IMPORTANT! The reducer gear box is shipped **Without Oil.**

*Oil must be added before conveyor operation.*

Refer to the Lubrication Section in this manual.
Hutchinson/Mayrath
A Division of GLOBAL Industries, Inc.

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.

Back Orders: Back orders will be shipped as they become available. Contact Hutchinson/Mayrath Customer Service for alternative shipping options or if cancellation is desired.

Damaged Goods: It is the consignee’s responsibility to check all shipments thoroughly upon receipt of goods. If any damage is discovered, it must be noted on the freight bill of lading before signing. The consignee must make necessary claims against the respective freight line. All damage claims must be submitted within 30 days of delivery receipt.

Shortages: All shortages must be noted at time of delivery. Shortages must be noted on the freight bill of lading before signing. Hutchinson/Mayrath must be advised of all concealed shortages upon discovery. Once notified of concealed shortages Hutchinson/Mayrath will advise corrective action to be taken.

Return of Goods: All returns must be approved by Hutchinson/Mayrath prior to shipment. All return requests will be issued a return authorization number. NO RETURNS WILL BE ACCEPTED WITHOUT A RETURN AUTHORIZATION NUMBER AND PRIOR AUTHORIZATION FROM THE FACTORY. All returns must be shipped prepaid. A 15% restocking charge will be applied to all returned merchandise. Custom Products may not be returned for credit. Only current products in new and salable condition may be returned. No safety devices may be returned for credit.

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 alternations 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 THE 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 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.

INTENDED USE STATEMENT

This product is intended to provide the mechanical means to move grains or commodities of similar physical size and properties from an inlet point on the conveyor to a discharge point. Chain speed of the conveyor should not be altered from factory settings.

Allowable capacities have been outlined in this manual, and the flow of the material being conveyed must be regulated into the inlet, so as not to exceed the capacity of the unit.

Any use other than what is specified in the above is not recommended by the manufacturer.

SAFETY DECALS

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

SAFETY ALERT SYMBOL

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

DANGER - Indicates immediate hazards that may result in severe injury or death.

WARNING - Indicates unsafe actions or situations that may cause severe injury, death and/or major equipment or property damage.

CAUTION - Indicates unsafe actions or situations that may cause injury, and/or minor property damage.

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

Decal identification can be found in the parts section of this manual.
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**OPERATOR QUALIFICATIONS**

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

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

1. Some regulations specify that no one under the age of 16 may operate power machinery. This includes this conveyor. It is your responsibility to know what these regulations are in your area or situation.

2. Current OSHA regulations state in part: “At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in safe operation and servicing of all equipment which the employee is, or will be involved with.”

3. Unqualified persons are to stay out of the work area. See page 4.

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 auger. We include this sign off sheet for your convenience and personal record keeping.

<table>
<thead>
<tr>
<th>Training Sign-Off Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
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</tbody>
</table>

**RIGHT and LEFT DESIGNATION**
When referencing the left, right, front or rear of the conveyor, it is always determined by standing at the inlet end of the conveyor and looking towards the discharge end.

**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 left hand side of the boot housing.
MACHINE INSPECTION
Our conveyors are well made and we are proud of our line of equipment. We would like you, as our customer, to do your part in using caution and good judgement in using our equipment, as well as any other machinery.

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 shields listed in the assembly instructions are in place, secured and functional.
2. Check all safety signs (decals) and replace any that are worn, missing or illegible. Safety signs may be obtained free of charge from your dealer or ordered from the factory.
3. Check all fasteners; nuts, bolts, set screws etc. for tightness.
4. Check side truss cables for security.
5. Check oil levels in gearboxes (See the Lubrication and Maintenance Section in this manual for proper procedures).
6. Make sure clean-out door in bottom of hopper and all inspection opening covers are shut and secured.
7. Are drive belts and conveyor chains properly adjusted (See Maintenance Section).

GENERAL CONVEYOR INFORMATION

WARNING! During initial start-up and break-in period, the operator shall be aware of any unusual vibrations or noises that would indicate a need for service or repair.
Keep all safety shields and devices in place. Keep hands, feet, and clothing away from moving parts.
The operator should have a full view of the conveyor work area and check that all personnel are free from designated work areas before adding power.

General Information (con’t.)
- Obtain any needed replacement parts from your dealer and install before using the machine.
- Inspect the drive before adding power and know how to shutdown in an emergency (See Page 5).
- During operation of your conveyor, one person shall be in a position to monitor the operation.
- Visually inspect the conveyor periodically during operation, be aware of all adjustments and checks which should be performed.
- The conveyor should be operated at a chain speed of about 400 feet (121.9 m) per minute (conveyor speed in excess of this recommended speed will cause excessive wear).
- Speeds are obtained with 1750 RPM electric motor speed or 1000 RPM PTO speed.
- Do Not attempt full load operation at speeds below 400 FPM, as high torque requirements may damage the conveyor.
- It is important to become familiar with the routine operating procedures before attempting start-up.

BREAK-IN INFORMATION
Any conveyor when it is new, or after sitting 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 housing. A conveyor that has not been polished in this manner requires greater horsepower to operate, and damage to conveyor can occur.

When the housing has been polished and smooth, the conveyor can be run at full capacity.

Never run conveyor empty for any length of time as excessive wear will result. If at all possible, do not stop or start the conveyor under load, especially before the housing becomes well polished, as this may cause the conveyor to “freeze-up.”

IMPORTANT! The conveyor should be frequently checked and serviced to operate freely. Keep all guards and shields in place, replace any that are damaged or missing.
**ELECTRIC DRIVE POWER REQUIREMENTS**

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

- The reset and starting controls must be located so that the operator has full view of the entire operation.
- Disconnect power before resetting motor overloads.
- Make certain electric motor is properly grounded.
- A main power disconnect switch that can be locked in only the “Off” position shall be provided. This shall be locked whenever work is being done to the conveyor.
- Do Not enter the grain bin unless all power driven equipment has been shutdown and locked out.

The conveyor can be operated using an electric drive motor. Always use a motor with the required power recommended shown in the chart below. Use a motor that operates at 60 hz @ 1750 RPM (50 hz @ 1450 rpm).

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

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

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

---

**TRACTOR & PTO REQUIREMENTS**

The conveyor PTO was designed for use with a tractor that is capable of operating at **1000 RPM** (speeds greater than this will cause excessive wear and/or damage to the conveyor).

**NOTE:** The PTO driveline furnished with the conveyor is equipped with a “Spring-Lok” coupler at the tractor end. This type of coupler is spring loaded and will fit the standard 1-3/8” x 21 splined 1000 RPM PTO shaft from a tractor.

The PTO driveline is also equipped with a shear bolt at the tractor connection. The shear bolt protects the conveyor from damage should the conveyor become plugged or subjected to high loads.

If this scenario should occur, the shear bolt would “shear off” causing the connection to the conveyor to suddenly stop (the tractor PTO would still continue turning, but not the conveyor driveline). **Immediately shutdown the tractor and lockout before attempting to investigate the cause of the problem.**

Extra shear bolts are located in the operator’s manual container. Always use same size and strength shear bolts, 3/8-16 x 1-1/4” Grade 2 (shear bolt replacement kit, part no. 1021355).

**HYDRAULIC REQUIREMENTS FOR LIFT SYSTEM**

**NOTE:** This conveyor uses two, 2-stage cylinders for lifting. Thus, oil is returning to the tractor reservoir at the same time it is being sent to the cylinders. This minimizes the oil volume needed from the tractor.

During the initial lift cycle of the conveyor however, it will be necessary to add additional oil to the tractor to replenish the oil used to charge the lines and cylinders. Use the oil type recommended for your tractors hydraulic system.

The tractor should have the capability of generating at least 2500 PSI (17237 kPa) pressure to lift the conveyor.

**Recommended**

<table>
<thead>
<tr>
<th>HP \ (kw)</th>
<th>Motor Frame Size</th>
<th>Recommended Motor Sheave f/ 60Hz, 1750 RPM Motor</th>
<th>Recommended Motor Sheave f/ 50Hz, 1450 RPM Motor</th>
</tr>
</thead>
<tbody>
<tr>
<td>60–75 hp \ (45–56 kw)</td>
<td>364T (f/ 60 hp) 365T (f/ 75 hp)</td>
<td>4–Groove “5V” Section 6.3” Outside Dia.</td>
<td>4–Groove “5V” Section 7.5” Outside Dia.</td>
</tr>
<tr>
<td>120 hp \ (90 kw) PTO</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

**NOTE:** Use of the recommended motor sheave will provide a conveyor chain speed of approximately 400 feet per minute.
OPERATING CAPACITIES

The 12” Portable Double Run Conveyor has the ability to convey 10,000 BPH (270 tph) of reasonably dry grain during normal operating conditions.

Maximum possible capacity will be less with high moisture grain (above 15%) than with dry grain.

Twenty-five percent (25%) moisture could cut capacity back by as much as 40% under some conditions.

The results or capacities of conveyors can vary greatly under varying conditions. Different materials, moisture content, amounts of foreign matter, angle of operation, methods of feeding and conveyor speed all play a role in the performance of the conveyor.

A conveyor operating at a 40° incline could be cut by 20% in capacity compared to a conveyor operating horizontally.

Overfeeding the conveyor would result in increased power requirements, extra strain on the driveline and possibly a complete stalling out. Under the “extra” grain pressure conditions, a control gate or other method of limiting the amount of grain being fed into the conveyor should be used.

CONVEYOR CLEARANCE

WARNING! Be alert of all overhead obstructions and electrical wires, failure to do so can result in electrocution, serious injury to operator and bystanders, conveyor damage and/or extensive property damage.

Lower the conveyor well below the level of power lines before moving.

Maintain at least 10 feet of clearance (electrocution can occur without direct contact of the power lines).

The clearance dimensions for the conveyors are shown below and on the following page.

The dimensions below are given for the conveyor when it is in its full down position.

Never transport the conveyor while it is in the raised position, even when moving from one work site to another. Always transport the conveyor in its full down position. (See Page 9 for information on the transport height for the conveyor.)

NOTE: Discharge height dimension will be somewhat less due to housing deflection.
CONVEYOR CLEARANCE (con't.)

The clearance dimensions for the conveyor shown below are given with the conveyor set up for operation at the work site.

Though the dimensions are as close to accurate as possible, the dimensions may vary depending on bin size, type of storage structure, conveyor position, and other factors associated with your particular application.

NOTE: The 130’ model has an extendable axle. The tread width ("H"), outside the tires, given in the chart below, refer to the axles being in the collapsed position for transport. [Add 4'-0" (1.3 m) for the extended width.] Any time the conveyor is to be operated, the axles should be in the extended position.

<table>
<thead>
<tr>
<th>Conveyor Incline</th>
<th>“A”</th>
<th>“B”</th>
<th>“C”</th>
<th>“D”</th>
<th>“H” (Tread Width)</th>
</tr>
</thead>
<tbody>
<tr>
<td>42° Max.</td>
<td>85’-3” (25.98 m)</td>
<td>53’-9” (16.38 m)</td>
<td>38’-8” (11.79 m)</td>
<td>59’-11” (18.26 m)</td>
<td>14’-0” (4.27 m)</td>
</tr>
<tr>
<td>30°</td>
<td>63’-0” (19.20 m)</td>
<td>36’-9” (11.20 m)</td>
<td>50’-4” (15.34 m)</td>
<td>63’-8” (19.41 m)</td>
<td>14’-0” (4.27 m)</td>
</tr>
<tr>
<td>20°</td>
<td>42’-4” (12.90 m)</td>
<td>24’-4” (7.31 m)</td>
<td>57’-3” (17.45 m)</td>
<td>65’-11” (20.09 m)</td>
<td>14’-0” (4.27 m)</td>
</tr>
<tr>
<td>10°</td>
<td>20’-4” (6.20 m)</td>
<td>11’-11” (3.63 m)</td>
<td>61’-5” (18.72 m)</td>
<td>67’-3” (20.50 m)</td>
<td>14’-0” (4.27 m)</td>
</tr>
</tbody>
</table>

NOTE: Actual dimensions A & B may be somewhat less due to tire squash and conveyor deflection.
**BIN SIZE COMPATIBILITY**

Conveyor Shown at Maximum Incline

NOTE: No Foundation height is accounted for. Reduce number of rings accordingly.
**TRANSPORT INFORMATION**

Always observe safe driving and operating practices, and comply with your local and state regulations that govern marking, towing and maximum width while transporting.

**WARNING!** Be alert of all overhead obstructions and electrical wires, failure to do so can result in electrocution.

Lower the conveyor well below the level of power lines before moving. Maintain at least 10 feet of clearance (electrocution can occur without direct contact of the power lines).

- Plan your route to avoid overhead obstructions and power lines.
- Move the conveyor with a tractor to and from the work area. A suitable vehicle should be used for transporting the conveyor over great distances.
- Always transport your conveyor in the full down position.
- Hitch should be secured to tractor and safety chain properly attached.
- **Avoid Sharp Turns!** It is possible to hit the tractor tires or fenders.
- To prevent conveyor from upending, make sure all grain has been emptied from the conveyor before transporting.
- Before moving the conveyor, the operator should make sure all personnel are clear of the "Moving Conveyor Hazard Area" shown on Page 15.
- **Never** allow persons to stand underneath or ride on the conveyor when it is being transported.
- Know the transport height of the conveyor before moving it (see chart below).
- Axles must be collapsed for transport.

**Electrocution Can Occur Without Direct Contact of Power Lines!**

![Image of conveyor and tractor]

<table>
<thead>
<tr>
<th>Transport Height*</th>
<th>13'-6&quot; (4.11 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowered Height**</td>
<td>14'-2&quot; (4.32 m)</td>
</tr>
<tr>
<td>Total Weight</td>
<td>23,680 lbs. (10,741 kg)</td>
</tr>
<tr>
<td>Axle Weight</td>
<td>19,320 lbs. (8,763 kg)</td>
</tr>
<tr>
<td>Hitch Weight</td>
<td>4,360 lbs. (1,978 kg)</td>
</tr>
<tr>
<td>Towing Axle Width</td>
<td>14'-0&quot; (4.27 m)</td>
</tr>
<tr>
<td>Operating Axle Width</td>
<td>18'-0&quot; (5.49 m)</td>
</tr>
</tbody>
</table>

* Transport height is with conveyor fully lowered, hitch cylinders fully extended and attached to a vehicle with a drawbar height of 1'-6" (4.6 cm).

** Lowered height is with the conveyor fully lowered and the boot (inlet end) resting on the ground.
ATTACH CONVEYOR to TOWING VEHICLE

WARNING! Never stand between the tractor and conveyor when hitching unless all controls are in neutral and the brakes are locked. Never allow persons to stand underneath or ride on the conveyor when it is being transported. Never raise the hitch end higher than necessary to attach to the towing vehicle (weight transfers rapidly to the discharge end as the hitch end is being raised, particularly when the conveyor is in the raised position).

WARNING! Hydraulic systems are highly pressurized. Do Not connect or disconnect hydraulic components when there is pressure in the system. Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues and cause severe injury. If injured by hydraulic oil escaping under pressure, see a doctor at once. Serious infection or reaction may occur if medical attention is not received immediately.

The conveyor must be in the full down position with axles retracted when transporting.

1. The hitch cylinders are intended to lift the intake end of the conveyor for hitching and un hitching purposes.
   Position tractor at the intake end of conveyor so the hydraulic hoses on the hitch cylinders can be attached to the tractors hydraulic system. Raise the hitch to make the connection to the drawbar.

2. Secure the conveyor pintle hitch to tractor drawbar with hitch pin and keeper (maximum drawbar pin size is 1-1/2” diameter to allow 40 degree roll and pitch articulation).
   An auxiliary attachment system (safety chain) is required when transporting on public roads. Its function is to retain the connection between the towing and towed machines in the event of separation of the primary attachment system.

3. Route the end of the safety chain through the intermediate chain support and fasten chain to tractor drawbar (See Fig. 1).

4. Fully extend the hitch cylinders and install the cylinder rod stops (See Fig. 2). Position the stops around the extended cylinder rods and secure in place using the provided locking pin.

