

# PORTABLE DRIVE-OVER BELT CONVEYOR

## OWNER'S & OPERATOR'S MANUAL

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THIS MANUAL IS FOR CONVEYORS WITH SERIAL NUMBERS OF 958125 OR HIGHER.

**HUTCHINSON  MAYRATH **

Hutchinson | Mayrath • P.O. Box 629 • Clay Center, KS. USA 67432

P 785.632.2161 • F 785.632.5964 • TF 800.523.6993

[hutchinson-mayrath.com](http://hutchinson-mayrath.com)

[aggrowth.com](http://aggrowth.com)

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## **POLICIES and PROCEDURES**

**Prices:** Prices in effect at time of shipment will apply. Prices are subject to change without notice. All prices are F.O.B. Clay Center, Kansas. Orders shipped from locations other than Clay Center, Kansas will be subject to additional charges, such as back freight and/or additional freight.

**Service Charge:** A service charge will be assessed for all past due balances as permitted by state law not to exceed 1-1/2% per month.

**Minimum Order:** Processing and handling costs necessitate a minimum charge of \$15.00 net on all orders.

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**Modifications:** It is the policy of Hutchinson, Mayrath to improve its product whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.

**Limited Warranty:** (a) For a period of (1) year after receipt of goods by the original consumer buyer, Hutchinson, Mayrath will supply free of charge replacement parts for parts that prove defective in workmanship or material. Defective parts must be returned freight prepaid to a specified Hutchinson, Mayrath location. Only Hutchinson, Mayrath original repair parts may be used for warranty repairs.

(b) This limited warranty does not extend to parts designed to wear in normal operation and be replaced periodically; or to damage caused by negligence, accident, abuse or improper installation or operation.

(c) GOODS NOT MANUFACTURED BY HUTCHINSON, MAYRATH CARRY ONLY THE MANUFACTURER'S WARRANTY.

(d) THIS UNDERTAKING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

**FAILURE TO FOLLOW THE INSTRUCTIONS CONTAINED IN THE OWNER'S & OPERATOR'S MANUALS AND THE ITEMS LISTED BELOW WILL RESULT IN THE VOIDING OF THIS LIMITED WARRANTY.**

(1) Improper assembly, including failure to properly install all safety equipment.

(2) Improper installation.

(3) Unauthorized alterations of goods.

(4) Goods operated when obviously in need of repair.

(5) Use of unauthorized repair parts.

(6) Irresponsible operation.

(7) Used to handle materials other than free flowing, nonabrasive and dry materials, as intended.

(8) Damaged through abusive use or accident.

**Limitation of Liability:** BUYER AGREES THAT IN NO EVENT SHALL HUTCHINSON, MAYRATH HAVE LIABILITY FOR DIRECT DAMAGES IN EXCESS OF THE CONTRACT PRICE OF THE GOODS IN RESPECT OF WHICH CLAIM IS MADE. BUYER FURTHER AGREES THAT IN NO EVENT SHALL HUTCHINSON, MAYRATH ON ANY CLAIM OF ANY KIND HAVE LIABILITY FOR LOSS OF USE, LOSS OF PROFITS, OR FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

## **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.

Please remember safety equipment provides important protection for persons around a grain handling system that is in operation. Be sure all 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 symbol shown below is used to call your attention to instructions concerning your personal safety. Watch this symbol - it points out important safety precautions. It means "ATTENTION! Become alert! Your personal safety is involved!" Read the message that follows and be alert to the possibility of personal injury or death.



## **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.**

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## 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 right side of the conveyor housing near the drive.

## RIGHT AND LEFT DESIGNATION

When determining which is the left or right hand side of the unit, it is as if a person were standing at the intake end and looking toward the discharge end.

## OPERATOR QUALIFICATIONS

Operation of this Belt Conveyor shall be limited to competent and experienced persons. In addition, anyone who will operate or work around a Belt 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 Belt Conveyors. 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."<sup>\*</sup>
3. Unqualified persons are to stay out of the work area. See page 8.
4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.

**\*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.

DATE	EMPLOYER SIGNATURE	EMPLOYEE SIGNATURE

**MACHINE INSPECTION**

After delivery of your new conveyor and/or completion of assembly and before each use, inspection of the machine is mandatory. Use the assembly instructions in this manual as a reference to determine that the conveyor is assembled properly. This inspection should include, but not be limited to:

1. Check to see that all guards listed in the assembly instructions are in place, secured and functional. The shields on the PTO driveline must rotate easily.
2. Check all safety signs and replace any that are worn, missing or illegible. The safety signs are listed in the back of this manual. Safety signs may be obtained from your dealer or ordered from the factory.
3. Check feeder lift winch and cable for security and operation. There should be at least three complete wraps of cable around winch drum in full down position. Cable anchor on winch drum must be tight.
4. Are all fasteners tight?
5. Are drive belts properly adjusted? (See Maintenance Section.)
6. Is conveyor belt properly adjusted? (See Maintenance Section.)

Obtain any needed replacement parts from your dealer and install before using the machine.

**MACHINE FEATURES**

- Low drive-over clearance; only 5-1/2" (140 mm) high.
- Easy lift hopper side panels.
- 7' x 10' (2.13 m x 3.05 m) wide ramp area.
- Capacity - up to 10,000 BPH (250 T/hr)
- Extra wide 24" (610 mm) belt.
- Smooth transition from horizontal to incline.
- Higher capacity with lower belt speeds.
- Three drive choices.
- Undercarriage lift choices.
- Receive from side dump wagons, as well as bottom dump and rear dump vehicles.
- "S" type drive on return belt for greater drive efficiency and lower belt tension requirements. Includes snub pulley to give greater wrap at drive pulley for slip free operation.
- Spring loaded belt take-up for lower operating belt tensions.
- Guide roller assembly to keep belt tracking properly.
- Walk across platform and handrail provided to cross conveyor.
- Adjustable angle discharge spout.
- Removable hitch tube.
- Self cleaning wing type tail pulley.

**POWER REQUIREMENTS (DRIVE)**

RECOMMENDED ELECTRIC H.P.	MOTOR FRAME SIZE	60 Hz RECOMMENDED MOTOR PULLEY	50 Hz RECOMMENDED MOTOR PULLEY
10 HP (7.5 kW)	215T	5.0" P.D. 2-Groove "B" Section	6.0" P.D. 2-Groove "B" Section

RECOMMENDED HYDRAULIC SYSTEM PRESSURE	RECOMMENDED HYDRAULIC SYSTEM CAPACITY
1500 PSI (10,340 kPa)	20 GPM (75.7 L/M)

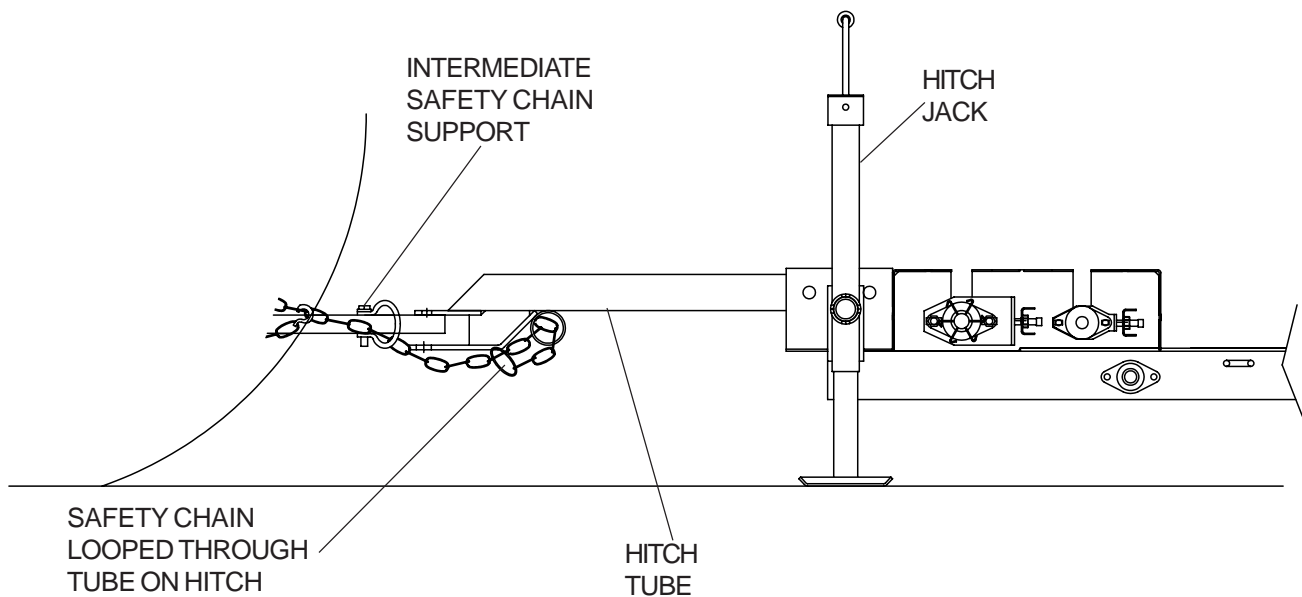
NOTE: Hoses for hydraulic drive are not provided. Minimum hose size of 3/4" is recommended. Hydraulic motor ports are 7/8" o-ring.

**PTO DRIVE**

25 PTO horsepower recommended.

## HITCHING TO TRACTOR INSTRUCTIONS

1. The hitch jack is intended to lift the intake for hitching and unhitching purposes. The jack should be positioned approximately vertical to the ground. Crank the jack handle clockwise to extend the jack. Raise the intake only as much as necessary to attach to the drawbar of the towing vehicle.
2. Pin the conveyor hitch to the tractor drawbar. Make certain the hitch pin is securely attached.
3. An auxiliary attachment system (safety chain) is required to retain the connection between towing and towed machines in the event of separation of the primary attachment system. The safety chain should be routed through the tube on the hitch and fastened to the tractor. A clevis or intermediate chain support should be fastened to the tractor drawbar no farther than 6" from the hitch pin.  
**NOTE :** The safety chain is not furnished with the conveyor.
4. After the conveyor is secured to the towing vehicle, completely retract the jack base or pull the pin and remove the jack.



**MOVING THE CONVEYOR**

Move the conveyor with a tractor to or from the work area. A pick-up truck or other suitable vehicle may be used for transporting the conveyor over greater distances. Comply with your state and local regulations governing marking, towing and maximum width. Observe safe driving and operation practices.

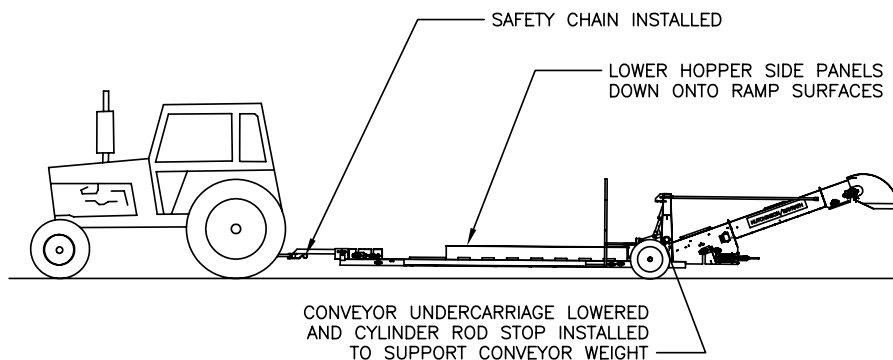
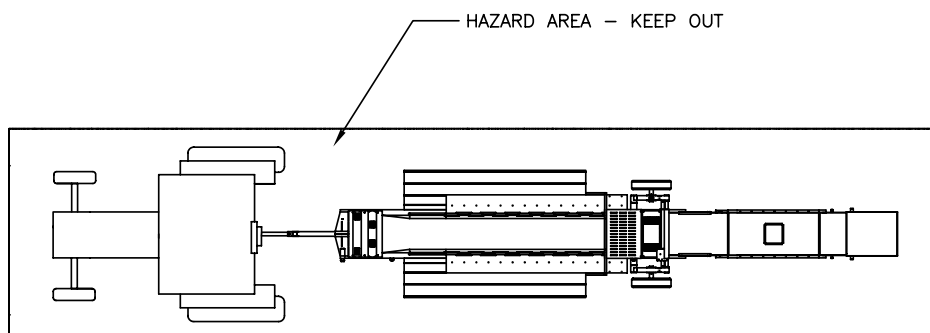
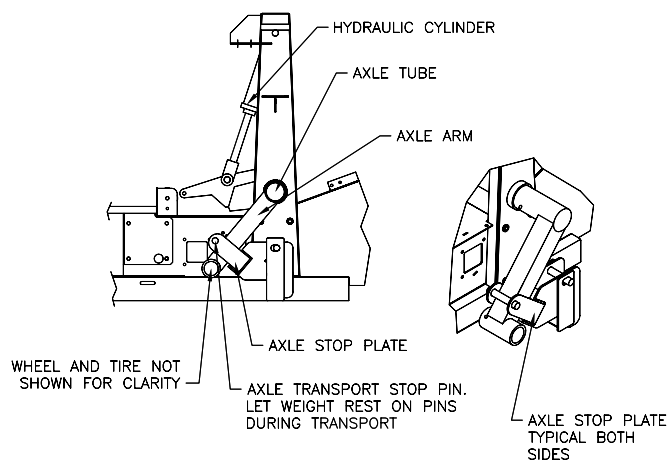
Follow these steps when transporting the conveyor:

1. Always lower the undercarriage, (i.e. raise the conveyor) install the axle transport stop pins through the stop plates and let the conveyor weight onto the stop pins before transporting. **NEVER transport the conveyor with the weight supported by the extended hydraulic cylinder rod.**
2. The axle transport stop pins should be pinned in place on both sides of the conveyor frame.

3. Always lower the hopper side panels down onto the ramp surfaces before transporting. The hopper side panel lift cable should not be in tension when transporting the conveyor.

4. Hitch should be secured to tractor and jack stored in transport position. Hitch safety chain must be fastened in place.

Before moving the conveyor, the operator should make sure all personnel are clear of the **Moving Conveyor Hazard Area** as shown in the following diagram. Never allow persons to ride on the conveyor when it is being transported.

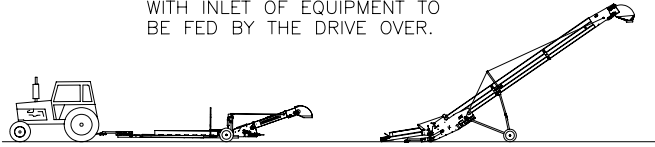




## PLACEMENT OF CONVEYOR

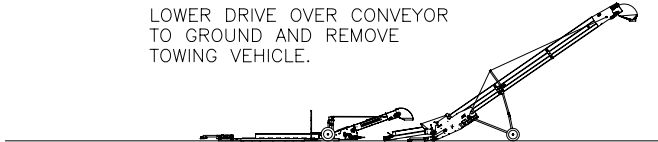
### STEP 1

ALIGN DRIVE OVER DISCHARGE WITH INLET OF EQUIPMENT TO BE FED BY THE DRIVE OVER.



### STEP 2

LOWER DRIVE OVER CONVEYOR TO GROUND AND REMOVE TOWING VEHICLE.



### Step 1

Move conveyor slowly toward working position with a tractor. Locate the conveyor on level ground as close as possible to the bin or other structure. Leave adequate room for loaded vehicles to reach the conveyor intake area conveniently. The wheels must be allowed to roll freely when raising. Be sure the area is clear of any obstructions.

### Step 2

Using the hydraulic lift cylinder provided for the undercarriage, lift the conveyor enough to take the weight off the axle transport stop pins. Remove the stop pins and lower the conveyor to the ground. Replace the pins in the stop plates for storage.

### Step 3

Raise the hitch jack enough to un-hitch from the towing vehicle. Lower hitch end of conveyor to the ground using the hitch jack.

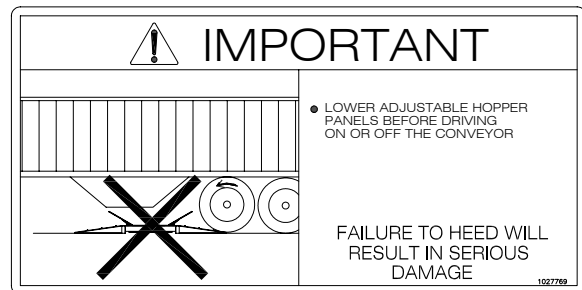
### Step 4

Always make certain the adjustable hopper side panels are in the fully down position prior to driving the unload vehicle across the conveyor. Also, make certain the panels are fully down before the vehicle is moved off the conveyor after unloading.

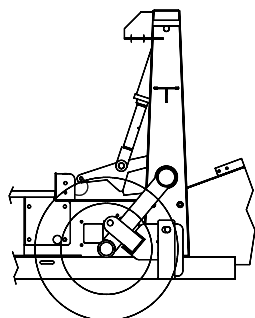


**Make certain everyone is clear of the work area when moving the conveyor.**

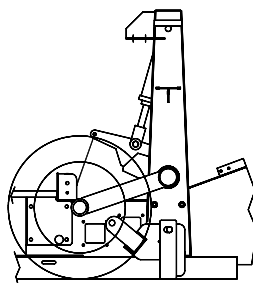
**Make sure entire area above conveyor and in line of travel is clear of overhead obstructions and electrical wires. Failure to do so may result in electrocution. Maintain at least ten (10) feet of clearance. Electrocution can occur without direct contact.**



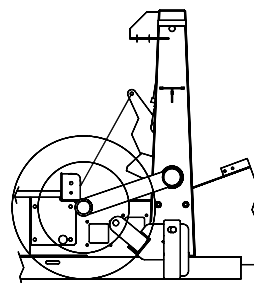
**TYPICAL HYDRAULIC LIFT POSITIONS**  
(ON ELECTRIC MODELS A HAND WINCH IS USED TO RAISE AND LOWER THE HOPPER PANELS)



WHEELS DOWN  
FOR TRANSPORT



WHEELS UP  
FOR OPERATION  
(HOPPER PANELS LOWERED)



WHEELS UP  
FOR OPERATION  
(HOPPER PANELS RAISED)

# DESIGNATED WORK AREA

## DESIGNATED WORK AREA

Before starting the conveyor, a designated work area should be established and properly marked. The following diagrams will show the manufacturers designated work areas. These areas shall be marked off with colored nylon or plastic rope hung as portable barriers to define the designated work areas.

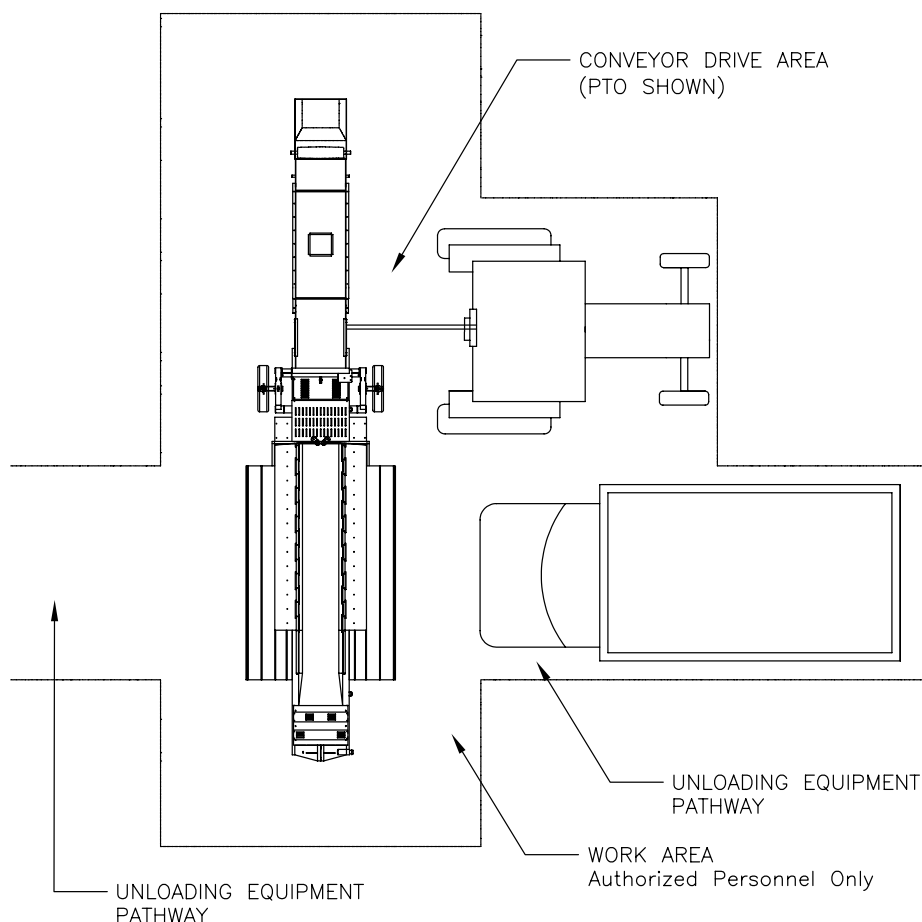
## RULES FOR SAFE WORK AREA



**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 an immediate shut down 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 all debris, and tools which might cause accidental tripping and/or falling. It shall also be their responsibility to keep the work area clean and orderly during the operation.**



**PTO drive shown. Electric and hydraulic drive work areas are similar.**

## GENERAL OPERATION

**It is essential to inspect your drive before adding power and 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. Any conveyor when it is new or after it sets idle for a season should go through a "break-in" period. The conveyor should be run at partial capacity until several hundred bushels of grain have been conveyed to polish the belt slide surfaces. When the surfaces are polished, the conveyor can be run at full capacity.



**During the 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 work area and check that all personnel are clear of designated work area before adding power.**



**SHUT OFF POWER AND LOCKOUT DRIVE TO ADJUST, SERVICE OR CLEAN.**

## CONVEYOR BELT INFORMATION

It is very important that the conveyor belt run in the center of the conveyor when operating. Carefully read through the belt tension and training instructions on pages 41-43 before attempting to operate the conveyor.

## ELECTRIC MOTOR DRIVE INFORMATION

Always use a motor with required H.P. suggested in the charts below. Use a motor that operates at 1750 RPM. 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. Reset and Motor Starting Controls may be mounted directly to the conveyor or in a nearby area, but they must be located so that the operators have full view of the entire operation from the control location.

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 motor is used, use only those with manual reset.



**Disconnect power before resetting motor overloads. Make certain electric motors are grounded.**

Electric motor is not provided. The motor sheave is provided after 10/31/08. Use the following table for recommended sizes. Using these recommendations will provide a belt speed of approximately 800 FPM (4.06 m/sec). NOTE: Standard driven sheave provided is 18.4" pitch diameter.

If slower belt speeds are desired, a 4.2" pitch dia. motor sheave will provide approximately a 680 FPM (3.45 m/sec) belt speed.

RECOMMENDED ELECTRIC H.P.	MOTOR FRAME SIZE	60 Hz RECOMMENDED MOTOR PULLEY	50 Hz RECOMMENDED MOTOR PULLEY
10 HP (7.5 kw)	215T	5.0" P.D. 2-Groove "B" Section	6.0" P.D. 2-Groove "B" Section

NOTE: If the conveyor has the extended incline section (i.e. a non portable model) use a 15 HP (11 kw) motor.

## HYDRAULIC MOTOR DRIVE INFORMATION

**IMPORTANT:** Use a tractor which has the proper hydraulic capacity 20 gallons per minute (75 L/min.) minimum with a hydraulic oil pressure of at least 1500 PSI (10,340 kPa).

**IMPORTANT:** Read the hydraulic motor information in the lubrication section on page 14 of this manual.

The hydraulic motor ports are 7/8" o-ring. Hoses to the motor are not provided. Minimum recommended hose size is 3/4".

The hydraulic control lever on the tractor will operate the motor in either direction, making it possible to run the conveyor belt in the wrong direction. Therefore, make certain the belt is moving from the loading hopper into the conveyor incline section. **NOTE:** A check valve can be put in one of the hydraulic lines to limit flow to one direction only. If a check valve is installed, make certain it is capable of the required oil volume required.

### 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 the 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 act 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 or the motor.



Do not disconnect hydraulic lines while system is under pressure. Because hydraulic systems are highly pressurized, escaping hydraulic oil (even an invisible pinhole leak) can penetrate body tissues and cause serious injury. Use a piece of wood or cardboard when looking for leaks. Never use the hands or other parts of the body. 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 may occur if medical attention is not received at once.



Keep all hydraulic lines away from moving parts. Refer to the rules and regulations applicable to the power source operating your hydraulic drive.

## DIRECT PTO DRIVE INFORMATION

1. The PTO driveline is equipped with a shear bolt at the tractor connection. The shear bolt protects the conveyor from damage if the conveyor becomes plugged or subjected to high loads. See page 13 for replacement shear bolt information.
2. To attach the PTO driveline to the tractor PTO, start sliding the driveline end onto the PTO. Compress the spring keeper on the driveline and continue to slide onto the PTO until the keeper seats in the groove on the tractor PTO. Then the spring keeper will return to its original position and the PTO driveline will be locked onto the tractor PTO.

**NOTICE:** The PTO driveline furnished with the conveyor is equipped with a "Spring-Lok" coupler at the tractor end. This type coupler is spring loaded and will fit the standard 1-3/8" x 6" spline PTO output shaft from a tractor.

See that the PTO driveline is securely attached and the retaining balls of the "Spring-Lok" coupler lock into the ring groove of the tractor PTO output shaft. Check this by trying to pull the driveline off of the tractor PTO output shaft.

## DIRECT PTO DRIVE INFORMATION - CONT.

### BELT SPEED

The belt conveyor has been designed to operate at belt speeds up to 900 FPM (4.57 m/sec). On PTO models, this is obtained with a PTO input speed of 540 RPM. If a PTO RPM indicator is not available, the approximate belt speed can be determined by timing one complete revolution of the belt. Use the belt splice connector as a reference when timing the belt. The following chart shows the times for one belt revolution at various belt speeds. In some circumstances, it may be desirable to run belt at lower speeds.

		BELT SPEED CHART FOR PTO DRIVES (UPPER BELT)							
		@ 900 FPM (4.57 m/sec)		@ 800 FPM (4.06 m/sec)		@ 700 FPM (3.55 m/sec)		@ 600 FPM (3.05 m/sec)	
Conveyor Model	Belt Length	Time for 1 Belt Rev.	PTO RPM	Time for 1 Belt Rev.	PTO RPM	Time for 1 Belt Rev.	PTO RPM	Time for 1 Belt Rev.	PTO RPM
DRIVE-OVER	61'-3" (18.67 m)	4 sec.	530	4.6 sec.	470	5.2 sec.	410	6.1 sec.	350

### CHECK THE FOLLOWING BEFORE ADDING POWER:

1. Be certain the PTO driveline is securely attached to the conveyor and the tractor.
2. Never use a PTO driveline without a rotating shield in good working order that can be turned freely on the shaft.
3. Align PTO driveline with tractor. The PTO driveline furnished with the conveyor is a pin stop type—that is, the two telescoping sections will not separate. It is a good practice to operate the PTO driveline in as short a configuration as possible. Keep the PTO driveline in as straight a line as possible during operation. When connecting tractor and conveyor, always make sure the tractor axle and side of conveyor are parallel.
4. If the tractor and conveyor are on unlevel ground or at different levels, place them so the center line of the tractor and the conveyor input shaft are parallel.

### WHEN ADDING POWER:

The tractor operator should have a full view of the conveyor work area and check that all personnel are clear of hazard areas before adding power.

**IMPORTANT: Engage PTO at a slow RPM to minimize shock loads. Then work up RPM to recommended speed.**

## SHUTDOWN

### A. NORMAL SHUTDOWN

Make certain that the conveyor is empty before stopping the unit. Before the operator leaves the work area, the power source shall be locked out. (See LOCKOUT).

### B. INTERMITTENT OPERATION SHUTDOWN

When a conveyor is stopped and restarted under full load, it may result in damage to the conveyor. Therefore, if intermittent operation is to be carried out, it is advisable to reduce the load level. When kept from absolute filling, conveyor start-up is easier and operation is more efficient.

### C. EMERGENCY SHUTDOWN

Should the conveyor be immediately shut down under load, disconnect and lockout the power source. Clear as much grain from hopper and conveyor as you can. Never attempt to start when full. When as much grain as possible has been cleared, reconnect power source and clear conveyor gradually.

**NOTE: Starting the unit under load may result in damage to the conveyor. Such damage is considered abuse of the equipment.**

## LOCKOUT



**WARNING: If the operator must leave the work area, or whenever servicing or adjusting, the conveyor must be stopped and the power source turned off. Precaution should be made to prevent anyone from operating the conveyor when the operator is absent from the work area.**

**PTO or HYDRAULIC DRIVE:** Remove ignition key or coil wire from power source.

**ELECTRIC DRIVE:** A main power disconnect switch capable of being locked only in the OFF position shall be provided.

## OPERATING CAPACITIES

Capacities of belt conveyors can vary greatly under diverse conditions. Different materials, moisture content, amounts of foreign matter, angle of operation, methods of feeding and speed all play a role in performance of the conveyor. Maximum possible capacity will be less with high moisture grain (above 15%) than with dry grain. Feeding the material onto the feeder conveyor so that it is moving in the direction of the belt travel will aid capacity.

## RELOCATION OF CONVEYOR

When grain conveying operation is completed, the conveyor should be moved to a different location for more conveying operations or cleaned up and stored.

