IMPORTANT! The reducer gear box for the Low Profile Conveyor is shipped Without Oil. Oil must be added before conveyor operation. Refer to the Lubrication Section in this manual.

This Manual is for Units with Serial No’s. 958853 and Higher
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.
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GENERAL SAFETY STATEMENT

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

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

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

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

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

SAFETY ALERT SYMBOL

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

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

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

Follow Safety Instructions

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

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

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

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

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

Prepare for Emergencies

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

Keep a first-aid kit and fire extinguisher handy.

Be prepared if a fire starts.
Wear Proper PPE (Personal Protective Equipment)
Some materials can create flying debris when they are filed, cut or drilled. Safety glasses should be worn at all times to protect your eyes from such debris.
Hearing protection should be worn when operating power tools or other power equipment that could be harmful to your hearing.
Gloves should be worn to protect your hands from sharp metal and plastic edges, as well as providing protection from the handling of heavy objects.
Wear steel toe boots to protect your feet from falling debris.
Wear a hard hat to help protect your head from falling objects as well as from accidental bumping.
Use caution when working at elevations greater than four (4) feet (1.22 m) above the ground.
Use the appropriate fall protection equipment as set forth by OSHA guidelines and regulations.
A respirator may be needed to prevent breathing potentially toxic fumes and dust, especially when working within a grain bin or storage structure.

Operate Electric Motor(s) Properly
Do not operate electric motor equipped units until motor(s) are properly grounded.
Know how to “Shutdown and Lockout” the power source. Shutdown and lockout power source before performing any service, maintenance or adjustments to the unit.
Disconnect power on electrical driven units before resetting motor overloads.

Stay Clear of Moving Parts
Keep all shields, covers and safety devices in place at all times.
Entanglement in moving chains and sprockets will cause serious injury or death.
Wear close fitted clothing. Keep hands, feet and clothing away from moving parts.
Shutdown and lockout power source before making adjustments, cleaning or maintaining the equipment.
SAFETY DECALS

Check to ensure all Safety Decals are present and in good condition. If a decal cannot easily be read for any reason, or has been painted over, replace the decal immediately. Safety decals are offered free of charge, and can be ordered through your Hutchinson/Mayrath dealer or directly from the factory. Refer to the Parts List Section for decal Part No’s. and location of decals on components.

SAFETY BIN SAFETY

The Dual Hopper Chain Conveyor is designed to receive grain from both hoppers on a trailer at the same time and discharged into a lower conveyor system which then moves the grain into grain bins or other storage structures. Be aware of the dangers inherent in grain bins. Consult the grain bin manufacturer’s manual for information on the proper loading and unloading of the bins, structural stress analysis, adequate venting and important safety information.

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

Do Not enter the bin unless all power driven equipment has been shut down and locked out. Never enter the bin unless monitored by another person.

Example 1 (Abnormal Flow)

Example 2 (“Bridging”)
OPERATOR QUALIFICATIONS

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

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

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

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

3. Unqualified persons are to stay out of the work area. See Page 6.

4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.

5. Persons operating, servicing or repairing equipment that requires above ground work shall be properly secured with the use of “fall protection” equipment as set forth by OSHA guidelines and regulations.

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

SIGN OFF SHEET

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

<table>
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<th>Training Sign-Off Sheet</th>
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SERIAL NUMBER

To ensure efficient and prompt service, please furnish us with the model and serial number of your conveyor in all correspondence or other contact. The serial plate is located on the drive head assembly of the dual hopper conveyor and on the drive head assembly of the low profile hopper.
MACHINE INSPECTION

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

1. Inspect the conveyor for loose bolts, missing chain parts, missing or damaged paddles and the overall chain condition.
2. Check chain tension.
3. Check the condition and tension of drive belts and adjust as necessary.
4. Inspect sheaves for alignment and see that they are securely fastened.
5. Check oil level in drive reducers and gearboxes.
6. Check all safety signs and replace any that are worn, missing or illegible. The safety signs are listed in the front of this manual. Safety signs may be obtained free of charge from your dealer or ordered from the factory.
7. Check that all safety devices, guards and shields are installed and that all grates and covers are properly in place.