NOTE: The cylinder stops must be installed when transporting the conveyor.
PLACEMENT of CONVEYOR for FILLING GRAIN BIN

CAUTION! Make sure entire area above conveyor and the path of travel is clear of overhead obstructions and electrical wires. Failure to do so can result in electrocution (maintain at least 10 feet of clearance from power lines, electrocution can occur without direct contact of the power lines).

To prevent tip-over when backing, avoid rolling over any obstructions and avoid steep slopes. If the conveyor is to be set on a slope, approach the bin uphill. Avoid moving the conveyor at right angles to a slope.

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

- Conveyor should be placed on a level surface (the wheels must be allowed to roll freely as the conveyor is being raised).
- When positioning the conveyor into its working position, make sure to leave adequate room for the loaded vehicles to reach the inlet hopper. Also allow room for auxiliary feed equipment (such as drive-over conveyor, etc.) to feed the inlet, if so equipped.

This conveyor is equipped with extendable/collapsible axles. The axles must be collapsed for transporting. After the conveyor is positioned at the bin site, before operations begin and before raising the conveyor, the axles must be extended.

IMPORTANT! The conveyor must be in the full down position with the intake end resting on the ground. A hydraulic jack with a minimum 5 ton (4536 kg) rating is recommended.

CAUTION! When raising the conveyor axle, Do Not rely solely on hydraulic or mechanical jacks for support. Use appropriate jack stands or equivalent for supporting the axle.

1. Raise one side of the undercarriage at a time to extend or collapse the axles.
   
   Note: The jack location shown in Fig. 3 is shown as a reference only. It does not have to be positioned in that exact location.

2. Depending on the surface the jack will be resting on, it may be necessary to place a board or similar material beneath the jack to prevent it from sinking into the ground.

   Also, it is recommended to place a board on top of the jack when raising the axles (the board should extend across the width of the axle).

3. To extend the axles: Raise the axle just high enough for the tire to clear the ground. Place jack stands or equivalent beneath the axle for support.

   Remove the axle pin from the inner hole on top of the axle (See Fig. 3). Extend the axle out until it can be locked into place. Insert the axle pin in the outer hole to secure axle (there is a locking pin on bottom of the axle pin to secure the pin into place).

   Reverse these procedures to collapse the axles.

4. Lower the axle and repeat the procedures on the opposite side of the conveyor.
PLACEMENT of CONVEYOR for
FILLING GRAIN BIN (con’t.)

STEP 1: Locate Conveyor Next to Bin
1. Move the conveyor into its working position with a towing vehicle (See illustration below). Locate the conveyor as close as possible to the bin, or other storage structure (move conveyor slowly towards the bin with the towing vehicle).
2. After the conveyor is positioned and before raising the conveyor, the axles must be extended. Refer to the instructions on Page 11 for extending and collapsing the axles.

![Step 1: Locate Conveyor Next to Bin and Extend Axles](image)

STEP 2: Raise Conveyor

**WARNING!** Hydraulic systems are highly pressurized. Do Not connect or disconnect hydraulic components when there is pressure in the system.

Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues and cause severe injury.

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

Check hydraulic hoses and connections to ensure there are no leaks. Use a piece of wood or cardboard to check for leaks. Never use your hands or other body parts.

See hydraulic requirements for the lift system on Page 5.

Hydraulic systems are highly pressurized. Do Not connect or disconnect hydraulic components when there is pressure in the system.

1. Connect the hoses for the hitch cylinders to the tractor’s hydraulic system. Extend the hitch cylinder rods to release the pressure on the cylinder stops and remove the stops.
2. Lower the inlet end of the conveyor to the ground.
3. Connect the hydraulic hoses from the conveyor lift cylinders to the tractor and raise the discharge end of the conveyor high enough to clear the top of the bin.

**NOTE:** Make certain the ball valves on the tractor ends of the hoses are in the open position. Raise slowly and evenly to keep hydraulic pressure at a minimum.

**IMPORTANT!** When the conveyor is raised for the first time, it is highly advisable to do it in small increments, so that the cylinders get charged with oil properly and each lifts equally. This means extend the cylinders a few inches and then completely retract them.

Each time extend a few more inches and then completely retract. During each retract cycle, oil is being charged into the rod ends of the cylinders. During each lift cycle, oil is charged into the piston end of the cylinders.

Approximately 15 gallons (56.78 L) of oil will be needed to fully fill the piston ends of the cylinders when fully extended. Monitor the hydraulic oil level in the tractor and add additional oil, as required.
**STEP 2: RAISE CONVEYOR (con’t.)**

4. Monitor the hoses that connect to the lift cylinders and make sure there is adequate slack in the hoses when the cylinders are fully extended. If the hoses appear to be getting tight, stop the lift process and lower the conveyor completely. Adjust hose routing as required, so they will maintain slack in all lift conditions.

**STEP 3: Back into Position**

1. Raise the inlet end off the ground, and back the conveyor slowly into working position with the towing vehicle. **Do Not attempt to increase conveyor height by positioning its wheels on lumber, blocks or any other means to raise its height.**

2. Continue backing the conveyor until the discharge spout is directly over the bin opening **(when positioning the discharge over the bin opening, keep in mind that the discharge end will lower a few inches as the conveyor fills with grain).** When discharging into a grain spreader, maintain at least 12" (30.5 cm) of space between the discharge and the spreader.

**STEP 4: Lower Inlet End to Ground**

1. With the discharge directly over the opening, lower the inlet hopper to the ground and check discharge spout position. If necessary, reposition and/or lower conveyor so spout is directly above opening when intake is resting on the ground.

2. Chock the conveyor wheels to prevent the conveyor from rolling.

3. Disconnect tractor from conveyor. Raise the hitch just high enough to remove the hitch weight from the tractor drawbar. Remove safety chain and tractor hitch pin. **Make sure ball valves on the tractor ends of the hoses are closed.** Disconnect all hydraulic hoses from tractor to conveyor before moving the tractor from the area. **NOTE: It is good practice to secure the discharge end of the conveyor to the bin or storage structure to prevent possible wind damage (remember to disconnect any tie-downs and/or anchors before moving the conveyor away from the bin).**

4. Make sure all clean-out doors, access panels and safety guards are in place before beginning grain transfer operations.
**RELOCATION OF CONVEYOR**

When grain conveying is completed, the conveyor should be moved away from the bin and lowered. It can then be moved to a different bin for more conveying operations, or it can be cleaned-up for storage.

| CAUTION! Never stand between the tractor and conveyor when hitching or unhitching, unless all controls are in neutral and the brakes locked. Never raise the intake end higher than necessary to attach to a towing vehicle. Weight is transferred rapidly to the discharge end when the intake is raised, especially when conveyor is in the raised position. |

**STEP 1: Raise Conveyor**

1. Empty all grain from the conveyor and clean up the work area. Loosen the wingnut on the small hopper door located on the lower right side of the inlet hopper and clean excess grain from hopper.
2. Untie any anchors and/or supports that were used to help anchor the conveyor.
3. Disconnect the power source. Electric units, unplug all electrical cords and store them so they cannot become damaged during transport.
   PTO drive units, place PTO driveline into the storage/transport bracket and secure for transport.
4. After connecting the hitch lift cylinder hoses to the tractor, raise the hitch just high enough to attach the hitch to the tractor drawbar and install the safety chain (See Page 9 for safety chain information).
   Connect the hydraulic lift cylinder hoses to the tractor’s hydraulic system.
5. Remove the wheel chocks and raise conveyor until the discharge spout clears the top of the bin.
6. Once conveyor is ready, move the conveyor slowly away from the grain bin with the towing vehicle.

**STEP 2: Lower Conveyor**

1. Immediately after conveyor has cleared the bin or storage structure, lower the conveyor to its full down position. **IMPORTANT! Lower the conveyor to its full down position even if only relocating to another bin (collapse axles before moving, See Page 11).**
2. Use the hitch cylinders to raise inlet and install the cylinder rod stops (See Page 10).
**STEP 2: LOWER CONVEYOR (con’t.)**

![](Step2.png)

**STEP 3: Move to Next Bin or Storage**

1. Verify all pressure has been released from the hydraulic system and ball valves are closed. Disconnect and secure the hydraulic hoses so they will not become damaged during transport.

2. Move conveyor to next bin or storage site, or prepare the conveyor for storage (conveyor should be stored in the full down position).

   If the conveyor will be stored outside, make sure the small inlet hopper door on the lower right side of the hopper remains open (this will allow rain water, melted snow, etc. to drain from the hopper).

3. Follow the machine inspection recommendations on Page 4 before operating conveyor again.

![](Step3.png)

**CONVEYOR MOVING HAZARD AREA**

**WARNING!** Before moving the conveyor, the operator should make sure all personnel are clear of the “Moving Hazard Area” as shown in the diagram below. Never allow persons to ride on the conveyor while it is being transported.

![](Moving_Hazard_Area.png)

The shaded area represents the area to stay clear of.
DESIGNATED WORK AREA

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

It shall be the duty of all operators to see that children and/or other persons stay out of the work areas. Trespassing into the work area by anyone not involved in the actual operation, or trespassing into a hazard area by anyone shall result in immediate shutdown by the operator.

It shall be the responsibility of the 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.

Before starting the conveyor, a designated work area should be established and properly marked. The following diagram shows the manufacturers designated work area for conveyor operation.

These areas shall be marked off with colored nylon or plastic rope or banners hung as portable barriers to define the designated work area.

All operators shall know how to shutdown and lockout the equipment in the event of an emergency.
OPERATING PROCEDURES
(ELECTRIC DRIVE MODELS)

WARNING! The operator shall be aware of any unusual vibrations, noises and the loosening of any fasteners. Keep all safety shields and devices in place. Keep hands, feet and clothing away from moving parts. The operator shall have a full view of the conveyor work area and check that all personnel are clear of hazard areas before adding power.

Emergency Shutdown
Should the conveyor be immediately shutdown under load, disconnect and lockout the power source. Clear as much grain from the hopper and conveyor as you can. Use the clean-out door in the bottom of the hopper to help clean grain from this area. When as much grain as possible has been cleared, reconnect the power source and clear the conveyor gradually. Never attempt to restart conveyor when full of grain. Starting the unit under load may result in damage to the conveyor, such damage is considered abuse and is not covered by warranty.

Normal Shutdown
Make certain that the hopper and conveyor are empty before stopping the unit. Before the operator leaves the work area, the power source shall be locked out. (See “Lockout” below).

Intermittent Shutdown
When a conveyor is stopped and restarted under full load, it may result in damage to the conveyor and/or the motor. 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 more efficient.

Lockout
The power source for electric units shall have a main disconnect box that can be locked in only the “Off” position. That is what “shutdown and lockout” refers to - Shut off the main power source and lock the handle or breaker switch in the “Off” position.

SHUTDOWN/LOCKOUT
(ELECTRIC DRIVE MODELS)

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 and locked out. Precaution should be made to prevent anyone from operating the conveyor when the operator is away from the work area.

Check the following before adding power:
- All safety devices are in place and properly fastened, and the clean-out door on bottom of hopper is in place.
- Drive belts are properly tightened and in good condition. Replace belts if they are cracked, frayed, or damaged in anyway.
- Check electrical cords to ensure they are in good condition. Replace if necessary.
- Check electric power box and controls. Verify the power source can be locked out.
- Ensure conveyor is properly positioned and work area is appropriately marked and free of tools, debris and other hazards.
- Verify all drive component hardware and fasteners are tight, i.e. motor mount, pulleys, setscrews etc.
- Check hydraulic hoses and connections for leaks.

Begin Grain Conveying Operations
1. Start the electric motor and check to make sure conveyor is running properly (on electric drive units, make certain chain is moving in the correct direction; i.e. bottom chain going up toward discharge).
2. Slowly begin filling the inlet hopper with grain until desired flow rate is achieved.
**OPERATING PROCEDURES**

(PTO DRIVE MODELS)

**WARNING!** The operator shall be aware of any unusual vibrations, noises and the loosening of any fasteners.

Keep all safety shields and devices in place.

Keep hands, feet and clothing away from moving parts.

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

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

Before starting tractor, be certain power to the PTO is off.

Be certain the PTO driveline is securely attached to the conveyor and tractor.

Use a PTO with a rotating shield in good working condition that can be turned freely on the shaft.

Stay out of designated hazard area of an operating PTO.

**Check the following before adding power:**

- All safety devices are in place and properly fastened, and the clean-out door on bottom of hopper is in place.
- Make sure tractor is perpendicular to conveyor with PTO driveline as horizontal as possible.
- Ensure conveyor is properly positioned and work area is appropriately marked and free of tools, debris and other hazards.
- Verify all drive component hardware and fasteners are tight. Check drive belts for proper tension and that they are in good condition.

**Begin Grain Conveying Operations**

1. Engage PTO at a slow RPM to minimize shock loads, then work up to recommended speed (1000 RPM). Make sure conveyor is running properly.

The conveyor should be operated at chain speeds of about 400 FPM. **DO NOT** attempt full load operation at speeds below 400 FPM as high torque requirements may damage the conveyor.

2. Slowly begin filling inlet hopper with grain until desired flow rate is achieved.

**SHUTDOWN/LOCKOUT**

(PTO DRIVE MODELS)

**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 and locked out.

Precaution should be made to prevent anyone from operating the conveyor when the operator is away from the work area.

**Emergency Shutdown**

Should the conveyor be immediately shutdown under load, **disconnect and lockout the power source**.

Clear as much grain from the hopper and conveyor as you can. Use the clean-out door in the bottom of the hopper to help clean grain from this area.

When as much grain as possible has been cleared, reconnect the power source and clear the conveyor gradually.

Never attempt to restart conveyor when full of grain. Starting the unit under load may result in damage to the conveyor, such damage is considered abuse and is not covered by warranty.

**Normal Shutdown**

Make certain that the hopper and conveyor are empty before stopping the unit. **Before the operator leaves the work area, the power source shall be locked out** (See “Lockout” below).

**Intermittent 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 more efficient.

**Lockout**

Stop PTO and turn off power source. Remove ignition key from power source (if this is not possible, remove the PTO driveline from the work area).
GENERAL MAINTENANCE INFORMATION

WARNING! Shut off power and lockout before attempting to adjust, service, clean or repair the conveyor or any of its components.

Keep hands, feet and clothing away from moving parts.

Make sure all safety devices, shields and guards are in place and functional. Immediately replace any that are damaged or missing.

Never rely solely on mechanical or hydraulic jacks for support. Use jack stands or equivalent for support.

Never operate the conveyor with access doors or panels open.

For economical and efficient operation of your conveyor, maintain regular and correct lubrication, maintenance and service schedules. Neglect leads to reduced efficiency, excessive wear and needless down time.

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.

GUARDS

Check the guards to see if they are properly adjusted and securely fastened.

Guards should not be rubbing against pulleys, belts, chains or sprockets. Immediately replace any worn or damaged guards.

WARNING! Hydraulic systems are highly pressurized. Do Not connect or disconnect hydraulic components when there is pressure within the system.

Escaping hydraulic oil, even an invisible pin hole leak can penetrate body tissues and cause serious injury.

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

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

BEARING LUBRICATION

HEAD & INLET HOPPER BEARINGS

The head bearings are located on the head section at the discharge end of the conveyor (one bearing on each side of the head section). See Fig. 4

The inlet hopper bearing is located on the left hand side of the inlet hopper (See Fig. 4).

These bearings are fitted with grease zerks (lubrication fittings) and should be lubricated approximately once annually.

Before greasing the bearings, make sure the zerks are free of dirt, otherwise the dirt will be passed into the bearing race which can cause contamination resulting in bearing failure.

Use an SAE multi-purpose type grease.

Normally only one to two pumps of the grease gun is sufficient when servicing the bearings. NOTE: Over greasing can be just as harmful as under greasing if it forces grease out of the bearing seals.

The bearings themselves do not require adjustment, but check to make sure the hardware securing the bearings is tight. Also check the setscrews in the lock collars to ensure they are tight against the shaft.
BEARING LUBRICATION (con't.)

UNDERCARRIAGE AXLE BEARINGS

WARNING! Do Not rely solely on hydraulic or mechanical jacks for support. Use jack stands or equivalent to support undercarriage axle.