### STEP 1

- A. Empty all grain from the conveyor. Clean up the area.
- B. Untie any anchors and/or remove all supports.
- C. Disconnect the power source.
  - Electric Drive** - Unplug electric motor, wind up electric cables.
  - Hydraulic Drive** - Disconnect hydraulic hoses from tractor or from hydraulic motor.
  - PTO Drive** - Disconnect PTO driveline from tractor.
- D. Remove the axle transport stop pins from the stop plates. Using the hydraulic cylinder provided for the undercarriage, lift the conveyor enough to re-install the stop pins.
- E. Let the weight of the conveyor down until it is supported by the stop pins on both sides of the conveyor. **NEVER** transport the conveyor with the weight supported by the hydraulic cylinder rod only.
- F. Using the screw jack at the hitch end, raise the hitch end just enough to connect to the towing vehicle. Attach safety chain.

## PTO DRIVELINE

Conveyors equipped with PTO driveline, should have the u-joints lubricated at approximately ten (10) hour intervals with SAE multipurpose type grease.



**Be sure that PTO driveline shields turn freely on shaft.**

The PTO driveline is equipped with a shear bolt at the tractor connection. The shear bolt protects the conveyor from damage if the conveyor becomes plugged or subjected to high loads. It is important to use the correct replacement bolt of the proper size and strength to insure that the shear device will protect the conveyor and operator. Order replacement shear bolt, Part No. 33046-5/16" NC x 1" long grade 5 bolt. Extra shear bolts are provided with conveyor and are stored in the operator's manual container located underneath the inclined housing section near the drive area.



## GENERAL

For economical and efficient operation of your conveyor, maintain regular and correct lubrication. Neglect leads to reduced efficiency, excessive wear and needless down time. Use the maintenance schedule on page 15..



**Keep all safety shields and devices in place. Replace any that are damaged or missing. Shut off power and lockout drive to adjust, service or clean.**

Any parts needing replacement should be replaced with parts of the same type and size. Do not modify or alter any of the conveyor components.

## PULLEY & “S” ROLLER BEARINGS

All bearings are fitted with grease zerks and should be lubricated, as specified in the maintenance schedule on page 15. Before greasing the bearings, make certain the zerks are free of dirt, otherwise this will be passed into the bearing race.

NOTE: Overgreasing can be as harmful as undergreasing if it forces grease out of the bearing seals.

## HYDRAULIC HOSE



Check all the hydraulic fittings and hoses to see if they are tight and not leaking hydraulic oil. Replace any hydraulic hose that may be cut or damaged.



**CAUTION: Do not connect or disconnect hydraulic components when there is pressure within the system. Hydraulic systems are highly pressurized. Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues and cause serious injury. Use a piece of wood or cardboard when looking for leaks. Never use the hands or other parts of the body. 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 may occur if medical attention is not received.**

## DRIVE BELT ADJUSTMENT

On drives that are powered by belts, the belt tension will need periodic adjustment. Use the adjustment bolt under the motor mount plate.

## HYDRAULIC MOTOR

A hydraulic motor is used to power the hydraulic drive belt conveyor. Hydraulic motors are built to extremely high standards and should be treated as such. It should be returned to your nearest service center or to the factory if in need of repair. Only trained personnel should repair and test returned motors, so that they meet the highest quality repair and test standards. Upon request, before repairs are made, the owner will be notified of the cost and probable cause of the failure. The only exception to the above is the replacement of the high pressure shaft seal.

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

- Avoid nuisance fluid-leaks. Typical causes are: dirty, scratched, bowed or inadequately bolted joints; vibrating, unsupported lengths of flexible and rigid piping. The cure: careful assembly, proper seals, periodic inspection. Only compatible materials (resistant to fluid and temperatures involved) should be used.
- Avoid shock - limit the rate of pressure build-up. Adjust relief valves, avoid chatter, sudden pressure surges and higher than needed working pressures. Pressure and flow are energy - use them efficiently.
- Driving on or off, the moving belt may cause motor damage.
- Be aware of temperatures. Use oils that will not be too heavy when cold or too light when hot. Either may affect operation and lubrication. Never exceed 180° F oil temperatures or motor damage could occur.
- Include adequate filtration in the system. (10 micron or finer)
- The drive motor has displacement of 10.6 cubic inches (173 cm<sup>3</sup>) per revolution. Exceeding the recommended motor RPM may cause motor damage. At 18 GPM (68 L/min), the motor RPM will be approximately 350 RPM. **DO NOT** exceed 20 GPM (76 L/min) or approximately 400 RPM.

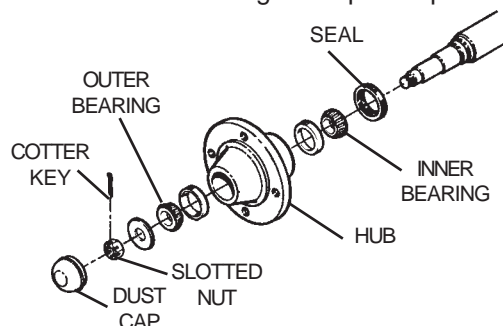
## WHEEL BEARINGS

### Undercarriage Axle Spindle Bearing

Tapered roller type bearings are standard on the belt conveyor and should be repacked with grease and adjusted annually or as needed, determined by usage.

Care must be used in dismantling wheel bearing assemblies. First remove the dust cap by prying around the edges. Remove the cotter pin, slotted nut and flat washer. Carefully remove the hub and bearings from the spindle. Inspect all parts for wear or damage and replace with new ones, if necessary.

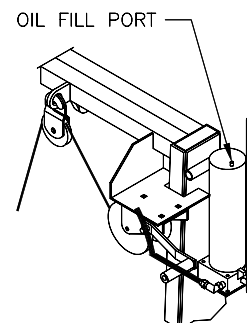
When reassembling the hub, repack both bearing cones with grease and fill the hub cavity 1/3 full. Place inner bearing assemblies into the hub, and then press seal into hub and carefully reinstall the hub on the spindle. When placing hub on spindle be careful not to damage the lip of the grease seal. Install outer bearing assembly into the hub, and replace flat washer and slotted nut. Then tighten the slotted nut to seal the bearings until the hub binds as you rotate hub. Back off the slotted nut to the next slot and install a new 5/32" x 1-1/4" long cotter pin. Replace dust cap.



## HYDRAULIC HAND PUMP

### - Electric Drive Models Only

For initial operation, approximately one half gallon (1.89 L) of hydraulic oil should be installed in the hand pump tank. Remove the 1/4" fill plug from the top of the tank and use a funnel for filling. If necessary, additional oil can be added to the tank after the oil has been pumped to the cylinder once. **NOTE:** Only add oil when the cylinder is in the retracted position, as there needs to be space for the oil to occupy as the cylinder retracts.





NOTE: For electric drive models equipped with the optional hydraulic power unit for lifting the hopper panels, refer to supplemental instruction sheet Part No. 1037417.

## MANUAL WINCH - (Hopper Side Panel Lifting) - Electric Drive Models Only

Check the winch handle assembly on your conveyor to determine that it has been assembled correctly. See assembly section.



Never fully extend the cable and always keep three complete turns of cable around winch drum. Never operate winch with wet or oily hands and always use a firm grip on the handle.

### SAFETY REMINDERS

1. Operator must pay attention during raising and lowering.
  - Watch cable to see if it is coiling properly onto winch drum evenly.
  - Keep hands away from winch drum during operation.
  - Don't use hands to guide cable onto winch drum during winch operation.
  - Don't continue to raise side panels after they reach the stops.

The following lubrication checks should be made to the winch periodically.

The conveyor hopper side panels should be in the lowered position when this inspection is being performed. Refer to operating and maintenance instructions furnished with your winch for proper inspection methods.

1. All gears should have a film of grease on them at all times.
2. Check brake disc. If worn to less than 1/16" (1.59 mm) thick, cracked or broken, replace both discs.
3. The following parts must be wet with oil at all times:
  - A. Two bushings located at ends of drum shaft.
  - B. The ratchet pawl pivot.

**IMPORTANT: Do not get oil or grease on brake disc faces (located between ratchet gear brake hub and pinion shaft.)**

## DRIVE-OVER MAINTENANCE SCHEDULE

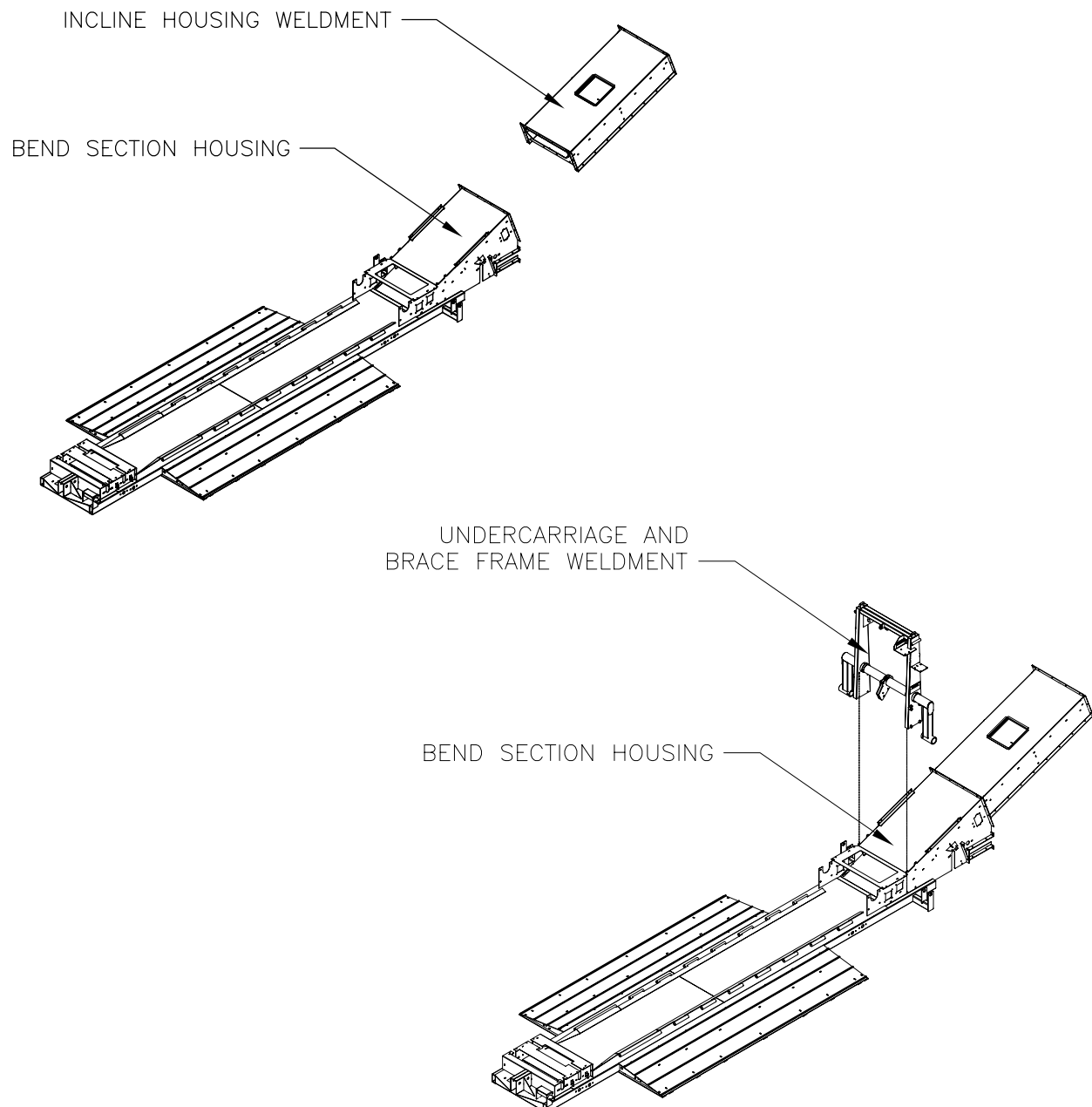
- ° Inspect and replace the main belt splice every 800,000 bushels (20,000 T) or 120 hours.
- ° Replace all tension springs every 1,000,000 bushels (25,000 T) or 150 hours.
- ° Back the adjustment bolts all the way off for the belt during the off season.
- ° Insert one - two pumps of grease in each of the bearings every 500,000 bushels (12,500 T) or 75 hours or once a season, whichever is reached first (too much grease can push out the bearing seals) and after each time the unit is washed down. After the wash down, insert just enough grease to push out the water and let run for 15 minutes.
- ° Check all the drive belts on the unit and adjust, as needed.
- ° Examine all of the skirting at least every 1,000,000 bushels (25,000 T) or 150 hours and replace, as needed.
- ° Check each bearing and return roller every 750,000 bushels (18,750 T) or 110 hours or once a season, whichever is reached first.
- ° Clean all material out of the incline section. Make sure to check under all of the skirting.
- ° If the unit will set outside during the off season, make sure that the discharge hood is installed and cover the drive-over section with a tarp or plastic. Keep the tarp or plastic off the ground. This should help keep rodents out of the unit and protect the belts. Store the unit inside out of the weather, if possible. Sunlight is hard on the belt and hoses.
- ° Before start up, tighten the adjustment nuts for the belt drive system. Remember that the tension will have to be checked and adjusted under load.
- ° Check for proper belt alignment at start up at the start of and during each operational season.

**CONVEYOR HOUSING**

NOTE: Whenever reference is made to right or left side on conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

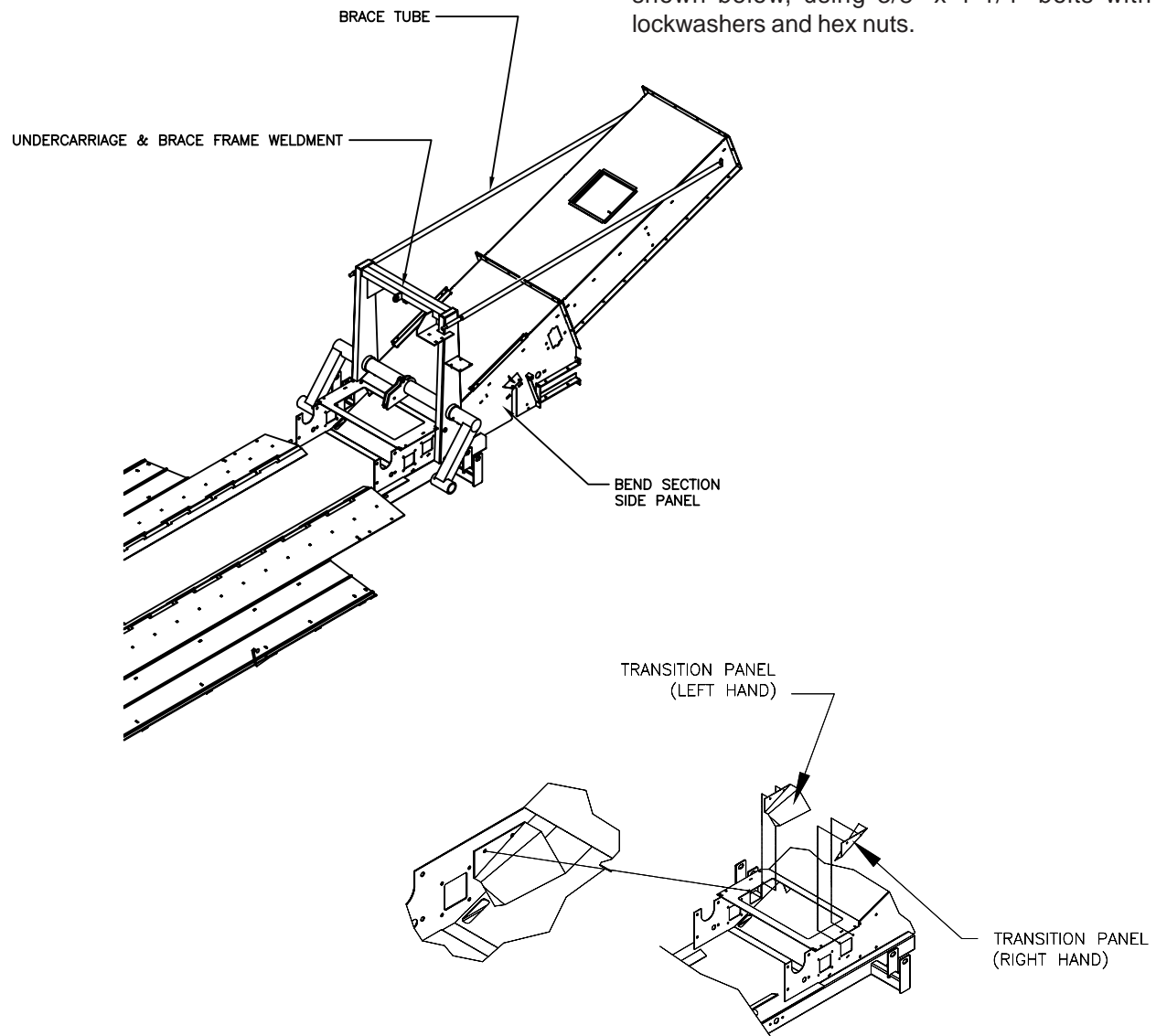
1. Connect the incline housing weldment to the bend section housing of the main drive over frame using fourteen  $\frac{3}{8}$ " x 1" bolts and nylon locknuts.

2. Connect the undercarriage and brace frame weldment to the side panels of the bend section housing using eight  $\frac{1}{2}$ " x  $3\text{-}\frac{1}{4}$ " bolts and nylon locknuts.



## CONVEYOR HOUSING - CONT.

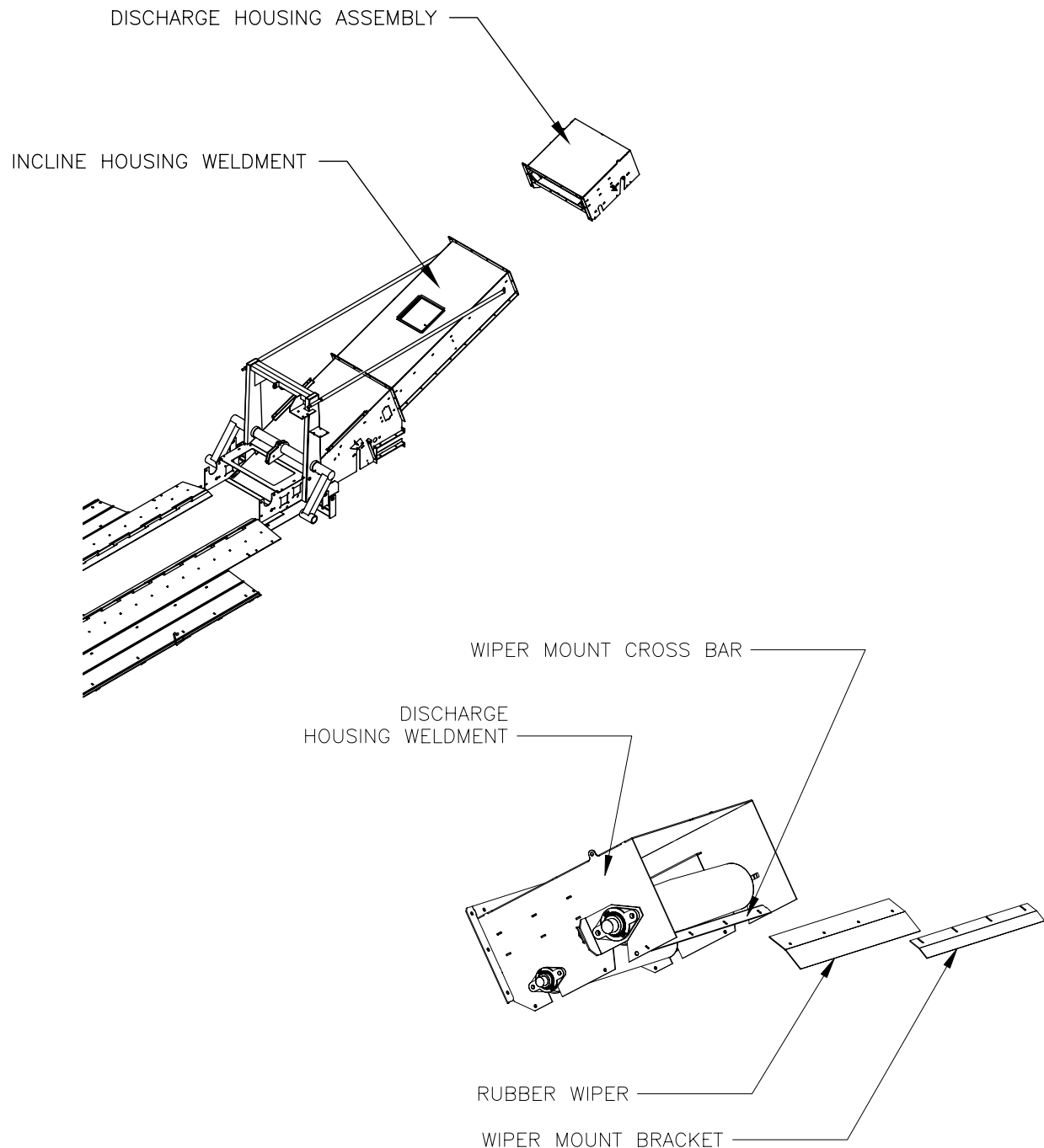
3. Install a 5/8" hex nut onto the threaded end of each brace frame tube. Thread the nuts on about 6".
4. Insert the 5/8" threaded rod on one of the brace tubes through one of the mounting tubes on top of the brace frame weldment. Install another 5/8" hex nut onto the threaded rod. Repeat for the other brace tube.
5. Attach the other end of each brace tube to the side panels of the incline housing weldment using a 1/2" x 1-1/2" bolt and nylon lock nut. Put four 1/2" flat washers between each housing side panels and brace tubes to space the tubes away from housing.
6. Tighten the 5/8" hex nuts installed in steps 3 and 4 above against the ends of the mounting tubes on top the brace frame weldment. NOTE: The brace tubes should be in slight tension.
7. Fasten the two transition panels (left and right hand) to two holes in the bend section side panels, as shown below, using 3/8" x 1-1/4" bolts with lockwashers and hex nuts.



**CONVEYOR HOUSING - CONT.**

8. Connect the discharge housing assembly to the incline housing weldment using fourteen 3/8" x 1" bolts and nylon locknuts.

9. Fasten the rubber pulley wiper and wiper mount bracket to the cross bar welded across the inside of the discharge housing weldment. Use four 1/4" x 1" bolts with flat washers, lock washers and non-lock nuts.



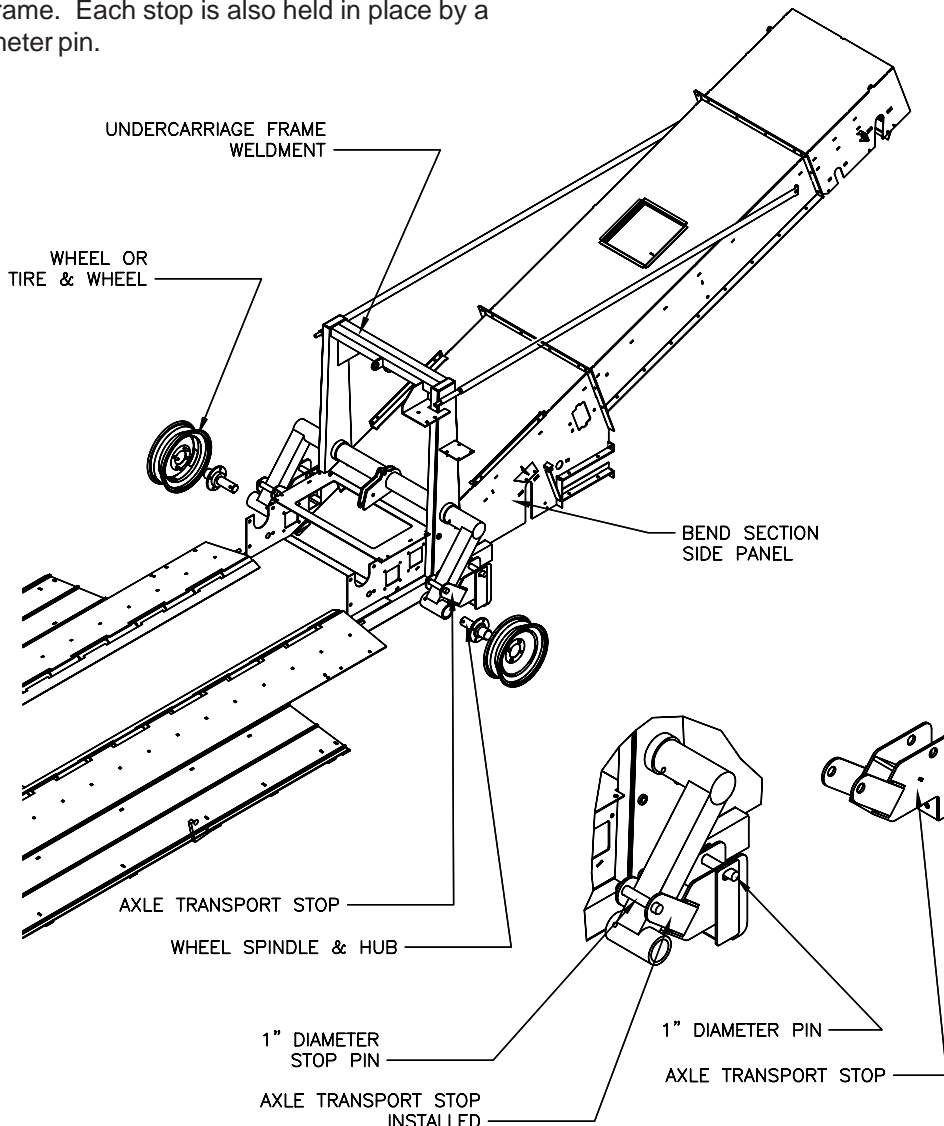
## CONVEYOR UNDERCARRIAGE

NOTE: Whenever reference is made to right or left side on conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

1. The undercarriage frame weldment was previously installed.
2. Install an axle transport stop on each side of the conveyor main frame. The 3" square tube of the undercarriage frame will rest between the two 1/4" thick plates on the axle transport stop.

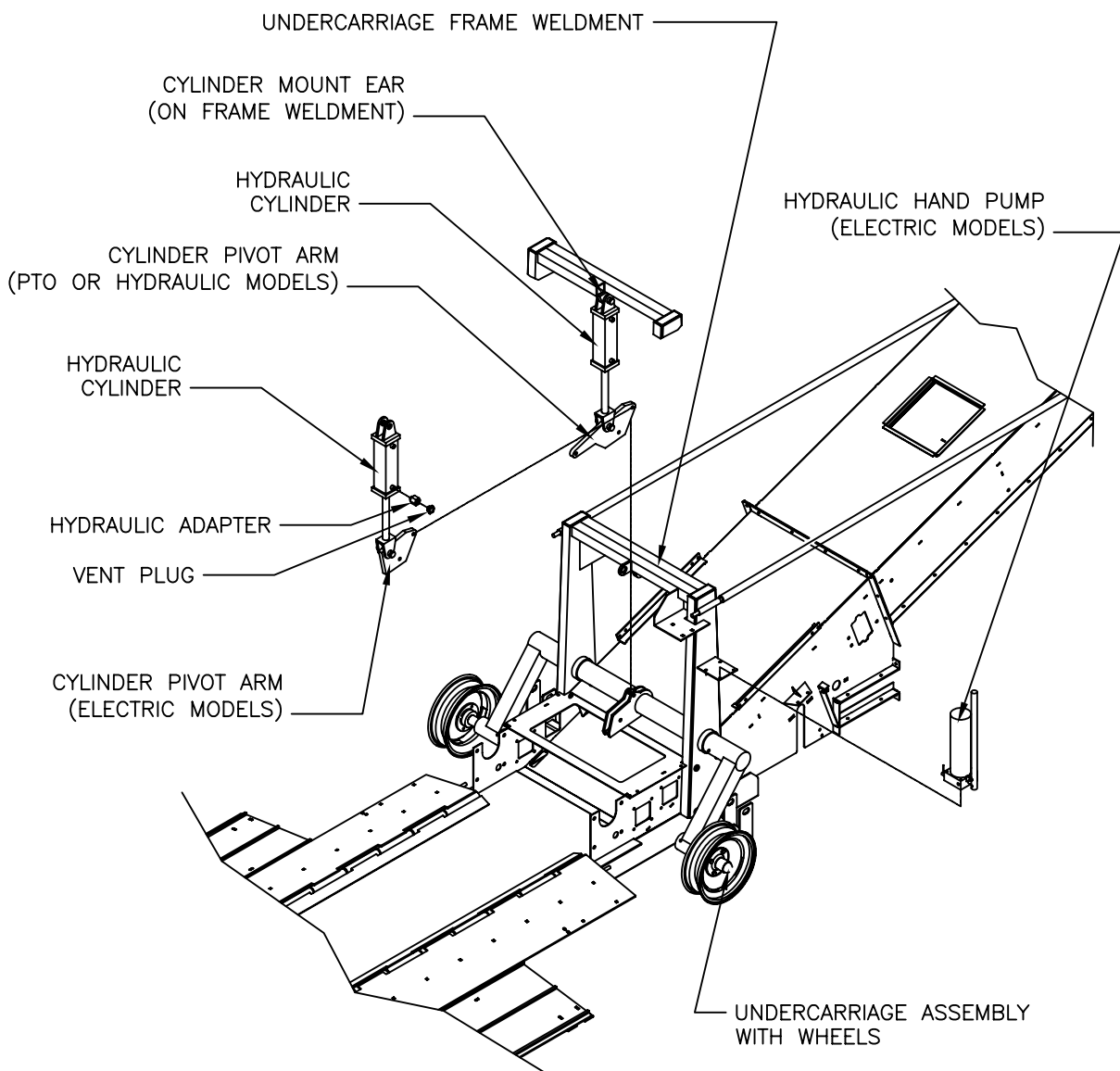
Use 1/2" x 3" long bolts and nylon locknuts to fasten the stops to the 2" x 3" tubing outriggers of the main frame. Each stop is also held in place by a 1" diameter pin.