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

START-UP and BREAK-IN INFORMATION

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

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

The operator should have a full view of the auger work area and check that all personnel are free from designated work areas before adding power.

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

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

START-UP and BREAK-IN INFORMATION (con’t.)

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

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

DESIGNATED WORK AREA

The area around the conveyor and inside the grain storage units is considered the work area. Use the following to ensure a safe working environment.

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

It shall be the responsibility of all operators to see that the work area has secure footing, is clean and free of 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.

Use caution when working in areas above the ground. Persons operating, servicing or repairing equipment that requires above ground work shall be properly secured with the use of “fall protection” equipment as set forth by OSHA guidelines and regulations.

Metal buildings, scaffolding and other types of work surfaces can become slippery, especially when surfaces are wet and/or oily. This can create hazardous working conditions. Use caution when working, climbing or walking on these surfaces.


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

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

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

Make certain electric motor is grounded.

Disconnect power before resetting motor overloads.

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

---

### Power Requirements

#### f/ Dual Hopper Chain Conveyor

The drive head requires a 10 H.P. C-Face electric motor that mounts directly to the head drive reducer (motor not supplied).

**Motor Specifications:**
- AC 10 H.P. C-Face w/ Base
- 230/460V - 3PH Explosion Proof
- 1800 RPM
- 215TC Frame

Recommend VFD type motor control be used for limiting capacity to match that of the take-away conveyor.

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

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

Some motors have built-in thermal overload protection. If this type motor is used, use only those with a manual reset.

Install with an ampmeter on motor or motors, so that the load can always be monitored to prevent overloading.

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

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<table>
<thead>
<tr>
<th>Recommended Electric H.P.</th>
<th>Motor Frame Size</th>
<th>Recommended Motor Pulley*</th>
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<tr>
<td>15 H.P.</td>
<td>254T</td>
<td>7.4” P.D.</td>
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*The motor pulley is furnished with the unit.

P.D. = Pitch Diameter
OPERATING PROCEDURES

WARNING! Make certain everyone is clear before operating the equipment. The operator shall be aware of any unusual vibrations or noises that would indicate the need for service or repair. Keep all safety shields in place. Keep hands, feet and clothing away from moving parts.

The operator shall have a full view of the entire work area and check that all personnel are clear of the designated work area before adding power. 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 absent from the work area.

The reset and starting controls must be located so that the operator has full view of the entire operation. Do Not enter the grain bin unless all power driven equipment has been shut down and locked out. Make certain electric motor is grounded. Disconnect power before resetting motor overloads. Shut off power and lockout whenever cleaning or servicing the conveyor.

EMERGENCY SHUTDOWN

Should either machine need to be immediately shut down under full load, disconnect and lockout the power source. Clear as much grain from the conveyors as possible. Remove covers and grates as needed to access hoppers. Also use the access door on top of each spring take-up to gain access at the boot ends. Never attempt to restart when full. Starting the unit under full load may result in damage. Such damage is considered abuse of the equipment and will void all warranties.

NORMAL SHUTDOWN

Close flow controls from dump vehicle and allow the conveyor to empty before stopping the unit. Before the operator leaves the work area, the power source shall be locked out.

INTERMITTENT SHUTDOWN

When a conveyor is stopped and started 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. If a conveyor is kept from absolute filling, it will make start-up easier and will convey grain more efficiently.

LOCKOUT

The power source shall have a main disconnect box that can be locked only in the “Off” position. This is what “shutdown and lockout” refers to, shut off the main power source and lock handle or breaker switch in the “Off” position.