Tapered roller bearings are standard on all conveyor axles and should be repacked with grease annually, or as needed determined by usage.

To Repack Wheel Bearings:
1. Raise the undercarriage axle high enough to allow the tire to clear the ground (only raise one side of the axle at a time).
   Place jack stands or equivalent beneath the axle for support and remove the tire.
2. Remove the dust cover by prying around the edges, (See Fig. 5) then remove the cotter pin, slotted nut and flat washer from the end of the axle shaft.
3. Carefully remove the hub from the shaft being careful so the outer bearing doesn’t fall to the ground. Clean the bearing with solvent and inspect the bearing for wear and damage, replace if necessary.
   To inspect the inner bearing you will need to remove the seal from the rear of the hub (the seal may become damaged during this procedure, replace as necessary, see parts identification above).
   With the seal removed, you can now remove the inner bearing from the hub. Clean the bearing with solvent and inspect it for wear and damage. Replace if necessary.
4. Clean the hub cavity with solvent before reassembly.
   Using a good automotive type axle grease, repack the inner bearing. Insert the inner bearing into the hub and press on the grease seal.
5. Reinstall the hub onto the axle shaft being careful not to damage the lip of the seal during installation.
6. Repack the outer bearing. Fill the hub cavity with grease until about 1/3 full, then install the outer bearing.
7. Reinstall the flat washer and the slotted nut. Tighten the nut to seat the bearings. Keep tightening the slotted nut until the hub begins to bind as it is being rotated. Back off the nut to the next slot and install a new 5/32” x 1-3/4” cotter pin. Reinstall the dust cap and remount the tire.
   Repeat this procedure on the opposite wheel hub.

Fig. 5

ELECTRIC DRIVE BELT ADJUSTMENT

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

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

1. Loosen the 3/4" nut securing each of the threaded tightening rods (loosen the nuts on both the left and right hand side of motor mount plate, See Fig. 6).
2. Turn the threaded tightening rod in the desired direction to loosen or tighten the drive belts. When belt tension has been achieved, tighten the 3/4" nut against the gusset at the head end of the tightening rod (See Fig. 6).
   Proper belt tension is approximately 1” (25 mm) of deflection (per belt) using 10 to 15 lbs. of force in the center of the span between the two sheaves (use 15 lbs. for initial run of 24 - 48 hrs., then check using 10 lbs. of force thereafter).
   If a weight set is not available to check force lbs., a spring type fish scale is a good alternative.
ELECTRIC DRIVE BELT ADJUSTMENT (con’t.)

Also refer to the electric drive assembly instructions on Pages 72 to 75 for more information on the parts associated with the adjustment procedure.

GEARBOX LUBRICATION

WARNING! Keep all safety shields and devices in place. Never clean, adjust or lubricate a machine that is in operation.

IMPORTANT! The gearbox is shipped without oil. Oil needs to be added before operation of the conveyor.

Even under normal working conditions, oil will still dissipate. Check oil level in gearboxes periodically and maintain proper level.

Lubrication is extremely important. For satisfactory operation, follow the information shown on the reducer gearbox nameplate, its warning tag and in the manual provided with the gearbox. Failure to observe these precautions could result in damage to the equipment.

Oil should be changed more frequently when conveyor is being operated at high temperatures, under extreme dirty conditions, or when operated continuously.

Under these extreme conditions the oil should be changed every 1 to 3 months, depending on severity of the conditions.

CAUTION: Too much oil will cause overheating and too little oil will result in gear wear and failure. Check oil level regularly.

Very often, small metal particles will show up in the oil due to the wearing process. A magnetic drain plug is provided to help contain the particles.

1. With conveyor in the full down position, remove the vent/fill plug from the top of the gearbox, as shown in Fig. 7.

Add 10 qts. (9.5 l) of oil to the gearbox. Insert a dipstick, or similar type device, through the vent hole and check oil level. Record the level on the dipstick. Use this method for future readings when determining oil level (a wire coat hanger can be used as a substitute for the dipstick).

If the oil level is to be checked with the conveyor at an angle different than the full down position, place the conveyor at the angle it will most likely be at when the next oil level check is performed.

Use the dipstick to record the oil level at that particular angle. Use the dipstick reading for future level checks (conveyor must be at the same angle as when the initial reading was taken).

Recommended Oil:

SAE 90 weight, high grade petroleum base, rust and oxidation inhibited (R&O) gear oil.

Capacity: Approximately 10 qts. (9.5 l)

Oil Change Intervals:

Initial change after 2 weeks (if desired, this oil may be filtered and reused).

Thereafter, every 2500 hours, or 6 months (whichever comes first), oil should be drained, magnetic plug cleaned, and gearbox flushed and refilled with new oil.

Under extreme conditions, 1 to 3 months.
CONVEYOR CHAIN TENSION
and ADJUSTMENT

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

Regular inspections should be established in order to ensure the conveyor chain is always in good operating condition at all times.

The life of the conveyor chain will be shortened when the chain is allowed to sit in water or is operated in acidic conditions, try to avoid these situations.

To extend chain life, spray a light coat of soybean oil on the chain after each seasons use. Use extreme caution, keep away from moving chain and paddles.

Check Chain Tension
1. Inspect conveyor chain for loose bolts, missing chain parts, missing or damaged chain paddles and overall chain condition.

2. Check chain tension. Grasp one of the paddles at the inlet end, and attempt to rotate it up towards the chain (See Fig. 8). Proper chain tension should allow only minimal movement of the paddle.

There may be some flexing of the paddle itself, but overall there should be very minimal movement of the paddle and chain.

Adjust Chain Tension
1. Loosen the four (4) carriage bolts on each of the take-up slides on the head section located at the discharge end of unit, See Fig. 9 (there will be a total of eight carriage bolts).

2. Move the jam nuts on the conveyor chain adjustment bolts in direction desired to either loosen or tighten the chain. Move the jam nuts in equal increments so that the head shaft remains straight.

Check each side for equal distance by measuring from the shaft of each bearing to the head end.

Once proper tension has been set, tighten the eight carriage bolts and secure the jam nuts on the adjustment bolts.

If the chain is still too loose after these adjustments, it may be necessary to remove one or more chain links from the chain.
PTO DRIVELINE LUBRICATION

WARNING! Before engaging PTO, be sure the PTO driveline shaft shield turns freely on shaft. Keep hands and clothing away from the PTO components during operation.

The PTO driveline has three (3) fittings that require lubrication (See illustration below).

Lubricate all fittings with a good quality lithium based E.P. grease which meets the NLGI #2 Specifications and contains no more than 1% molybdenum disulfide (example: Shell Super Duty or equivalent).

An E.P. grease meeting the NLGI #2 Specifications and containing 3% molybdenum disulfide may be substituted in the telescoping members only, example: (Mobil Grease CMP); (Shell Oil - Retinax AM) and (Texaco - Molyex EP #0 & #2).

Telescoping members should be lubricated while in the collapsed position.

- The first lube interval should be 16 to 24 hours after initial start-up and operation, then follow the recommendations shown below.
- Check u-joint setscrews at the conveyor end to make sure they are tight against the conveyor drive shaft.

Replacement Parts are Not Lubricated

Replacement parts must be lubricated at the time of assembly. Depending on the replacement part, use the chart below to determine the proper amount of grease to use for that particular location.

After repaired parts have been lubricated and installed, follow the lubrication recommendations in the chart shown below.

PTO DRIVELINE SHEAR BOLT

The PTO driveline is equipped with a shear bolt at the tractor connection. Extra shear bolts are provided and stored in the operator’s manual container.

The shear bolt protects the conveyor from damage should the conveyor become plugged or subjected to high loads. If this scenario should occur, the shear bolt would “shear off” causing the connection to the conveyor to suddenly stop (the tractor’s PTO would still continue turning, but not the conveyor driveline).

Immediately shut down the tractor and lockout before attempting to investigate the cause of the problem.

It is important that the correct replacement bolt be of the same size and strength as the original (see chart below). This is to ensure the shear device will function properly to help protect the operator and the conveyor.

PTO Driveline Lubrication Recommendations

After the first lube interval (first 16 to 24 hours of operation) the following schedule should be maintained.

<table>
<thead>
<tr>
<th>Interval</th>
<th>Location</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 hrs.</td>
<td>U-Joint Cross &amp; Bearing</td>
<td>1 Pump</td>
</tr>
<tr>
<td>8 hrs.</td>
<td>Telescoping Members</td>
<td>4–8 Pumps</td>
</tr>
</tbody>
</table>

Shear Bolt Specifications

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Conveyor Size</td>
<td>Shear Bolt Size</td>
<td>Shear Bolt Grade</td>
<td>Replacement Shear Bolt Kit</td>
</tr>
<tr>
<td>130’</td>
<td>3/8–16 x 1 1/4”</td>
<td>Grade 2</td>
<td>Part No. 1021355</td>
</tr>
</tbody>
</table>

Fig. 10
**LUBRICATION & MAINTENANCE**

**DRIVE BELT ADJUSTMENT, PTO DRIVE**

1. Loosen the two 3/4" nuts securing each of the tightening rods to the housing gusset on the right hand side of the boot housing (See Fig. 11).
2. Loosen the two 5/16" x 1 1/4" bolts in the slotted holes securing the PTO box assembly to the belt guard (See Fig. 11 below).
3. Turn the threaded tightening rod in the desired direction to loosen or tighten the belts. Once belts have been properly tensioned, tighten the 3/4" nuts against the gusset plate at the head end of the threaded rod.

Tighten the two bolts in the slotted holes of the PTO box and belt guard.

**WARNING!** Disconnect power source and lockout whenever cleaning or servicing the conveyor.

**TROUBLE SHOOTING**

**LOW CAPACITY**

- The conveyor may not be getting enough grain. Check to see that the hopper intake has not bridged over restricting the flow.
- Chain speed is too slow.
- Grain is high in moisture. A low capacity will likely be achieved with high moisture grain. Excessive feeding of high moisture grain can cause plugging.

**PADDLE BREAKING OR BENDING**

- Paddles may be coming loose from the chain. Keep the paddles securely connected to the chain.
- Housing misalignment.
- Frequent starts under load. Allow conveyor to clean out before shutting down.
- Sprockets at intake or discharge ends may be off center. Align in center of housing.
- Overfeeding; adjust the feeding of the conveyor to allow less grain to enter while maintaining full speed.
- Loose chain. Check chain tension, adjust if necessary.

**EXCESSIVE CONVEYOR NOISE**

- Conveyor chain is too loose. Check chain tension and adjust if necessary (See Maintenance Section).
- Improper assembly or misalignment of housing. Loosen housing connection(s) that are the source of noise and disassemble. Check for end smoothness and grind if necessary.
- Sprockets at intake or discharge ends may be off center. Check setscrew in sprocket and ensure that it is tight.

**BELT SLIPPAGE**

- Incorrect belt tension. Turn the adjustment bolts on the motor mount end until proper tension is reached.
- Unit is plugged. Clean the grain and any obstructions from the conveyor.

Proper belt tension is approximately 5/8" (16 mm) of deflection (per belt) using 15 to 20 lbs. of force in the center of the span between the two sheaves (use 20 lbs. of force for initial run of 24 to 48 hrs., then check using 15 lbs. of force thereafter.

---

**Fig. 11**

Loosen these Two Bolts

Loosen the 3/4" Non-Lock Nut

Turn Tightener Rod in Desired Direction

Loosen the 3/4" Non-Lock Nut

Shown as Reference Only
CONVEYOR CHAIN & PADDLE ASSEMBLY (48 pitch chain lengths)

The paddles can be installed onto the conveyor chain before installing the chain into the tube housing.

The model number of the chain is stamped on the side of the chain links, make sure all of the conveyor chain is the same type.

The conveyor model listed in this manual uses the 81XHH Chain w/Paddle Mount Brackets and 1/2" thick UHMW paddles.

IMPORTANT! Do Not overtighten the bolts when attaching the paddles to the chain. Excessive tightening can deform the paddles.

The recommended torque for the paddle bolts and hardware is 15 to 20 ft. lbs. (20.1 to 26.8 Nm).

Install the chain so the paddle mounting bracket will be behind the paddle as grain is moved up the tube.

Be careful not to twist the conveyor chain when feeding it through the tube housing. To check for twisted conveyor chain, place a light source at the inlet section and look into the tube housing from the discharge end.

1. Assemble the sections of conveyor chain together using the connecting links and cotter pins provided (if necessary, a half link is also provided).

2. Secure the paddles to the attachment brackets welded to the conveyor chain. Fasten the paddles using two 5/16" x 1-1/2" bolts, two flat washers and nylon locknuts (bolt & flat washer on paddle side).

3. It works well to install four sections of chain assembly, approximately 41'-9" (12.7 m) long, into the upper and lower tubes of the three 39' (11.9 m) long housing weldments prior to connecting the housings together. Then, connect the chain ends together using connecting links prior to sliding the tube ends together and clamping the tube connecting bands.

NOTE: Fig. 12 shows the chain & paddle arrangement as it will be in the lower tube section of each housing assembly (as seen looking from inlet end of conveyor toward discharge end).

The chain & paddle arrangement for the upper tube sections of each housing assembly will be flipped upside down and end for ended. This means the flattened edge of the paddles will be facing the bottom of the tube and the paddles will be on the inlet side of the chain mounting brackets.
UNDERCARRIAGE ASSEMBLY

Choose an open area of level ground or concrete that is approximately 150 ft. (46 m) long with access to a chain hoist or lifting device with a rating of 2 tons (1815 kg).

Note: During the final undercarrriage to housing assembly connection, a lifting device rated at 5 tons (4536 kg) will be required for a short amount of time.

Also later in the assembly process, it will require a minimum of 20 ft. (6 m) of overhead clearance above the head assembly.

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

1. Set the lower cylinder mount (p/n. 1039324) on a pair of blocks that are 9 1/4" (23.5 cm) tall (the narrow end of the mount should be facing the inlet end of the conveyor, See illustration below). Reference: for clearance considerations, the center of the cylinder mount will be approx. 43’ (13 m) from the inlet end of boot and approx. 91’ (28 m) from the end of the head assembly, so locate it accordingly in the established assembly area (See illustration below).
The following illustration will help with the identification of the undercarriage components. Refer to this page for reference during the assembly process. The parts page exploded view on Page P-8 can also be helpful with component identification.
2. Position the upper cylinder mount (p/n 1039601) on the floor near the lower cylinder mount. Rotate 90° so the 4” x 8” (10 x 20 cm) cross tube with the two angled notches is at the top, block the mount so it is stable (See illustration below).

3. With the hydraulic lift cylinders laying horizontal (hose ports facing upward), hoist the two cylinders through the open slots in the upper mount and slide a spacer washer onto each of the trunnion pins on the cylinders (See illustration below). Install the trunnion blocks onto the trunnion pins (the snap rings on the trunnion blocks need to be facing away from the cylinder).

4. Secure the trunnion blocks to the upper mount using the 1 1/4” x 8” bolts, flat washers and nylon locknuts and tighten securely.

5. Lubricate the fittings on the bottom side of the trunnion blocks with a good quality lithium based grease (1 to 2 pumps should be sufficient).

6. Cut a piece of wood to a length of 21 3/4” (55 cm) and wedge this between the top of the two hydraulic cylinders. IMPORTANT! This prevents the cylinders from being pulled together during the lifting process, which could damage the cylinders.
7. Using the lifting rings located on top of the hydraulic cylinders, carefully lift the cylinders and upper mount assembly over the lower cylinder mount (the hose ports on the cylinders need to be facing the inlet end of the conveyor, if necessary, rotate the rod ends so the grease zerk is facing the discharge end of the conveyor, See illustration below).

8. Place 5” (13 cm) tall blocks between the tubes of the lower mount and the outer plates on the upper mount as shown in the illustration below. Center the upper cylinder mount over the lower mount and slowly lower into position while guiding the cylinder rod ends between the mounting plates of the lower cylinder mount. Cylinder rods will probably need to be pried out 1/2” (13 mm) or so to line up with the holes in the mounting plates of the lower cylinder mount.

9. Install the cylinder mount pins from the inside of the mounting plates. Add the mounting pin collar and secure collar to pin using one 1/2” x 3 1/2” bolt and nylon locknut. Secure the tab of the mount pin to the lower mount using one 5/8” x 2 1/2” bolt and nylon locknut (See illustration below).