3. Insert axle spindles into the axle sleeve tubes of the undercarriage frame. Align the holes in the spindles with the holes in the sleeve tubes and secure in place with two 1/2" x 4-1/2" bolts and nylon locknuts.
4. Secure tires and rims to spindle hubs with five lug nuts each.



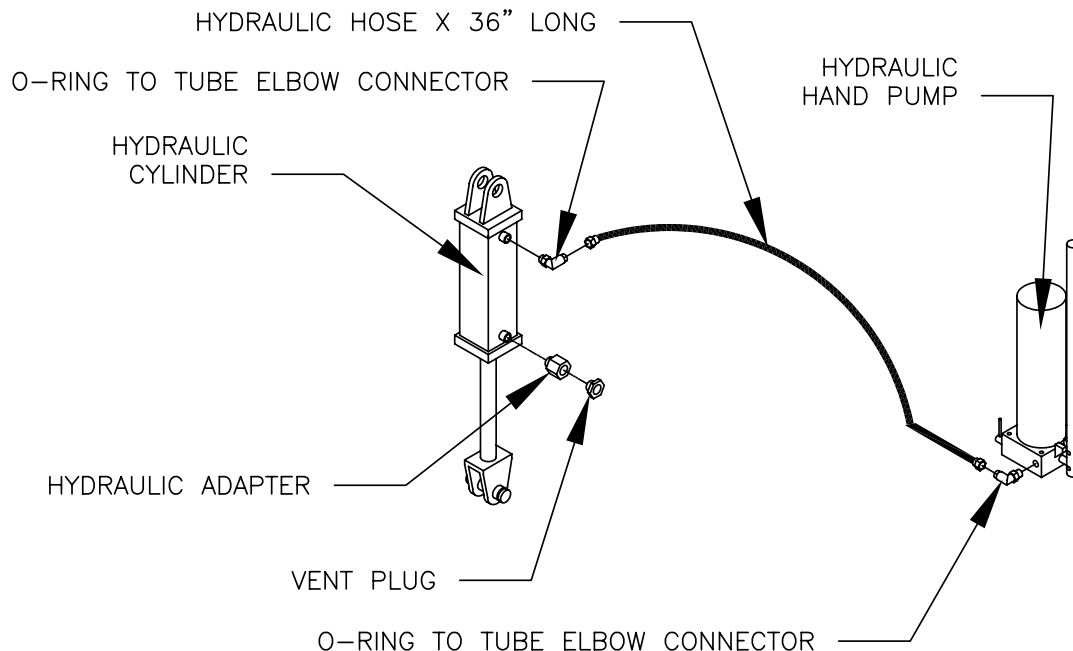
**CONVEYOR UNDERCARRIAGE -  
CONT.**

5. Install the cylinder pivot arm between the two plates which are centered on the axle tube. Fasten with a 1/2" x 2-1/2" bolt and locknut.
6. For electric drive models, mount the hydraulic hand pump to the mounting plate on the right hand side of the undercarriage frame weldment. Use four 1/4" x 2" bolts with nuts & lockwashers. The inside two bolts will also each require a flatwasher.
7. Using the cylinder pins provided with the cylinder, connect the cylinder between the cylinder pivot arm and the cylinder mounting ear that is located under the top frame members of the undercarriage frame. Mount so cylinder rod extends downward.



## CONVEYOR UNDERCARRIAGE - CONT.

8. NOTE: On hydraulic and PTO drive models and electric models with the optional hydraulic power unit, the cylinder will be used as a double acting cylinder (i.e. powered to both extend and retract). On electric drive models, the cylinder will be used as a single acting cylinder (i.e. powered to extend only). On hydraulic and PTO models and electric models with the optional hydraulic power unit, the retracting cylinder will be used to raise the hopper panels of the drive over section. On electric models, these panels will be raised with a hand winch.
9. For PTO drive models, connect a hydraulic supply hose to the top and bottom SAE 8 ports on the cylinder. (These hoses are not provided.)
10. On Electric models without hydraulic power unit option only. (For electric models equipped with the hydraulic power unit option for lifting the hopper panels, refer to supplemental instruction sheet Part No. 1037417. Remove the plug fitting from the rod end cylinder port and replace it with the SAE 7 male o-ring to 1/2" female pipe adapter.
11. On Electric models only:  
Install the 1/2" pipe cylinder breather plug into the adapter fitting.
12. On Electric models only:  
Plumb between hydraulic hand pump and hydraulic cylinder, as shown.



**\*Diagram for electric drive models without  
the optional hydraulic power unit.**

# ASSEMBLY INSTRUCTIONS

## BELT HOLD DOWN WHEELS & SEALS

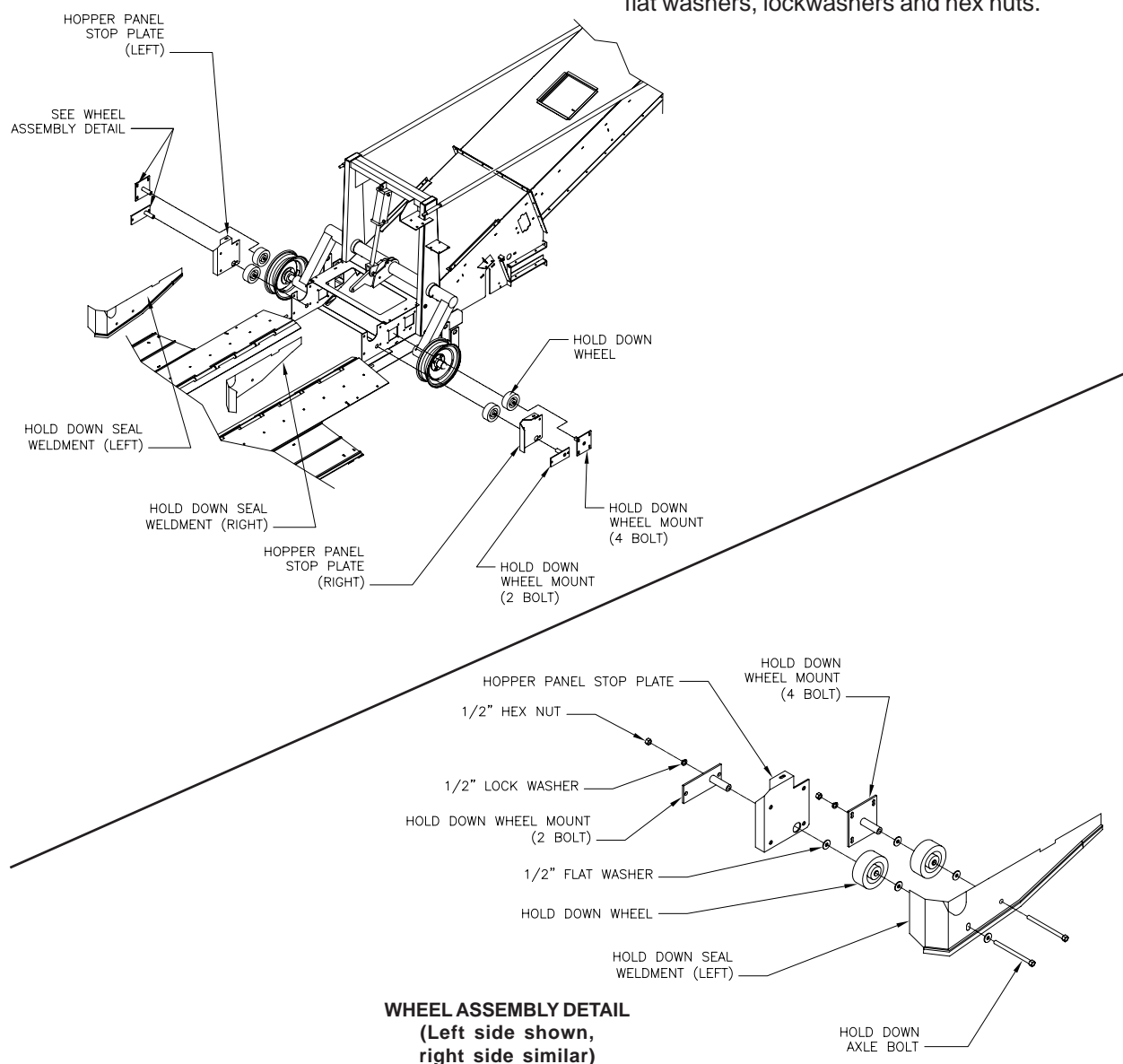
NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

1. Slide the right hand and left hand hold down seal weldments inside the housing of the bend section.
2. Bolt the right and left hand hopper panel stop plates to the side panels of the conveyor bend section, as shown, using eight 1/2" x 1-1/2" bolts and locknuts. NOTE: The bottom two holes are also used for the wheel mount installed in step 4 to follow.

3. Referring to the wheel assembly detail, position two of the 5" diameter hold down wheels between the hold down seal weldment and the side panel of the bend section housing.

4. Position a hold down wheel mount against the outside of the bend section side panel, so that the tube of the mount extends into the conveyor housing. Assemble each wheel to each mount and the hold down seal weldment using a 1/2" x 7-1/2" long bolt with two flat washers, one lockwasher and one hex nut. The two bolt wheel mount bolts also get a flat washer to cover the slot in the hold down seal panel. There should be one flat washer on each side of the wheel. The two bolt wheel mount attaches to the bottom of the two hopper panel stop plates installed in step 2.

5. Fasten each four bolt hold down wheel mount to the conveyor side panel using 3/8" x 1-1/4" bolts with flat washers, lockwashers and hex nuts.

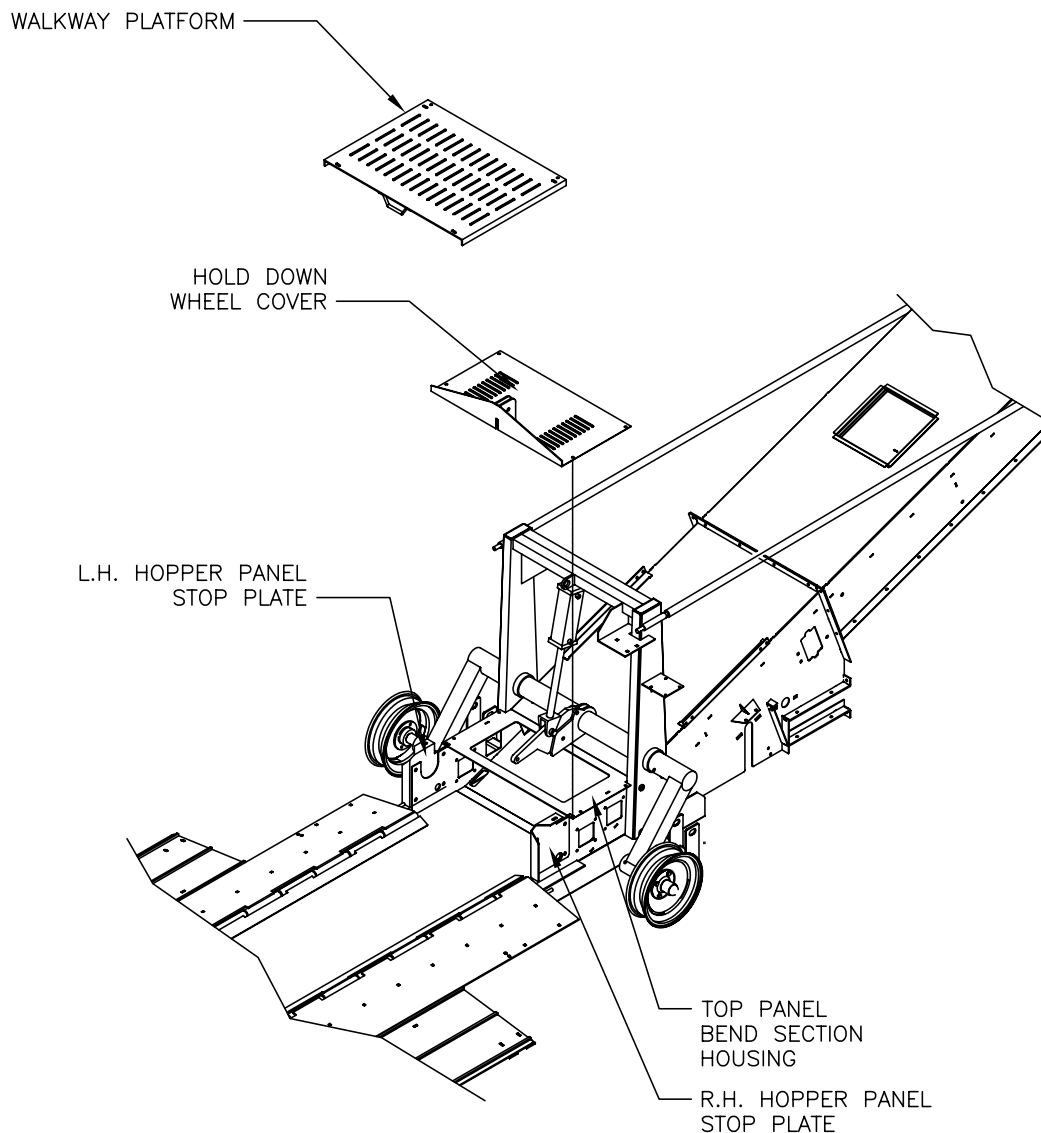




## HOLD DOWN WHEEL COVER PANEL, WALKWAY PLATFORM & HANDRAIL

NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

1. Fasten the hold down wheel cover panel to the top panel of the bend section housing using four  $\frac{3}{8}$ " x 1" bolts and nylon locknuts.
2. Fasten the walkway platform to the top of the hopper panel stop plates using two  $\frac{3}{8}$ " x 1- $\frac{1}{4}$ " long bolts, flat washers and nylon locknuts.



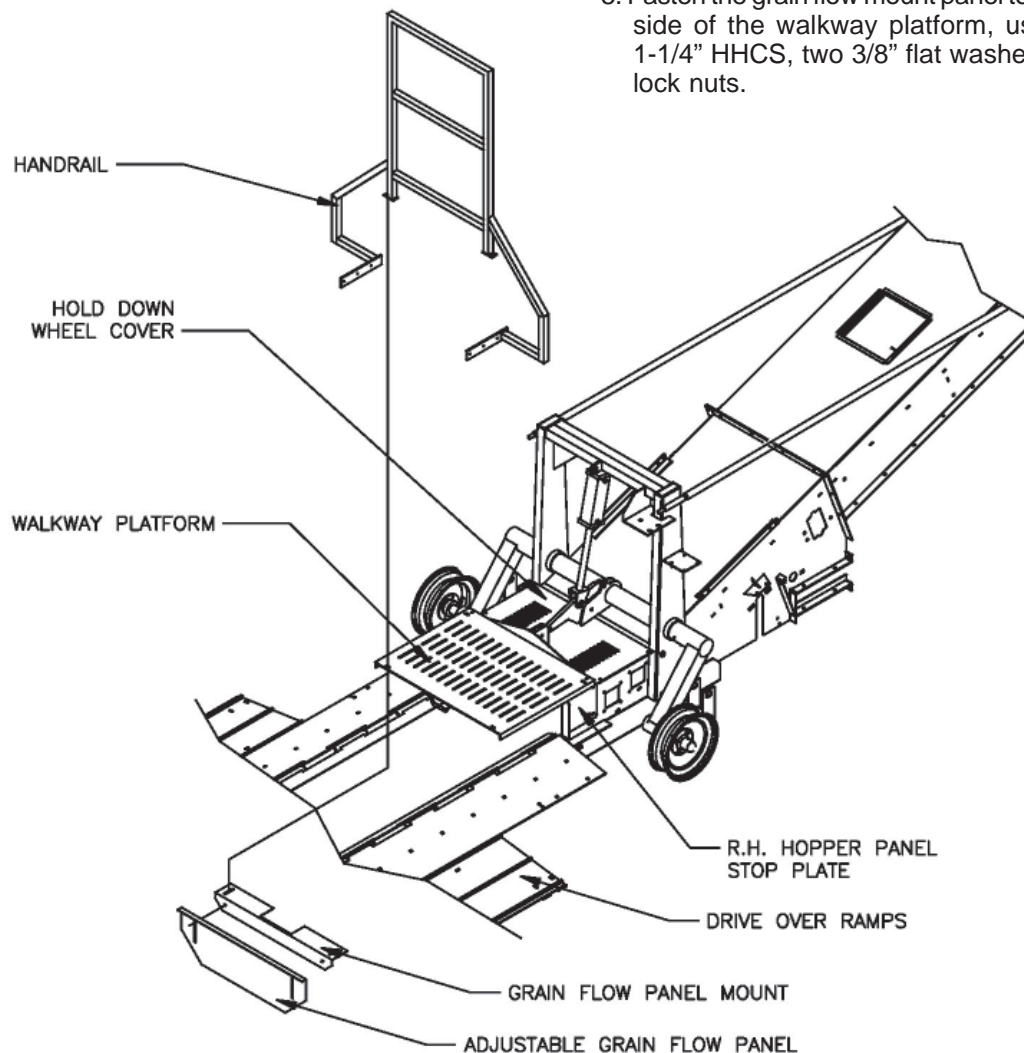
# ASSEMBLY INSTRUCTIONS

## HOLD DOWN WHEEL COVER PANEL, WALKWAY PLATFORM & HANDRAIL - CONT.

3. Fasten the handrail weldment to the slots in the walkway platform with two 3/8" x 1-1/4" bolts, nylon locknuts and flat washers.

4. Fasten the handrail weldment to the two 3/8" bolts that extend to the outside of the main frame rail tubing. There are three holes in each of the lower handrail mounting bars. Use the holes closest to the handrail tubing. Secure with four 3/8" nylon locknuts.

5. Fasten the grain flow mount panel to the underneath side of the walkway platform, using two 3/8" x 1-1/4" HHCS, two 3/8" flat washers and two 3/8" lock nuts.



6. Fasten the adjustable grain flow panel to the mount panel, using two 3/8" x 1" carriage bolts, two 3/8" flat washers, two 3/8" lockwashers and two 3/8" non-lock nuts.

## CONVEYOR BELT

REFER TO ASSEMBLY DRAWING ON PAGE 26.

NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

1. Move the roll of conveyor belting to the inlet end of the conveyor. Put a round bar through the wooden hub inside the belt and set each end of the rod on a saw horse or other support so that the roll of belting is free to rotate. Make sure the roll is arranged so that as it is unrolled and the end pulled through the conveyor housing, that the side of the belt with crescent shaped cleats (rough side) will be up and the smooth side will be down against the conveyor. Also, the crescent cleats should be cupped away from the inlet end of the conveyor.
2. Remove the nylon covered connecting pin from the exposed splice end of the belt roll.

NOTE: You may discard the two retaining washers when removing the pin, as they will not be used.

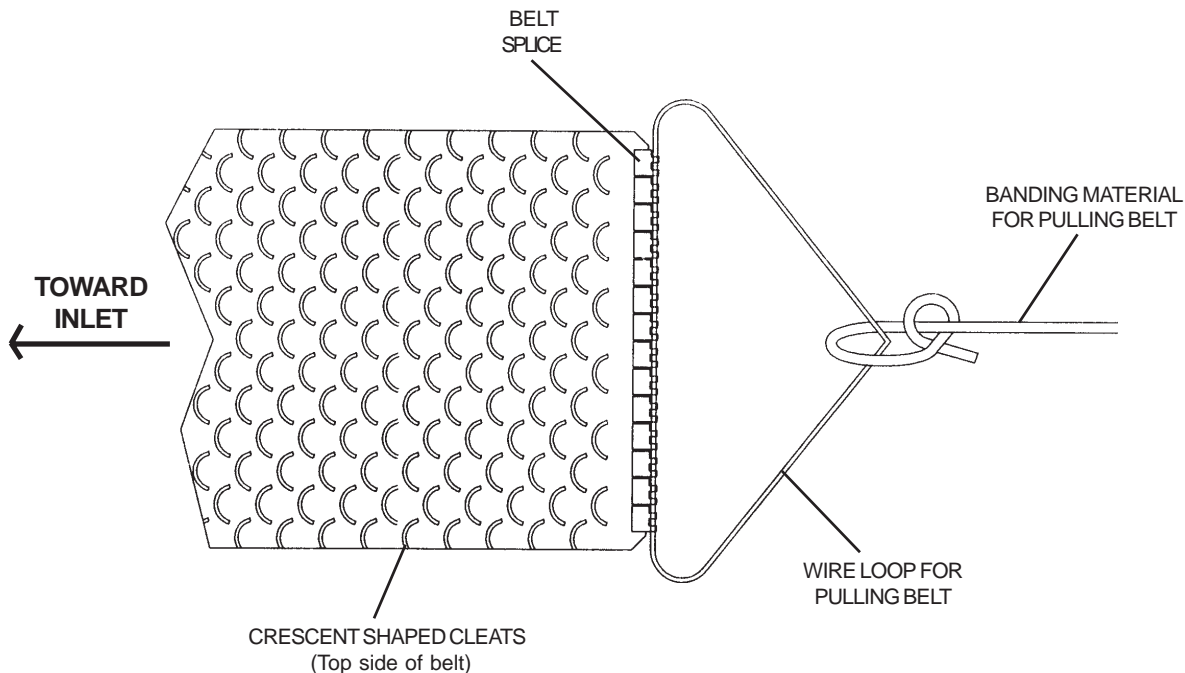
3. Run a piece of straight wire at least 45" long through the loops of the exposed splice end of the belt. Tie the wire ends together to form an attachment loop for pulling the belt through the conveyor housing.

4. Run a length of banding material or similar object through the belt conveyor housing and tie it to the wire loop created in Step 3 above.

NOTE: The banding material should be slightly longer than the assembled conveyor length.

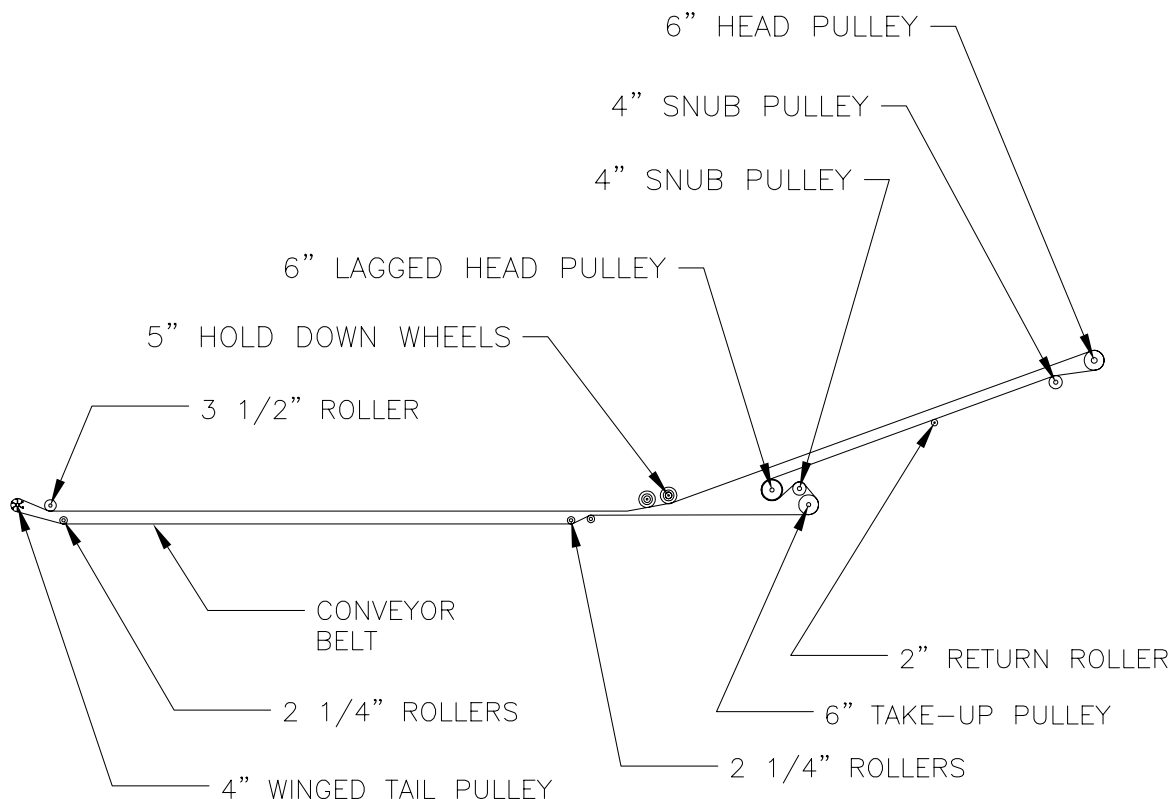
5. Pull the belt through the conveyor housing from inlet end to discharge end. Assure belt arranged as specified in Step 1 above. Pull approximately 35 feet of belt past the discharge end. This will allow the belt to be spliced near the inlet end.

NOTE: The belt should pass underneath the four 5" diameter hold down wheels.



**CONVEYOR BELT - CONT.**

6. Remove the banding material used to pull the belt.
7. Route the belt around the 6" head pulley and over the top side of the 4" snub pulley that is just under and behind the head pulley. NOTE: Make certain belt passes between rubber pulley wiper and head pulley. Continue to route the belt over the 2" return roller and over the 6" lagged drive pulley.
8. Wrap belt completely around drive pulley and over and around the 4" snub pulley and 6" take-up pulley.
9. Route the belt over and under the 2-1/4" diameter rollers on the underneath side of the frame. NOTE: There are two bottom plates on the underneath side of the conveyor frame that the belt **MUST** go on top of.
10. Insert the end of the belt under the tail pulley and wrap it around the tail pulley. Now pull the end over the top of the tail pulley, under the 3-1/2" roller and out onto the flat loading surface of the inlet frame.
11. Inspect that path of the belt once again to make certain it matches the following diagram.

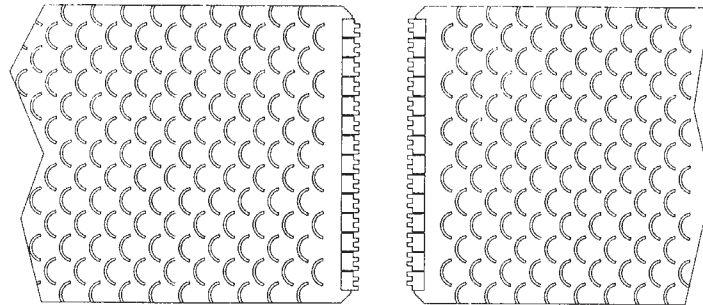


## CONVEYOR BELT - CONT.

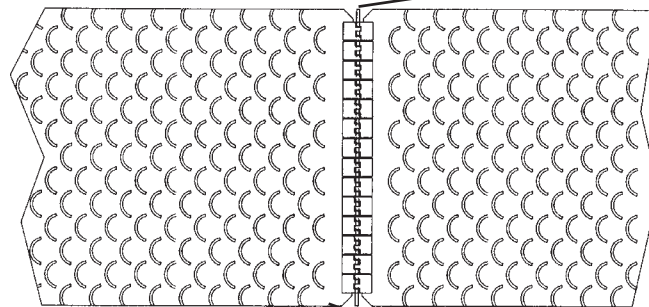
12. Pull the two ends of each belt together so that the splice bars interlock and insert the nylon covered pin (removed from the belt in Step 2) through the splice. Make certain the belt edges are aligned with each other. If not, the splice was probably connected improperly. It may be necessary to provide additional slack in the belt to get the ends to come together. If so, turn the take-up bolts to move the take-up pulley closer to the drive pulley.

NOTE: Although two pin retaining washers may have been supplied with the splice pin, experience has shown that it is best to just discard them. The hinge pin will seat into the hinge after a short period of operation. To assure the pin stays in place until seated, using a punch, smash one of the lace hinge loops located in the center of the splice. This leaves the ends of the pin free to work inside the splice as it flexes going in and out of the conveyor housing. The splice should be monitored during the first few hours of conveyor operation to assure that the pin hasn't started to work out of the splice.

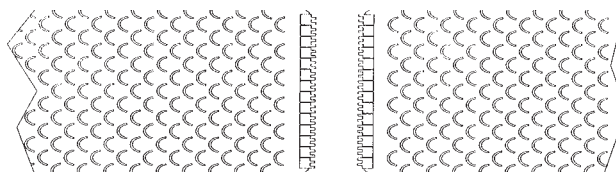
Pull Ends Together



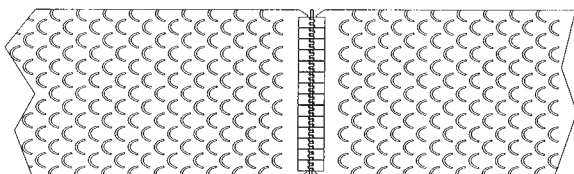
### CONNECTED BELT



Nylon covered splice pin



Make certain belt edges are aligned.



13. Tighten the conveyor belt by adjusting the take-up bolts on the take-up pulley bearings. For now, the take-up adjustment should be equal on both the right and left sides.