1. Start the conveyor and take-away conveyor for operation. Open trailer gates gradually until desired grain flow has been obtained. At initial start-up, check to make sure grain is not returning to boot end of conveyor. It is critical to ensure the take-away conveyor(s) is matching or exceeding the capacity of the dual hopper conveyor. Piling grain along length of hoppers can result in stalling. Monitor motor load to ensure conveyor is not being overloaded. If, in rare occasions, overload is detected, reduce the flow of grain into the dual hopper conveyor. After grain flow from dump vehicle has stopped, allow the conveyors to clean themselves out, then shut down and lock out the power source. Never start the conveyor under load.
**PROPER UNLOADING PROCEDURES**

When unloading trucks and trailers, it is critical not to overload the take-away conveyor nor the dual hopper conveyor. The illustrations below show the correct unloading procedures to prevent overloading of the system. Adjust the flow of grain to unload either into the dual hopper head itself, or into the dump hoppers on either side of the head section so that the grain flows from each dump hopper into the head section.

Do Not unload by dumping into one side of the dump hoppers and the dual hopper head at the same time. This will cause the grain to keep being fed back into the dump hopper which will cause plugging and overflow of the grain in the conveyor system. This can also cause excessive grain build-up in the take-away conveyor leading to equipment and/or electric motor damage.

**Correct Dumping Procedures**

![Correct Dumping Procedures Diagram]

Dump into hoppers on either side of the dual hopper head to allow grain to flow from hoppers to head.

**Incorrect Dumping Procedures**

![Incorrect Dumping Procedures Diagram]

DO NOT dump into dump hopper and dual hopper head at the same time

DO NOT dump into dump hopper and dual hopper head at the same time
GENERAL MAINTENANCE INFORMATION

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

Keep all safety shields and devices in place.

Never clean, adjust or lubricate a machine that is in operation.

Disconnect power before resetting motor overloads.

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

Keep hands, feet and clothing away from moving parts.

For economical and efficient operation of your conveyors, maintain regular and correct lubrication. Neglect leads to reduced efficiency, excessive wear, and needless down time. Regular inspections should be established in order to ensure that the equipment is in good operating condition at all times. Use the “Machine Inspection” list on Page 6 for guidelines.

The following information will detail the parts that require lubrication and the various conditions that determine the frequency span.

DUAL HOPPER CONVEYOR MAINTENANCE

Oil, even under normal operating conditions will dissipate. Check oil level periodically and maintain proper level.

The Drive Head gearboxes and reducer are shipped with oil already in them. Oil level should be checked prior to installation of the drive head.

Gearbox Oil Level Check
To check oil level, remove the vent/fill plug from the top of the gearboxes (See Fig. 1). Use a dipstick type device and insert into the opening. Record the oil level. Use this same method for future level checks.

If additional oil is required, use an EP80W90 non-foaming multi-purpose gear oil in normal operating temperatures between 40°F to 102°F (4.4°C to 48.9°C). For temperatures below 40°F (4.4°C) an EP80W oil is recommended.

Gearbox Capacity: 28 oz. (.83 L)

Reducer Oil Level Check
To check oil level, remove the oil fill plug from the top of the reducer (See Fig. 1). Use a dipstick type device and insert into the opening. Record the oil level. Use this same method for future level checks.

If additional oil is required, use a high performance H1 grade synthetic lubricant. Refer to the manual that was supplied with the reducer for more on break-in and maintenance information.

The reducer is referenced in the manual as a:

Size 40, 3-Piece Coupled Input, Hollow Output Shaft

Reducer Capacity: 139 oz. (4.1 L)

Drain plugs are accessible from the bottom of the gearbox mount plate. When draining oil, make sure to clean up any spilled oil and dispose of used oil according to your local ordinances.

Fig. 1
**Bearing & Chain Lubrication**

The drive head bearings and chain require periodic maintenance. The bearings are sealed ball bearings and have been lubricated at the factory.

**Lubricate (1 pump) every 50 hours** of operating time using an SAE multi-purpose type grease.

To prevent contamination of the bearings, make sure lubrication fittings (grease zerks) are free of dirt or debris before lubrication.

Ensure that all hardware securing the bearings is tight and that eccentric collars are secure.

Remove the chain coupler covers to gain access to the chains and couplers. Brush thoroughly at least once a week with a medium body (30W) machine or engine oil, or a good quality roller bearing grease of medium consistency. Particular attention to lubrication is required for couplers operating at high speeds. Relubricate frequently as required.

