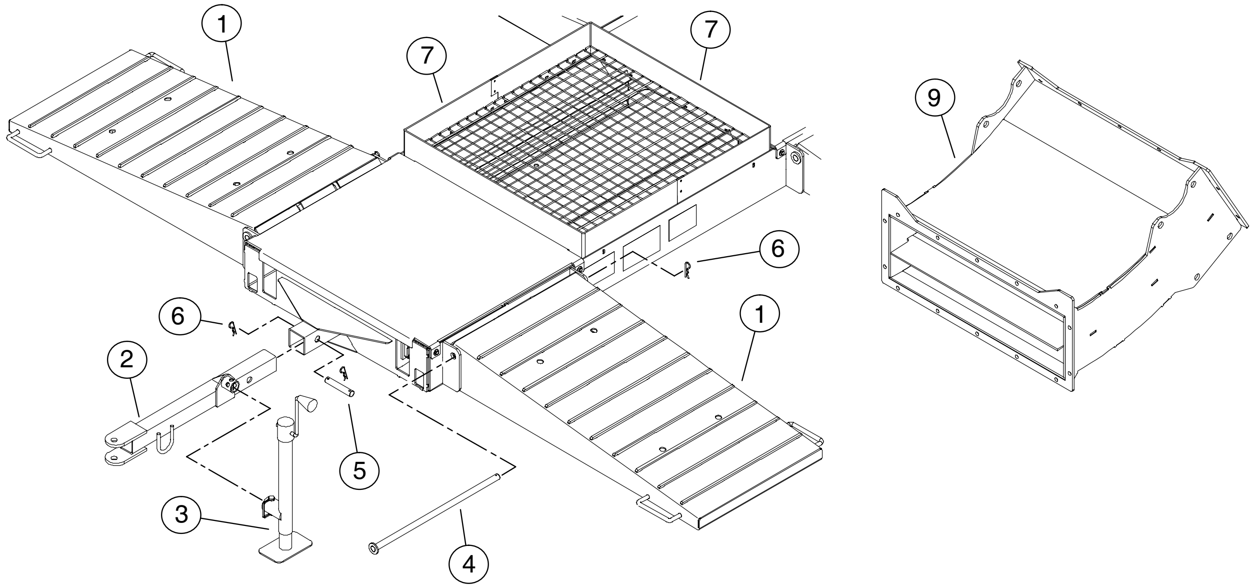
Ref. No.	Part No.	Description
1	1025063	Hydraulic Motor, 12.9 C.I. 7/8" O-Ring Ports
2	1048046	Hydraulic Flow Control Valve, SAE 12 Ports, 3000 pSI
3	1035195	Hose, Hydraulic, 1/2" x 30" long, 1/2" male NPT Swivel Ends
4	420146	Adapter, Hydraulic, 7/8" O-Ring to 1/2" NPT
5	106413	Elbow, 90° Hydraulic, .5M/.5FM
6	1004732	Tee, Hydraulic, 1/2" NPT ML - 1/2" NPT FM
7	1032734	Adapter, Hydraulic, 1-1/16" O-Ring to 1/2" NPT
8	N/A	Hoses to Tractor (Not Furnished)

CHAIN & PADDLES

Ref. No.	Part No.	Description
1	1034768	Paddle Backing Plate
2	1034761	Chain, CA 550, w/brackets
3	1034370	Paddle, 3/8" thick UHMW
4	41492	Offset Link f/CA550 Chain (Not Shown)



RAMPS, HITCH, JACK & 30° CORNER



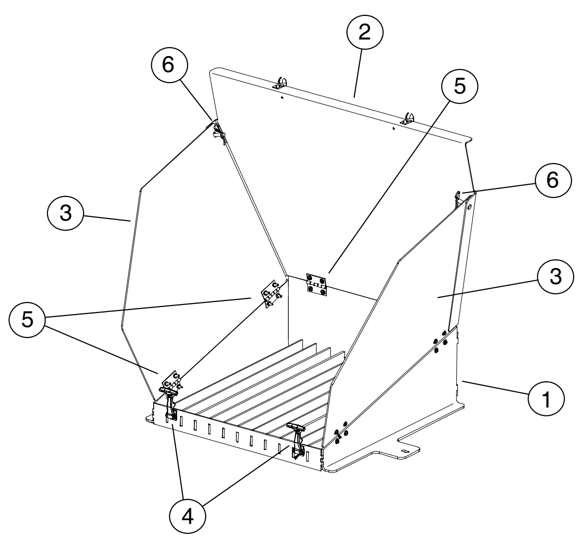
Ref. No.	Part No.	Description
1	1040596	Ramp w/ Lift Springs
2	1034986	Hitch f/ Drive Over
3	1024776	Jack, 2000 lb.
4	1046384	Ramp Pin
5	1026104	Hitch Pin, 1" x 5 1/2" long
6	D1166	Hair Pin, .148" x 2.938"
7	1034787	Belting, Hopper (half)
8	1035659	Ramp Transport Chain (Not Shown)
9	1046727	Corner, 30° f/ Drive Over