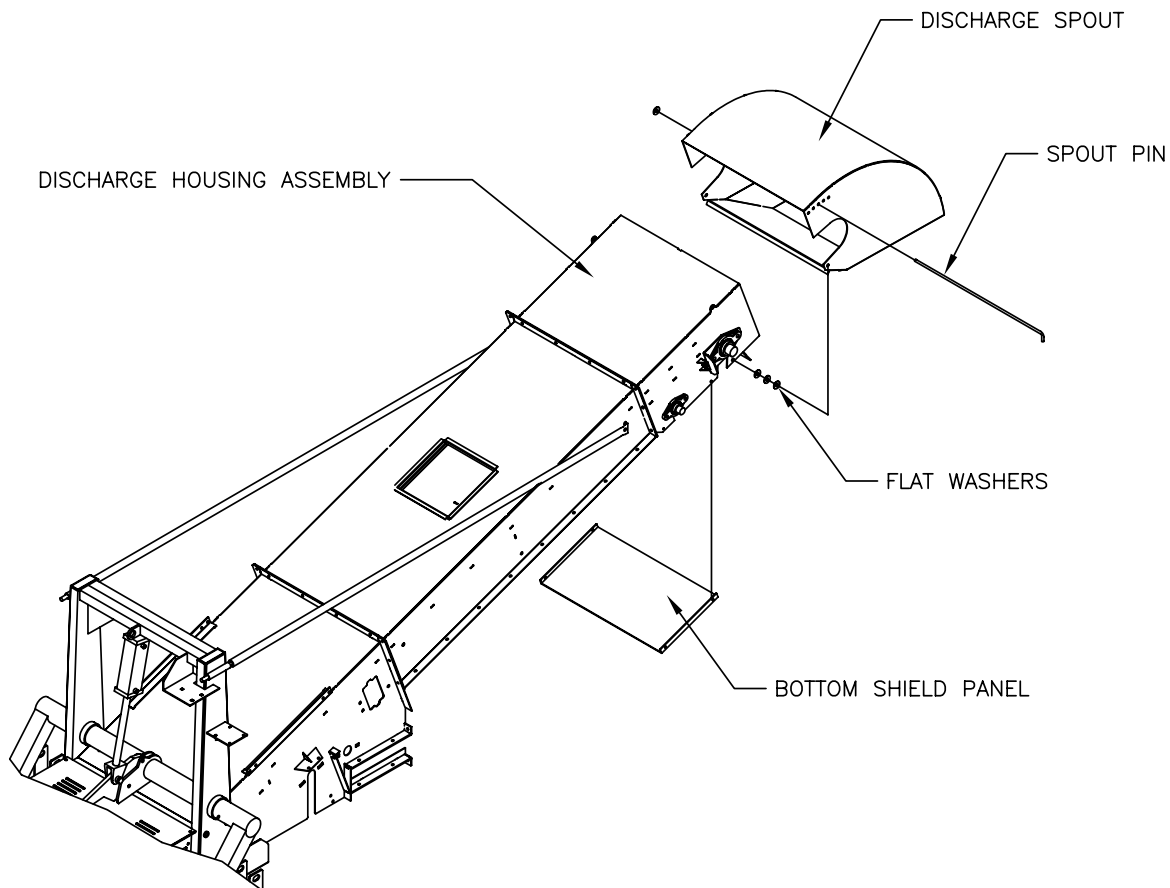
**DISCHARGE SPOUT**

NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

1. Bolt the discharge spout to the side panels of the discharge housing with two  $\frac{3}{8}$ " x  $1\frac{1}{4}$ " bolts and nylon locknuts. NOTE: Place three  $\frac{3}{8}$ " flat washers between each side of the spout and the side of the housing to serve as spacers.

2. Swing the spout about the bolts just installed until one of the five holes in the top of the spout side panel aligns with the hole in the side panel tab and insert the spout pin through the holes on both sides of the spout. Install a  $\frac{3}{8}$ " flat washer and  $\frac{3}{32}$ " x  $1\frac{1}{4}$ " cotter pin in the end of the spout pin to secure it in place.

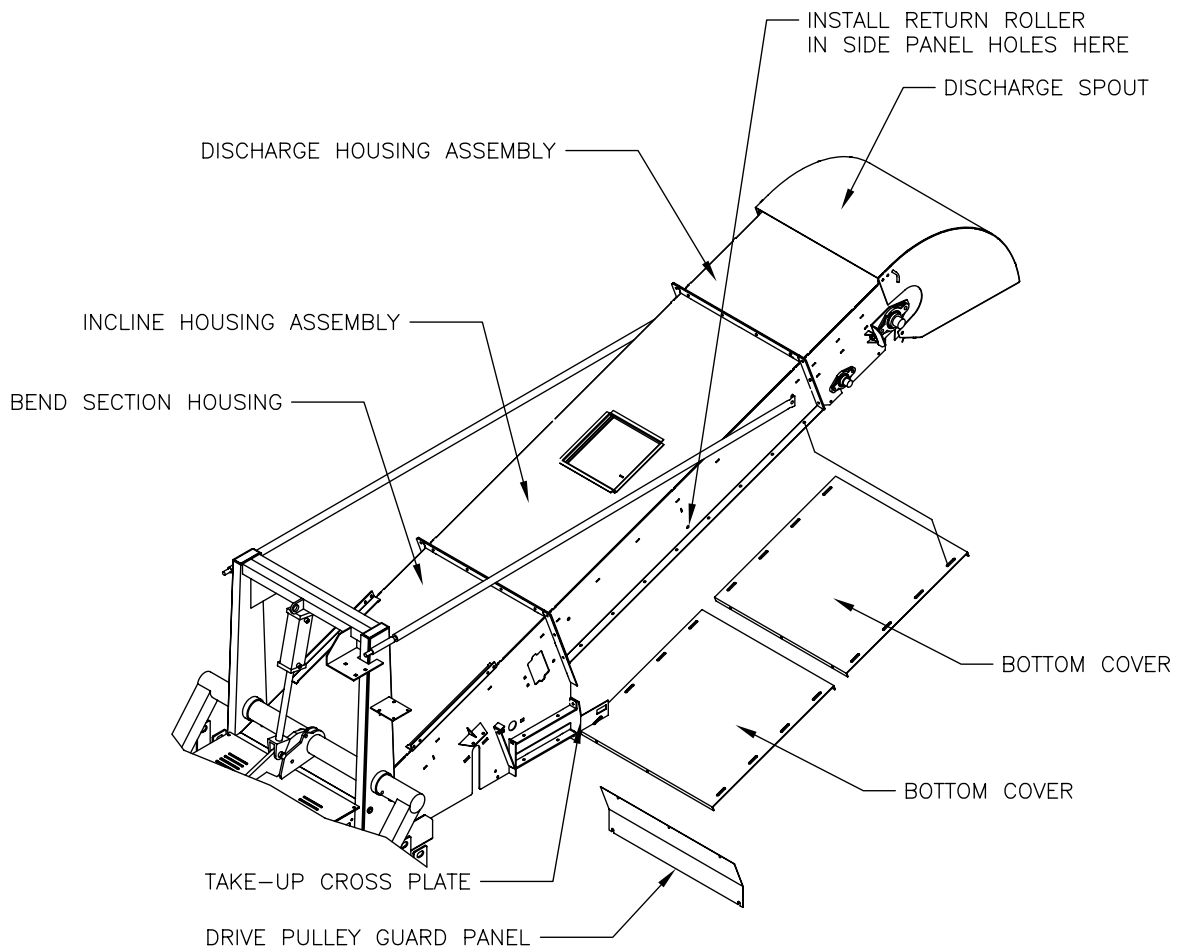
NOTE: The spout angle can be changed by relocating the pin in a different pair of holes in the spout.



## BOTTOM COVER PANELS

NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

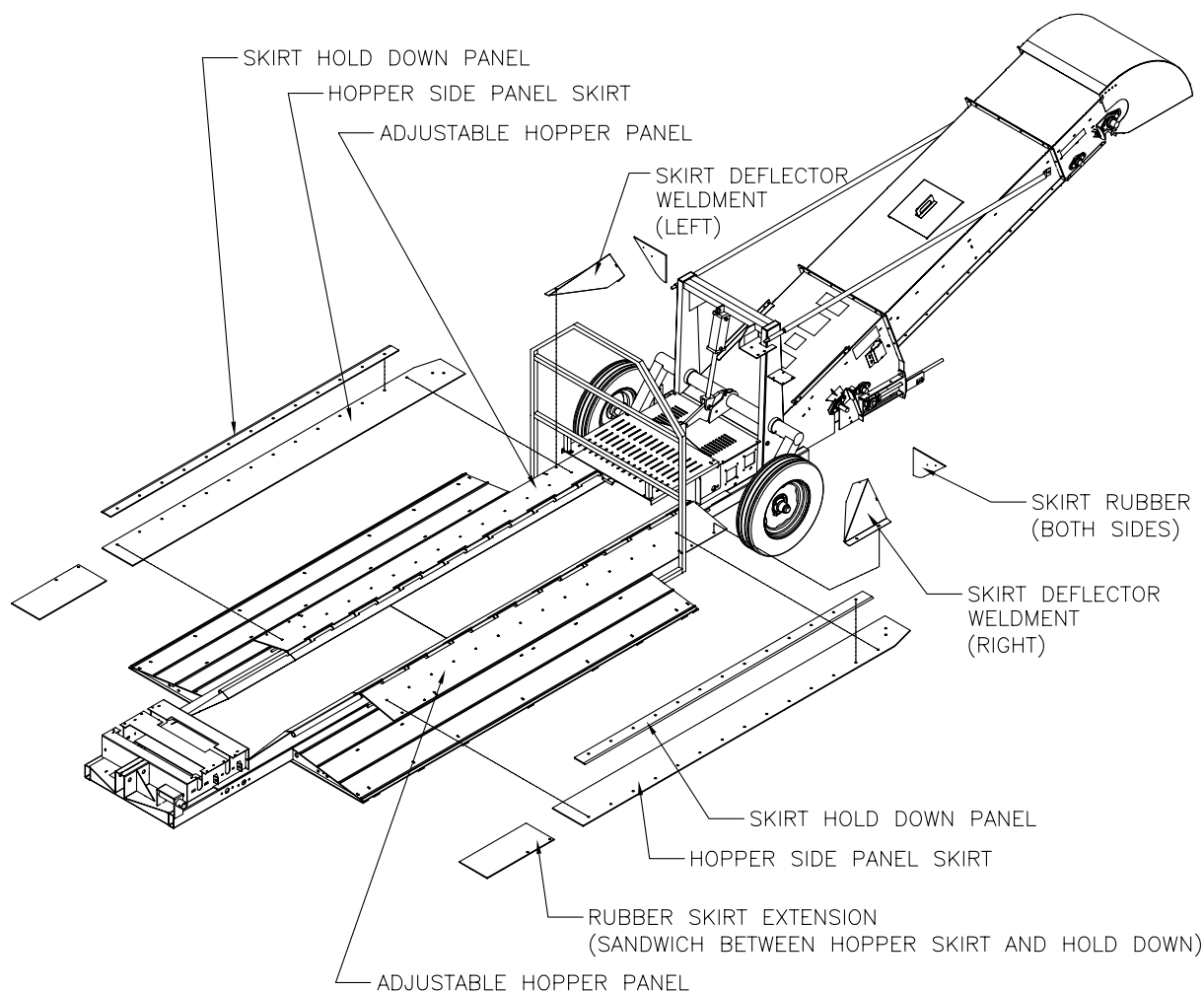
1. Install the 2" O.D. return roller (w/hex shaft ends) into the hex holes in the incline section side panels.
2. Fasten the two bottom cover panels to the underneath side of the incline section housing using sixteen 3/8" x 1" bolts, flat washers and nylon locknuts. (Make sure to leave an opening between the two panels, so that the return roller just installed can be removed and replaced in the future.)
3. Bolt the drive pulley guard to the lower bottom cover panel just installed using three 1/4" tinnerman nuts and three 1/4" x 1/2" wing bolts. NOTE: The bottom slots of the pulley cover guard bolt to the top two mounting bolts of the take-up cross plate.



**HOPPER SIDE PANELS & SKIRTS**

NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

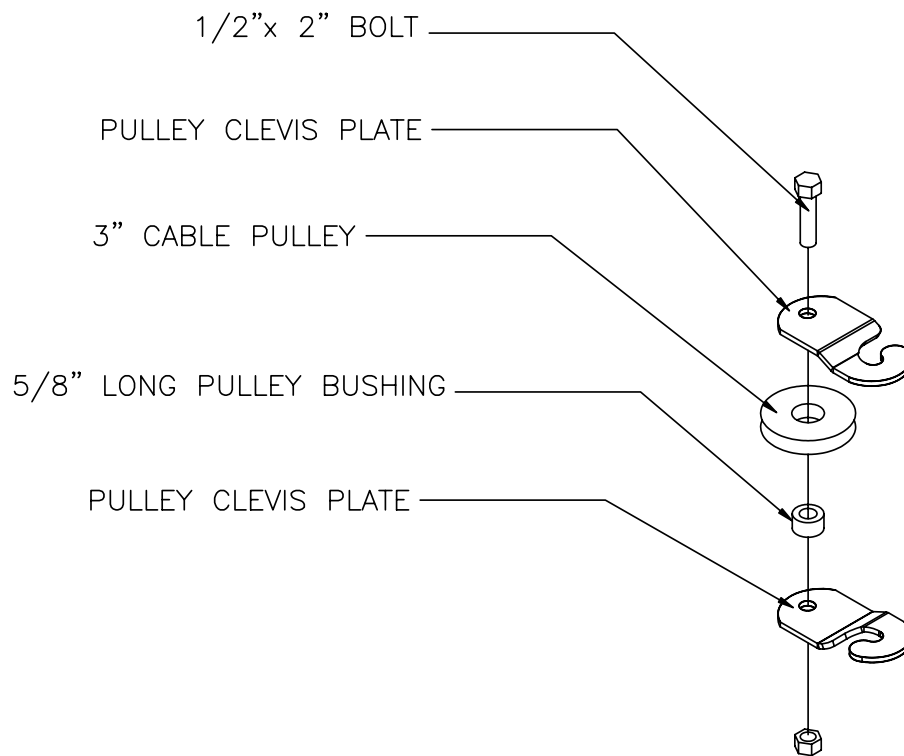
1. Secure a rubber skirt to each of the left and right skirt deflector weldments, using two 1/4" x 3/4" hex head self tapping screws and 1/4" flatwashers on each.
2. Fasten the right hand skirt deflector weldment to the end of the adjustable hopper panel on the right side of the conveyor using two 3/8" x 1-1/4" carriage bolts and nylon locknuts. The deflector mounts to the end of the panel, which is closest to the bend section housing.
3. Repeat step 1 for the left side of the conveyor.
4. Fasten a rubber hopper side panel skirt and hold down panel to the top of each adjustable hopper panel using thirteen 3/8" x 1-1/4" carriage bolts and nylon lock nuts. NOTE: One end of the hopper side panel skirt will fold around onto the skirt deflector weldments. A rubber skirt extension should be sandwiched between the rubber hopper side panel and the hold down panel at the inlet end of the conveyor.
5. Fasten the last hole in each rubber hopper side panel skirt to the hopper panel, using a 3/8" x 1-1/4" bolt with flat washer and locknut. (This will be the hole nearest the skirt deflector weldments.)





## HOPPER LIFT CABLE

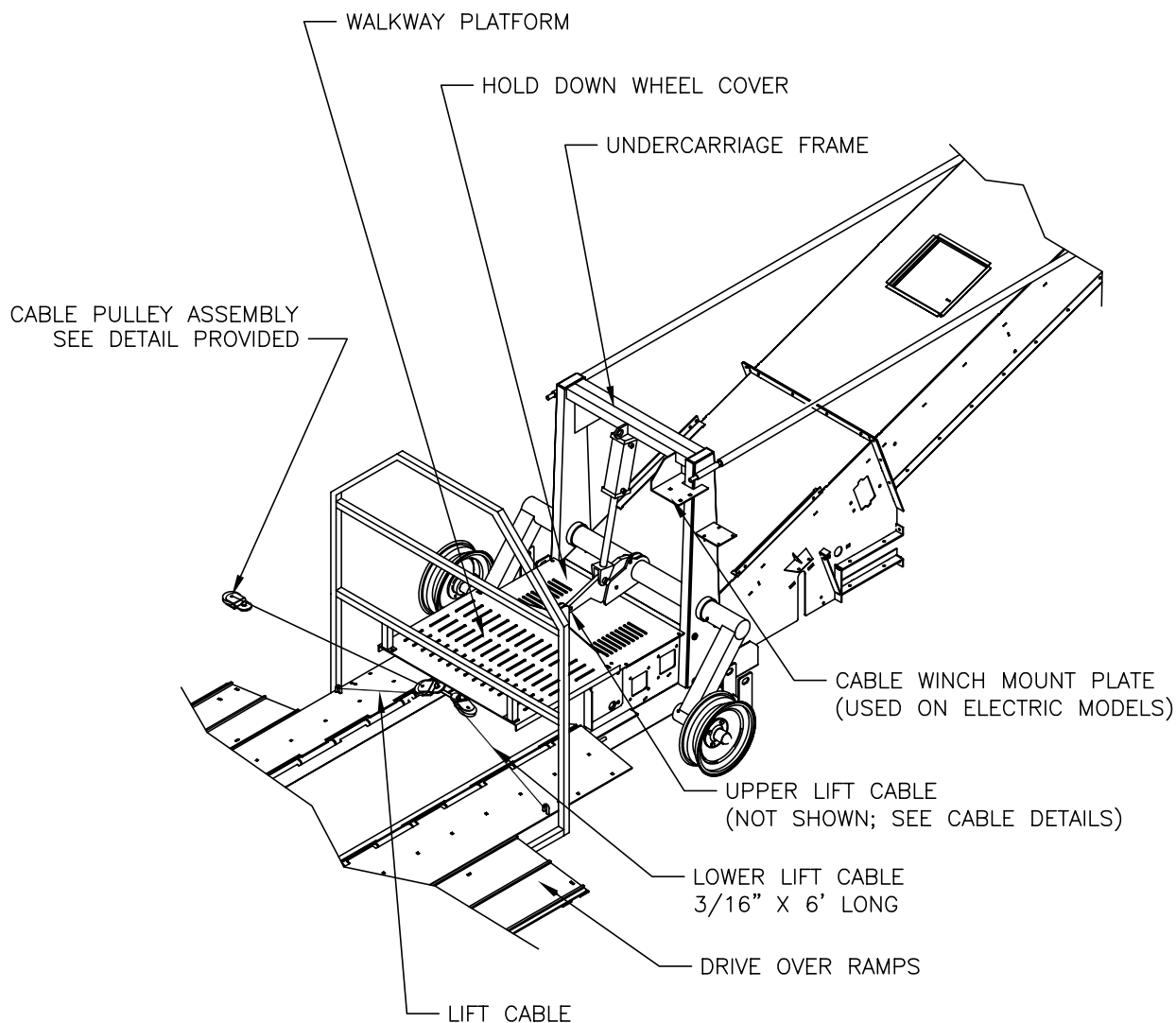
1. On PTO and hydraulic models, assemble two cable pulley assemblies and on electric models, assemble three cable pulley assemblies using the pulley clevis plates, 3" cable pulley, 1" O.D. x 5/8" long bushing and 1/2" x 2" long bolts and nylon lock nuts.
2. Hook two of the cable pulley assemblies to the two 1-1/4" diameter holes in the cable anchor plate that is welded on the underneath side of the walkway platform.
3. Install a 3/8" u-bolt into the two mounting holes located near the ends of the adjustable hopper panels. Use four 3/8" hex nuts on each u-bolt.



# ASSEMBLY INSTRUCTIONS

## HOPPER LIFT CABLE - CONT.

4. Install a 3" cable pulley in the mounting tabs on the hold down wheel cover panel. Use a 1" O.D. x 9/16" long bushing and 1/2" x 2" bolt and nylon lock nut. Install a 3/8" x 1-3/4" long bolt and locknut in the hole directly below the cable pulley. This will serve as a cable guide.
5. On electric models, install the third cable pulley assembly from Step 1 to the attachment tab on the top of the undercarriage frame.
6. On electric drive models, bolt cable winch to mounting plate on the undercarriage frame weldment using three 3/8" x 1" long carriage bolts and nylon locknuts.
7. Thread the ends of one of the 3/16" x 6' cables through the two 3" cable pulleys located underneath the walkway platforms and secure the ends to the 3/8" u-bolts that were installed in the ends of the adjustable hopper panels. Use one 3/16" cable clamp on each end. Leave clamps loose at this time, so excess cable length can be taken up here after upper lift cable has been installed.

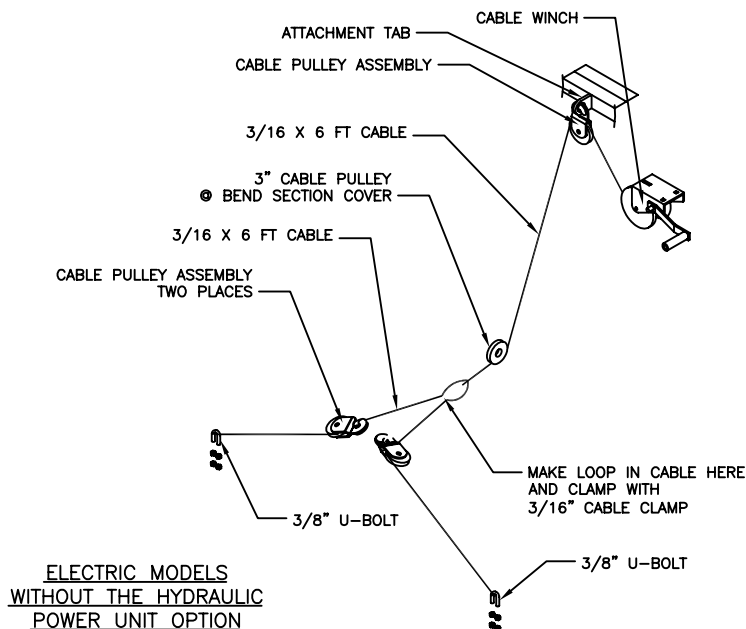
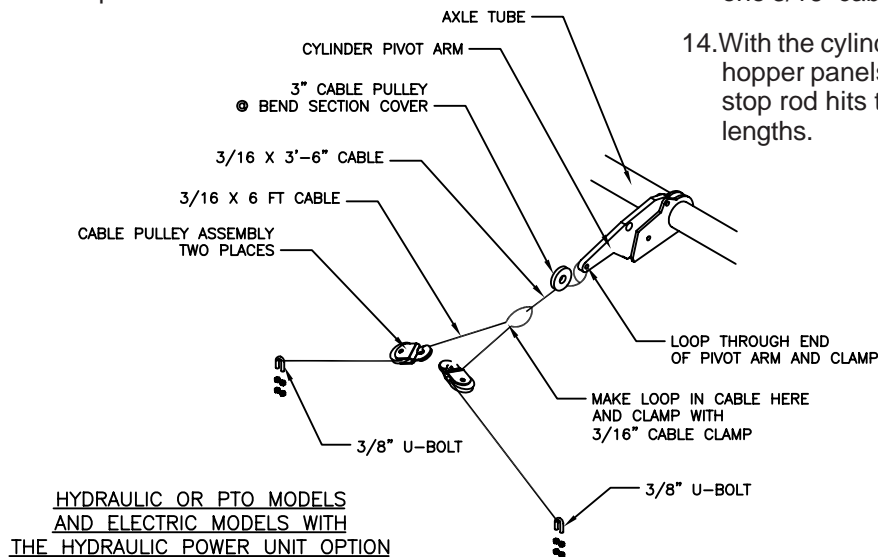


## HOPPER LIFT CABLE - CONT.

8. On electric and hydraulic models, form a loop at the middle of this cable and install another 3/16" cable clamp to secure the loop.
9. On electric drive models without the hydraulic power unit option, wrap one end of the other 3/16" x 6' cable through the loop created in the first cable and secure its end with one 3/16" cable clamp.
10. Route the other end of this cable up and around the 3" cable pulley that was mounted to the undercarriage frame weldment. Attach the end of the cable to the drum of the winch using the cable keeper provided. Adjust ends of first cable installed and tighten cable clamps.

11. On electric drive models without the hydraulic power unit option, wrap the cable onto the drum to lift the hopper side panels. NOTE: There is a rod welded to the ends of the hopper panels which serves as a stop to prevent the panels from being raised too far.
12. On hydraulic or PTO drive models and electric drive models with the hydraulic power unit option, wrap one end of a 3/16" x 3'-6" cable through the loop created in the first cable (Step 8) and secure its end with one 3/16" cable clamp.
13. Insert the other end of this cable through the counter bored hole in the end of the cylinder pivot arm and secure the end to the cable with one 3/16" cable clamp.

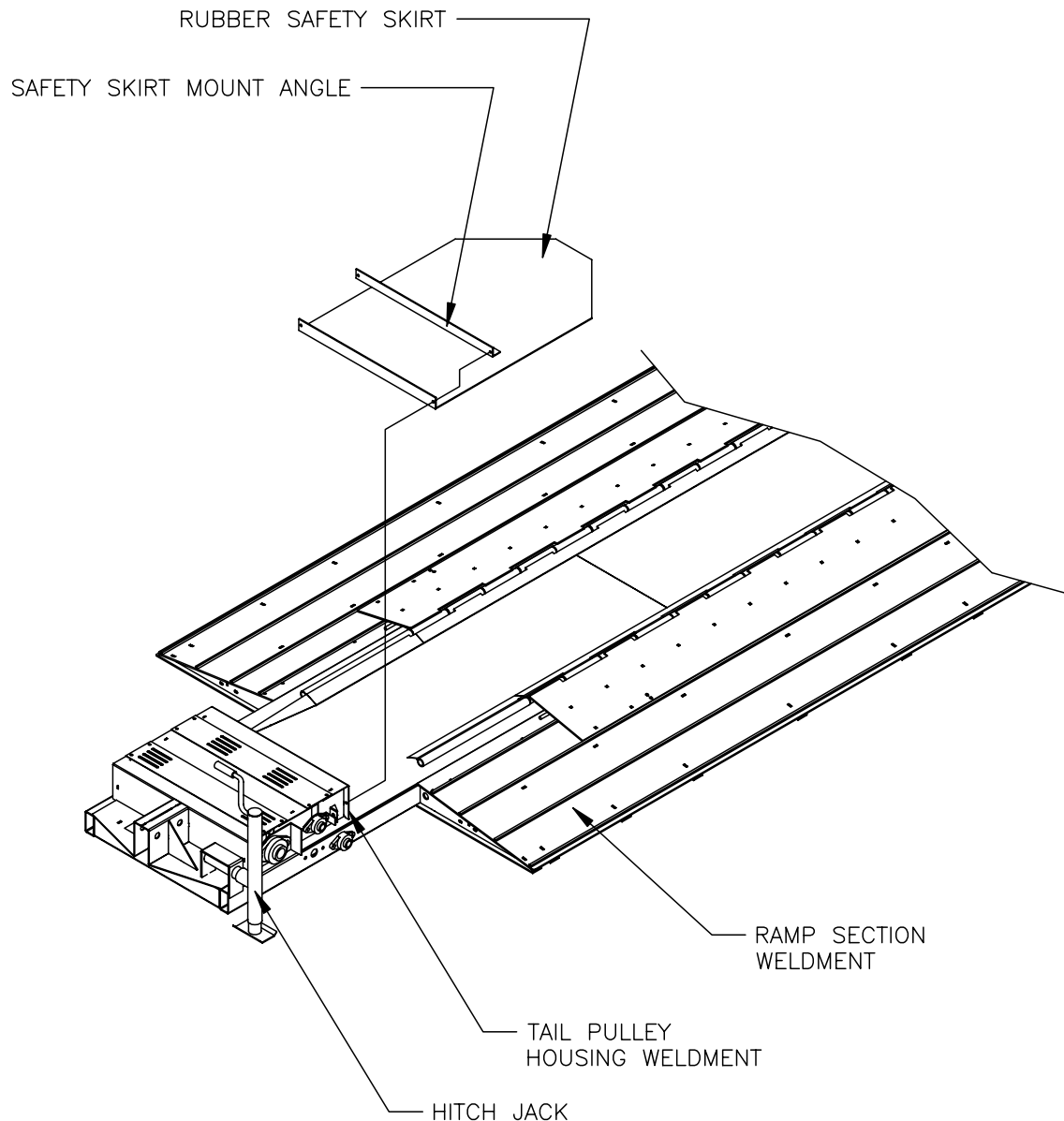
14. With the cylinder completely retracted and the hopper panels completely raised to where the stop rod hits the stop plates, adjust the cable lengths.