**Spring Take-Up Maintenance**

The spring take-up assembly has two bearings that need lubrication. The bearings are sealed ball bearings and have been pre-lubricated at the factory.

**Lubricate (1 pump) every 50 hours** of operating time using an SAE multi-purpose type grease (See Fig. 3).

**Do Not** over grease as this may damage the seals on the bearings.

Ensure that all hardware securing the bearings is tight and that eccentric collars are secure.

**Chain Tension for Dual Hopper Conveyor**

Chain tension for the dual hopper conveyor is set at the spring take-up end. The chain tension for the dual hopper conveyor is different than that of the low profile conveyor, refer to the instructions for setting chain tension on the low profile hopper.

Adjust chain tension using the nuts on the threaded take-up bolts. Hold the adjustment bolt and turn the nut against the spring on each side equally in small increments to keep the tail shaft square (also reference Page 36).

To check tension, rotate the paddles up towards the chain (See Fig. 3), there should be minimal movement of the paddle.

Once this tension has been reached, compress spring an additional 1/2” to 3/4” (13 mm to 19 mm) to allow for wear in chain. Spring should be compressed to approx. 4 1/2” (11.4 cm) in length (Also reference Page 36).

After tension has been properly set, tighten the jam nuts to lock into place.

Check paddles regularly for wear and/or breakage. Ensure all hardware securing the paddles to the chain brackets is tight and all bolts and nuts are still intact.
DUAL HOPPER & SPRING TAKE-UP
BEARING & SHAFT DISASSEMBLY

The dual hopper and the spring take-up bearings and shafts can be removed as complete assemblies without having to disassemble the individual components or without having to remove these sections from the pit.

WARNING! Keep hands, feet and clothing away from moving parts.
Shut off power and lockout whenever cleaning or servicing the conveyor.

Dual Head Hopper Bearings & Shafts
Remove the grates and/or cover plates for access to the dual hopper head section.
Position the connecting links on the chains and paddles near the drive sprockets. Keep clear of moving parts.
Shut down and lockout power source. Loosen the chain tension using the spring take-up adjustment bolts and remove the connecting links from chain.
Remove the clean-out panels and mounting brackets and remove the cover from the chain coupler. Remove chain from coupler (See Fig. 3A below).
Remove the hardware securing the bearings to the hopper sides and lift the shaft and bearing assembly out of hopper.
Reassemble in the reverse order of removal.

Spring Take-Up Bearings & Shafts
Remove the cover plates for access to the spring take-up section.
Open the hinged cover. Position the connecting links on the chains and paddles near the take-up sprockets. Keep clear of moving parts.
Shut down and lockout power source. Loosen the chain tension using the spring take-up adjustment bolts and remove the connecting links from chain.
Remove the four carriage bolts and locknuts securing the top portion of the bearing slide mount to the sides of the boot (See Fig. 3B below).
Remove the four bolts and lock washers securing the bottom portion of the bearing slide mount to the boot (the bottom four bolts have weldnuts that they thread into, See Fig. 3B).
The complete slide mount, bearing and shaft can now be removed. Slide the assembly towards the rear of the boot and lift up for removal (note the boot weldment in Fig. 3B, slide assembly back and up).
Reassemble in the reverse order of removal.

Fig. 3A

Remove Mount Brackets & Clean-Out Panels (both sides)
Remove Bearing Hardware (both sides)
Remove Cover & Chain from Coupler

Fig. 3B

3/8" x 1" Carriage Bolts & Locknuts (both sides of boot)
3/8" x 1" Bolts & Lock Washers (both sides of boot)
Slide Assembly Back and Up for Removal
Shown for Reference Only
**LOW PROFILE CONVEYOR MAINTENANCE**

**Chain Adjustment**

The chain tension for the low profile conveyor is different than that of the dual hopper conveyor, refer to the instructions for setting chain tension on the dual hopper conveyor.

To adjust the chain to proper tension, loosen the four (4) carriage bolts on each side of the head (total of eight carriage bolts), See Fig. 4.