10. Install a small rod, bolt or similar item into the upper holes on the rear gusset welded to the upper mount plate (See illustration below). Place a rod or similar item on top of these to help keep cylinders in the upright position). Lubricate the cylinder rod ends attached to the mounting pins (2 to 3 pumps should be sufficient).
11. Install the left hand upper lift arm (p/n 1039521) to the upper cylinder mount and secure using six 3/4" x 6" bolts, with two flat washers for each bolt, lock washers and non-lock nuts (insert bolts from the inside of the upper cylinder mount). Support the opposite end of the lift arm with a 25" (64 cm) tall stand or similar support.

12. Insert the lift arm pivot weldment (p/n 1039569) into the pivot hole on the lift arm as shown below. Secure the pivot weldment using four 3/4" x 2 1/2" bolts, lock washers and non-lock nuts. **Note: The pivot arm shaft will also be used for mounting the lower lift arms.**

13. Position the right hand lift arm (p/n 1039522) on the opposite side of the upper mount and slide the lift arm onto the pivot weldment shaft. Secure the lift arm to the upper mount using six 3/4" x 6" bolts with two flat washers for each bolt, lock washers and non-lock nuts (insert bolts from inside of upper cylinder mount). Secure the lift arm pivot weldment to the right hand lift arm using four 3/4" x 2 1/2" bolts, lock washers and non-lock nuts. Support the opposite end of the lift arm with a 25" (64 cm) tall stand or similar support.
14. Position the axle assembly (p/n 1040014) on a 10" tall stand near the end of the upper lift arms (make sure the attachment plates with the four holes in them are facing towards the inlet end of the conveyor, See illustration shown below).

15. Install the left hand side lower lift arm (p/n 1039409) onto the shaft protruding from the left side upper lift arm (See illustration below). Slide a pivot washer onto the shaft, then the pivot shaft collar. Secure collar using one 5/8" x 5" bolt and nylon locknut.

Connect the other end of the lift arm to the pivot plates on top of the axle assembly (See illustration below). Secure the lift arm using one pin weldment (p/n 1039880) and pivot pin collar (p/n 1039883), the pin is inserted from the outside of the plate. Secure the collar to the pin using one 1/2" x 3" bolt and nylon locknut.

Rotate the pin weldment so the small hole at the end of the pin plate is aligned with the hole on the rear side of the pivot plate on the axle. Secure the pin to the pivot plate using one 3/4" x 2 1/2" bolt and nylon locknut (See illustration below).

Repeat this procedure with the right hand side lower lift arm (p/n 1039408).

16. After the lower lift arms have been installed, lubricate the pivot ends of the lift arms. Use a good quality lithium based grease and apply 1 to 2 pumps in each lubrication fitting.

After lift arms are attached, lubricate fittings with a good quality lithium based grease. 1 to 2 pumps should be sufficient.

4-Hole Attachment Plate Facing Towards Inlet End
10" Tall Stand

Secure Collar w/ 1/2" x 3" Bolt & Nylon Locknut

Secure Pin w/ 3/4" x 2 1/2" Bolt & Nylon Locknut

Lift Arm Pin Weldment
UNDERCARRIAGE ASSEMBLY (con’t.)

17. **This step is temporary.** Loosely attach the lift arm upper frame attachment to the upper lift arms using eight 3/4” x 2 1/2” bolts, lock washers and non-lock nuts (See illustration below).

18. Using a strap or chain around the lift arm upper frame attachment, raise the upper lift arms just high enough to remove the 5” tall blocks that were placed between the lower and upper cylinder mounts in Step 8. Lower the upper lift arms.

19. Wrap a 5/16” or larger chain through the trough section of the upper cylinder mount and around the lower cylinder mount (See illustration below). Fasten chain together.

20. Again, raise the upper lift arms until the holes in the **lower lift arms** align with the mounting holes in the lower cylinder mount. Secure each lower lift arm using six (6) 3/4” x 6” bolts, twelve (12) flat washers, six (6) lock washers and six (6) non-lock nuts (insert bolts from the **outside**, see illustration below). Check all undercarriage hardware to ensure it is tight (Do Not tighten the lift arm upper frame attachment to the ends of the upper lift arms).

   Remove the block between the upper end of the hydraulic cylinders and the rod that was installed to temporarily help support the lower portion of the cylinders (refer to Pages 28 & 29).

21. Relieve the upward pressure on the upper lift arms and remove the chain previously wrapped through the upper cylinder mount trough and around the lower cylinder mount. Use a bottle jack to raise the lower cylinder mount and remove the 9 1/4” tall stands that were installed beneath the lower cylinder mount in Step 1. Release bottle jack and allow lower lift arms to rest on the floor.

22. Remove the lift arm upper frame attachment which was temporarily bolted to the ends of the upper lift arms in Step 17 above.
**UNDCARRIAGE ASSEMBLY (con’t.)**

23. Position a short radius arm near the axle as shown in the illustration below. Position a long radius arm on the opposite end of the short arm (the long arm needs to have the flat truss bar on the bottom with the offset end of the truss bar towards the axle, See illustration below).

24. Using ten 5/8” x 2” bolts and nylon locknuts, attach the short (p/n 1041452) and long (p/n 1041214) radius arms together (there are flange shims provided in case they are needed to make the two arms straight after bolting together).

25. Attach the radius arm pivot end (p/n 1041223) to the end of the long radius arm using ten 5/8” x 2” bolts and nylon locknuts. **IMPORTANT!** Note orientation of the arm ends for the left and right hand sides as shown in the illustration below.

26. Attach one of the radius arm axle ends (p/n 1041228) to the end of the short radius arm using ten 5/8” x 2” bolts and nylon locknuts (orient the arm end as shown below). Repeat these procedures on the opposite side of the conveyor.

27. Bolt the radius arm ends to the axle mount plate using four 3/4” x 2 1/2” bolts, lock washers and non-lock nuts (the radius arm end will mount to the inside of the axle plate as shown below).

**NOTE:** Steps 28 thru 60 of the undercarriage assembly will be done after completion of the housing and truss assembly. The undercarriage assembly instructions will resume on Page 45.
CONVEYOR HOUSING ASSEMBLY

The remaining undercarriage components will be assembled after completion of the housing and truss assembly.

Complete the following steps for the housing and truss assembly after you have completed Steps 1 thru 27 of the Undercarriage Assembly.

The following housing assembly illustration shows the correct sequence and location of components. The chain and paddles should already be inserted into the housing sections as described previously on Page 25.

To make assembly easier and safer, the housing sections should be placed on stands or saw horses. The stands should be approximately 33” (84 cm) tall and shimmed as required, and should be able to support the weight of the housings and chain assemblies.

IMPORTANT! The housing sections will need to be restrained in some way on the stands to assure that they remain vertical and do not roll.

Note: The final tightening of the connecting band bolts should be done manually and not with an impact wrench.

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

1. Using a hoist, position the lower housing section (p/n 1040833) between the hydraulic cylinders and lower the housing section onto the saddle support on the upper cylinder mount (See illustration on the following page, Page 35).

Make sure when lifting the housing section that it is securely fastened and balanced.

The inlet end of the housing should be positioned so that it is 28’-8” (8.74 m) from the center of pivot connection of the upper and lower lift arms. This will approximate the location of the housings in respect to the undercarriage. Minor adjustments may be required when connecting the housing to the undercarriage later.

Note: the housing part number is stenciled on the end of the housing that is nearest the inlet end of the conveyor. This is typical for all housing sections.

2. Loosely install a 38” (96.5 cm) long connecting band (p/n 1011100) over the discharge end of each lower housing tube.

Pull the chains in the tubes so the ends are exposed sufficiently to connect to the next chain segment.
3. Hoist the middle housing section (p/n 1040834) so the end with the part no. stenciled on it is facing towards the inlet end of the conveyor. Align the inlet end of the middle section with the discharge end of the lower housing section with enough room in between them to allow the chains to be connected. Using the chain links provided, connect the upper and lower chain segments together.

4. Guide the ends of the middle housing section into the connecting bands installed on the ends of the lower housing. With the ends of the housing sections touching each other, center the connecting band evenly over the lower and middle housing sections. Secure each of the connecting bands using ten 3/8" x 1 1/2" bolts and nylon locknuts. Support the other end of the housing to keep it level with the first.

Note: The connecting band attachment bolts and nuts, and the tension rod nuts are located in the truss bolt kit (p/n 1039894), this kit can be found in the 1039893 truss box of parts.

5. Install the two tension rods (p/n 1034234) to pull the top housing connection together (See illustration above). Use two 3/4" non-lock nuts on each end of the tension rod and tighten. Use the outer nut as a jam nut once tight.

6. Insert a tension rod (p/n 1043234) into one of the compression tubes (p/n 1040473) and install to pull the bottom housing connection together. Use two 3/4" non-lock nuts on each end of the tension rod and tighten against the compression tube. Use the outer nut as a jam nut once tight.

7. Loosely install a 38" (96.5 cm) long connecting band (p/n 1011100) over the discharge end of each middle housing tube. Pull the chains in the tubes so the ends are exposed sufficiently to connect to the next chain segment.

8. Hoist the upper housing section (p/n 1040835) so the end with the part no. stenciled on it is facing towards the inlet end of the conveyor. Align the inlet end of the upper section with the discharge end of the middle housing section with enough room in between them to allow the chains to be connected. Using the chain links provided, connect the upper and lower chain segments together.

9. Guide the ends of the upper housing section into the connecting bands installed on the ends of the middle housing. With the ends of the housing sections touching each other, center the connecting band evenly over the upper and middle housing sections.
10. Secure connecting bands using ten 3/8” x 1 1/2” bolts and nylon locknuts. Support the other end of the upper housing to keep it level with the first two housing sections.

11. Install one tension rod (p/n 1034234) to pull the top housing connection together and one tension rod to pull the bottom tubes together. Secure with two 3/4” non-lock nuts on each end of the tension rod and tighten. Use the outer nut as a jam nut once tight.

12. Loosely install a 30” (76 cm) long connecting band (p/n 1224D) over the discharge end of each upper housing tube.

13. At the inlet end of the lower housing section (the housing section previously installed between the hydraulic cylinders), secure one of the paddles to the tube so the chain will not be pulled into the tube as the chain is being pulled and wrapped around the head end of the conveyor.

14. Pull enough chain slack out of the discharge end of the upper housing so there will be enough chain to wrap around the head sprocket (five paddles out of the top tube and five paddles out of the bottom tube should be enough chain length to wrap around the sprocket).

15. Hoist the head assembly (p/n 1039680) so the inlet end tubes align with the tubes on the upper housing. Guide the tubes into the connecting bands until the housing tubes from the upper and head sections are touching each other.

   Secure connecting bands using eight 3/8” x 1 1/2” bolts and nylon locknuts.

16. Ensure the take-up plate for the head shaft bearings is moved all the way back to the end of the slots. If necessary, loosen the eight carriage bolts (four on each side of the head assembly) securing the take-up plates. Loosen the adjustment bolts and move the take-up plates towards the inlet end of the conveyor until the bolts contact the ends of the slots (See Fig. 13).

17. Wrap the chain around the sprocket in the head assembly and connect the ends together using the connecting link provided.

18. Prepare the lower housing section for installation of the boot (inlet hopper) assembly.

   At the inlet end of the lower housing section attach a 10’-5” (3.2 m) long chain and paddle segment to the chain protruding from the housing (use the provided connecting link to attach chains together).

19. Pull out all the chain slack from the top and bottom tubes of the lower housing assembly.

20. Loosely install a 38” (96.5 cm) long connecting band (p/n 1011100) over the ends of the lower housing tubes.

21. Hoist the boot (inlet) assembly (p/n 1039888) so the tubes align with the connecting bands on the lower housing tubes. Guide the chains through the boot assembly tubes and insert tubes into the connecting bands until they contact the tubes on the lower housing section.

   Secure connecting bands using ten 3/8” x 1 1/2” bolts and nylon locknuts.

22. Insert a tensioning rod (p/n 1034234) into a compression tube (p/n 1040473) and install to top side of the housings. Secure using two 3/4” non-lock nuts on each end of the rod (see illustration on Page 35 for similar installation procedure).

   Install one tension rod (p/n 1034234) to pull the bottom tube connection together. Secure with two 3/4” non-lock nuts on each end of the rod and tighten. Use the outer nut as a jam nut once tight.

23. Wrap the chain around the boot sprocket and connect ends together using the provided connecting link.

   Continue with the truss assembly instructions beginning on Page 37.
CONVEYOR TRUSS ASSEMBLY

Complete the following assembly steps after you have completed the Housing Assembly section.
The illustrations below and on Page 38 will help you with identifying the truss components.
Any time reference is made to the front, rear, left or right side of the conveyor will always be determined by standing at the inlet end of the conveyor and looking at the discharge end.
The illustrations below show a close-up view of the conveyor shown on Page 37. Refer to the letters below each truss section to help determine the location and the components used for that particular assembly.
CONVEYOR TRUSS ASSEMBLY (con’t.)

1. Loosely install two of the short vertical end truss tubes (p/n 1039857) to the first truss support bracket on the lower housing section (See Fig. 15). The support bracket is located directly above the radius arm mount on the housing.

Use two 5/8” x 2” bolts and nylon locknuts for each truss tube (unless otherwise noted, the 5/8” x 2” bolts and nylon locknuts will be used through the entire truss assembly procedures). Leave all bolts loose until the entire truss assembly has been installed.

NOTE: The right hand vertical tube should be mounted on the inlet side of the support plate and the left hand vertical tube should be mounted on the discharge side of the support plate (See Fig. 15). Note the correct location of the nuts as shown in Fig. 15. This will be important at truss locations E, F, G & H when it is time to add the 1040850 & 1040851 side truss standoffs.

2. Locate the diagonal end truss tube (p/n 1039802) from the truss bundle. Insert a 1” non-lock nut and flat washer onto the threaded end of the truss tube.

3. Insert the threaded rod into the slot of the truss anchor bracket on the boot assembly and install another flat washer and 1” nut onto the end of the threaded rod (See Fig. 16).

4. Connect the bracket that is welded to the diagonal truss tube to the vertical truss tubes installed in Step 1 above. NOTE: The right hand vertical tube will be mounted on the inlet side of the plate and the left hand vertical tube will be mounted on the discharge side of the plate (See Fig. 15).

This right hand, left hand arrangement will continue throughout the remaining assembly of truss tubes.
CONVEYOR TRUSS ASSEMBLY (con’t.)

5. Install the taller vertical truss tubes (p/n 1039795) to the next eight truss support brackets on the conveyor housing. Refer to the illustrations on Pages 37 & 38. Reference C, D, E, F, G, H, I, & J.

Attach the truss tubes in the same manner as the first set of vertical truss tubes were installed. Use the same right hand, left hand arrangement on these taller sets of vertical truss tubes as stated in Step 4. Also make sure the bolts are inserted from the truss tube side with the nuts against the support bracket welded to the housing.

6. Locate the truss splice weldment (p/n 1039790) and the top truss end tube (p/n 1039800) from the box of parts and truss component’s bundle. Install the splice tube into the end of the top truss tube and loosely secure using two 5/8” x 4” bolts and nylon locknuts (See illustration below).

Position the top truss end tube (p/n 1038900) on top of the first two taller vertical truss tubes (Truss Sections “C” and “D”). Attach the vertical tubes to the mount plates on the top truss tube, and on the truss splice weldment. Secure loosely using 5/8” x 2 ’ bolts and nylon locknuts.

7. Using one 5/8” x 2” bolt and nylon locknut, loosely connect the mount plate on the inlet end of the top truss end tube (p/n 1039800) to the end truss tube (p/n 1039802) previously attached to the anchor bracket on the boot assembly (See illustration below).

8. Using two 5/8” x 2” bolts and nylon locknuts each, mount the diagonal truss tubes (p/n 1039793) to the left hand side of the support brackets welded to the housing and attach the other end to the left hand side of the mounting tabs on the top truss tubes (See illustration below). Diagonal tubes attach from Truss Sections “B” to “C” and from “C” to “D”.