**BELT SAFETY SKIRT**

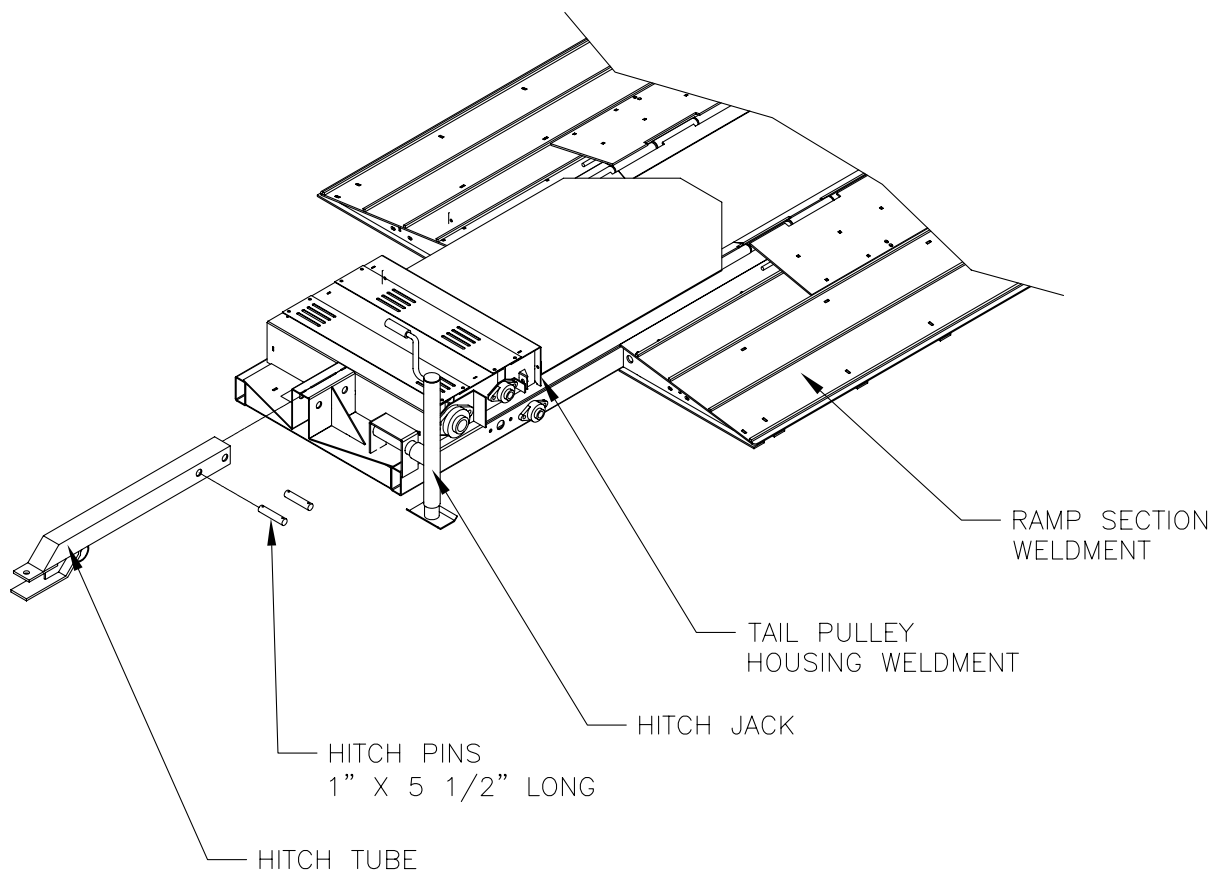
NOTE: Although the safety skirt rubber is installed on top the conveyor belt near the inlet end of the conveyor, it should not be used as a walk across device.

1. Align the two holes of the rubber safety skirt with the holes in the tail pulley housing and secure in place using the skirt mount angle and two 3/8" x 1" bolts and nylon locknuts.



## CONVEYOR HITCH

1. Slide the hitch tube in between the mounting plates on the tail pulley housing. Align holes in tube with holes in plates and insert the two 1" diameter x 5 1/2" long hitch pins. Install a #6 x 3 1/4" long hair pin clip through the hole in each end of the pins.



# ASSEMBLY INSTRUCTIONS

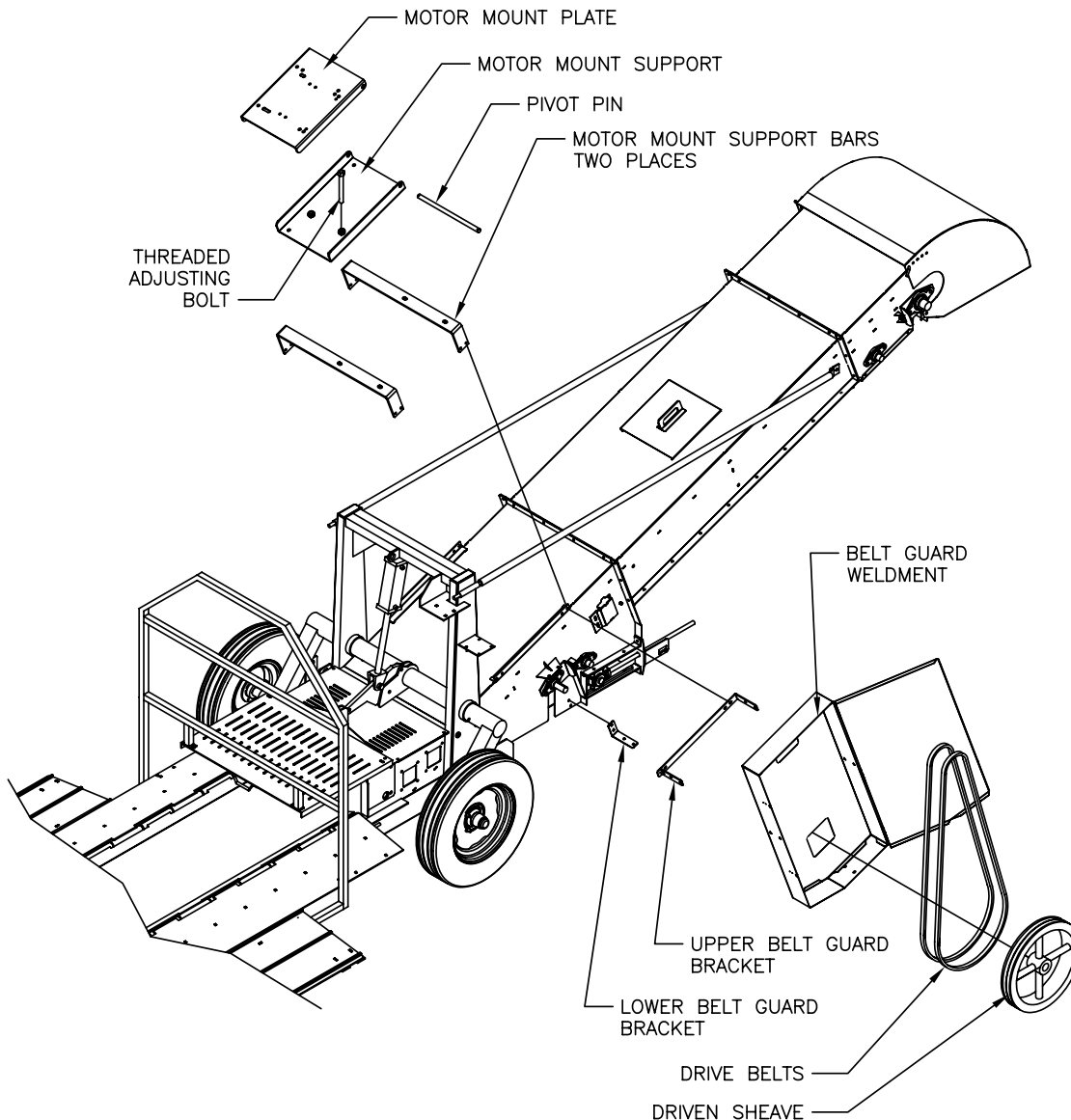
## ELECTRIC MOTOR DRIVE

NOTE: If the conveyor is equipped with the optional hydraulic power unit for lifting the hopper panels, also refer to supplemental instruction sheet Part No. 1037417 for additional assembly instructions.

NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

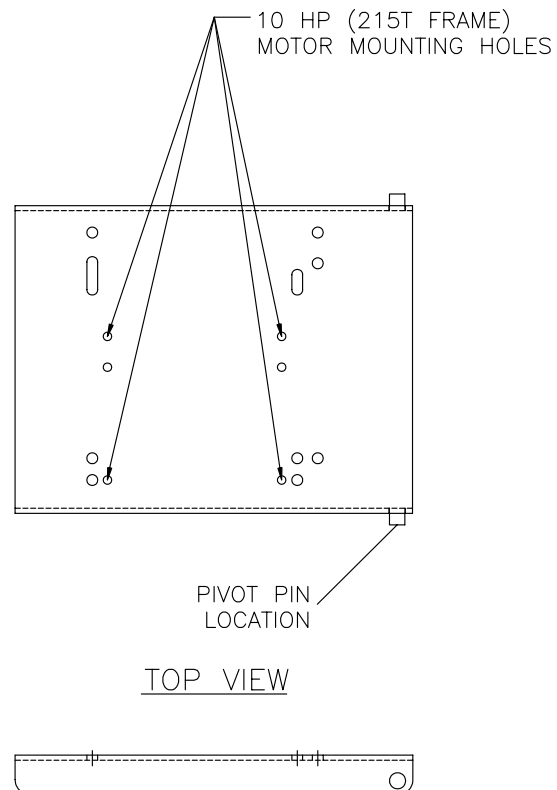
NOTE: Electric motor and motor sheave are not furnished.

1. Mount the two motor mount support bars to the mounting bars welded to the top of the inclined conveyor housing. NOTE: The slots in the top of the bars should be closest to the right side of the conveyor. Mount using eight  $\frac{3}{8}$ " x  $1\frac{1}{2}$ " long bolts and nylon locknuts. NOTE: The upper belt guard bracket mounts with the same four bolts on the right side of the conveyor.



## ELECTRIC MOTOR DRIVE - CONT.

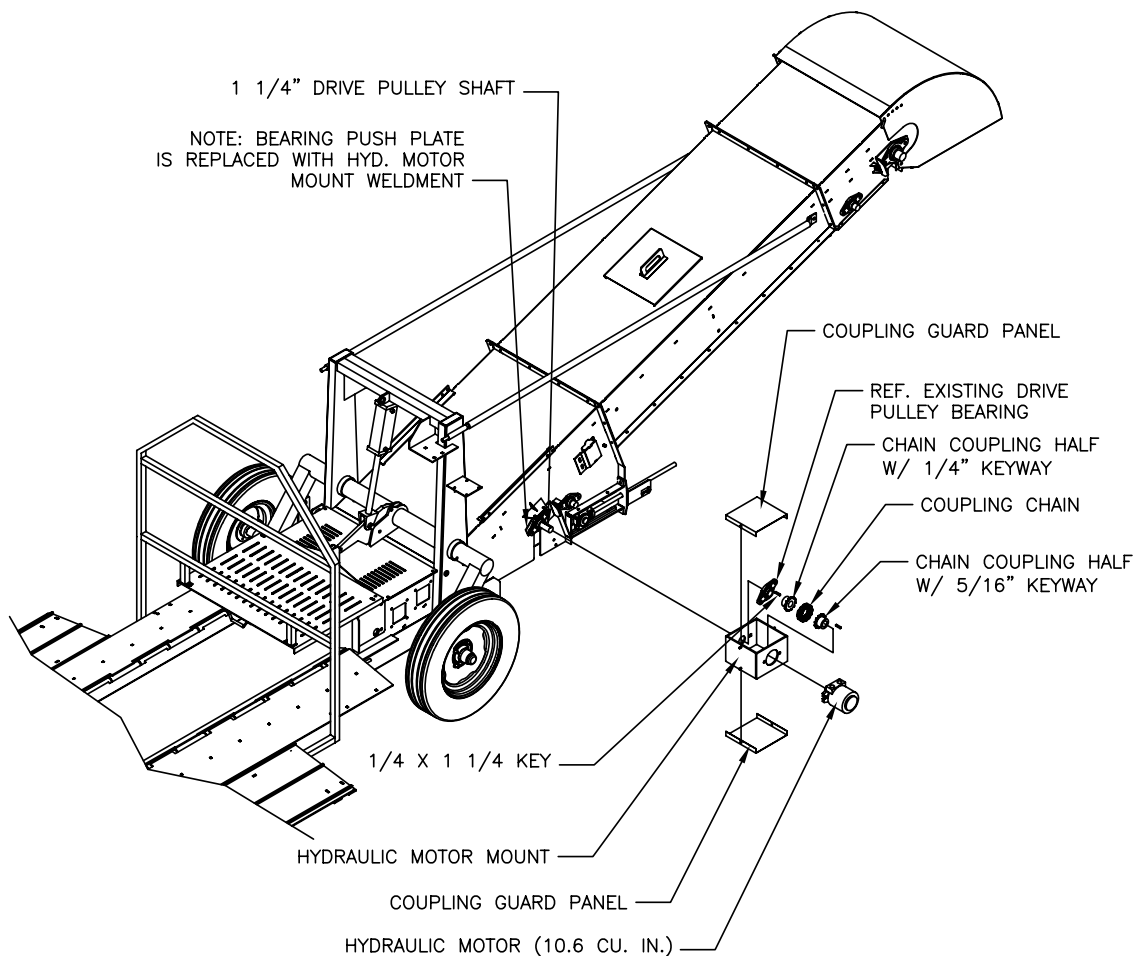
2. Bolt the motor mount support to the motor mount support bars using four 1/2" x 1-1/2" long bolts and nylon locknuts. NOTE: The pivot pin holes should be on the end closest to the discharge.
3. Thread a 3/4" hex nut onto the threaded adjusting bolt approximately five inches.
4. Thread the adjusting bolt down through the nut in the top of the motor mount support until it only extends about three inches above the top of the support (final adjustment will be done after the motor and belts have been installed). NOTE: There are two nuts in the top of the motor mount support. Use the nut closest to the right side of the conveyor.
5. Set the motor mount plate down over the motor mount support and align the pivot shaft holes in each. Install the pivot pin through the holes and install a 3/16" x 1-1/2" long cotter pin in each end to secure it in place.
6. Install the lower belt guard bracket to the right side panel of the conveyor bend section using two 5/16" x 1" long bolts and nylon locknuts.
7. Install the belt guard weldment to the upper and lower belt guard brackets using six 5/16" x 1" long bolts and nylon locknuts.
8. Install a 1/4" x 3" long square key in the keyway of the pulley shaft.
9. Mount the 18.4" pitch diameter sheave onto the pulley shaft using a tapered lock Q.D. bushing.
10. Install a 10 HP 1750 RPM 60 Hz (1450 RPM 50 Hz), electric motor onto the motor mount plate. NOTE: Motor is not furnished. See detail for correct mounting holes.
11. Install a 5.0" pitch diameter sheave for 60 Hz or a 6.0" pitch diameter sheave for 50 Hz onto the motor shaft. The motor sheave is furnished after 10/31/08.
12. Align the motor sheave with the driven sheave by placing a straight edge across the edges of the sheaves. When aligned, tighten the setscrews to hold sheaves firmly on the shafts.
13. Install drive belts and tighten them by adjusting the threaded adjusting bolt up against the bottom of the motor mount plate. Once belts are tensioned properly, secure the 3/4" hex nut tightly against the nut on the top of the motor mount support.



**HYDRAULIC MOTOR DRIVE**

NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

1. It is possible that the hydraulic motor mount has already been installed on the right side of the conveyor. If so, skip to step 3.
2. Install the hydraulic motor mount to the right side panel of the conveyor incline section. NOTE: The motor mount takes the place of the bearing push plate so the bearing and push plate must first be removed. Use the existing bearing mount bolts to secure the hydraulic motor mount and bearing back onto the conveyor side panel.
3. Install a 1/4" x 1-1/4" key in the end of the drive pulley shaft and slide the chain coupling half with 1/4" keyway over the key.
4. Set the other chain coupling half with 5/16" keyway inside the hydraulic motor mount and insert the shaft of the hydraulic motor through the hole in the mount and into the chain coupler half. Make certain the 5/16" key furnished with the hydraulic motor is in place.
5. Fasten the hydraulic motor to the motor mount using two 1/2" x 1-1/2" long bolts with lockwasher and hex nut.
6. Install the coupling chain around the chain coupler halves and connect the ends together.
7. Tighten setscrews on coupler halves.
8. Install coupling guard panels to top and bottom of hydraulic motor mount.





## OPTIONAL HYDRAULIC CONTROL PACKAGE (For Hydraulic Drive Models)

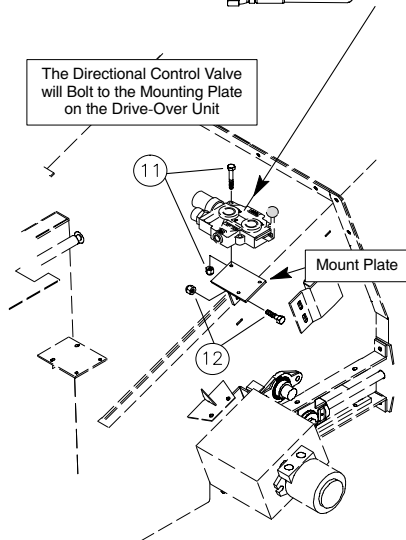
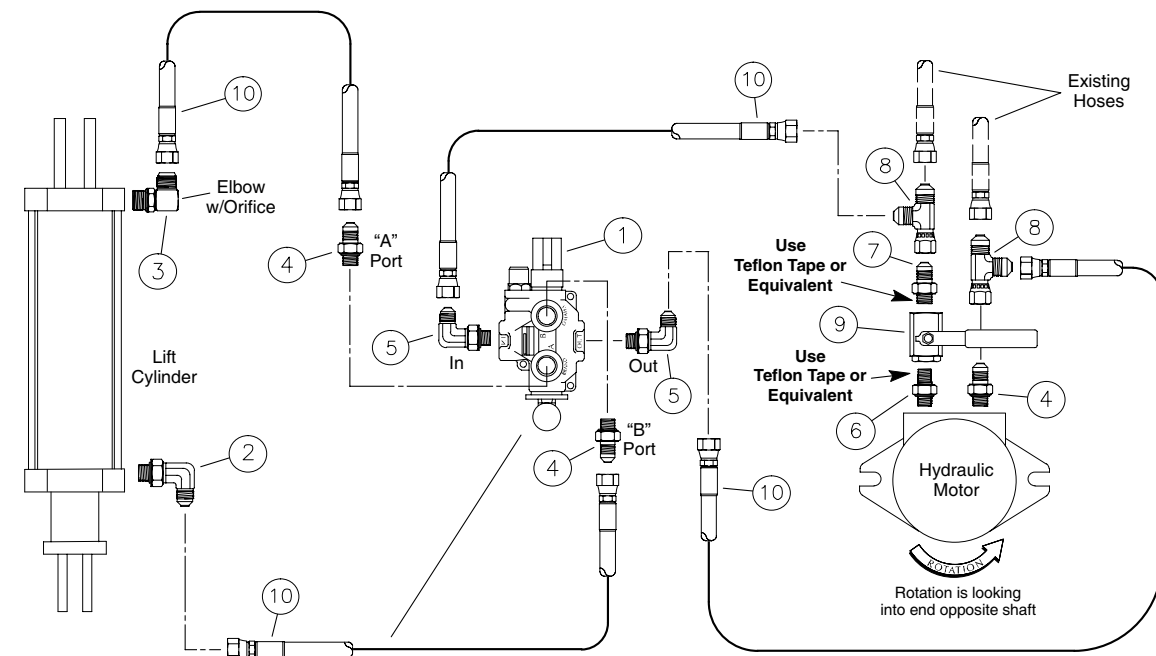
NOTE: This kit has been designed to work with the Hutchinson/Mayrath portable hydraulic power unit. The hoses from the power unit can be connected directly to this plumbing assembly.

If an alternate power source is used, it should be of the pressure compensating type.

**IMPORTANT:** After connecting supply hoses to fittings (Items 8), always open the quarter turn valve (Item 9) prior to checking for correct motor rotation direction.

This kit provides the necessary components to allow the belt drive motor and axle and hopper panel lift cylinder to be operated from a single hydraulic source.

Assemble the components, as shown, in the following figures.



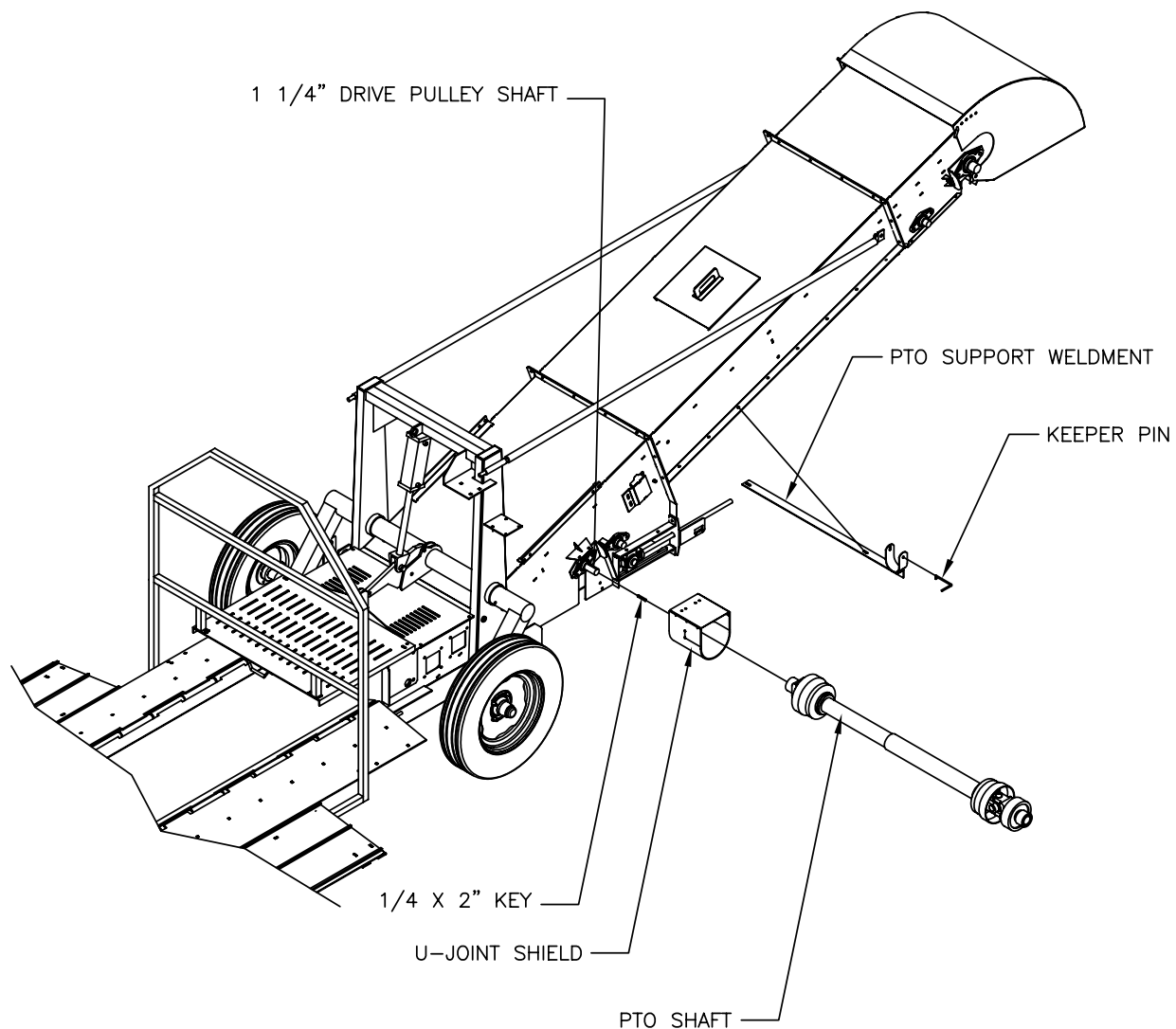
Item No.	Description	Qty.	Where Used
1	Directional Control Valve . . . . .	1	Bolts to Drive-Over Unit
2	Fitting, Elbow (8 C50X-S) . . . . .	1	Cylinder Retract Port
3	Fitting, Elbow w/Orifice (6801-08-08 NWO .062)	1	Cylinder Extend Port
4	Adapter, o-ring to flare (12-10 F5OX-S)	3	Control Valve, Ports A & B and on top of Hydraulic Motor
5	Fitting, Elbow, o-ring to flare . . . . .	2	Control Valve, In and Out Ports (8-12 C5OX-S)
6	Adapter, o-ring to pipe thread . . . . .	1	Top of Motor to Ball Valve (10-1/2 F5OF-S)
7	Adapter, pipe thread to flare . . . . .	1	Ball Valve to Tee (12-8 FTX-S)
8	Tee Fittings (12 R6X-S) . . . . .	2	For Hydraulic Motor
9	Ball Valve (V500CS-8) . . . . .	1	For Hydraulic Motor
10	Hydraulic Hoses . . . . .	4	For Cylinder and Motor (451TC0606-12-8-8,48")
11	Bolt, 1/4-20 x 2 1/4" . . . . .	3	Control Valve to Mounting Plate
	Locknut, 1/4-20 . . . . .	3	
12	Bolt, 3/8-16 x 1 1/2" . . . . .	2	Control Valve Mount Plate to Drive-Over Unit
	Locknut, 3/8-16 . . . . .	2	

# ASSEMBLY INSTRUCTIONS

## PTO DRIVE ASSEMBLY

NOTE: Whenever reference is made to right or left side of conveyor, it is determined by standing at the inlet end of the conveyor and looking toward the discharge end.

1. Mount the PTO drive shaft to the 1-1/4" drive pulley shaft on the right side of the conveyor using the 1/4" x 2" long key.
2. Slide the u-joint shield over the PTO shaft and bolt it to the mounting tab that is welded to the right side panel using two 5/16" x 3/4" long bolts with lock washers and hex nuts.
3. Bolt the PTO support weldment to the underneath side of the inclined conveyor section using two of the existing bolts. Locate at the third set of bolts up from the bottom.
4. Swing the PTO drive shaft around toward the discharge end of the conveyor and set it in the saddle of the PTO support.
5. Install the keeper pin in the PTO support.



## CONVEYOR BELT TENSION AND TRAINING

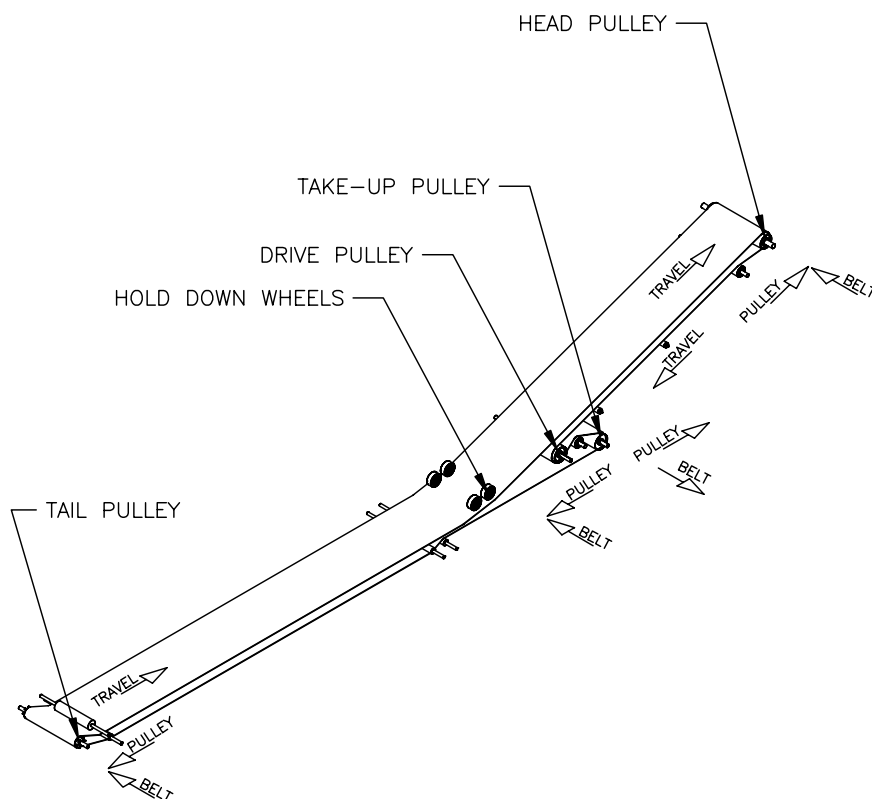
**IMPORTANT:** If the conveyor belt is installed correctly and trained properly, it will run straight and true. Training is the process of adjusting pulleys and rollers to get the belt to track down the center of the conveyor. If the belt is not properly trained, it may work its way off the end of a pulley and cause damage to the belt.

**IMPORTANT:** Belt tracking during the first few minutes of operation is critical. It is a good idea to run the belt at slow speeds (PTO and hydraulic models) or by stopping and starting (electric models) to prevent belt damage if the belt mistracks rapidly. Once the belt appears to be tracking using this procedure increase the speed until it is running at operating conditions. Make sure the belt is tracking properly before attempting to convey material. Check the belt frequently during the first 10 hours of operation. After 10 hours, the belt is normally seated and will need less frequent checking.

1. For initial operation, all rotating parts (head pulley, drive pulley, take-up pulley, tail pulley and return belt rollers) must be at a 90° angle to the direction of belt travel and should be level.

2. Slight adjustment of pulleys may be required to keep the belt centered on them. **As a general rule, the belt will track toward the loose side.** Therefore, if the belt runs to one side of the pulley, apply more tension to this end of the pulley. This is done by loosening the bearing bolts on the shaft end that is to be moved and moving the bearing with the adjustment bolt. Small movements (such as 1/16" to 1/8") are probably all that will be required.