Turn the adjustment bolts on each side equally in small increments to keep the head shaft square. Continue adjustment until there is approximately 85° of rotation when the paddle is rotated up towards the chain (See Fig. 5 below).

After proper tension has been achieved, tighten carriage bolts and jam nuts on adjustment bolts.

The life of the conveyor chain will be shortened when the chain is allowed to sit in water or is operated in acidic conditions, so avoid these situations as much as possible. To extend chain life, spray a light coat of vegetable oil on the chain after each seasons use.

**Bearing Lubrication**

The head section and short boot have a set of bearings that require periodic maintenance (See Fig’s. 4 and 6). The bearings are sealed ball bearings and have been pre-lubricated at the factory.

Lubricate (1 pump) every 50 hours of operating time using an SAE multi-purpose type grease.

To prevent contamination of the bearings, make sure lubrication fittings (grease zerks) are free of dirt or debris before lubrication.

Ensure that all hardware securing the bearings is tight and that eccentric collars are secure.

**Motor Belt Tension**

To adjust the motor belt tension, loosen jam nuts on motor mount adjustment bolts, turn adjustment bolts in equal increments until proper belt tension has been achieved. Tighten the jam nuts to lock into place (See Fig. 7).

Proper belt tension is approx. 1/2” (13 mm) of deflection per belt when firmly pressed at the center of the span between the two sheaves.

Check belts for tightness, fraying or other damage. Replace as necessary. **Belt Type: B-59**

Check that sheaves are properly aligned and all hardware securing the sheaves is tight. Make sure belt guard is in good condition and properly secured.
LOW PROFILE CONVEYOR MAINTENANCE
MOTOR BELT TENSION (con’t.)

Gearbox Oil Level
IMPORTANT! Because the gear reducer is shipped without oil. It is necessary to add the proper amount of oil before conveyor operation.
Use a high grade petroleum base, rust and oxidation inhibiting (R&O) gear oil such as a 320 ISO Grade gear oil.
Capacity: 1.1 qts. (1.1 L).
Reducer Type: Dodge TA2115H05
Under normal industrial operating conditions, the lubricant should be changed every 2500 hours of operation or every six (6) months, whichever occurs first. Drain the reducer and flush it with kerosene, clean the magnetic drain plug and refill reducer to its proper level with new lubricant.
CAUTION: Too much oil will cause overheating and too little oil will result in gear failure. Check oil level regularly.
Under extreme operating conditions, such as rapid rise and fall of temperature, dust, dirt, chemical particles, chemical fumes or oil pump temperatures above 200°F (93.3°C), the oil should be changed every 1 to 3 months depending on severity of conditions.
For reducers operating in ambient temperatures that range between -22°F (-30°C) and 20°F (-6.6°C), the use of a synthetic hydrocarbon lubricant, 100 grade or AGMA 3 Grade (for example Mobil SHC627) is recommended.
Refer to the manual that is furnished with the reducer for additional information.

Bearing and Shaft (Short Boot Section)
The bearing and shaft assembly can be removed without completely disassembling the individual components or without having to remove the short boot section from the pit.
Remove cover plates for access to short boot section. Open hinged cover. Keep clear of moving parts. Position the connecting links on the chain and paddles near the boot sprockets. Shut down and lockout the power source. Loosen the chain tension using the adjustment bolts at the drive head section. Remove the connecting links to separate the chains and remove chains from sprockets.
Remove the hardware securing the bearings to the sides of the boot section. Slide the assembly up for removal (See Fig. 8). Reinstall in the reverse order of removal.
**DUAL HOPPER CONVEYOR**

The typical component layout for the basic 25' Dual Hopper Conveyor is shown in the illustration below. The length limitation recommended is no more than 15 ft. (4.57 m) of hoppers or trunks on each side of the drive head (not including the take-up section).

Conveyor supports should be spaced every 5 ft. (1.52 m) ideally, 10 ft. max. (3.05 m). Conveyor supports should only carry the weight of the conveyor and do not support loaded trucks.