NOTE: Mounting the diagonal truss tubes (p/n 1039793) on the left hand side of the top truss tubes and support brackets will apply to the first four diagonal tubes. The last five diagonal tubes will mount to the right hand side of the support brackets and top truss mount plates.
9. Slide the end of the upper truss tube (p/n 1039787) onto the splice tube installed in Step 6 (use the end of the upper truss tube that does not have the diagonal mounting tab on it, See illustration below). Secure the upper tube to the splice tube using two 5/8" x 4" bolts and nylon locknuts.

10. Loosely attach the mount plate that is welded to the upper tube to the vertical tubes on Truss Section “E” using two 5/8" x 2" bolts and nylon locknuts.

11. Install a truss splice weldment (p/n 1039790) into the other end of the upper truss tube (p/n 1039787) and loosely secure with two 5/8" x 4" bolts and nylon locknuts. Fasten the mount plate on the splice tube to the vertical tubes on Truss Section “F” using two 5/8" x 2" bolts and nylon locknuts.

12. Attach a diagonal truss tube (p/n 1039793) to the left hand side of the support bracket welded to the housing and attach the other end to the left hand side of the mount tab on the upper truss tube (See illustration below). Loosely secure using two 5/8" x 2" bolts and nylon locknuts. The diagonal tubes will attach on the left hand side from Truss Sections “D” to “E” and from “E” to “F” as shown below.
CONVEYOR TRUSS ASSEMBLY (con’t.)

NOTE: This is the point at which the diagonal truss tubes (p/n 1039793) switch from mounting on the left hand side to the right hand side. This right hand attachment will begin with diagonal tube from Truss Section “F” to “G”.

13. Slide a splice tube weldment into the end of the other upper truss tube (p/n 1039787) from the truss bundle and loosely secure with the 5/8” x 4” bolts and nylon locknuts (the splice tube will be inserted into the end of the upper tube that does not have the mounting tab welded to it, See illustration below). Slide the other end of the upper truss tube onto the splice tube previously installed in Step 11 and secure with the 5/8” x 4” bolts and nylon locknuts.

14. Attach the mount plate welded to the upper tube to the vertical tubes on Truss Section “G” using two 5/8” x 2” bolts and nylon locknuts, attach the splice tube mount plate to the vertical tubes on Truss Section “H” (See illustration below).

15. Install the diagonal truss tubes (p/n 1039793) on the right hand side of the support bracket welded on the housing, and on the right hand side of the mount tab on the upper truss tube (See illustration below). Diagonals will be installed from Truss Sections “F” to “G” and from “G” to “H” as shown below. Use the 5/8” x 2” bolts and nylon locknuts to install the diagonal truss tubes.
16. Insert the upper truss end tube (p/n 1040838) over the splice tube on the end of the upper tube (p/n 1039787) that was installed in Step 13 (on Truss Section “G”). Secure with two 5/8” x 4” bolts and nylon locknuts. Connect the other end of the upper end truss tube (p/n 1040838) to the vertical truss tubes on Truss Section “J” as shown below.

17. Attach the mount plate welded to the upper truss end tube to the vertical tubes on Truss Section “I” using two 5/8” x 4” bolts and nylon locknuts.

18. Install the diagonal truss tubes to the right hand side of the support brackets welded on the housing and on the right hand side of the mount tab on the upper truss tubes. Secure using the 5/8” x 2” bolts and nylon locknuts provided. The diagonals will attach from Truss Section “H” to “I” and from “I” to “J” as shown below.
19. Install the two shorter vertical truss tubes (p/n 1039857) to the last truss support bracket on the upper housing assembly of Truss Section “K” (mount the right hand side vertical tube on the inlet side of the support bracket and mount the left hand side vertical tube on the discharge side of the support bracket, See illustration below).

20. Install a 1” non-lock nut and flat washer onto the threaded end of the diagonal end truss tube (p/n 1039802). Insert the threaded rod into the slot of the truss anchor bracket on the upper housing assembly of Truss Section “L” and install another 1” non-lock nut and flat washer onto the threaded rod.

21. Connect the diagonal end truss tube (p/n 1039802) to the end of the top truss tube (p/n 1040838) previously installed in Step 16, and secure using one 5/8” x 2” bolt and nylon locknut. Secure the mount plate welded to the end truss tube (p/n 1039802) to the shorter vertical tubes (p/n 1039857) using two 5/8” x 2” bolts and nylon locknuts.

22. Install the last diagonal truss tube (p/n 1039793) and secure using two 5/8” x 2” bolts and nylon locknuts (position the diagonal tube on the right hand side of the support bracket and on the right hand side of the mount tab as shown below). The diagonal truss tube will attach from Truss Sections “J” to “K”.

23. Begin tightening all the diagonal truss tubes, top truss tubes and vertical tubes. Do Not tighten the 1” nuts on either end of the conveyor until all other truss hardware has been tightened. After all hardware is tight, tighten the 1” nuts and secure them into place (it may be helpful to apply a little upward pressure on the ends of the conveyor when tightening the 1” nuts).

NOTE: The remaining truss assembly (side truss brackets and side truss cables, Pages 54 to 55) will be completed after remaining undercarriage components have been assembled. Continue with the undercarriage instructions on the following page (Page 45).
UNDERCARRIAGE ASSEMBLY

Con’t. from Page 33

28. Slide the radius arm pivot ends (p/n 1041223) over the pivot tubes of the undercarriage mount (p/n 1039399) and secure using the pivot tube retainer plates (p/n 1032699), 3/4” lock washers and 3/4” x 2 1/2” bolts. Attach the undercarriage mount to the mounting plate welded to the underneath side of the lower housing section (See illustration below). Secure using eight 3/4” x 2 1/2” bolts, with two flat washers and one nylon locknut on each bolt.

29. Position the radius arm cross brace (p/n 1040099) between the inlet end of the two long radius arms and secure in place using eight 5/8” x 5” bolts, flat washers and nylon locknuts (See illustration below).

30. Bolt the eight radius arm x-brace brackets to the inside of the long and short radius arms as shown below. The brackets will be installed to the radius arms on both sides of the conveyor using two 5/8” x 5” bolts, four flat washers and two nylon locknuts for each bracket (position the bracket so the mount tab with the single hole is facing up, See illustration below).

31. After undercarriage mount has been installed, lubricate the grease fittings on the ends of the radius arms (one on each side of the undercarriage mount). Use a good quality lithium based grease, 1 to 2 pumps should be sufficient.
UNDERCARRIAGE ASSEMBLY (con’t.)

32. Lay two of the shorter x-brace tubes (p/n 1040091) and two of the longer x-brace tubes (p/n 1040089) between the long radius arms and near the x-brace brackets previously installed (the end plates with the two holes should face towards the center of the “X” and the end with one hole will attach to the x-brace brackets). The shorter x-brace tubes will be positioned nearest the inlet end and the longer tubes at the discharge end. Using two of the center x-brace connection plates (p/n 1040087), bolt the x-brace tubes and center connections together as shown in the illustration below. Secure with eight 5/8” x 2” bolts and nylon locknuts (the x-brace tubes will be sandwiched in between the center connection plates).

33. Bolt the single hole end of the x-brace tubes to the brackets previously installed. Secure using four 5/8” x 2” bolts and nylon locknuts.

34. Hoist the upper lift frame (p/n 1039473) and position underneath the mounting plates on the middle housing section (See illustration on following page, Page 47). Position the 1 19/32” (4 cm) diameter pivot hole plates towards the inlet end of the conveyor. NOTE: The two end plates on the upper lift frame go to the inside of the mounting plates on the housing, the two middle plates on the lift frame go on the outside of the mounting plates on the housing, See Fig. 17 on Page 47. Secure the upper frame using thirty-two 5/8” x 2” bolts and nylon locknuts. To make it easier to access the nylon locknuts with an impact wrench, position all nuts on the outside of the mount plates. If there is a large gap between any of the mount plates, insert 5/8” flat washers to fill the gaps (See Fig. 17 on Page 47).

35. Position the upper lift arm attachment (p/n 1039540) underneath the lift frame and raise it so the holes in the pivot mount plates align with the pivot holes in the lift frame plates (the pivot plates from the lift arm attachment will be positioned between the mount plates on the lift frame as shown in Fig. 18 on Page 47). Note: When positioning the upper lift arm attachment, make sure the grease zerks in the pivot bushing are facing down, See Fig. 18 on Page 47.

Insert a pivot pin (p/n 1039668) through each pivot hole and secure each pin using one pin collar (p/n 1039669) and one 1/2” x 3” bolt and nylon locknut (the pins are inserted from the outside of the mount plates). Secure the pivot pins to the mount plates using one 5/8” x 2” bolt and nylon locknut.

After the lift arm attachment is fastened to the upper lift frame, lubricate the grease fittings on the lift arm attachment with a good quality lithium based grease. 1 to 2 pumps should be sufficient (See Fig. 18).
ASSEMBLY INSTRUCTIONS

UNDERCARRIAGE ASSEMBLY (con’t.)

Upper Lift Frame (1039473)

If Necessary, Install 5/8” Flat Washers Between Upper Lift Frame and Housing Mount Plate

End Plates on Lift Frame to Inside of Housing Mount Plate

5/8” x 2” Bolts & Nylon Locknuts

Middle Plates on Lift Frame to Outside of Housing Mount Plate

End Plates on Lift Frame to Inside of Housing Mount Plate

Fig. 17

Position Pivot Plates from Lift Arm Attachment, Between the Mount Plates on the Upper Lift Frame

After lift arm attachment is fastened to upper lift frame, lubricate fittings with a good quality lithium based grease. 1 to 2 pumps should be sufficient.

Note: Grease Zerks Should be Facing Down

Pin Weldment Collar (1039669)

5/8” x 3” Bolt & Nylon Locknut

Pin Weldment (1039668)

Lift Arm Attachment (1039540)

Shown for Reference Only

Fig. 18
36. Install one pair of lower lift arm x-braces (p/n 1039677) between the two lower lift arms and secure using four 5/8" x 2" bolts, flat washers and nylon locknuts. There are eight pairs of double mounting tabs welded to the inside of the lower lift arms that are used for attaching the x-braces. Use the four pairs of tabs closest to the inlet end of the conveyor (See illustration below).

Mount one of the x-braces to the bottom mounting tabs and the other x-brace to the top mounting tabs. When attaching the top x-brace to the mounting tab, insert the bolt from above (flat washer against the slotted hole). When attaching the x-brace to the bottom mounting tab, insert the bolt from below (flat washer against slotted hole). The other pair of x-braces nearest the axle will be installed later after the conveyor has been lifted slightly.

37. Connect one of the transport support stand tubes (p/n 1039872) to the pivot plate on the right hand side axle assembly to which the lower lift arm is pinned on (the support stand will be angled towards the center of the axle, See illustration below). Secure the support stand using two 3/4" x 2 1/2" bolts and nylon locknuts. Connect the other transport support stand (p/n 1039872) to the left hand side of the axle in the same manner and secure using two 3/4" x 2 1/2" bolts and nylon locknuts.
It is at this point in the assembly that the 5 ton (4536 kg) lifting device is going to be needed to lift the conveyor housing assembly, so that the remaining undercarriage components can be installed.

38. Locate a lifting point on the conveyor just beyond the connection point of the middle housing section to the upper housing section (i.e. just on the discharge side of the upper 38" (96.5 cm) connecting bands). You will want to stay as near the truss support and spacer welded to the housing tubes as possible (See illustration below). Position the lifting device so it will be possible to lift at this point. Any lifting sling used must be rated to support the 5 ton (4536 kg) load. The sling should wrap underneath the bottom tube as shown below. **NOTE:** There will need to be overhead clearance of at least 20 ft. (6 m) above the head assembly in order to get the conveyor high enough to connect the undercarriage components.

39. Position a rigid support directly underneath the pivot point of the two radius arm pivot ends which are attached to the undercarriage mount (See Fig. 19). The entire conveyor is going to be pivoted up at this location, so make sure the support is substantial enough to handle the load. It should be braced or have a wide enough base that it will not rotate and tip over. Any temporary supports that have been installed between the radius arm pivot and the boot, need to be removed so that the conveyor is free to rotate about this point.
40. Slowly begin lifting the conveyor housing. As the conveyor is rising, carefully swing the upper lift arm attachment (p/n 1039540) that was installed in Step 35, around its pivot pin until the plates on the ends of the lift arm attachment align with the plates on the ends of the upper lift arms (See illustration below). Use an aligning punch to help with aligning the holes and fasten together using eight 3/4” x 2 1/2” bolts, lock washers and non-lock nuts. Tighten bolts securely.

41. Continue to raise the housing until the “W” shaped saddle piece on the upper lift frame is about 12” (30 cm) above the top ends of the transport support stands previously installed in Step 37.

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WARNING! Do Not rely solely on the lifting device and lifting sling. Do Not get underneath the conveyor housings or undercarriage arms. Use some type of rigid support to assist with supporting the raised conveyor or any of its raised components. It is best to have personnel on both sides of the conveyor and that they not cross beneath the conveyor until the transport support saddle has been installed.

42. While making sure to stay out from underneath the conveyor housing, install the two vertical transport stands (p/n 1039876) to the plates on top of the main axle assembly (See illustration on Page 51). Secure each vertical stand using four 1/2” x 1 3/4” bolts and nylon locknuts.

43. Attach the upper transport stand weldment (p/n 1039866) to the top of the two vertical stands. Secure using eight 1/2” x 1 3/4” bolts and nylon locknuts (See illustration on Page 51).

44. Attach the upper ends of the two transport support stands (p/n 1039872) to the sides of the upper transport stand weldment using four 3/4” x 2 1/2” bolts and nylon locknuts. **NOTE: The upper transport stand will not be aligned with the “W” shaped saddle piece yet, so disregard this for the moment.**
45. While still holding the weight of the conveyor at the upper housing point, it is now necessary to use the 2 ton (907 kg) lifting device to pick up the upper-to-lower arm connection point. Wrap a lifting sling around the lift arm pivot weldment and raise the pivot point up until there is sufficient clearance to install the lower lift transport stand (p/n 1040097) between the two long radius arms (See illustration below). Secure the lower lift transport stand using eight 5/8" x 5" bolts, flat washers and nylon locknuts.

46. Lower the lift arm pivot weldment until it rests in the saddles of the lower lift arm transport stand just installed. Remove the lifting sling and move lifting device to the right hand end of the axle assembly (the 5 ton lifting device supporting the conveyor housing will remain where it is for the moment).
47. While continuing to support the conveyor housing, use the 2 ton (907 kg) lifting device to pick up the right hand end of the axle assembly. Install one of the tire and rim assemblies onto the axle hub and secure using the lug nuts provided with the hubs (apply some oil to the threads before installing the nuts). Make sure valve stem is to the outside. Repeat this procedure for the tire and rim assembly on the left hand side of the conveyor.

48. Lower the lifting device that is supporting the conveyor housing until the “W” shaped saddle of the upper lift frame is resting on the transport stand.

49. Bolt the two upper lift arm cross brace tubes (p/n 1039673) between the upper lift arms. Secure using sixteen 3/4” x 6” bolts and nylon locknuts (See illustration below).

50. Attach the second pair of lower lift arm x-braces (p/n 1039677) between the two lower lift arms using four 5/8” x 2” bolts, flat washers and nylon locknuts (See illustration on Page 53). **Note: The first pair of x-braces were installed previously in Step 36.** Use the four pairs of double mounting tabs welded to the inside of the lower lift arms to attach the lift x-braces. Mount one pair to the top mounting tab, and one pair to the bottom mounting tab as shown in the “Lower Lift Arm X-Braces” illustration on the following page (Page 53).

51. Lay two x-brace tubes (p/n 1070079, 56 5/8” long) and two x-brace tubes (p/n 1040086, 64 3/8” long) between the two short radius arms near the remaining x-brace brackets previously installed in Step 30. The shorter x-brace tubes (1070079, 56 5/8” long) should be positioned nearest the inlet end of the conveyor, the longer tubes (1070086 64 3/8” long) towards the discharge end. The end of the x-brace tubes with the two holes should be pointing towards the center of the conveyor, See “Short Radius Arm X-Brace Tubes” illustration on the following page (Page 53). Bolt the two holed ends of the x-braces to the center connection plates (1040082) using eight 5/8” x 2” bolts and nylon locknuts (the ends of the x-braces will be sandwiched in-between the two center connection plates).