**IMPORTANT:** If there is too much tension on the conveyor belt, it will be more difficult to train the belt and may shorten the life of the belt. It is best to leave the drive pulley at 90° to the belt travel and make training adjustments with the other pulleys, if possible. The arrows in the diagram below show probable direction of belt movement for various movements of the head and tail pulleys. Example: If the right end of the tail pulley is moved to tighten the belt, the belt should move over toward the left end of the tail pulley. **Also, notice belt movement vs. take-up pulley movement. Experience has shown that the take-up pulley will need to be moved opposite of the general rule for the head and tail pulleys, i.e. tighten the side to which you want the belt to move toward.**



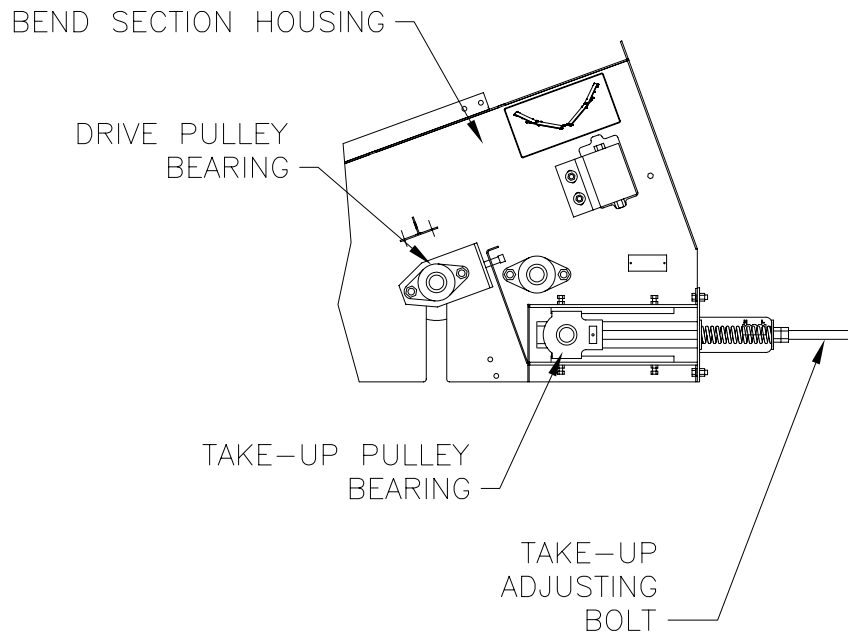
RIGHT SIDE VIEW

**CONVEYOR BELT TENSION & TRAINING - CONT.**

3. The belt tension is adjusted by tightening or loosening the take-up bolts, which are attached to the take-up pulley bearings. The bolts should be adjusted simultaneously the same amount to keep the pulley located the same relative to the belt. NOTE: There is a high and low tension indicator built into the spring mount plate near each take-up bolt spring. This indicator serves as a reference device to let the operator know that the tension is somewhere in the designed operating range. The position of the 3/4" flat washer on the end of the take-up springs relative to the "H" and "L" indicators will serve as a guide to the belt tension. The washer should be located somewhere in this range and preferably nearer the "L" low tension end. See figure on page 43. If slip occurs under load, additional belt tension should be applied by adjusting the spring tension enough to prevent slip from occurring under load and during belt start-up. It is very likely that one side of the take-up will have to be tensioned more than the other side to achieve proper belt tracking.

4. If the edge of the belt tracks completely off one side of a pulley, it will be necessary to loosen the take-up adjusting bolts enough to remove all tension from the belt so that it can be manually slid back onto the center of the pulley. It is a good idea to note the location of the take-up bearings before loosening so that they can be returned to their original position after moving the belt. Before restarting the conveyor, make the appropriate adjustments as recommended in Step 2 to correct the tracking problem. It may take several attempts to correct the tracking.

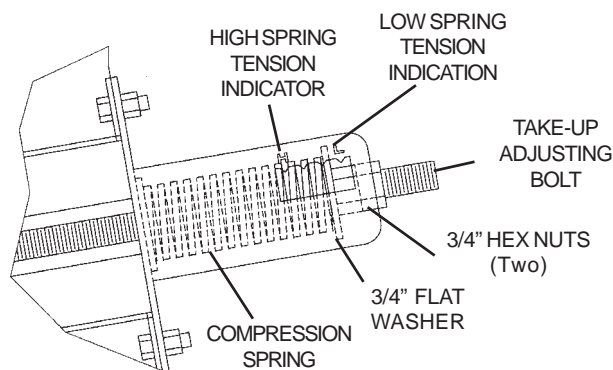
NOTE: If the belt has tracked off, monitor the nylon pin of the belt splice to assure it is still properly installed and centered in the splice. If not, loosen the belt and center the pin in the splice. Retighten belt. Reference Trouble Shooting section, item R on page 46.



## CONVEYOR BELT TENSION & TRAINING - CONT.

5. The take-up adjusting bolts have two 3/4" hex nuts at the outer ends. The inside nut is for adjusting the take-up tension. The outside nut needs to be snugged against the inside nut after making any adjustments to assure that the take-up position is maintained during operation.

**NOTE:** When training the belt, it is often helpful to use a screw driver as a pry bar to compress or decompress the tensioner springs to get a very quick idea of what belt tracking results can be expected before actually threading the adjusting nuts in or out on the adjusting bolts.

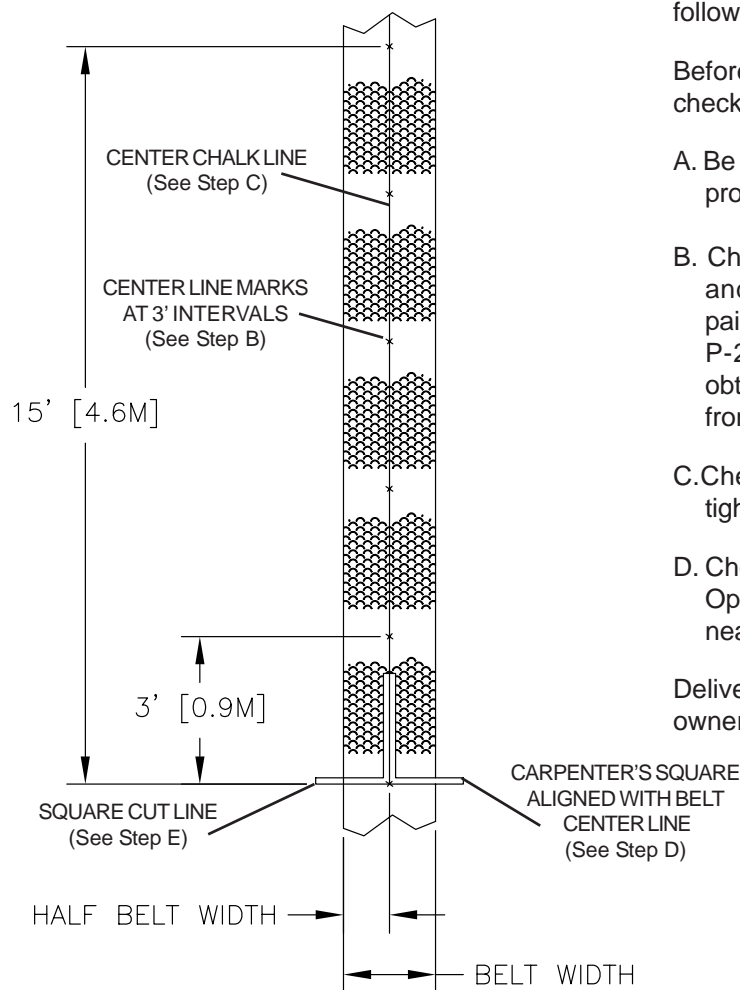


**TYPICAL BOTH SIDES  
OF CONVEYORS**

## CONVEYOR BELT SPLICING

**IMPORTANT:** If the conveyor belt becomes damaged for some reason, it may be possible to splice in a section of replacement belt. However, if the damage has occurred along a considerable length of the belt, it may be better to replace the damaged belt with an entire new belt. Splicing the belt does require a special tool for installing the splice connectors to the belt ends. Check to see if your dealer has this tool. Replacement belting and splice kits are listed in the parts section of this manual.

1. The manufacturer of the belt splice provides detailed instructions with the splice kits, so refer to those instructions.
2. The most critical step in installing the belt splice will be to square the belt ends to be spliced. Squaring the belt ends requires only a few minutes and offers real paybacks in extending your belt splice life. A splice that is applied on a belt that is properly squared will have the tension evenly distributed across the splice. Properly squared splices are essential to good belt training. Following these steps will help ensure that your belt is properly squared.
  - A. Prior to any work on the conveyor, make certain that the power has been turned off and the belt is "locked out".
  - B. Mark the actual center points on the belt width at intervals of about 3 feet for a distance back from the intended splice area of 15 to 20 feet. See figure on page 44.
  - C. Using a steel rule or chalk line, mark the average center line through the points measured from Step B.
  - D. Using a carpenter's square, draw a line perpendicular to your average center line across the belt width.
  - E. Cut your belt on this line using a sharp knife.

**CONVEYOR BELT SPLICING  
CONT.****TO DEALER/ASSEMBLER  
NOTICE**

The assembly of the conveyor is complete if all the applicable assembly steps in this manual have been followed.

Before delivery to the owner, it is a good practice to check the following.

- A. Be sure all safety shields and devices are installed properly.
- B. Check all safety decals to see if they are clean and readable. If any are missing, damaged, painted over, etc. replace them. See pages P-1 & P-2 for safety sign location. Decals may be obtained from your dealer, distributor or ordered from the factory.
- C. Check all bolts and fasteners to see they are tightened and secured properly.
- D. Check that the Operator's Manual container (with Operator's Manual inside) is installed in its holder near the belt take-up area of the conveyor.

Deliver this Assembly and Operator's Manual to the owner, along with the conveyor.

**TO THE OWNER**

Use the assembly instructions in this manual as a reference to determine that the conveyor is assembled properly.

Make certain that the maintenance schedule on page 15 is read and followed.

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**TROUBLE SHOOTING****PROBLEM/CAUSE****For Solutions Refer to Answer # Page 47.)**

A. Belt runs off at tail pulley.	7	1	11	17			
B. Belt runs to one side for long distance or entire length of conveyor.	5	1	2	17	25		
C. Particular section of belt runs to one side at all points on conveyor.	3	4					
D. Conveyor belt runs to one side at given point on structure.	1	2	16	25			
E. Belt runs true when empty, crooked when loaded.	5	11					
F. Belt slips.	12	11					
G. Belt slips on starting	12	11					
H. Grooving, gouging or stripping of top belt cover.	18	26					
I. Severe pulley cover wear.	6	7	8	11			
J. Belt covers harden or crack.	10	13					
K. Belt cover swells in spots or streaks.	9						
L. Excessive belt edge wear, broken edges.	5	7	15	4	17	14	11
M. Short breaks in carcass parallel to belt edge, star breaks in carcass.	8						
N. Belt ply separation.	10						
O. Belt cupping-old belt (was OK when new).	9	10					
P. Low conveyor capacity.	19	6	20	7	12	11	
Q. Pulley drags or does not turn.	21						
R. Nylon covered belt splice pin coming out.	22						
S. Belt lifts at bend section and pulls away from hold down wheels.	23	24	21	7			

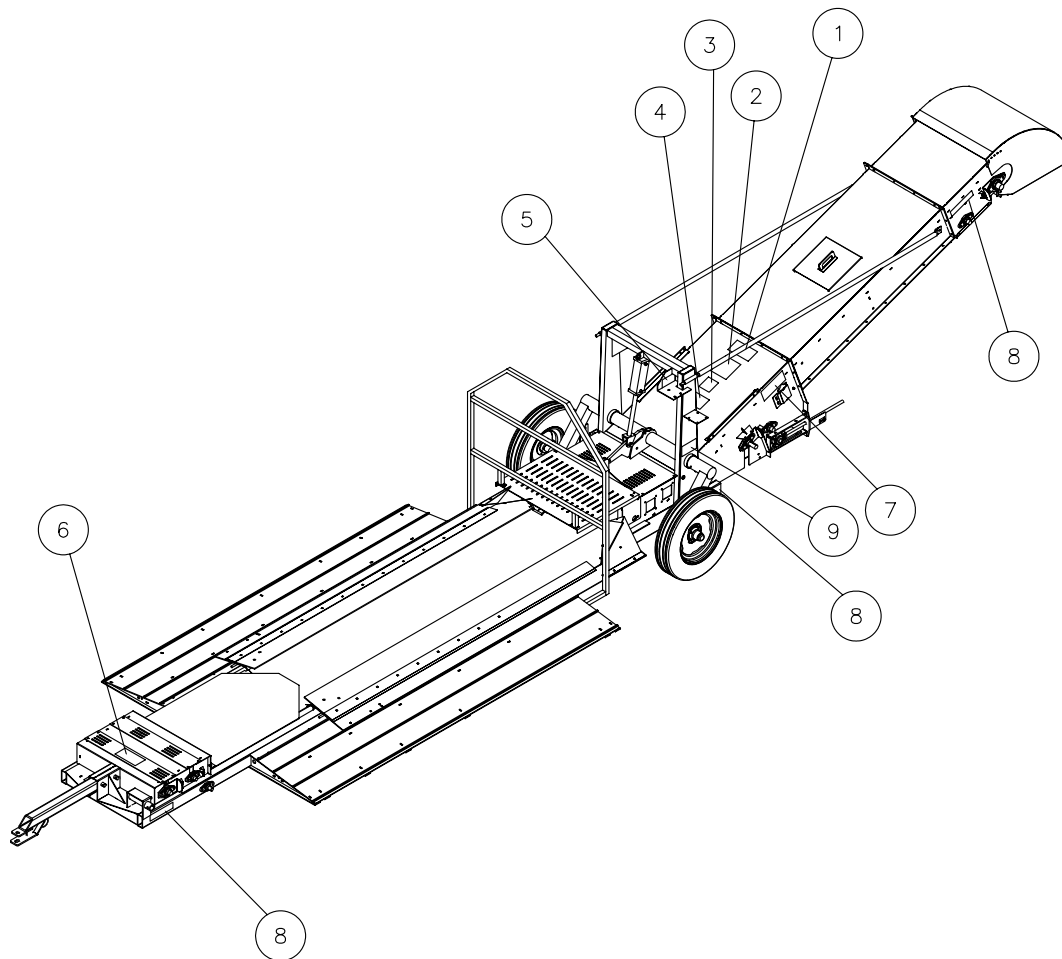


## **CONVEYOR SYSTEM PROBLEMS/ CAUSES AND THEIR SOLUTIONS**

1. Idlers or pulleys out of square with center line of belt: Readjust idlers in affected area.
2. Conveyor frame or structure crooked: Straighten in affected area.
3. Belt not joined squarely: Remove affected splice and resplice.
4. Bowed belt: For new belt this condition should disappear during break-in; in rare instances belt must be straightened or replaced: Check storage and handling of belt rolls.
5. Off-center loading or poor loading: Load on center of belt; discharge material in direction of belt travel at or near belt speed.
6. Slippage on drive pulley: Increase tension through screw take-up.
7. Material spillage and build-up: Improve loading and transfer conditions, improve maintenance.
8. Material trapped between belt and pulley.
9. Spilled oil or grease: Improve Housekeeping.
10. Heat or chemical damage: Use belt designed for specific condition.
11. Screw take-up tension too light.
12. Insufficient traction between belt and pulley: Adjust tension.
13. Improper storage or handling.
14. Belt improperly spliced.
15. Belt hitting conveyor structure
16. Structure not level: Level structure in affected area.
17. Belt misalignment: See training recommendations.
18. Sharp edges of objects caught in inlet.
19. Incorrect belt speed. Design capacity is at approximately 800 FPM belt speed. See PTO, hydraulic or electric drive section of manual.
20. Loose electric motor drive belts.
21. Frozen bearings. Lubricate or replace.
22. Hinge pin not properly crimped. See Belt Assembly Instructions.
23. Screw take-up tension too high.
24. Loading conveyor too fast. Allow material to get to bend section before increasing capacity.

# PARTS LIST

## SAFETY SIGNS AND DECALS



REF. NO.	PART NO.	QTY.	DESCRIPTION	SIZE
1	1027775	1	CAUTION - GENERAL STATEMENTS 1-10	4-3/4" x 8"
2	1005324	1	DANGER - "STOP", IF ANY GUARDS, SHIELD. . .	4" x 6"
3	1001983	1	DANGER - ROTATING DRIVELINE	4" x 6"
4	1027769	1	IMPORTANT - LOWER HOPPER PANELS	4" x 8"
5	1002091	1	WARNING - MANUAL WINCH	4-1/2" x 6-1/4"
6	1027768	1	DANGER - INTAKE HAZARD	2-3/4" x 5"
7	1027765	2	BELT TRACKING DIAGRAM	2" x 9"
8	1021180		YELLOW REFLECTIVE DECAL (On both sides)	2" x 9"
9	1037412	2	DANGER - CRUSH HAZARD	3-1/2" x 6"

## SAFETY SIGNS AND DECALS

### CAUTION

1. READ AND UNDERSTAND THE OPERATOR'S MANUAL BEFORE OPERATING.
2. DO NOT REMOVE OR MODIFY ANY GUARDS.
3. KEEP ALL PERSONNEL CLEAR OF CONVEYOR WHILE POSITIONING UNLOAD VEHICLE.
4. MAKE CERTAIN EVERYONE IS CLEAR BEFORE OPERATING OR MOVING THE CONVEYOR.
5. KEEP HANDS, FEET, HAIR AND CLOTHING AWAY FROM MOVING PARTS.
6. CROSS THE CONVEYOR ONLY ON THE WALKWAY PLATFORM PROVIDED.
7. STOP THE CONVEYOR AND LOCKOUT POWER TO ADJUST, SERVICE OR CLEAN.
8. DISCONNECT POWER BEFORE SETTING MOTOR OVERLOAD.
9. MAKE CERTAIN ELECTRIC MOTORS ARE GROUNDED.
10. KEEP CHILDREN WELL CLEAR OF WORK AREA.

### DANGER

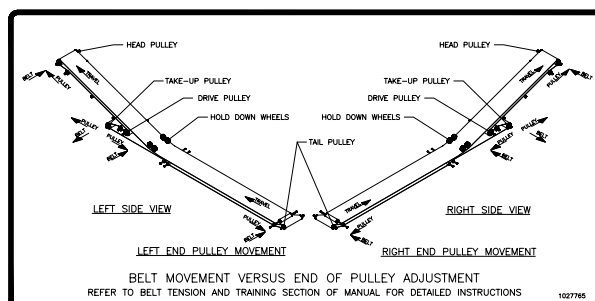
- KEEP HANDS, FEET, HAIR AND CLOTHING AWAY FROM MOVING BELTS.
- STOP MACHINE AND LOCKOUT POWER TO ADJUST, SERVICE OR CLEAN.
- DO NOT REMOVE OR MODIFY ANY GUARDS.
- KEEP CHILDREN WELL CLEAR OF WORK AREA.

**FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!**

### IMPORTANT

- LOWER ADJUSTABLE HOPPER PANELS BEFORE DRIVING ON OR OFF THE CONVEYOR

**FAILURE TO HEED WILL RESULT IN SERIOUS DAMAGE**



### DANGER

IF ANY GUARDS, SHIELDS OR SAFETY DECALS ARE DAMAGED OR MISSING, ORDER FREE REPLACEMENTS BY CALLING

**1-800-523-6993**

OR WRITE TO:  
HUTCHINSON/MAYRATH  
P.O. BOX 629  
CLAY CENTER, KANSAS 67432

### DANGER

#### ROTATING DRIVELINE

- KEEP BODY, HAIR AND CLOTHING AWAY FROM ROTATING DRIVELINE.
- USE ONLY WITH AGRICULTURAL TRACTOR HAVING 540 RPM POWER TAKE OFF.
- KEEP ALL DRIVELINE, TRACTOR AND EQUIPMENT GUARDS IN PLACE.
- MAKE SURE DRIVELINES ARE SECURELY ATTACHED AT BOTH ENDS.
- MAKE SURE DRIVELINE SHIELDS TURN FREELY ON DRIVELINE.
- KEEP U-JOINT ANGLES SMALL AND EQUAL.
- KEEP CHILDREN WELL CLEAR OF WORK AREA.

**FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!**

### WARNING

(FOR HYDRAULIC OR ELECTRIC WINCH OPERATION, PLEASE REFER TO THE OPERATOR'S MANUAL PROVIDED WITH UNIT.)

- AFTER LOWERING THE UNIT, ALWAYS TURN THE WINCH HANDLE CLOCKWISE UNTIL YOU HEAR AT LEAST TWO CLICKS. THIS TIGHTENS THE BRAKE LOCK.
- MAINTAIN CONTROL OF WINCH HANDLE AT ALL TIMES.
- DO NOT PUT LUBRICATION OF ANY KIND ON THE BRAKE DISC.
- CHECK CABLE BEFORE EACH USE. REPLACE IF FRAYED OR DAMAGED.
- MAINTAIN LIGHT CABLE TENSION WHEN TRANSPORTING.

**FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!**

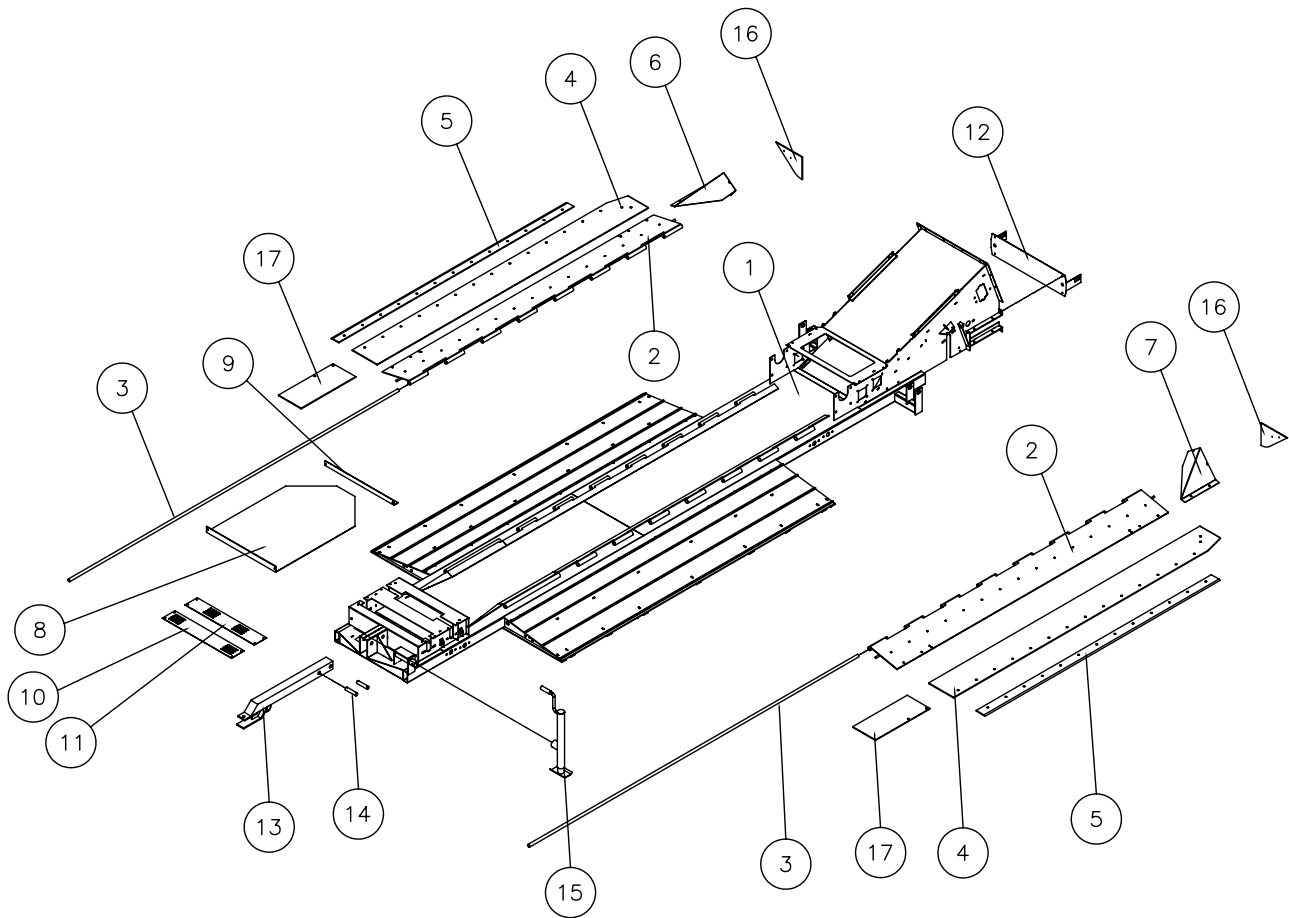
### DANGER

- KEEP HANDS, FEET AND OTHER BODY PARTS CLEAR OF FRAME AND RAMPS.
- KEEP CHILDREN WELL CLEAR OF WORK AREA.

**FAILURE TO HEED WILL RESULT IN SERIOUS INJURY OR DEATH!**

# PARTS LIST

## INLET HOUSING COMPONENTS

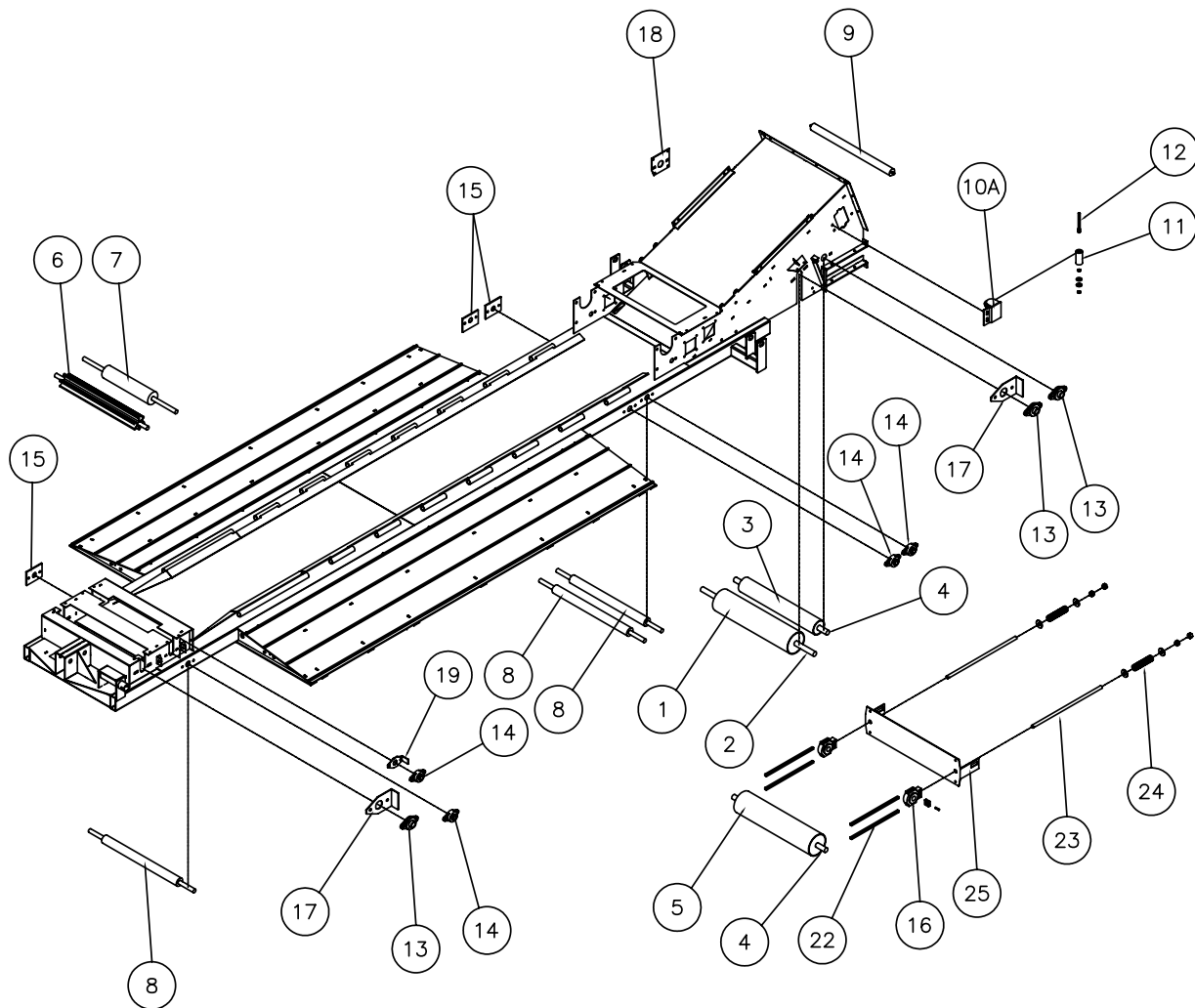


## INLET HOUSING COMPONENTS

REF. NO.	PART NO.	DESCRIPTION
1	1039066	Main Frame (with ramps) (For Portable Models)
1	1039067	Main Frame (without ramps) (not shown) (For Stationary Models)
2	1027618	Hinged Hopper Side Panel
3	1027625	Hinge Shaft 15/16" dia. x 12'-1" lg.
4	1027639	Hopper Skirt Rubber
5	1027650	Skirt Hold Down Panel
6	1027656	Skirt Deflector Weldment (left hand)
7	1027655	Skirt Deflector Weldment (right hand)
8	1027648	Rubber Safety Skirt
9	1027649	Skirt Mount Angle
10	1027415	Tail Pulley Cover Panel
11	1027416	Hold Down Roller Cover Panel
12	1027452	Take-up Cross Plate
13	1026067	Hitch Tube
14	1026104	Hitch Pin 1" x 5 1/2"
15	1024776	Screw Jack 2000 lb. x 15" Travel
16	1031672	Deflector Skirt Rubber (for items 6 & 7)
17	1032395	Rubber Extension Skirt