**Recommended Length Limitations:**
- No more than 15 ft. of hoppers or trunks on each side of drive head
- Conveyor Supports should be spaced every 5 ft. ideally, 10 ft. max.
- Conveyor Supports should only carry weight of conveyor and do not support loaded trucks.

**Optional Trunk Extensions** can be used for your particular application. Generally located between drive head and dump hopper sections.
LOW PROFILE CONVEYOR

The typical component layout for the Low Profile Conveyor is shown in the illustration below. Optional trunk extensions can be used to fit your particular application.

If additional trunk sections are used, causing the head section to be moved further away from the last conveyor support, the head section will need to be supported in some manner.

The two most common take-away conveyors that would be used with the Dual Hopper Conveyor are the Low Profile Conveyor and the M85 Stationary Mass-Ter Mover. Other possible take-away conveyors are the 12” Grain Pump® Loop System, the 16” Grain Pump® Loop System and the M150 Stationary Mass-Ter Mover. The use of any other take-away equipment may require additional modification of the trench dimensions. The dimensions shown on the following pages reference the Low Profile Conveyor.

Depending on which take-away conveying system is used, the conveyor supports that are normally used with the low profile conveyor may have to be modified or you may have to custom design your own supports specific to the take-away equipment used.
CONCRETE/TRENCH SPECIFICATIONS

CONCRETE DIMENSIONS

NOTE: Hutchinson-Mayrath does not design structural concrete/foundations and any local code approvals must be done by outside engineering.

The dimensions shown are for the basic 25’ Dual hopper Conveyor with the Low Profile Conveyor being used as the take-away source. The center trench depth may vary depending on the take-away conveyor used.

It is also possible that a scale could be incorporated into this system. Consult the scale manufacturer for specific details and specifications.

NOTE: Depending on the number of trunk extensions being used, the lengths will be different from what is shown. The length limit recommended is 15’ (4.57 m) of hoppers/trunks on each side of the drive head. The angle irons will be installed with the concrete pour and will require some type of anchor system (See the following pages for further information on anchoring the angle irons).

Concrete Dimension: Top View

<table>
<thead>
<tr>
<th>Metric Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>43” (1.09 m), 44 1/4” (1.12 m), 52” (1.32 m), 65 3/4” (1.67 m), 114 1/4” (2.90 m), 164 1/2” (4.18 m), 201 1/2” (5.12 m), 381” (9.68 m)</td>
</tr>
</tbody>
</table>
CONCRETE/TRENCH SPECIFICATIONS

CONCRETE DIMENSIONS (con’t.)

Concrete Dimension: Front View

Front View

164 1/2”

6”

4”

42” (min)

52” (inside trench)

NOTE: Depending on what unload system is used, this trench may need to be deeper

Metric Equivalent

4” (10.2 cm), 6” (15.2 cm), 42” (1.07 m), 52” (1.32 m), 164 1/2” (4.18 m)

Concrete Dimension: Side View

Side View

201 1/2”

44 1/4”

4”

114 1/4”

43” (inside trench)

42”

Metric Equivalent

4” (10.2 cm), 42” (1.07 m), 43” (1.09 m), 44 1/4” (1.12 m), 114 1/4” (2.90 m), 201 1/2” (5.12 m)

NOTE: Dimensions Shown Allow for 1/2” (13 mm) Gap at End of Grates/Covers for Variations & Discrepancies

NOTE: Dimensions Shown Allow for 1/2” (13 mm) Gap at End of Grates/Covers for Variations & Discrepancies

Shown for Reference Only
Angle irons will be placed around the offset in the upper perimeter of the pit to be used as grating support. Use 4” x 4” x 1/4” angle iron for the long runs of the dual hopper conveyor, use 6” x 4” x 1/4” angle iron for the short runs of the low profile conveyor trench (See illustration below). IMPORTANT! The corner areas where the 4” and 6” angle irons meet in the center of the trench must be positioned flush. The 6” angle will need to be notched as shown in the illustration below.

One method to ensure the angle irons remain consistent with the dimensions of the pit is shown on the following page (Page 20). This method shows pre-fabricating the four separate sections of angle irons prior to setting them into the concrete. Other methods can be used, it’s what works best for your application.