52. Attach the single holed end of the x-brace tubes to the x-brace brackets (p/n 1041261) previously installed in Step 30. Secure using four 5/8” x 2” bolts and nylon locknuts.
UNDERCARRIAGE ASSEMBLY (con’t.)

Lower Lift Arm X-Braces

Attach Lower Lift Arm X-Braces w/ 5/8" x 2" Bolts, Flat Washers & Nylon Locknut

X-Brace on Top Tab (insert bolt from above)

X-Brace on Bottom Tab (insert bolt from below)

Mounting Tabs

Shown without some Components for Location Purposes Only

Shown without some Components for Location Purposes Only

Short X-Brace Tubes

5/8" x 2" Bolts & Nylon Locknuts used for all X-Brace Attachments

X-Brace Center Connection Plate (1040082)

Short X-Brace Tubes, 1040079 (56 5/8" long)

Long X-Brace Tubes, 1040086 (64 3/8" long)

X-Brace Center Connection Plate (1040082)

Short Radius Arm X-Brace Tubes

Short X-Brace Tubes (1040079)

Long X-Brace Tubes (1040086)

Short Radius Arm (right side)

Short Radius Arm (left side)

X-Brace Bracket (1041261)

Shown without some Components for Location Purposes Only

Shown without some Components for Location Purposes Only
CONVEYOR TRUSS ASSEMBLY
Con't. from Page 44

The remaining truss components (side truss standoff brackets and truss cables) can now be installed onto the conveyor. The following procedures are a continuance of the truss assembly that ended with Step 23 on Page 44.

24. Install two side truss standoff brackets (p/n 1040851) at the first truss support bracket on the middle housing section (See illustration below, also refer to Truss Section “E” on Pages 37 & 38).

Remove only the nylon locknut from each of the existing 5/8” x 2” bolts securing the bottom side of the vertical truss tubes. Note: The bolts should remain in place provided they were installed as stated on Page 39, Step 1 and shown in Fig. 15. If they were not installed as shown, it will be necessary to support the top truss tube to take weight off the vertical truss tubes, remove the bolts and install them in the correct arrangement (bolt heads against the vertical truss tubes, nuts against the standoff bracket). Install a standoff bracket (p/n 1040851) onto each side of the conveyor. Note: the right hand side standoff will attach to the discharge side of the truss support plate and the left hand side standoff will attach to the inlet side of the support plate (See illustration below).

25. Install the next two sets of standoff brackets (p/n 1040851) to the second and third truss sections of the middle housing (refer to Truss Sections “F” and “G” shown on Pages 37 & 38). Install these standoff brackets in the same manner described in Step 24.

26. Install the final set of standoff brackets (p/n 1040851) to the fourth truss support bracket on the middle housing (refer to Truss Section “H” on Pages 37 & 38). Attach this set of standoff brackets in the same manner shown in Step 24.

27. Loosely attach a 1/2” cable clamp (p/n 1021158) to the end of each standoff bracket previously installed (the u-bolt of each clamp will be positioned on the underneath side of the standoff bracket (See illustration below).
CONVEYOR TRUSS ASSEMBLY (con’t.)

28. String a 1/2" (13 mm) diameter x 75' (22.9 m) steel cable through the four cable clamps previously installed on the right hand side of the conveyor. Do Not tighten the clamps at this time.
String the other 1/2" dia. x 75' cable through the cable clamps on the left hand side of the conveyor. Do Not tighten cable clamps at this time.

29. Insert the cable ends nearest the discharge end of conveyor through the cable anchor loops welded to the left and right hand sides of the upper housing (See illustration below, you can also refer to Truss Section “L” on Pages 37 & 38). Extend approximately 18" (46 cm) of cable through the anchor loop and install two cable clamps (p/n 1021158) to the end of each cable. 
Note: The u-bolt portion of the clamps should be against the loose (short) end of the cable (See illustration below).

30. At the inlet end of the conveyor, insert a 5/8" x 11" eyebolt (p/n 866015-1) into the cable anchor bracket welded on the right and left hand sides of the lower housing section (See illustration below).

31. Install one 5/8" flat washer, one 5/8" coupling nut (p/n 1035357) and one 5/8" non-lock nut onto each of the eyebolts (leave most of the threads available so that the cables can be tensioned by tightening the coupling nuts).

31. Insert the cable ends through the eyebolt loops and pull tight by hand. Install two cable clamps over each cable end and tighten clamps.
Note: The u-bolt portion of the clamps should be against the loose (short) end of the cable as shown below.

32. Cut any excess cable off the ends so that there is only 18" to 20" (46 to 61 cm) of loose cable end.

33. Tighten the cables evenly from side to side by adjusting the coupling nuts. Once tension has been achieved, tighten the 5/8" nut against the coupling nut to lock into place. Tighten the cable clamps on the ends of each standoff bracket.
When cable tension is set, the cable will be tight, and the conveyor housing will be aligned straight from side-to-side.
**CONVEYOR LIFT CYLINDER**

**HYDRAULIC ASSEMBLY**

**WARNING!** Hydraulic systems are highly pressurized. Do Not connect or disconnect hydraulic components when there is pressure within the system.

Escaping hydraulic oil, even an invisible pin hole leak can penetrate body tissues and cause serious injury. Use a piece of wood or cardboard when searching for leaks, Never use your hands or other parts of your body. If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction can occur if medical attention is not received at once.

Complete the following assembly steps after you have completed the **Undercarriage, Housing and Truss Assembly sections**.

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

1. Locate the two 3/8" x 70' (21.3 m) long hydraulic hoses (p/n 1040069). One end has a swivel connector and one end has a non-swivel connector. Run the hose up through the 1-1/4" (3 cm) holes in the truss support plates on top of the lower housing weldment (See illustration below).

2. Continue to run the hose ends through the first truss support bracket on the middle housing section. There should be about 7' (2.1 m) of hose extended beyond the end of the boot (inlet) assembly after the hoses are in position.

3. Apply Teflon tape to the hose fitting threads on the swivel ends of the hoses. Attach a 1/2" pipe coupler (p/n 1040070) to each end of the hose.

4. Locate the two 3/8" x 24'-6" (7.5 m) long hydraulic hoses (p/n 1006325). One end of the hose has a swivel connector and the other end of the hose has a non-swivel connector. Apply Teflon tape to the non-swivel end of the hose and attach to the pipe couplers installed in step 3.

One of the hoses will run up the right hand side of the conveyor and the other will run up the left hand side of the conveyor. **Note: There are six of the 1-1/4" holes in each plate. Use the two outer and lower of the six holes (See illustration below).** The holes will help support the hose as it runs up the conveyor housing.

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**Route Hoses Through Holes in Truss Supports**

**Route Hoses thru Holes in Truss Support Brackets**

**Route Hoses thru 1st Truss Support Bracket on Middle Section**

**Swivel End, Attach Coupler 1040070 and 24'-6" Hose**

**Shown for Reference Only**

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**Gusset Plate**

**Hose from Right-Hand Side (top hole, retract)**

**Hose from Left-Hand Side (bottom hole, extend)**

**Hose Clamps**

**Approx. 7' (2.1 m) of Hose Extending Past Boot Ay.**

**Route Hose from Right-Hand Side to Left-Hand Side**

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**Left Side of Conveyor Shown**

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**Approx. 7' (2.1 m) of Hose Extending Past Boot Ay.**

**70' (21.3 m) long Hydraulic Hose**

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**Route Hoses thru Holes in Truss Support Brackets**

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**Route Hoses thru 1st Truss Support Bracket on Middle Section**

**Swivel End, Attach Coupler 1040070 and 24'-6" Hose**
5. Run the hose on the right hand side of the conveyor down, and along the inside surface of the upper right hand lift arm (p/n 1039522).

6. Run the hose on the left hand side of the conveyor down, along the inside surface of the upper left hand lift arm (p/n 1039521), See illustration below.

7. As the hoses pass the upper cylinder mount (p/n 1039601), you will see two 1-1/4" (3 cm) holes in each of the gusset plates near the lift cylinders. Route the ends of the hoses through the bottom hole of each gusset plate.

8. There are seven hose clamp mounting locations, along each upper lift arm (p/n’s 1039521 and 1039522). Using 1/4” x 5-1/2” long bolts secure a hose clamps (p/n 1006324) around the hose at each of these locations and secure in place with a 1/4” flat washer and nylock nut.
9. Bolt the upper cylinder hose mounting bracket (p/n 1041282) to the two holes on the inlet side of the upper cylinder mount (p/n 1039601). See illustration on the following page (Page 55).

Secure the hose mounting bracket on top of the plate using two 5/16" x 1 1/2" bolts and nylon locknuts.

10. Insert two 1/2" NPT bulkhead fittings (p/n 1041284) up through the holes in the hose mounting bracket previously installed and loosely thread a bulkhead locknut (p/n 1041348) onto each (the fitting will be on the bottom side, locknuts on the top side).

11. Apply Teflon tape to the threads of the two bulkhead fittings (the threads on top side of the mount bracket).

12. Position a 1/2" FNPT tee (p/n 1040071) above one of the bulkhead fittings and thread the fitting tightly into the tee. Position the tee so one port faces to the right and the other port to the left (See illustration on following page).

13. Repeat Step 12 for the other bulkhead fitting.

14. Locate two of the 3/8" x 5' (1.5 m) long hoses and apply Teflon tape to the threads.

15. Thread the non-swivel ends of these two hoses into the back tee (farthest from the cylinders) and tighten securely.

16. Remove the plugs from the retract (RET) ports of both lift cylinders. Note: Some oil that is inside the cylinders when shipping may leak during this step. This is not an issue (clean-up any oil that may have leaked and dispose of oil soaked rags according to local ordinance).

Apply a thin coat of clean oil to the o-ring on each of the pipe adapter fittings (p/n 420146). Install a fitting into each of the RET ports.

17. Screw the swivel end fitting of the two 3/8" x 5' long hoses into the two adapter fittings in the (RET) cylinder ports.

18. Locate the remaining two 3/8" x 5' (1.5 m) long hoses and apply Teflon tape to the threads.

19. Thread the non-swivel ends of these two hoses into the front tee and tighten securely.

20. Remove the plugs from the extend (EXT) ports of both lift cylinders. Note: Some oil that is inside the cylinders when shipping may leak during this step. This is not an issue (clean-up any oil that may have leaked and dispose of oil soaked rags according to local ordinance).

Apply a thin coat of clean oil to the o-ring on each of the pipe adapter fittings (p/n 420146). Install a fitting into each of the EXT ports.

21. Screw the swivel end fitting of the two 3/8" x 5' long hoses into the two adapter fittings in the (EXT) cylinder ports.

22. Apply Teflon tape to the bottom threads of the two bulkhead fittings and install a 1/2" NPT coupling (p/n 1040070) onto each.

23. Apply Teflon tape to the swivel ends of the two 24'-6" hoses previously installed in Steps 5 and 6.

24. Thread the swivel end of the 24'-6" hose from the right side into the coupling on the back bulkhead fitting (farthest from cylinders) and tighten securely. This makes the hose coming from the right hand side of the conveyor, the cylinder retract hose. It will be good to keep track of this, so when the hoses are connected to the tractor it will be clear which connection is for the lowering the conveyor.

25. Thread the swivel end of the 24'-6" hose from the left side into the coupling on the front bulkhead fitting (closest to cylinders) and tighten securely. This makes the hose coming from the left hand side of the conveyor, the cylinder extend hose. It will be good to keep track of this, so when the hoses are connected to the tractor it will be clear which connection is for the raising the conveyor.
CONVEYOR LIFT CYLINDER
HYDRAULIC ASSEMBLY (con’t.)

1. 1039310 Hydraulic Lift Cylinder
2. 1041284 Hydr. Hose Fitting, 1/2" NPT Bulkhead
3. 1041348 Jam Nut f/ Bulkhead Fitting
4. 1040070 Hydraulic Coupler, 1/2" NPT
5. 1040071 Hydraulic Tee, 1/2" FNPT
6. 1034985 Hydraulic Hose Ay. 3/8" x 5' x 1/2" NPT
7. 1006325 Hydraulic Hose Ay. 3/8" x 24' x 1/2" NPT
8. 420146 Hydraulic Adapter Fitting, 7/8" O-Ring to 1/2" NPT
26. Now move down towards the inlet end to the point where the two 70’ hoses pass through the holes on the first truss support bracket.
Move the free end of the right-hand hose under the top housing tube and position it on the left-hand side (you may want to mark or flag this hose so that you can easily tell which is the right-hand hose).

27. Locate the gusset plate on the left-hand side of the boot assembly (See illustration below). There are two 1 1/4” (3 cm) diameter holes in the top portion of the gusset.
Route the hose previously moved from the right side through the top hole of the gusset. Route the left hand side hose through the bottom hole of the gusset. The hydraulic cylinder retract hose is now on the top, the hydraulic cylinder extend hose is on the bottom.

28. Pull the ends of the hydraulic hoses beyond the end of the conveyor to remove most of the slack.

29. Near the upper left corner of the inlet housing is a gusset plate that caps off the end of the upper hitch cylinder mount tube.
This gusset will have a 13/32” (10 mm) hole in it. Install two hose clamps (p/n 1006324) over the two hoses at this point and mount the hose clamps to the gusset plate using one 1/4” x 1 3/4” bolt and nylon locknut. Keep the right hand (retract) hose on top and the left hand (extend) hose on the bottom.

30. Install a quarter turn shut-off valve (p/n 1005886) to the end of each 70’ hose. Make certain to apply Teflon tape to the threads prior to tightening.
When installed, the handle on the valve should be pointing towards the conveyor when the valve is in the open position.

31. Check all fittings and connections to ensure that they are tight.
Complete the following assembly steps after you have completed the Undercarriage, Housing and Truss Assembly sections.

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

1. Locate the hitch mount weldment (p/n 1040200) and position it at the lower end of the boot assembly (See Fig. 20).
   Align the 1 1/16" (27 mm) dia. holes in the pivot plates of the hitch mount with the pivot holes at the bottom of the boot frame as shown in Fig. 20 below. The hitch mount pivot holes should be facing up when properly oriented.

2. On the right hand side of the hitch mount, secure the pivot plates to the boot using one (1) 1" x 6 1/2" bolt and nylon locknut (insert bolt from the outside and install nut on inside of hitch plate.
   On the left hand side of the hitch mount, first install the 3 1/4" (8 mm) dia. washer (p/n 1040446) onto a 1" x 6 1/2" bolt.
   Next slide on the 1 1/2" O.D. x 15/16" long bushing (p/n 1021198) and the loop of the safety chain (p/n 1040496) onto the bolt, See Fig. 20 below.
   Insert the bolt through the hitch mount pivot plates and secure into place with the 1" nylon locknut.

3. Connect the two 4" bore x 8" stroke hydraulic hitch cylinders (p/n’s 1041263) to the mounting ears at the top inlet end of the boot assembly, the cylinder rods must be pointing down and the ports of both cylinders must be facing the center of the conveyor (See Fig. 21). Use the pins and keepers provided with the cylinders for mounting.
   To aid in the assembly it will be helpful if the cylinder rods are extended. Simply remove the port plugs and pull the rod end of the cylinders to extend.

4. Connect the cylinder rod ends to the 1-1/32" (26 mm) dia. cylinder mounting holes of the hitch mount weldment (See Fig. 21 below). Use the pins and keepers provided with the cylinders for mounting.
   Note: There are two cylinder stops (p/n 1045264) that can be placed over the extended rods of the cylinders and pinned into place at this time, if so desired. Pin p/n is 1045258.
   If they are not installed at this time, make sure they are kept with the boot and hitch as they are needed when transporting the conveyor, refer to Page 10, “Transporting Conveyor” for information and proper installation.
5. Insert the hitch tube weldment (p/n 1040114) through the rectangular opening on the rear of the hitch mount weldment (p/n 1040200) previous installed (Refer to the illustration shown below).

    Slide the tube in until the pin hole of the hitch tube aligns with the holes in the hitch mount plates (the tube mount will be positioned between the mount plates as shown below).