# PARTS LIST

## INLET HOUSING BEARINGS & PULLEYS



# PARTS LIST

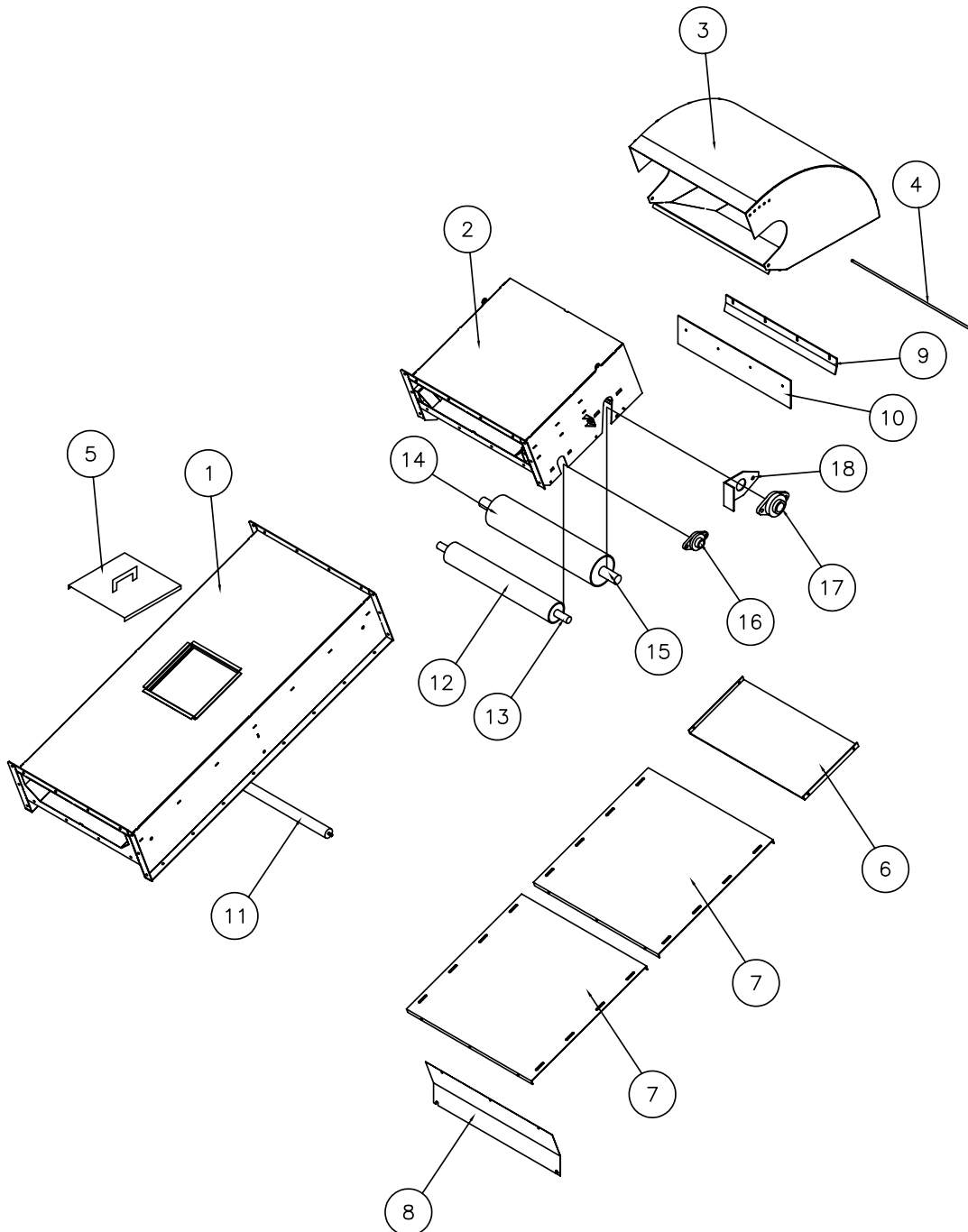
Page P- 6

## INLET HOUSING BEARINGS & PULLEY

REF. NO.	PART NO.	DESCRIPTION
1	1032494	Pulley, 6" dia. w/1/4" Herringbone Grooved Lagging, 1-1/4" Bore (See Assembled P/N Below)
2	1032487	Drive Pulley Shaft, 1-1/4" x 36"
3	1032497	Pulley, 4" dia. 1-1/4" Bore (See Assembled P/N Below)
4	1032489	Pulley Shaft, 1-1/4" x 32-1/4"
5	1027378	Pulley, 6" dia., 1-1/4" Bore (See Assembled P/N Below)
6	1027375	Pulley, 4" dia. wing type w/1-1/4" Shaft
7	1027381	Hold Down Roller, 3-1/2" dia.
8	1027380	Snub Roller, 2-1/4" dia.
9	1027557	Return Roller w/Bearings
10A	1036731	Guide Roller Assembly w/Mount Bracket (Right Hand) - Replaces 1026178
10B	1036732	Guide Roller Assembly w/Mount Bracket (Left Hand) - Replaces 1026178
11	1036617	Guide Roller (included in item 10A & 10B)
12	1036711	Guide Roller Shaft (included in item 10A & 10B)
13	1029742	Bearing 1-1/4", 2-bolt flanged
14	1029746	Bearing 1", 2-bolt flanged
15	1027419	Bearing Mount Plate
16	1029743	Bearing 1-1/4" Take-up
17	1023727	Bearing Push Plate
18	1027638	Pulley Cover Plate
19	1025870	Bearing Push Plate
22	1025975	Take-up Guide Bar
23	1023737	Threaded Take-up Rod w/Retainer
24	1023328P	Spring (Painted Yellow)
25	1027452	Take-up Cross Plate
--	1032490	Items 1 & 2 Assembled
--	1032493	Items 3 & 4 Assembled
--	1031807	Items 5 & 4 Assembled

# PARTS LIST

## INCLINE & DISCHARGE HOUSING COMPONENTS



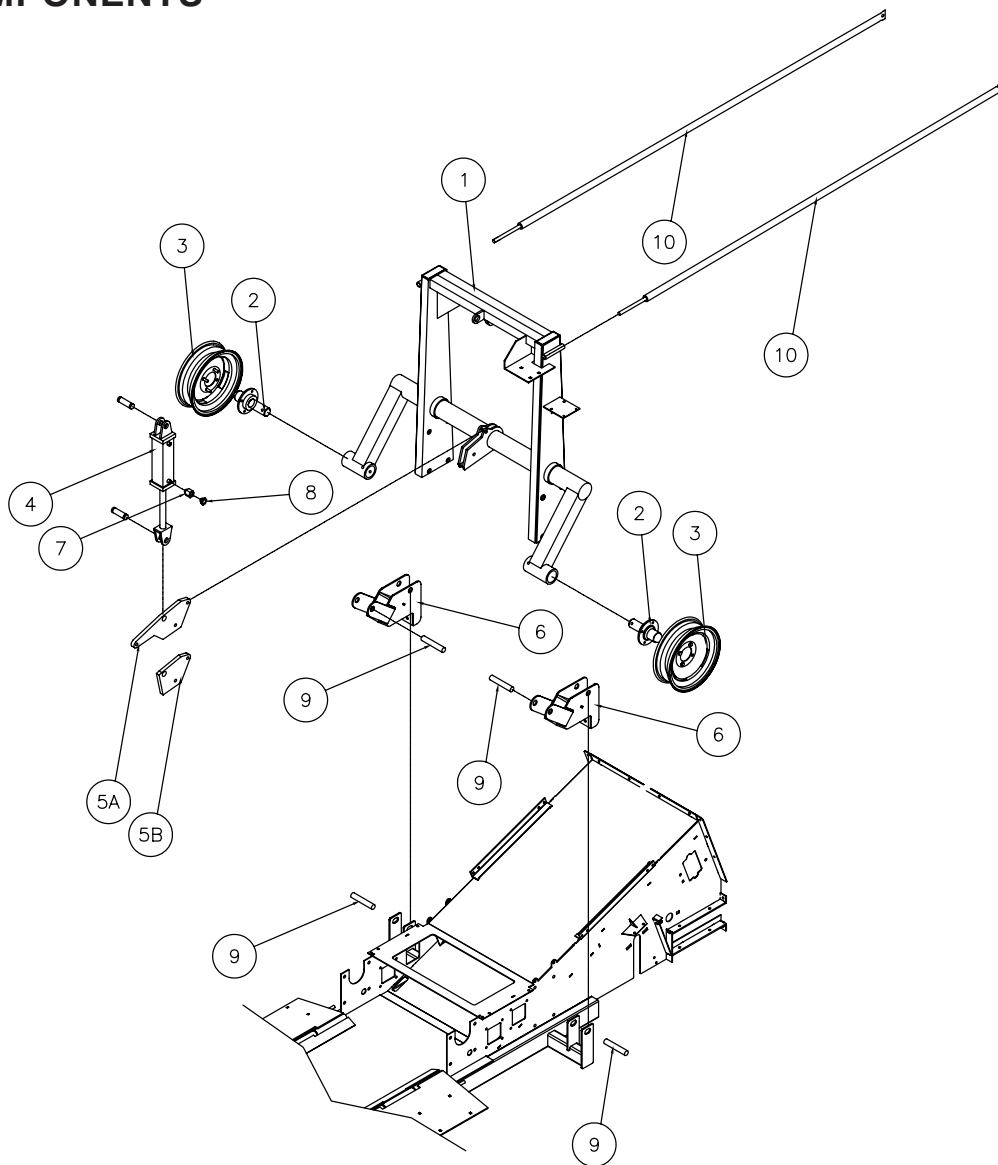


## INCLINE & DISCHARGE HOUSING COMPONENTS

REF. NO.	PART NO.	DESCRIPTION
1	1039068-200	Incline Housing (Hutchinson)
1	1039068-300	Incline Housing (Mayrath)
2	1029835	Discharge Housing
3	1027643	Discharge Spout (metal)
4	1027512	Spout Pin
5	1032162	Peek Hole Cover
6	1027635	Bottom Panel (Discharge Housing)
7	1027548	Bottom Panel (Incline Housing)
8	1027816	Drive Pulley Guard Panel w/manual holder
9	1027647	Wiper Mount Bracket
10	1027646	Rubber Pulley Wiper
11	1027557	Return Roller w/Bearings
12	1032497	Pulley, 4" dia., 1-1/4" Bore (See Assembled P/N Below)
13	1032489	Pulley Shaft, 1-1/4" x 32-1/4"
14	1032495	Pulley, 6" dia., 1-3/4" Bore (See Assembled P/N Below)
15	1032488	Pulley Shaft, 1-3/4" x 33-5/8"
16	1029742	Bearing, 1-1/4" 2-Bolt Flanged
17	1029744	Bearing, 1-3/4" 2-Bolt Flanged
18	1023728	Bearing Push Plate
19	1029827	Extension Housing (optional on stationary model only) 5'-4" lg. (not shown) (Prior to Serial No. 94300)
19	1039069	Extension Housing (optional on stationary model only) 5'-4" lg. (not shown) (Serial No. 94301 & above)
--	1032493	Items 12 & 13 Assembled
--	1032491	Items 14 & 15 Assembled

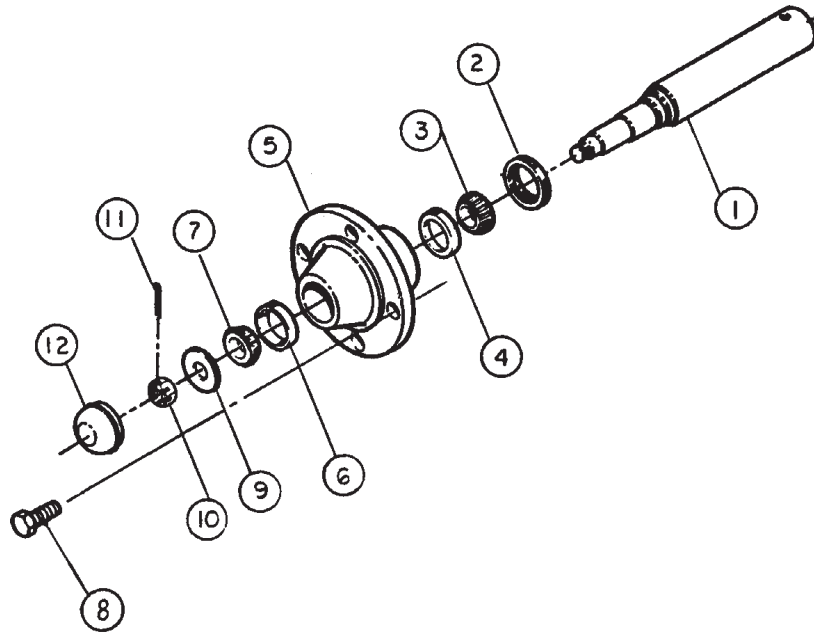
# PARTS LIST

## UNDERCARRIAGE & LIFT COMPONENTS



REF. NO.	PART NO.	DESCRIPTION
1	1030760	Undercarriage Frame Weldment
2	1003104	Spindle & Hub Assembly (See Page P-10 for breakdown.)
3	107225	Wheel Rim 15" x 6" x 5-Bolt
4	1030723	Hydraulic Cylinder, 3.0" Bore x 8" Stroke
5A	1030770	Cylinder Pivot Arm (not used on electric drive model, unless equipped with optional hydraulic power unit)
5B	1030769	Cylinder Pivot Arm (used only on electric drive model)
6	1033905	Axle Stop Plate Weldment
7	1027817	Adapter Fitting (used only on electric drive model)
8	042016	Breather Plug (used only on electric drive model)
9	1026104	Pin
10	1027496	Brace Tube

## SPINDLE & HUB ASSEMBLIES

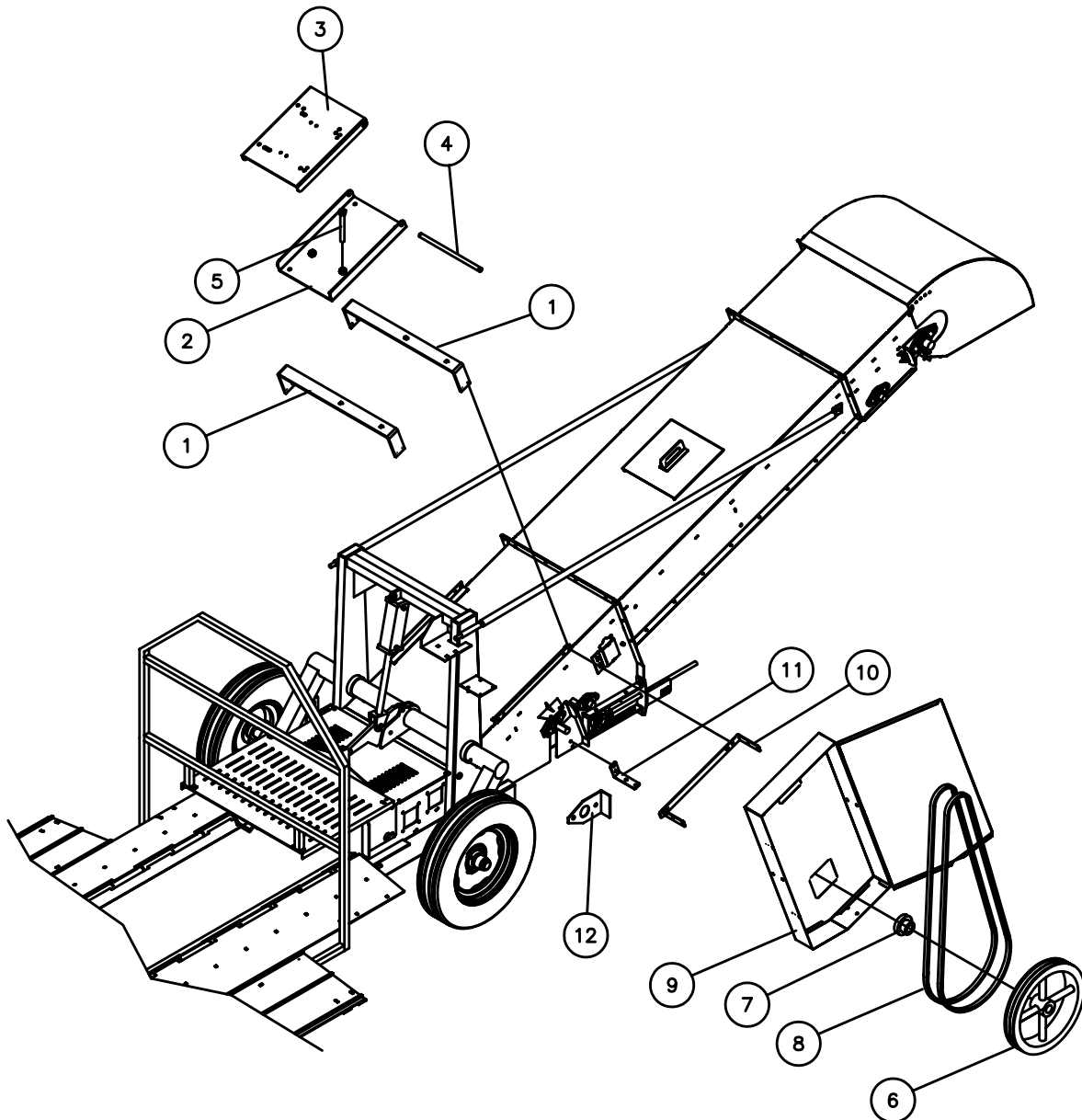


REF. NO.	DESCRIPTION	5-BOLT (2 3/8" x 14")
--	Spindle & Hub Assy.	1003104
1	Spindle	1001004
2	Grease Seal	107233
3	Inner Cone	3078R1
	(Timken No.)	(LM48548)
4	Inner Cup	3147R1
5	Hub	*1006987
6	Outer Cup	3148R1
	(Timken No.)	(LM67010)
7	Outer Cone	3079R1
	(Timken No.)	(LM67048)
8	Lug Nut	107235
9	Washer	107229
10	Slotted Hex Nut	6360C (3/4")
11	Cotter Pin	107230
		(5/32" x 1 3/4")
12	Hub Cap	107234

\*Furnished w/Cups and Lug Nuts.

## PARTS LIST

### ELECTRIC DRIVE COMPONENTS

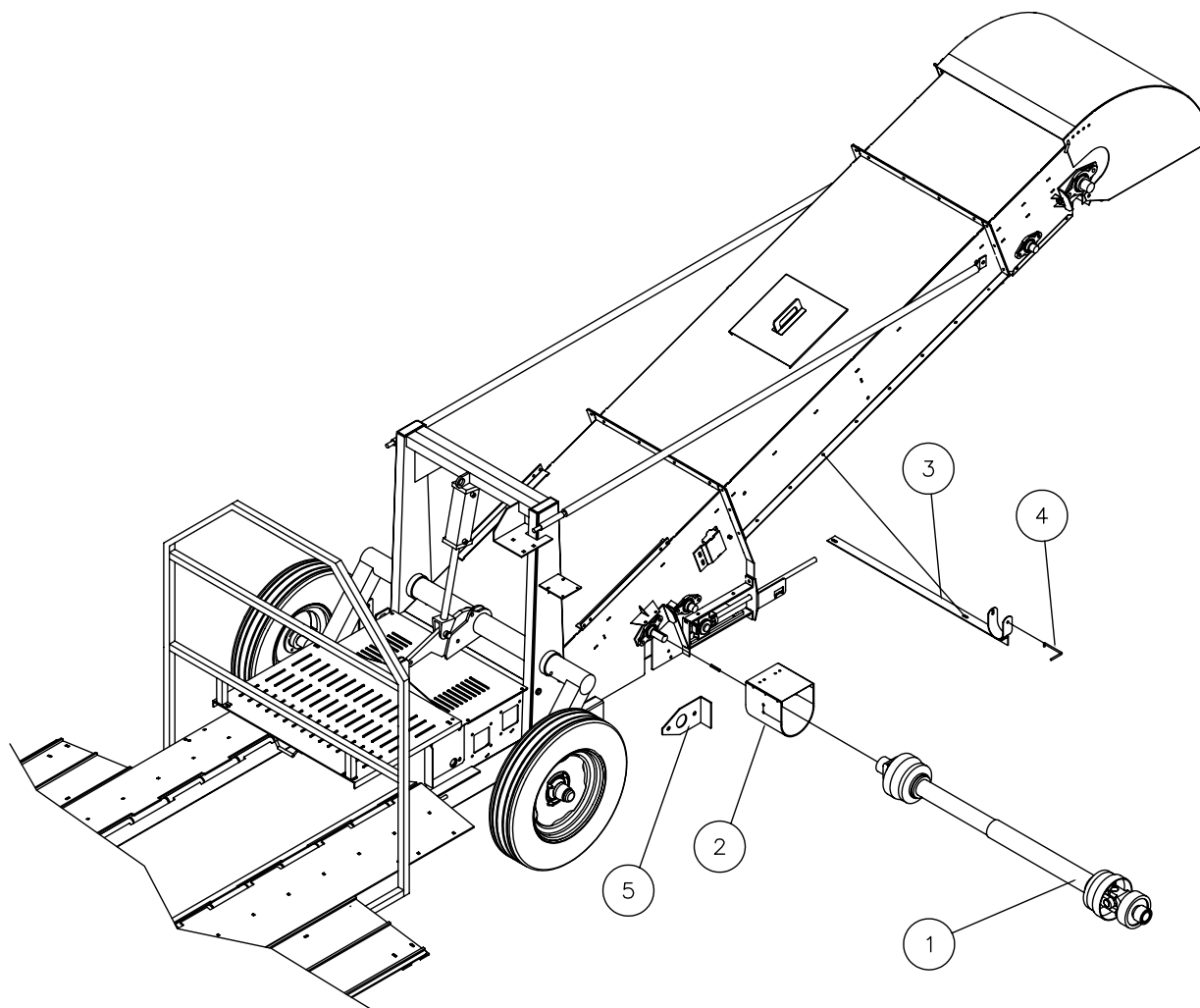


## ELECTRIC DRIVE COMPONENTS

REF. NO.	PART NO.	DESCRIPTION
1	1027462	Motor Mount Support Bar
2	1026895	Motor Mount Support Weldment
3	1027461	Motor Mount Plate
4	1022188	Pivot Shaft
5	1022381	Adjusting Rod
6	3238A1	Sheave 2B 18.4" QD
7	3072A1	Bushing QD Type SK 1.25"
8	1016262	Belt B-93
9	1027553	Belt Guard Weldment
10	1027682	Upper Belt Guard Bracket
11	1027681	Lower Belt Guard Bracket
12	1023727	Bearing Push Plate (Needed if converting from hydraulic to electric) (Mounts under bearing)
--	3261A1 3233A1	Motor Sheave 2B 5.0" P.D. (For 1750 RPM 60 Hz motor) Motor Sheave 2B 6.0" P.D. (For 1450 RPM 50 Hz motor)
--	3087A1	Bushing QD Type SDS 1.375"

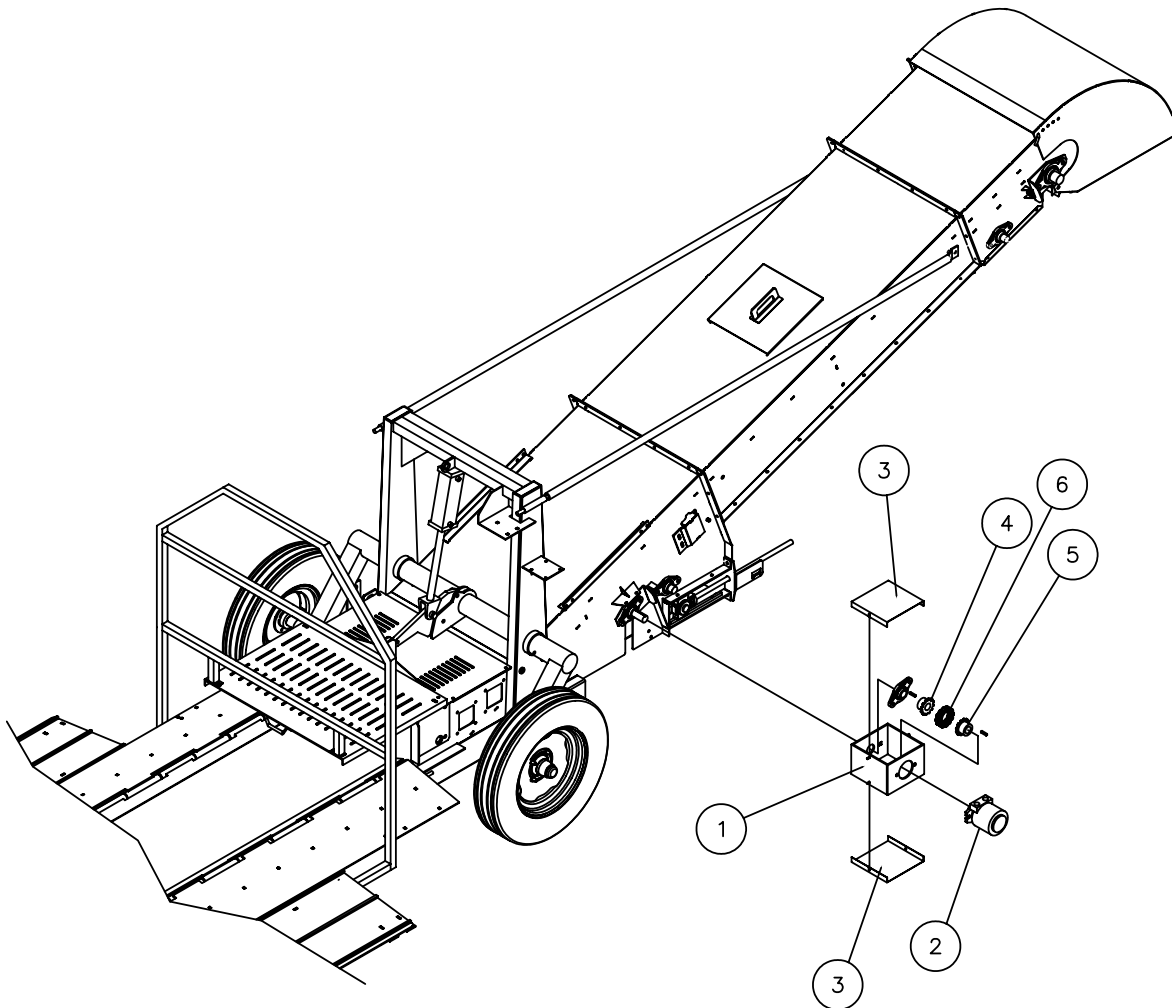
# PARTS LIST

## PTO DRIVE COMPONENTS



REF. NO.	PART NO.	DESCRIPTION
1	1002172	PTO Shaft, 60" - 1-1/4" Bore, 14R (See Page P-19 for breakdown.)
2	1026217	U-Joint Shield
3	1027660	PTO Support Bracket
4	3338A1	PTO Transport Pin
5	1023727	Bearing Push Plate (Needed if converting from hydraulic to PTO) (Mounts under bearing)

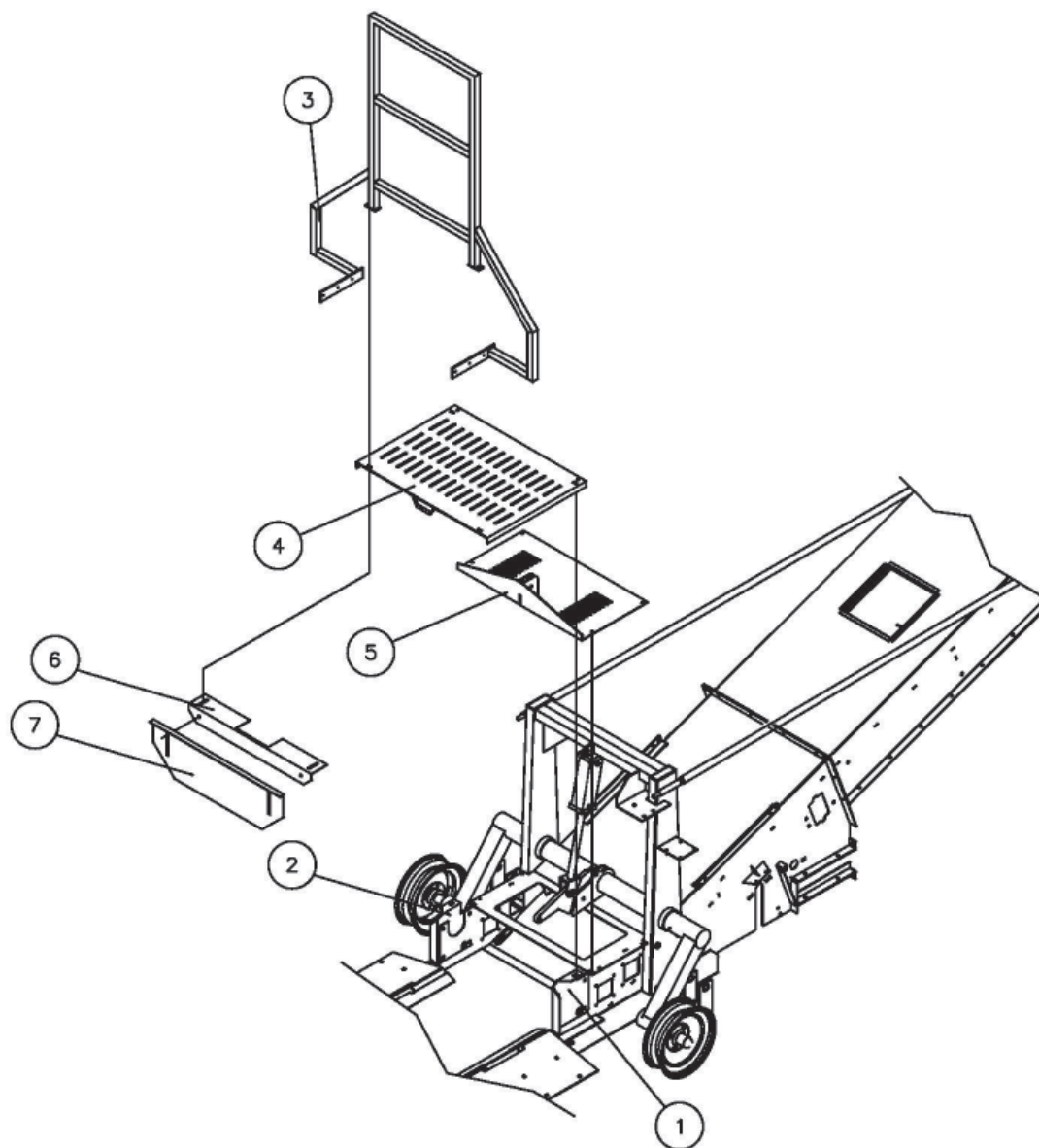
## HYDRAULIC DRIVE COMPONENTS



REF. NO.	PART NO.	DESCRIPTION
1	1027555	Hydraulic Motor Mount Weldment
2	1030713	Hydraulic Motor 10.6 cu. in.
3	1025059	Coupling Guard
4	1017967	Chain Coupling Half #80 w/1/4" Keyway
5	1025349	Chain Coupling Half #80 w/5/16" Keyway
6	41051	Roller Chain No. 80 12 Pitch w/Link