Cut the 4” x 4” x 1/4” and 6” x 4” x 1/4” angle irons to length, the 6” portion of the angle will be facing up (lengths will vary depending on your particular application).

Notch the 6” portion of the angles so the 4” angle will be flush with the top and side of the inside portion of the 6” angle (See illustration below).

Some type of anchoring system will need to be incorporated with the angle irons, Page 20 shows one variation of how anchors can be installed.
**INSTALL ANGLE IRON (con’t.)**

After the angle irons have been cut to length, each section can be pre-fabricated as shown below. Spacers can be spot welded in between the angles to keep dimensions consistent.

Whether it is rebar, metal tubing, or another material of this type, an anchoring system needs to be installed onto the angle irons to keep them in place.

If using spacers between the angles, once concrete has set, the spacers can be removed and any weld material left on the angles can be ground down smooth.

Pre-fabricate Four Separate Angle Iron Sections, then Place into Position,
After Concrete has Dried, Remove Spacers and Grind Smooth Angle Iron Surfaces
Trench dimensions may vary, use measurements from your particular application to set measurements for pre-fabricated sections.

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**Diagram Description:**
- Spot Weld spacer tubes in between angle irons to keep dimensions consistent.
- Weld some type of anchor supports to angle irons.
- End Angle or Spacer.
CONVEYOR SUPPORT LOCATIONS

INSTALL CONVEYOR SUPPORTS
for DUAL HOPPER CONVEYOR

CAUTION! To prevent personal injury, use the proper PPE protection when working with metal and concrete, i.e. eye glasses, face shield, ear protection, gloves etc.

The illustration below shows the typical location of the conveyor supports used with the basic 25' dual hopper application. The number of supports will vary depending on the amount of trunk sections being used. The dimensions shown are approximate. NOTE: It may be beneficial to pre-assemble the dual hopper conveyor before determining the support locations.

When locating the supports, keep in mind the angle at the flange end of the trunk sections. You do not want to locate a support below these angles.

When measuring for locations, measure from the center of the pit to the center of first support bracket, then center-to-center of the remaining support brackets. Ideally the conveyor supports should be located every 5 ft. (1.52 m) or as close to that as possible, 10 ft. max. (3.05 m).

When Locating Supports, be Aware of Angled Ends on Each Trunk Section

When Locating Supports, Be Aware of Angled Ends on Each Trunk Section

Mark Support Location, then Run Chalkline

Position Support Accordingly

Mark Support Location, then Run Chalkline

Measure from Center of Pit to Center of First Support Mount Bracket, then from Center-to-Center of Each Mount Bracket

Typical Dimensions for Basic 25 ft. Dual Hopper. Measurements may vary depending on your particular application (See Note above)
After location for the support brackets has been determined, use one of the dimensions shown below to use as the starting point for installing the supports (dimensions are measured from the top of the pit wall).

Mark the end locations first and chalkline down the side of the trench to determine height of the other support brackets. This will ensure all supports are level and will make up any variations in floor height.

Secure the supports to the pit wall using the typical concrete anchors and hardware.

Using One of the Dimensions Shown Below, Measure and Mark Support Location at Each End of Pit, Use a Chalkline to Mark Length from End-to-End to Ensure Alignment of the Supports

- 20 1/2" (52.1 cm) to Top of Mount Bracket
- 21 1/2" (54.6 cm) to Top of Support Tube
- 22 1/2" (57.2 cm) to Center of Mount Hole

Mark Each End and Run Chalkline
INSTALL CONVEYOR SUPPORTS

LOW PROFILE CONVEYOR

Position the support brackets for the low profile conveyor as shown below. The two bottom supports will rest on the floor, the upper support will be positioned and installed after the incline portion of the conveyor is installed.

Measure down from the top of the pit wall to the top of one of the support mount brackets and mark. Use that measurement and do the same for the other bottom support. Run a chalkline and mark against pit wall.