    Secure the hitch tube to the mount plates using one (1) 1” x 6 1/2” bolt and nylon locknut.

6. Connect the implement hitch clevis (p/n 1041194) to the outer end of the hitch tube using the middle two holes in the plates as shown below.

    Secure the clevis using two (2) 1” x 6 1/2” bolts and nylon locknuts.

7. Align the tube portion of the intermediate safety chain support (p/n 1040450) between the bottom set of holes at the end of the hitch tube.

    Secure the chain support using one (1) 1” x 6 1/2” bolt and nylon locknut.

8. Run the end of the safety chain (p/n 1040496) from the left hand side of the hitch mount assembly, up and through the loop of the intermediate safety chain support as shown below.

   IMPORTANT! The safety chain must always be connected to the towing vehicle any time the conveyor is being transported. Refer to Pages 9 & 10 for proper transport information.

   IMPORTANT! The Safety Chain Must be connected to the towing vehicle any time the conveyor is being transported.
CONVEYOR HITCH & HITCH CYLINDER
PLUMBING ASSEMBLY (con’t.)

1. 1041263 Hitch Lift Cylinder
2. 1041284 Hydr. Hose Fitting, 1/2” NPT Bulkhead
3. 1041348 Jam Nut f/ Bulkhead Fitting
4. 1040070 Hydraulic Coupler, 1/2” NPT
5. 1040071 Hydraulic Tee, 1/2” FNPT
6. 1034412 Hydraulic Hose Ay. 3/8” x 7’ x 1/2” NPT
7. 1041388 Hydraulic Hose Ay. 3/8” x 1”-8” x 1/2” NPT
8. 1030440 Hydraulic Elbow Fitting, 3/4” O-Ring to 1/2” NPT
9. 106413 Hydraulic Elbow Fitting, 1/2” MNPT to 1/2” FNPT
10. 1005886 Hydraulic Valve, 1/2” Ball, MNPT to FNPT
CONVEYOR HITCH & HITCH CYLINDER
PLUMBING ASSEMBLY (con’t.)

Use the illustration on Page 63 for help with parts identification and assembly position. Note: Use Fig. 22 to determine orientation of elbow fittings.

9. Locate the plumbing bracket between the two hitch cylinders. The bracket is welded to the top center on the rear of the boot assembly (See Page 63).

10. Insert two 1/2” NPT bulkhead fittings (p/n 1041284) down through the two 7/8” (22 mm) dia. holes in the plumbing bracket and loosely thread a bulkhead locknut (p/n 1041348) onto each (the fitting will be on the top side, locknuts on the bottom side).

11. Apply Teflon tape to the external threads of the two bulkhead fittings.

12. Locate the four 1/2” x 90° elbow fittings (p/n 106413) and apply Teflon tape to the external threads of the elbow fittings. Screw the elbow fittings into the thru-ports of two 1/2” NPT tee’s (p/n 1040071). The single port on the tee’s will be facing up with the female opening of the elbow facing down, and when properly installed onto the plumbing bracket, the elbows should be oriented in the positions shown in Fig. 22.

13. From the bottom side of the plumbing bracket, install the tee and elbows that are oriented for the front hole of the bracket onto the front bulkhead fitting (fitting closest to boot assembly). Tighten the tee fitting and position the tee and elbows so they are parallel with the face of the boot assembly. Tighten the locknut to secure fittings into place.

14. Repeat this procedure for the tee and elbow fittings for the bulkhead fitting on the rear plumbing bracket hole. The elbows for this location should be oriented as shown in Fig 22.

15. Locate the four 3/8” x 20” (50.8 cm) long hydraulic hoses (p/n 1041388). Apply Teflon tape to the threads on the swivel end of the hoses. Screw this end of the two hoses into the elbows on the tee fitting closest to the boot assembly.

16. Apply a thin coat of clean oil to the o-rings of two 90° elbow fittings (p/n’s 1030440). Install the elbows into the top port of each hydraulic cylinder and tighten into place (orient the elbows as shown in Fig. 22).

17. Apply Teflon tape to the non-swivel ends of the two 20” (50.8 cm) long hoses previously installed onto the elbows of the tee fittings. Connect the left side hose to the elbow in the top port of the left cylinder and the right side hose to the elbow in the top of the right side cylinder.

18. Apply Teflon tape to the swivel ends on the two remaining 20” (50.8 cm) long hoses. Screw this end of the two hoses into the elbows on the rear tee fitting (fitting closest to tractor).

19. Apply a thin coat of clean oil to the o-rings of two 90° elbow fittings (p/n’s 1030440). Install the elbows into the bottom port of each hydraulic cylinder and tighten into place (orient the elbows as shown in Fig. 22).

20. Apply Teflon tape to the non-swivel ends of the two hoses installed in Step 18. Connect the left side hose to the elbow in the bottom port of the left cylinder and the right side hose to the elbow in the bottom of the right side cylinder.
21. Apply Teflon tape to the top threads of the two bulkhead fittings previously installed onto the plumbing bracket in Step 10. Install a 1/2" NPT coupling (p/n 1040070) onto each of the bulkhead fittings.

22. Locate the two 3/8" x 7' (10 mm x 2.1 m) long hoses (p/n 1034412) and apply Teflon tape to one of the ends on each hose. Connect one of the hoses to the coupler on the front bulkhead fitting and the other to the coupler on the rear bulkhead fitting.

23. Apply Teflon tape to the other end of each hose and install a shut-off valve (p/n 1005886) to the end of each hose. When installed, the handle of the valve should be pointing toward the conveyor and away from the tractor when in the "On" position (See Page 63).

24. Check all fittings and connections to assure that they are tight.

These next steps refer to installing the boot inlet hopper sides and extension panels. Refer to the illustration below.

25. Position one of the side hopper extension panels (p/n 1040304) so the mounting slots on the flange portion of the panel align with the mounting holes on the top of the inlet boot side panel. Loosely secure the panel using five (5) 5/16" x 3/4" bolts, ten (10) flat washers and five (5) nylon locknuts (bolts go from the inside out with flat washer on bolt head and nylon locknut side of panels). Repeat this procedure for the other side hopper panel on the opposite side of the boot.

26. Install the hopper end panels (p/ns 1040305) onto the front and rear side of the boot hopper using eight (8) 5/16" x 3/4" bolts with two flat washers and one nylon locknut for each bolt (the end panels mount to the inside of the boot hopper with bolt heads to the inside).

27. Connect the corner flanges of the side panels and end panels together using twelve (12) 5/16" x 3/4" bolts with two flat washers and one nylon locknut for each bolt (See illustration below).
CONVEYOR PTO DRIVE ASSEMBLY

Complete the following assembly steps after you have completed the Undercarriage, Housing and Truss Assembly sections.

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

1. Fasten the PTO shaft support (p/n 1041315) to the mounting plate that is welded to the housing end of the boot assembly (See illustration on Page 67). Attach the flat side of the PTO shaft support to the discharge side of the mounting plate (the open end of the U-shaped plate at the end of the support should be open toward the top). Secure using three 5/8” x 1-1/2” bolts, lock washers and non-lock nuts.

2. Connect the latch bar (p/n 1040355) across the open top of the U-shaped plate of the support. Secure using one (1) 3/8” x 1-1/4” bolt and nylock nut. Leave the nut loose enough so that the bar can be easily rotated. Rotate the latch bar down and secure the outer hole of the latch bar to the support with a 5/16” lynch pin (p/n 1016747).

3. Locate the PTO mount slide weldment (p/n 1040165). The slide weldment will attach to the right hand side of the conveyor between the front hopper panel and the middle gusset of the boot assembly housing (See illustration on Page 67). Orient the slide weldment as shown, with the two rectangular cutouts in the back plate facing towards the discharge end of the conveyor.

4. To install the top mounting shaft, insert one of the slide mounting shafts (p/n 1040160) through the top tube of the slide weldment. Position the weldment and align the end of the mounting shaft with the 11/16” (17 mm) dia. hole near the top right hand side of the inlet hopper. Using one (1) 5/8” x 1 1/2” bolt and lock washer, inserted from inside the inlet hopper, secure the end of the shaft to the hopper (See illustration on Page 67).

5. Secure the other end of the slide mounting shaft to the middle gusset plate of the boot housing. Align the shaft with the 11/16” dia. hole in the gusset plate and secure using one (1) 5/8” x 1 3/4” bolt, lock washer and flat washer.

If necessary, use whatever number of 5/8” flat washers it would take to fill in the gap between the end of the shaft and gusset plate.

6. To install the bottom mounting shaft, insert the other slide mounting shaft (1040160) through the 1 5/16” (33 mm) diameter hole in the gusset plate of the boot housing and through the bottom tube of the PTO slide weldment. Align the end of the shaft with the 5/8” threaded stud that protrudes from the lower right hand location of the inlet hopper panel (See illustration on Page 67). Screw the shaft tightly to the stud.

7. Slide a PTO spacer plate (p/n 1041309) in between the end of the mounting shaft and gusset plate. Secure the spacer plate using two (2) 3/8” x 1 1/4” bolts and nylon locknuts. Using a 5/8” x 1 1/2” bolt and lock washer, secure the mounting shaft to the spacer plate. If there is a gap between the spacer plate and the end of the shaft, insert 5/8” flat washers as required to fill the gap.
Installation of Top Mounting Shaft

- 5/8” x 1 3/4” Bolt, Lock Washer & Flat Washer (con’t.)
- 5/8” x 1 1/2” Bolt, Lock Washer & Non-Lock Nut
- Slide Mounting Shaft (p/n 1040160)
- PTO Drive Shaft Support (p/n 1041315)
- Lynch Pin
- Latch Bar (1040355)
- Add Flat Washers if Necessary
- 3/8” x 1 1/4” Bolt & Nylon Locknut

Installation of Bottom Mounting Shaft

- 5/8” Threaded Stud Welded to Front of Inlet Hopper Panel
- Slide Spacer Plate (1041309) Mount w/ 3/8” x 1 1/4” Bolts & Nylon Locknuts
- Slide Mounting Shaft (p/n 1040160)
- PTO Mounting Slide Weldment (p/n 1040165)

PTO Mounting Slide Weldment (p/n 1040165)
8. Directly below the mounting bolt that secures the top mounting shaft to the gusset plate is a 15/16" (24 mm) dia. hole (See illustration below).

Insert one of the threaded tightener rods (p/n 1040168) through the hole and install a 3/4" non-lock nut onto the rod. Thread the nut onto the rod until it is nearly to the gusset plate, but do not tighten.

9. Slide the end of the rod through the side plate of the slide weldment. Insert a 3/4" non-lock nut into the hex hole of a nut spacer plate (p/n 1040855). Position the nut and spacer plate on the inside of the slide weldment plate and thread the tightener rod into the 3/4" nut (See illustration below).

10. Place a nut retainer plate (p/n 1040856) over the end of the tightener rod and slide it up against the nut spacer plate.

Secure the retainer and spacer plates to the side of the slide weldment using two (2) 3/8" x 2" bolts and nylon locknuts.

11. Directly above the mounting bolt that secures the bottom mounting shaft to the gusset of the boot housing, is another 15/16" dia. hole.

Repeat Steps 8 thru 10 to install the bottom threaded tightener rod.
CONVEYOR PTO DRIVE ASSEMBLY (con’t.)

12. Mount the PTO box assembly (p/n 1040156) to the PTO slide weldment previously installed. **The PTO box will mount to the inside of the slide weldment as shown in the illustration below.** The open end of the PTO box should be facing the inlet hopper.

Secure the PTO box to the slide weldment using six (6) 5/8” x 1 1/2” bolts and nylon locknuts. Use 5/8” flat washers at the top and bottom as required if there is a gap between the box assembly and slide weldment plates (See illustration below).

13. Attach the belt guard mount bracket (p/n 1040353) to the mount plate on the right hand side of the boot directly in front of the reducer gearbox (See illustration below).

Orient the belt guard mount bracket on the discharge side of the mount plate with the angled edge of the bracket facing up. Secure using four (4) 3/8” x 1 1/4” bolts, eight (8) flat washers and four (4) nylon locknuts (use two flat washers for each bolt).

14. Mount the PTO shield hanger bracket (p/n 1033069) to the PTO box assembly previously installed. The “L” shaped hanger bracket has a set of round holes and a set of slotted holes, the round holes will be used to mount the bracket to the PTO box. The slotted holes will be facing down.

Secure the hanger bracket using two 3/4” x 3/8” bolts and nylon locknuts.

15. Attach the U-joint shield assembly (p/n 1026217) to the bottom side of the hanger bracket.

Secure the shield using two (2) 5/16” x 1” bolts, flat washers and nylon locknuts.
16. Position the belt guard (p/n 1040362) as shown in the illustration on Page 70 (the door hinges will be at the bottom, the open end of the belt guard will face towards the PTO box assembly). Leave the door open for access to mounting bolts and sheave installation.

17. Align the belt guard with the inlet end of the PTO box assembly and slide the guard inside the box until the three mounting slots on the back panel of the guard align with the mounting holes of the belt guard mount bracket (1040353). Secure the belt guard to the bracket using three (3) 5/16" x 1 1/4" bolts, flat washers and nylon locknuts.

18. Insert a 5/16" x 1 1/4" bolt with flat washer through the slotted holes of the guard and PTO box as shown below. Add another flat washer and secure with a nylon locknut. **Do Not tighten at this time.**

19. Install the Dodge reducer cooling fan (p/n 1025377) onto the input shaft of the reducer gearbox. See mounting instructions provided with the cooling fan.

20. Slide the 2 3/16" bore QD bushing (p/n 1039913) onto the reducer input shaft. Use the key provided in the shaft keyway. Mount so the hub of the bushing is towards the reducer.

21. Install the 12 1/2" (32 cm) dia., four groove sheave (p/n 1039914) to the QD bushing. Leave loose so it can be aligned with the sheave inside the PTO box assembly. Measure from the back of the PTO box to the edge of the sheave in the box and set the sheave on the reducer input shaft the same distance from the back of the belt guard.

22. Install the four drive belts from the PTO box around the sheave on the reducer input shaft. **Start with the back groove of the sheaves and work out.**

23. Adjust the tightener rods (p/n 1040168) installed in Steps 8 thru 10 on Page 68, to tighten the drive belts. Tighten belts according to instructions on Page 24 in the Maintenance Section of this manual. Tighten the two bolts in the slotted holes securing the PTO box to the belt guard.
CONVEYOR PTO DRIVE ASSEMBLY (con’t.)

24. Install a 3/8" x 2" key in the keyway in the exposed end of the shaft from the PTO box (shaft is beneath the u-joint shield previously installed).

25. Apply an anti-seize compound to the shaft and slide the implement end of the PTO driveline over the shaft so the that the key is engaged in the keyway of the PTO driveline u-joint (position the driveline so it will swing out towards the drive shaft support). Ensure the key is properly installed and tighten the setscrews (one of the setscrews needs to be positioned on the flat portion of the shaft as shown in the illustration below).

26. Place the PTO driveline into the support saddle. Rotate the latch bar down over the driveline and secure latch bar using the lynch pin provided.

Note: The PTO driveline must always be secured in the support saddle and locked in place with the lynch pin whenever the conveyor is being transported. The driveline should also be stored in the support saddle when not in use.

IMPORTANT! For the setscrew in the PTO driveline yoke to be properly engaged on the input shaft, slide the yoke onto the shaft until the setscrew will sit on the flat portion of the shaft. Do Not extend the input shaft beyond the inside edge of the yoke.
ASSEMBLY INSTRUCTIONS

CONVEYOR ELECTRIC DRIVE ASSEMBLY

Complete the following assembly steps after you have completed the Undercarriage, Housing and Truss Assembly sections.

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

1. Locate the two motor mount slide weldments (p/n 1040852) and the two slide mounting shafts (p/n 1040160). Insert a shaft inside the tube on each of the motor mount slides.

2. On the right hand side of the boot assembly, mount one of the slide and shaft assemblies between the two gusset plates on the boot housing as shown in the illustration below.

3. Align the ends of the slide mounting shaft with the 11/16" (17 mm) diameter holes near the top of each gusset plate. Use a 5/8" x 1 1/2" bolt, flat washer and lock washer to secure the shafts to the gusset plates (orient the motor mount slide weldments so the rectangular cutouts in the slide plates are facing the discharge end of the conveyor, see illustration below).