# PARTS LIST

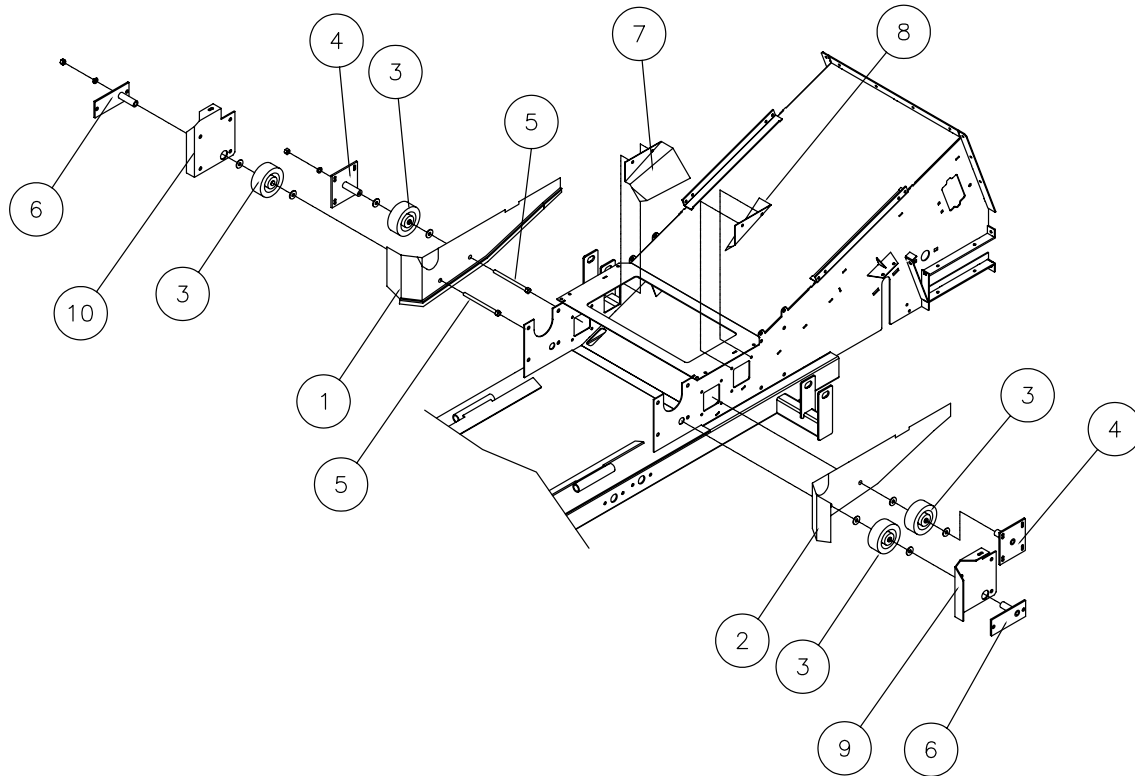
## HANDRAIL & WALKWAY COMPONENTS



REF. NO.	PART NO.	DESCRIPTION
1	Ref.	Hopper Panel Stop Plate (right)
2	Ref.	Hopper Panel Stop Plate (left)
3	1044728	Handrail
4	1027712	Walkway Plate
5	1030772	Cover Panel
6	1046303	Mount Panel
7	1046304	Adjustable Grain Flow Panel



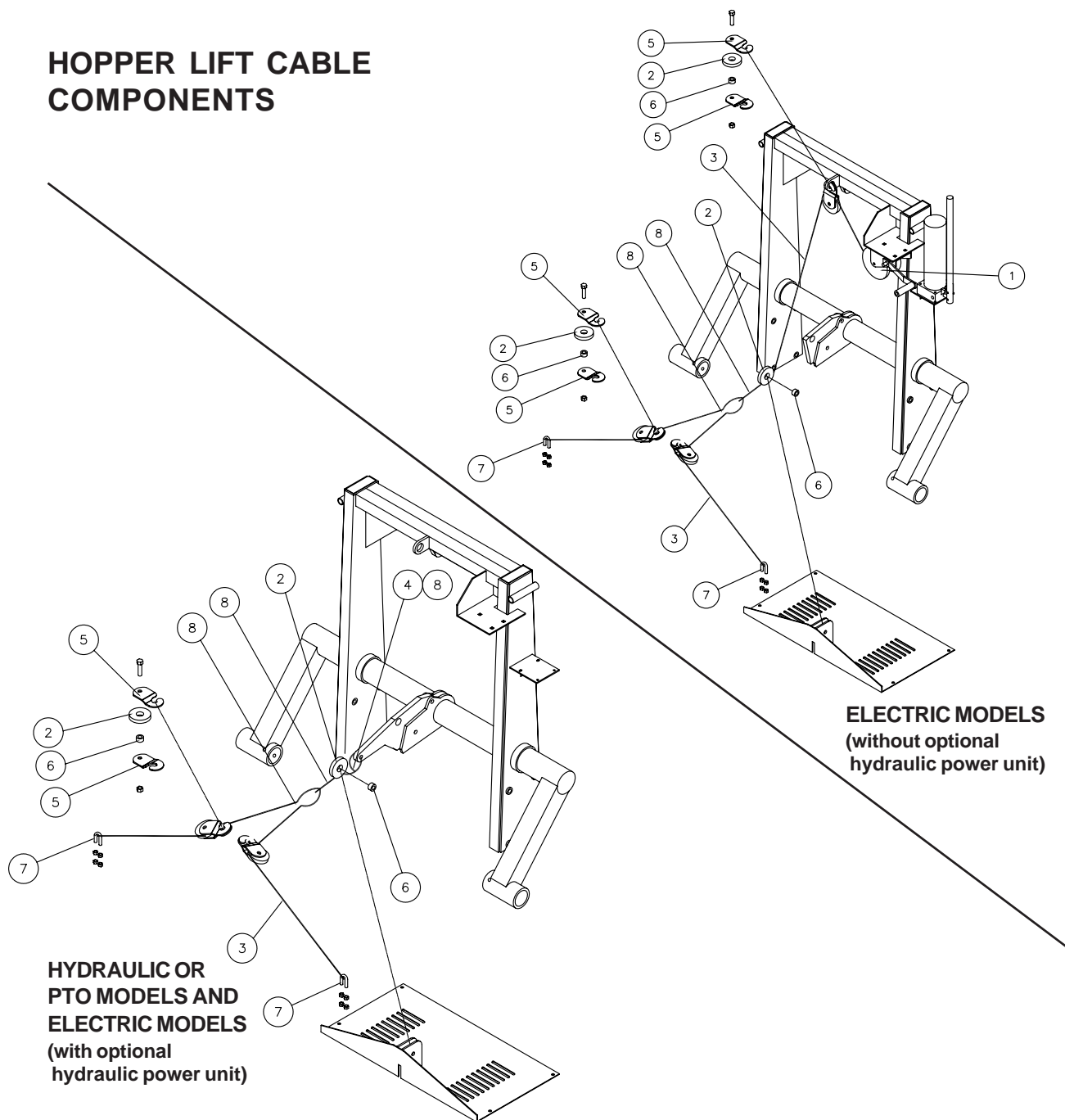
## HOLD DOWN WHEEL COMPONENTS



REF. NO.	PART NO.	DESCRIPTION
1	1029825	Hold Down Seal Weldment (left hand)
2	1029826	Hold Down Seal Weldment (right hand)
3	1027640	Caster Wheel w/Bearing (5" O.D. x 2" wide)
4	1027597	Hold Down Wheel Bracket (4-bolt)
5	1027641	Bolt Weldment 1/2" x 7-1/2" long
6	1029813	Hold Down Wheel Bracket (2-bolt)
7	1029821	Transition Panel (left hand)
8	1029822	Transition Panel (right hand)
9	1030778	Hopper Panel Stop Plate (right hand)
10	1030779	Hopper Panel Stop Plate (left hand)

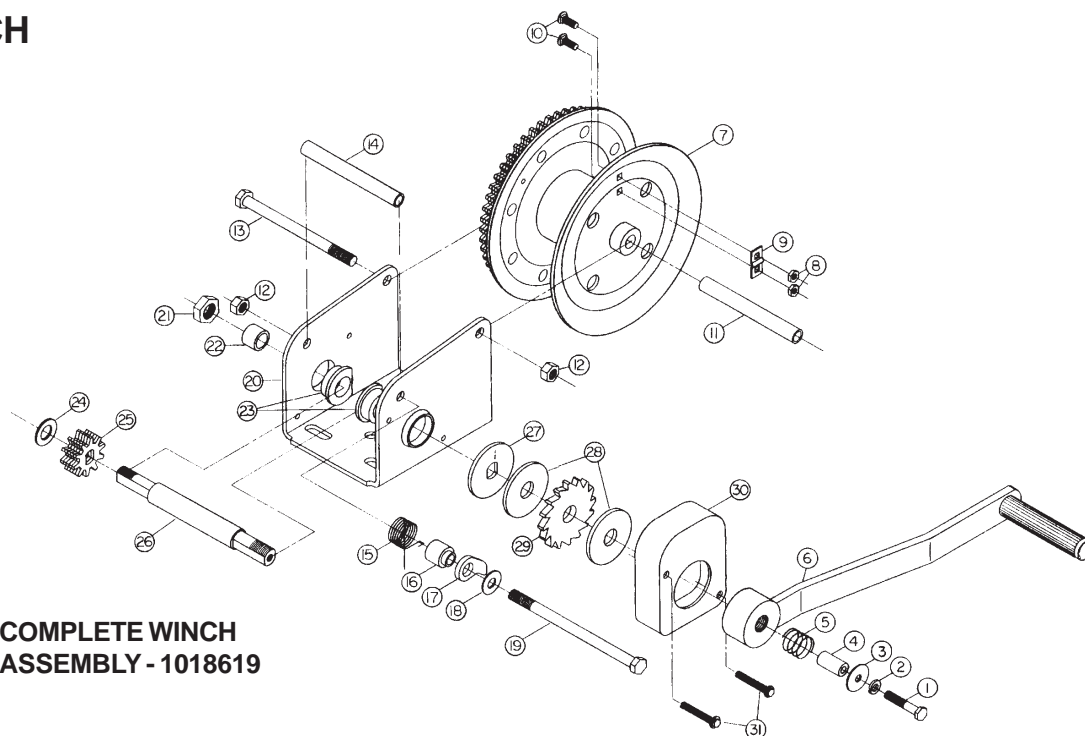
# PARTS LIST

## HOPPER LIFT CABLE COMPONENTS



REF. NO.	PART NO.	DESCRIPTION
1	1018619	Winch (See page P-18 for parts) (used only on electric models without optional hydraulic power unit)
2	1008195	Cable Pulley 3" O.D.
3	4095A1	Cable 3/16" x 6'-0" lg. (Two used on electric models) (One used on hydraulic or PTO models and electric w/optional hydraulic power unit)
4	1030815	Cable 3/16" x 3'-6" lg. (used only on hydraulic or PTO models and electric w/optional hydraulic power unit)
5	1007890	Pulley Clevis Plate
6	50079A1	Cable Pulley Bushing
7	4841	3/8" U-Bolt
8	5321C	(Not shown) 3/16" Cable Clamp
9	41600	Cable Keeper Kit (Provided w/winch initially)

## WINCH



**COMPLETE WINCH  
ASSEMBLY - 1018619**

ITEM NO.	DESCRIPTION	PART NO.	KIT NO.	ITEM NO.	DESCRIPTION	PART NO.	KIT NO.
1	1/4" - 20 x 1 1/2" Hex Screw	0913-03		17	Pawl	1891-07	
2	1/4" Lock Washer	2524-03		18	Washer	0904-03	
3	1/4" wide Flat Washer	0917-07	5444-81	19	38" x 5 1/2" Pawl Bolt	2045-06	
4	Handle Retainer Spacer	1907-02		20	Frame	0233-07	
5	Spring	0940-00		21	9/16" - 18 Locknut	0673-03	
6	Handle	2089-04		22	Bearing	2680-03	
7	Reel Assembly	0488-05		23	Bushing (2)	2679-09	
8	10-24 Hex Nut (2)	2706-03		24	Washer	0229-03	
9	Cable Keeper	2704-03	5441-81	25	Pinion Gear (3)	0776-03	
10	10-24 x 5/8" Carriage Bolt (2)	2705-03		26	Pinion Shaft	1869-07	
11	Front Frame Spacer	1413-08		27	Brake Back-up Plate	1878-09	
12	3/8" Lock Nut (2)	1873-03		28	Brake Pad (2)	0846-06	5442-81
13	3/8" x 4-1/2" Reel Bolt	1412-02		29	Ratchet	1906-06	
14	Back Frame Spacer	1866-04		30	Cover	1915-05	
15	Pawl Spring	1909-05		31	10" - 32 x 1-1/2" Screw (2)	2016-03	
16	Pawl Spacer	1890-05					

If kit number covers a combination of part numbers, parts are sold only by kit number.

Please order by specifying: Model Number  
Name of Part or Kit  
Part or Kit Number

Repair parts ordered directly from:

Shelby Industries, Inc.

175 McDaniel Road

P.O. Box 308

Shelbyville, KY 40066-0308

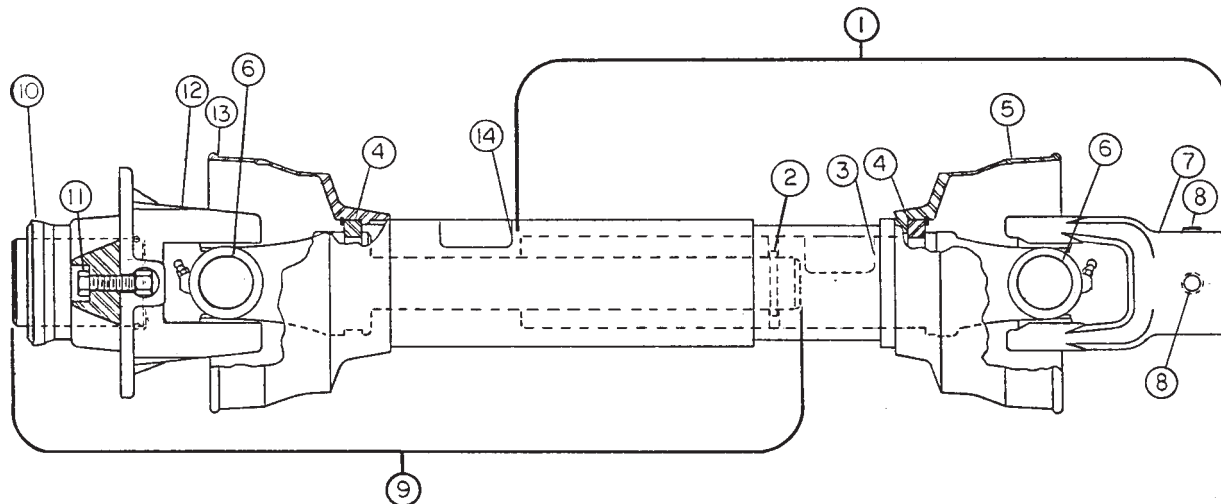
Phone: 502-633-2040

FAX: 502-633-2186

# PARTS LIST

## CONVEYOR PTO COMPONENTS

MANUFACTURED BY WEASLER



**NOTE:** Repair parts for PTO drivelines can also be purchased directly from:

**Weasler Engineering, Inc.**  
P.O. Box 558  
West Bend, WI 53095

**U-JOINT TYPE - 14R**  
**AUGER END 1 1/4" BORE**  
**WITH 1/4" KEYSEAT**  
**TRACTOR END 1 3/8 - 6B SPLINE**  
**WITH SHEAR BOLT**

## REF.

## NO

## DESCRIPTION

--	PTO Driveline Complete
1	Joint & Tube Half Assembly with Guard (Conveyor End)
2	Roll Pin 1/4" x 1" long
3	Inner Safety Sign
4	Shield Nylon Bearing Kit
5	Inner Guard (Includes Ref. No. 4)
6	U-Joint Cross Repair Kit
7	End Yoke
8	.375 - 16 x .38 long Setscrew
9	Joint & Shaft Half Assembly with Guard (Tractor End)
10	Spring Lock Flange Repair Kit
11	Shear Bolt & Nut Kit (See Note)
12	Yoke & Ball Shear Assembly
13	Outer Guard (Includes Ref. No. 4)
14	Outer Safety Sign

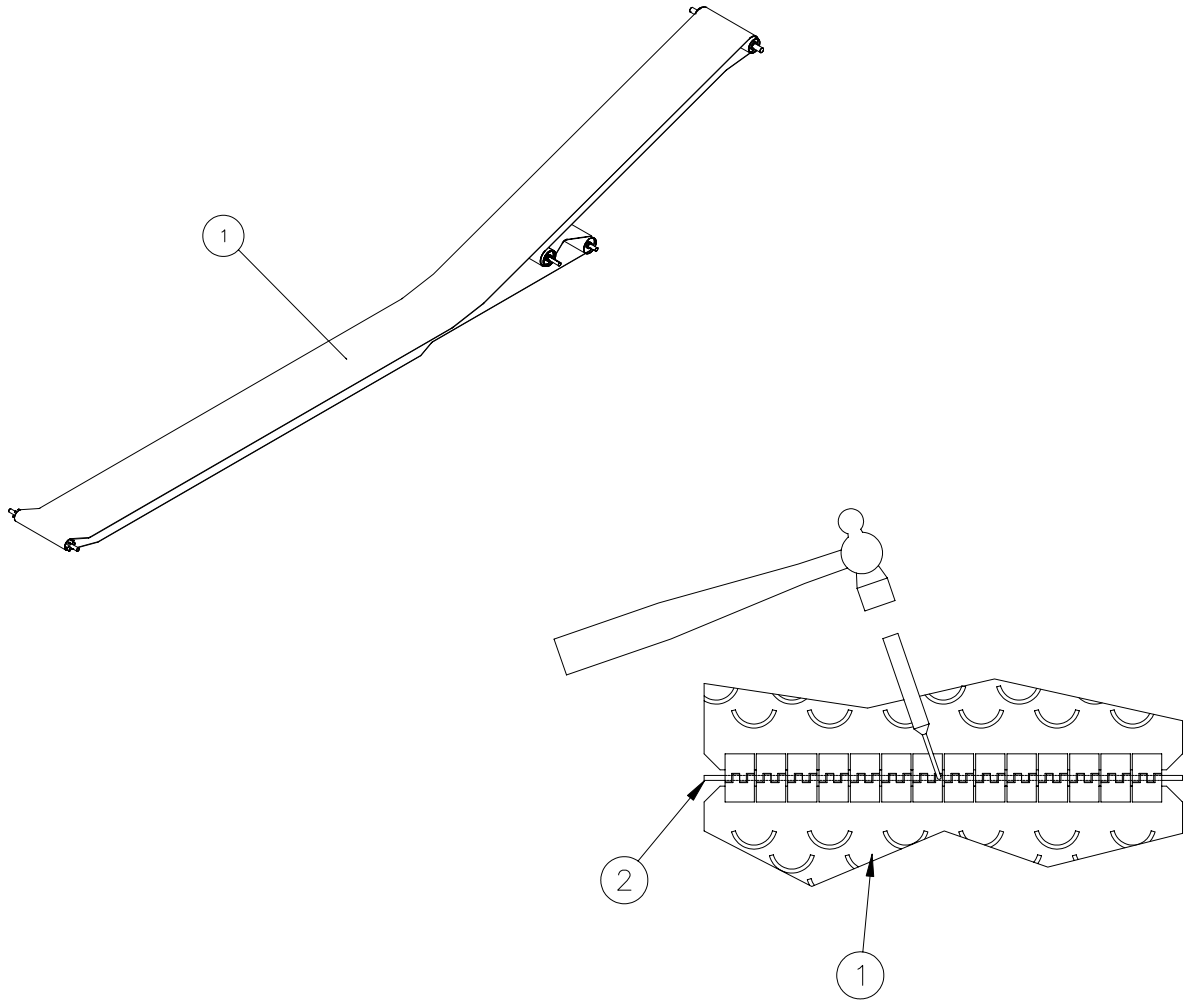
## HUTCHINSON/

MAYRATH  
PART NO.WEASLER  
PART NO.

1002172	232-16106
1015285	92-16106
1003691	11-10454
13-10022	13-10022
1010565	19-11104
1006478	96-16106
40524	03-10134
1003683	14011-1117
33170	11-10215
1015286	93-16106
1003674	26-10133
1004778	--
1006480	26-11670
1006481	97-16106
13-10021	13-10021

Note: Shear Bolt Kit includes (6) 5/16" - 18 x 1" long Grade 5 hex bolts and locknuts.

## BELTING COMPONENTS



REF. NO	PART NO.	DESCRIPTION
1	1027644	Conveyor Belting, 24" wide x 61'-8" long Low Temp PVC, Black Crescent Top Cover w/Slider Bed Back, RS125 Alligator Lacing installed on both ends. (Includes nylon covered stainless steel hinge pin)
1	1028303	Conveyor Belting, 24" wide x 72'-4" long (For units that have two 5'-4" incline housings bolted between the discharge housing and the inlet housing.) Stationary units.
2	1024215	Hinge Pin Material (per foot part no.)
--	1024AS-SET	Belt Splice Kit (without installation tool) (Enough for four belt splices.)

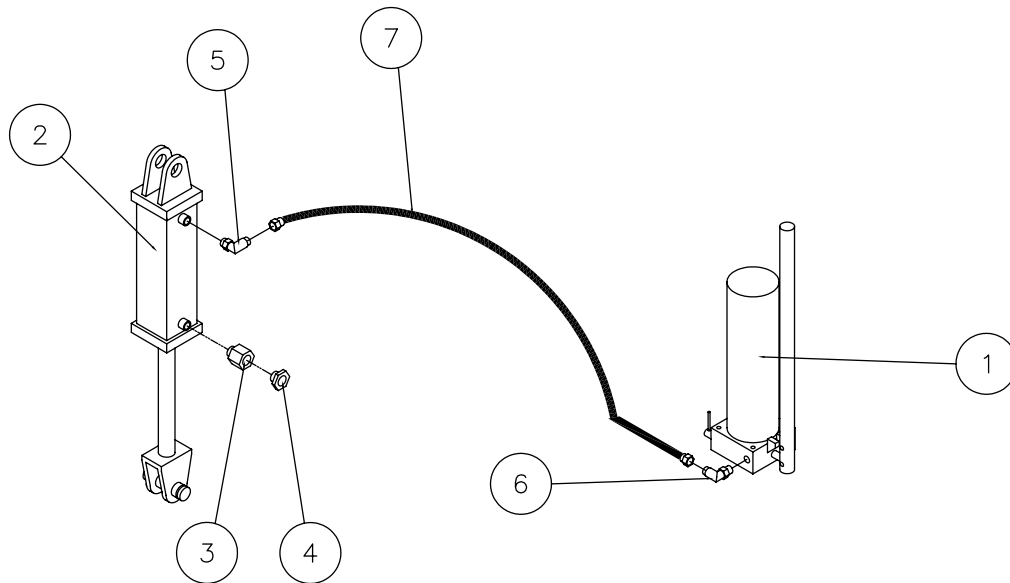
## PARTS LIST

### HAND PUMP TO CYLINDER PLUMBING

#### - Electric Drive Models

(without optional hydraulic power unit)

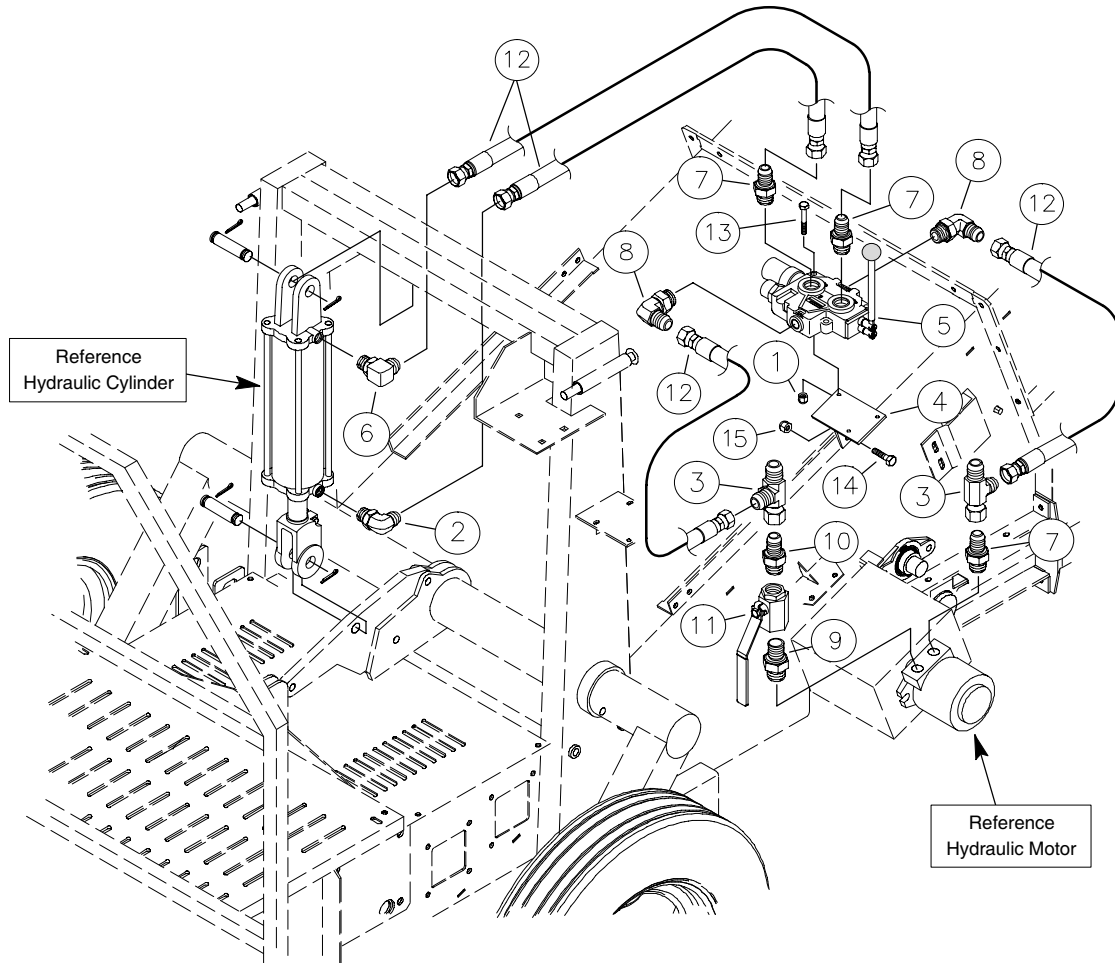
- Refer to supplemental manual 1037417  
if equipped with optional hydraulic  
power unit



REF. NO.	PART NO.	DESCRIPTION
1	1030764P	Hydraulic Hand Pump
2	Ref.	Hydraulic Cylinder (Part No. 1030723)
3	1027817	Hydraulic Adapter Fitting
4	042016	Breather Plug
5	1031892	Hydraulic Adapter Fitting
6	1030817	Hydraulic Adapter Fitting
7	1030816	Hydraulic Hose 3/8" x 36" long

## HYDRAULIC CONTROL VALVE PLUMBING

- Optional on Hydraulic  
Drive Models



REF. NO.	PART NO.	DESCRIPTION
1	4003	Locknut, 1/4-20
2	1028936	Fitting, Elbow (8 C5OX-S)
3	1028949	Tee Fitting (12 R6X-S)
4	1030881	Mount Plate, Control Valve
5	1030917	Directional Control Valve (AO12OC4JS)
6	1030918	Fitting, Elbow w/Orifice (6801-08-08 NWO .062)
7	1030919	Adapter (12-10 F5OX-S)
8	1030920	Elbow Fitting (8-12 C5OX-S)
9	1030921	Adapter (10-1/2 F5OF-S)
10	1030922	Adapter (12-8 FTX-S)
11	1030923	Ball Valve (V500CS-8)
12	1030924	Hydraulic Hoses (451TC0606-12-8-8,48")
13	4621	Bolt, 1/4-20 x 2-1/4"
14	33310	Bolt, 3/8"-16 x 1-1-2"
15	33136	Locknut, nylon 3/8-16







# **HUTCHINSON MAYRATH**

MANUFACTURED BY  
**HUTCHINSON | MAYRATH**

P.O. Box 629, 514 W. Crawford Street    **TF** 800.523.6993  
Clay Center, Kansas    **P** 785.632.2161  
USA 67432    **F** 785.632.5964

**[hutchinson-mayrath.com](http://hutchinson-mayrath.com)**