OPTIONAL INLET SIDE HOPPER

Ref. No.	Part No.	Description
- -	1036338	Hopper Assembly
1	1036335	•Side Inlet Weldment
2	1036359	•Rear Hopper Panel
3	1036336	•Side Hopper Panel
4	1018308	•Rubber Latch
5	1013215	•Hinge
6	635164	•Hair Pin

• Indented Parts Names Indicate these Parts are Included in the Previous Assembly.

To obtain complete Hopper Assembly, order **Catalog No. MX85101.**



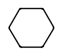
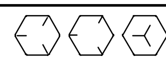
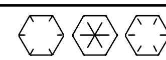
PARTS LIST

TORQUE CHART

General Torque Specification Table

Use the Following Torques When Special Torques Are Not Given

Note: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly-disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

SAE Grade No.		SAE 2				SAE 5				SAE 8*			
Bolt head identification marks as per grade Note: Manufacturing marks will vary													
		Torque				Torque				Torque			
Bolt Size		Foot Pounds		Newton·Meters		Foot Pounds		Newton·Meters		Foot Pounds		Newton·Meters	
Inches	Millimeters	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	5	6	6.8	8.13	9	11	12.2	14.9	12	15	16.3	20.3
5/16	7.94	10	12	13.6	16.3	17	20.5	23.1	27.8	24	29	32.5	39.3
3/8	9.53	20	23	27.1	31.2	35	42	47.5	57.0	45	54	61.0	73.2
7/16	11.11	30	35	40.7	47.4	54	64	73.2	86.8	70	84	94.9	113.9
1/2	12.70	45	52	61.0	70.5	80	96	108.5	130.2	110	132	149.2	179.0
9/16	14.29	65	75	88.1	101.6	110	132	149.2	179.0	160	192	217.0	260.4
5/8	15.88	95	105	128.7	142.3	150	180	203.4	244.1	220	264	298.3	358.0
3/4	19.05	150	185	203.3	250.7	270	324	366.1	439.3	380	456	515.3	618.3
7/8	22.23	160	200	216.8	271.0	400	480	542.4	650.9	600	720	813.6	976.3
1	25.40	250	300	338.8	406.5	580	696	786.5	943.8	900	1080	1220.4	1464.5
1 1/8	25.58	– – –	– – –	– – –	– – –	800	880	1084.8	1193.3	1280	1440	1735.7	1952.6
1 1/4	31.75	– – –	– – –	– – –	– – –	1120	1240	1518.7	1681.4	1820	2000	2467.9	2712.0
1 3/8	34.93	– – –	– – –	– – –	– – –	1460	1680	1979.8	2278.1	2380	2720	3227.3	3688.3
1 1/2	38.10	– – –	– – –	– – –	– – –	1940	2200	2630.6	2983.2	3160	3560	4285.0	4827.4

*Thick nuts must be used with Grade 8 bolts

AG GROWTH INTERNATIONAL INC. – FORM OF LIMITED WARRANTY

Ag Growth International Inc. (“AGI”) warrants that the goods and/or services being supplied (the “Goods”) will be free from defects in materials and workmanship under normal conditions, use, service, and maintenance, for a period of twelve (12) months from the date of first operation of the Goods, but in no event more than eighteen (18) months from the date of delivery of the Goods to the end-user (the “Warranty Term”). If the Goods are being used for rental purposes, the Warranty Term for the subject Goods shall be limited to 90 days.