4. Repeat Steps 1 thru 3 for installation of the motor mount slide weldment on the left hand side of the boot assembly housing.
5. Directly above the bolt that secures the right hand slide mounting shaft to the front gusset plate, there is a 15/16" (24 mm) diameter hole. Insert one of the threaded tightening rods (p/n 1040168) through this hole and install a 3/4" non-lock nut onto the rod (See illustration below).

Thread the nut onto the rod until it is nearly to the gusset plate, but do not tighten.

6. Insert another 3/4" non-lock nut into the hex hole of a nut spacer plate (p/n 1040855). Position the nut and spacer plate on the inside end-plate of the slide weldment and thread the tighter rod into the nut (See illustration below).

7. Place a nut retainer plate (p/n 1040856) over the end of the tighter rod and slide it up against the nut spacer plate. Secure the retainer and spacer plates to the slide weldment using two 3/8" x 2" bolts and nylon locknuts.

8. Repeat Steps 5 thru 7 for installation of the tighter rod on the left hand side of the boot assembly.

9. Attach the motor mount plate (p/n 1040178) to the two motor mount slides previously installed using six (6) 1/2" x 1 1/4" bolts and nylon locknuts. Orient the mount plate as shown below so that the mounting bar on the bottom side of the motor mount plate is on the right-hand side of the boot assembly (the slide assembly will attach to the inside of the mounting bar as shown below). The left-hand side slide assembly will attach to the inside of the beveled end on the motor mount plate.
CONVEYOR ELECTRIC DRIVE ASSEMBLY (con’t.)

10. Install the upper belt guard bracket (p/n 1040399) to the middle gusset plate on the right-hand side of the boot assembly (See illustration below).
   Attach the bracket to the inlet side of the gusset plate. The top hole on the bracket should mount to the 13/32" (10 mm) dia. hole that is approximately 7 1/4" down from the top of the gusset plate.
   Secure the bracket using two 3/8" x 1 1/4" bolts, flat washers and nylon locknuts.

11. Attach the lower belt guard bracket (p/n 1040398) to the discharge side of the 2 1/2" wide mounting bar welded to the right-hand side of the inlet hopper directly in front of the reducer gearbox (See illustration below).
   Secure the bracket to the two lower holes of the mounting bar and secure using two 3/8" x 1 1/4" bolts, flat washers and nylon locknuts.

12. Install the belt guard brace (p/n 1040400) to the top hole on the discharge side of the 2 1/2" wide mounting bar. Orient the belt guard brace so the long angled end is away from the conveyor, use the short angled end to attach to the mounting bar (See illustration below).
   Secure the brace using one 3/8” x 1 1/4” bolt and nylon lock nut. Leave the nut loose until the brace is connected to the back of the belt guard.

13. Install the belt guard (p/n 1040343) onto the right hand side of the boot assembly. Position the guard with the hinges to the top (this will put the large rectangular opening toward the reducer gearbox, see illustration on Page 75).
**ASSEMBLY INSTRUCTIONS**

**CONVEYOR ELECTRIC DRIVE ASSEMBLY (con’t.)**

14. Attach the bottom panel of the belt guard to the upper and lower belt guard brackets previously installed in Steps 10 and 11. Secure guard to brackets using four (4) 3/8” x 1 1/4” bolts, eight (8) flat washers and four (4) nylon locknuts.

15. Secure the back panel of the belt guard to the belt guard brace previously installed in Step 12. Secure the guard to the brace using one (1) 3/8” x 1 1/4” bolt two (2) flat washers and one (1) nylon locknut.

16. Install the Dodge reducer cooling fan onto the input shaft of the reducer gearbox. Refer to the manufacturer’s mounting instructions that are provided with the fan.

17. Slide the 2 3/16” bore QD bushing (p/n 1039913) onto the end of the reducer input shaft (use the key provided in the shaft keyway. Mount the QD bushing it’s hub is facing the reducer). Install the 11.8” outside dia. four groove driven sheave (p/n 1036942) onto the QD bushing (leave loose so it can be aligned with the drive sheave on the motor at a later time).

18. Mount a 60 hp (45 kW) 364T frame motor to the top of the motor mount plate (motor and its mounting hardware are not provided). Under operating conditions of maximum conveyor incline, maximum conveyor capacity and high moisture material, it may require the use of a 75 hp (56 kW) 365T frame motor. This larger motor will still use the same drive sheave and bushing provided.

19. Install the 2 3/8” bore QD bushing (p/n 1025831) which is provided, onto the motor shaft. Install the 6.3” outside dia. four groove drive sheave (p/n 1039912) onto the bushing. Using a straight edge, align the two sheaves. Once aligned, tighten all sheave hardware and secure the setscrews in each to lock them into place.

20. Install the four drive belts (p/n 1040352) around the sheaves, starting at the back groove on the sheaves and work out. Adjust the tightener rods (installed in Steps 5 thru 7 on page 73) to properly tension the belts. Refer to Pages 20 & 21 in the Maintenance section of this manual for proper tightening procedures.
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SAFETY DECALS & SIGNS

All Safety Decals can be obtained free of charge. Decals can be ordered from your Hutchinson/Mayrath dealer or they can be obtained directly from the factory.

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<td>1002311</td>
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<td>2</td>
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<td>Decal, Danger: Beware of Power Lines, Electrocutation Hazard</td>
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<td>3</td>
<td>1012872</td>
<td>Decal, Danger: Moving Chain and Paddles</td>
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### SAFETY DECALS & SIGNS

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# Boot Assembly Components

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<td>18</td>
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<td>Bolt, 1/2-13 x 3&quot; G5 PLT</td>
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<tr>
<td>19</td>
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<td>Nut, 1/2-13 Nylon Lock PLT</td>
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Complete Boot Assembly
Order Part No. 1039888
(complete boot assembly includes all items listed below)
Complete Head Assembly
Order Part No. 1039680
(complete head assembly includes all items listed with the exception of Item 19).

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### ELECTRIC DRIVE COMPONENTS

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<td>Bracket, Lower Guard Mount</td>
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<td>Bracket, Upper Guard Mount</td>
</tr>
<tr>
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<td>Sheave, 6.3&quot; O.D. 4 Groove (f/ 60hz 1750 RPM motor)</td>
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<td>(6)</td>
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<td>QD Bushing SF, 2 3/8&quot; Bore (f/ 50hz 1450 RPM motor)</td>
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<td>Sheave, 11.8&quot; O.D. 4 Groove</td>
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<td>QD Bushing E, 2 3/16&quot; Bore</td>
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<td>16</td>
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<td>Belt Guard</td>
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<tr>
<td>17</td>
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# PTO DRIVE COMPONENTS

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<td>Bearing Support, Rear (PTO)</td>
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<td>Shield, PTO Pulley</td>
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<td>1010A</td>
<td>Bearing, 1 1/2&quot; bore, 4-hole</td>
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<td>7</td>
<td>1032911</td>
<td>Shaft, PTO Drive Sheave</td>
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<td>1016992</td>
<td>Belt, 5VX x 106&quot; long</td>
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<td>Bolt, 1/2-13 x 2&quot; G5 PLT</td>
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<td>Nut, 1/2-13 Nylon Lock PLT</td>
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<td>Bolt, 3/8-16 x 1&quot; G5 PLT</td>
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<td>Nut, 3/8-16 Nylon Lock PLT</td>
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<td>Slide Weldment, PTO Mount</td>
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- Indented Parts Names Indicate these Parts are Included in the Previous Assembly.

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<td>QD Bushing E, 2 3/16&quot; bore</td>
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<td>Cooling Fan f/ Reducer</td>
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<td>Belt Guard, PTO</td>
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<td>23</td>
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<td>Nut, 3/4-10 Non-Lock PLT</td>
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<td>Rod, Threaded Tightener</td>
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<td>27</td>
<td>1033069</td>
<td>Bracket, PTO Shield Hanger</td>
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<td>32</td>
<td>1041309</td>
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UNDERCARRIAGE COMPONENTS
# UNDERCARRIAGE COMPONENTS

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<td>Cylinder Mount (Upper)</td>
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<td>Nut, 3/4&quot;-10 Nylon lock</td>
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Note: Items 47 thru 60 are not shown in the Parts Drawing on Page P-8, but are referenced, by size, in the undercarriage assembly procedures.
Item No. 9 (Standoff, 1040851) is shown for reference only. The cables and clamps are assembled in the same manner for Item No. 10 (Standoff, 1040850).
IMPORTANT! The Safety Chain Must be connected to the towing vehicle any time the conveyor is being transported.

---

**TRUSS COMPONENTS**

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<td>Tube, Diagonal Truss (9 places)</td>
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<td>Tube, Upper Truss End (1 place)</td>
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<td>Tube, Upper Truss (2 places)</td>
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<td>Tube, Upper Truss End (1 place)</td>
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<td>Tube, Vertical Truss (16 places)</td>
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<td>Cable, Side Truss 1/2&quot; x 75' (2 ea.)</td>
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<td>Clamp, 1/2&quot; Cable (16 places)</td>
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**HITCH COMPONENTS**

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<td>Support, Safety Chain</td>
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<td>6</td>
<td>1021198</td>
<td>Bushing, 1 1/2&quot; O.D. x 15/16&quot;</td>
</tr>
<tr>
<td>7</td>
<td>1040446</td>
<td>Washer, 3 1/4&quot; diameter</td>
</tr>
<tr>
<td>8</td>
<td>1040146</td>
<td>Bolt, 1&quot;-8 x 6 1/2&quot; Gr 8</td>
</tr>
<tr>
<td>9</td>
<td>1007943</td>
<td>Nut, 1&quot;-8 Nylon Lock PLT</td>
</tr>
</tbody>
</table>
LIFT CYLINDER HYDRAULIC COMPONENTS

Ref. Part No. Description
1 1039310 Hydraulic Lift Cylinder (6" bore x 60" stroke)
2 1041284 Fitting, 1/2" NPT Bulkhead
3 1041348 Nut, Jam f/ Bulkhead Fttng.
4 1040070 Coupler, Hydraulic 1/2" NPT
5 1040071 Tee, Hydraulic 1/2" NPT
6 1034985 Hose, Hydraulic (3/8" x 5" x 1/2" NPT)
7 1006325 Hose, Hydraulic (3/8" x 24"-6" x 1/2" NPT)
8 420146 Adapter, Hydraulic (7/8" O-Ring to 1/2" NPT)
9 1041282 Bracket, Upper Cylinder Hose Mount
10 1040069 Hose, Hydraulic (3/8" x 70" x 1/2" NPT)
--- 1042772 Seal Kit f/ 6" x 60" Stroke

HITCH CYLINDER HYDRAULIC COMPONENTS

Ref. Part No. Description
1 1041263 Hitch Lift Cylinder (4" bore x 8" stroke)
2 1041284 Fitting, 1/2" NPT Bulkhead
3 1041348 Nut, Jam f/ Bulkhead Fttng.
4 1040070 Coupler, Hydraulic 1/2" NPT
5 1040071 Tee, Hydraulic 1/2" NPT
6 1034412 Elbow, 90° Hydraulic (3/4" O-Ring to 1/2" NPT)
7 1041388 Hose, Hydraulic (3/8" x 1'-8" x 1/2" NPT)
8 1030440 Elbow, 90° Hydraulic (3/4" O-Ring to 1/2" NPT)
9 106413 Valve, Hydraulic (1/2" MNPT to 1/2" FNPT)
10 1005886 Cylinder Stop f/ Hitch Cylinder
11 1045264 Pin, Locking (1/2" x 3-5/8")
--- 1042773 Seal Kit f/ 4" x 8" Stroke
## HOPPER SIDE PANELS

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>1040304</td>
<td>Hopper Side Panel</td>
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<tr>
<td>2</td>
<td>1040305</td>
<td>Hopper End Panel</td>
</tr>
</tbody>
</table>

All Panels use:
- 5/16" x 3/4" Bolts (4701-1)
- 5/16" Flat Washers (33023)
- 5/16" Nylon Locknuts (33135)

## CHAIN & PADDLES COMPONENTS

### Direction of Grain movement

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1036088</td>
<td>Paddle, UHMW 1/2&quot; thick</td>
</tr>
<tr>
<td>2</td>
<td>1038008</td>
<td>Chain w/ Brackets, 81XHH (10'2 7/32&quot; long, 48 pitch)</td>
</tr>
<tr>
<td>3</td>
<td>1017077</td>
<td>Connecting Link f/ 81XHH</td>
</tr>
<tr>
<td>4</td>
<td>33023</td>
<td>Washer, 5/16&quot; Flat PLT</td>
</tr>
<tr>
<td>5</td>
<td>4736</td>
<td>Bolt, 5/16-18 x 1 1/2&quot; G5</td>
</tr>
<tr>
<td>6</td>
<td>33135</td>
<td>Nut, 5/16-18 Nylon Lock</td>
</tr>
<tr>
<td>*</td>
<td>1034495</td>
<td>Half Link, 81XHH (* Not Shown)</td>
</tr>
</tbody>
</table>
**PARTS LIST**

**PTO DRIVELINE COMPONENTS**

**Specifications:**
- U-Joint Type - 35R (1000 RPM)
- Auger End - 1 1/2" Bore w/ 3/8" Key Seat
- Tractor End - 1 3/8"-21B Spline w/ Shear Bolt

Replacement Parts are Not Lubricated.
Replacement parts must be lubricated at the time of assembly. Refer to the “Lubrication & Maintenance” Section of this manual.

Shear Bolt & Nut Kit (Item 11) includes six (6) 3/8-16 x 1 1/4" G2 bolts and nylon locknuts.

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Description</th>
<th>Hutch/May Part No.</th>
<th>Weasler Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- -</td>
<td>PTO Driveline Complete</td>
<td>1029613</td>
<td>242-23701</td>
</tr>
<tr>
<td>1</td>
<td>Joint &amp; Tube Half Ay. w/ Guard (auger end)</td>
<td>1028781</td>
<td>92-22829</td>
</tr>
<tr>
<td>2</td>
<td>Roll Pin, 1/4&quot; x 1&quot; long</td>
<td>1003691</td>
<td>11-10454</td>
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<tr>
<td>3</td>
<td>Inner Safety Sign</td>
<td>13-10022</td>
<td>13-10022</td>
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<tr>
<td>4</td>
<td>Shield, Nylon Bearing Kit</td>
<td>1028784</td>
<td>19-15126</td>
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<tr>
<td>5</td>
<td>Inner Guard (includes Item 4)</td>
<td>1028785</td>
<td>96-22829</td>
</tr>
<tr>
<td>6</td>
<td>U-Joint Cross Repair Kit</td>
<td>1028783</td>
<td>03-10045</td>
</tr>
<tr>
<td>7</td>
<td>End Yoke</td>
<td>1028787</td>
<td>35041-1572</td>
</tr>
<tr>
<td>8</td>
<td>Setscrew, 3/8-16 x .38</td>
<td>33170</td>
<td>11-10215</td>
</tr>
<tr>
<td>9</td>
<td>Joint &amp; Shaft Half Ay. w/ Guard (tractor end)</td>
<td>1029856</td>
<td>93-23701</td>
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<tr>
<td>10</td>
<td>Spring Lock Flange Repair Kit</td>
<td>1028788</td>
<td>26-15120</td>
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<tr>
<td>11</td>
<td>Shear Bolt &amp; Nut Kit (See Note)</td>
<td>1021355</td>
<td>- - -</td>
</tr>
<tr>
<td>12</td>
<td>Yoke &amp; Ball Shear Assembly</td>
<td>1029857</td>
<td>40-30006</td>
</tr>
<tr>
<td>13</td>
<td>Outer Guard (includes Item 4)</td>
<td>1028786</td>
<td>97-22829</td>
</tr>
<tr>
<td>14</td>
<td>Outer Safety Sign</td>
<td>13-10021</td>
<td>13-10021</td>
</tr>
</tbody>
</table>

Repair parts for PTO drivelines can also be purchased directly from:
Weasler Engineering Inc.
West Bend, WI 53095
ph: 262-338-2161