Subject to AGI’s sole discretion, if the Goods, or a component thereof, are found to have a default in materials and/or workmanship within the Warranty Term, AGI will, at its own option and expense, repair or replace the subject Goods or refund the purchase price for the applicable Goods. Any warranty related expenses incurred on behalf of or by the end-user without the prior written consent of AGI shall be the sole responsibility of the end-user. Expenses relating to travel, customs or import duties and tariffs, equipment rental, and any costs associated with accessing the Goods are the sole responsibility of the customer. Warranty shall be void in the event the Goods are returned or disposed of without the written consent of AGI.

The customer shall not assert a claim that the Goods are defective unless the customer gives written notice to AGI of such defect within forty-eight (48) hours of discovering such defect. In the event of a warranty claim, the customer must complete any and all information required by AGI in order to properly assess or investigate the claim. AGI shall be given a reasonable opportunity to inspect and test the Goods in question. Failure by the customer to notify AGI of such claim within 48 hours shall operate as a waiver of any and all such claims by the customer.

THIS IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY AGI WITH RESPECT TO THE GOODS AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, MERCHANTIBILITY OR FITNESS FOR A PARTICULAR PURPOSE WHETHER OR NOT THE PURPOSE OR USE HAS BEEN DISCLOSED TO SELLER IN SPECIFICATIONS, DRAWINGS, OR OTHERWISE, AND WHETHER OR NOT AGI’S GOODS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED BY AGI FOR BUYER’S USE OR PURPOSE.

This limited warranty extends solely to Goods manufactured by AGI and does not cover any third-party parts, components, or materials. To the extent permitted by the manufacturer, AGI will pass on applicable warranties on third-party parts, components or materials to the end-user. This warranty does not extend to any losses or damages due to misuse, use of a kind and/or to a degree not reasonably expected to be made of the Goods, any use of the Goods which is not an intended use as specified in AGI’s published product literature or otherwise specified by AGI in writing, accident, acts of God, abuse, neglect, normal wear and tear (including corrosion and cosmetic issues), any equipment attached to or used in conjunction with the Goods, any field modifications or substitutions to original Goods, component damage incurred during shipping and handling, unauthorized modification or alteration, used beyond rated capacity, or improper installation, maintenance or application.

THE SOLE AND EXCLUSIVE REMEDY FOR ANY CLAIM HEREUNDER SHALL BE LIMITED TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE. AGI SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY DELAY IN PERFORMANCE AND IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE), SHALL AGI’S LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXCEED THE PURCHASE PRICE OF THE GOODS. BUYER AGREED THAT IN NO EVENT SHALL AGI’S

LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXTEND TO INCLUDE INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES. THE TERM "CONSEQUENTIAL DAMAGES" SHALL INCLUDE, BUT NOT BE LIMITED TO, LOSS OF ANTICIPATED PROFITS, LOSS OF USE, LOSS OF REVENUE, FAILURE TO MEET GOVERNMENT AND/OR ADMINISTRATIVE REQUIREMENTS, CLEAN UP COSTS, COST OF CAPITAL AND DAMAGE OR LOSS TO OTHER GOODS, PROPERTY OR EQUIPMENT.

To the fullest extent permitted by law, Buyer, on behalf of itself, its suppliers, their agents, employees or any entity or person for which Buyer is or may be responsible ("Indemnitors") shall fully indemnify, save and hold AGI, its agents, employees, officers, directors, partners and related entities harmless from and against all liability, damage, loss, claims, demands, actions and expenses of any nature whatsoever, including, but not limited to reasonable attorney's fees which arise out of or are connected with: (a) any negligent act, error or omission by any Indemnitor in the performance of this agreement; (b) the failure of the Indemnitor to comply with the laws, statutes, ordinances or regulations of any governmental or quasi-governmental authority; or (c) the material breach of any term or condition of this agreement by any of the Indemnitors. Without limiting the generality of the foregoing, the indemnity hereinabove set forth shall include all liability, damage, loss, claims, demands, and actions on account of personal injury, death or property loss to any third party, any Indemnitee, any of Indemnitee's employees, agents, licensees or invitees. The indemnity set forth herein shall survive any termination of this agreement.

THIS WARRANTY IS NON-TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL END-USER AND SHALL BE CONSIDERED VOID IF NOT REGISTERED WITHIN 30 DAYS OF RECEIPT OF THE GOODS BY THE ORIGINAL END USER.

MANUFACTURED BY
HUTCHINSON I MAYRATH

514 W. Crawford Street
Clay Center, Kansas
USA 67432

TF 800.523.6993
P 785.632.2161
F 785.632.5964

hutchinson–mayrath.com

aggrowth.com