Position supports on chalkline and secure supports to the pit wall using the typical concrete anchors and hardware.
LOW PROFILE HOPPER ASSEMBLY

When assembling the Low Profile Conveyor, pay attention to the center divider panels in each trunk section. The overlap on these dividers is critical for proper conveyor operation. If the center dividers are not overlapped as shown damage to the paddles and chain will occur.

The upper and lower channels in the trunk sections have different height dimensions, therefore to ensure correct orientation of the trunk sections, holes were put in the side panels to indicate the top of each section. Make sure to always align the trunk sections with the holes facing up and the center divider panels overlapped as shown below. If additional trunk sections are used, the same procedures will be used, ie. center divider overlap and holes in side panels facing up.

The Bottom & Top Channels in the Trunk Sections Have Different Height Dimensions. Therefore, to Always Ensure Correct Orientation, Holes were Put into the Side Panels to Indicate the Top of Each Section

If additional trunk sections are used, the same procedure for the center divider panel will be used (panel under panel of previous section).

Also, with the addition of extra trunk sections, make sure to keep the holes in the trunk side panels facing up.
The boot end, dual pit inlet and lower portion of the 30° corner sit close to the ground. To gain better access to the bottom bolts during assembly, these sections should be pre-assembled outside the pit.

**Before lowering conveyor into the pit, loosen (not remove) the nuts for the u-bolts on the support tubes and move the angles and u-bolts towards each end of the support.**

1. Attach all sections together using 3/8” x 1 1/2” bolts and nylon locknuts. **Ensure the dual pit inlet is centered in the pit opening for making the connection to the dual hopper drive head.**

   After the trunk extension has been bolted to the top of the 30° corner, position the upper conveyor support against the trunk and install into place (the support can be welded to the angle iron, or it can be bolted to the sides of the pit wall).

2. The spout can be attached after the chain and paddles have been installed, this will allow better access through the head section during chain and paddle installation. The spout will attach using 3/8” x 1 1/4” bolts, flat washers, lock washers and non-lock nuts.

3. Fasten the outer transition square to the dual pit inlet using 3/8” x 1 1/4” bolts, flat washers, lock washers and non-lock nuts. The inner transition square will attach to the dual hopper drive head when it is lowered into the pit, it can be placed into the outer transition until assembly is required.

**IMPORTANT!** Remember to overlap the center divider panels and install sections with the hole in the side panels facing up as stated on the previous page.
LOW PROFILE HOPPER ASSEMBLY (con’t.)

4. After the Low Profile Conveyor has been assembled and positioned in the pit, slide the angles on the conveyor support tubes against the sides of the conveyor and weld along the top edge (See illustration below). Tighten the u-bolts. The conveyor can still be removed from the pit if necessary, just remove the nuts and u-bolts from the support angles and raise conveyor out.

NOTE: If additional trunk sections are used, thus moving the head assembly further away from the last conveyor support, the head section will need to be supported in some manner.

Install Chain and Paddles

Determine chain length needed for each side of the conveyor and assemble chain as needed for minimal cutting. Because there are dual chains in each trunk section, it is critical that chains are matched (paddles not offset).

Attach the back plates and paddles to the mounting brackets as shown below (back plates against chain brackets, paddles on front side of back plates). Secure the back plates and paddles using 5/16” x 1 1/2” bolts, flat washers and nylon locknuts (flat washers against paddles).

Ensure all paddles are on the same side of all the mounting brackets.
ASSEMBLY INSTRUCTIONS

It will be necessary to use an electrical fish tape, wire or rope to pull the chain and paddles through the conveyor trunk sections. It is recommended to begin and end at the head section as this will be where the chain’s tension will be determined.

Open the hinged cover on the short boot section to allow access to the boot sprockets.

When routing chain and paddles, make sure the paddles are pushing the grain towards the head in the upper portion of the trunk sections.

1. Route the chain and paddles down and around the boot sprockets and up to the head section. Connect the ends of the chain with the connecting links provided.

2. Set chain tension by loosening the four (4) carriage bolts on the bearing slide plate. Use the adjustment bolt, turning both sides in equal increments. To check chain tension, grasp one of the paddles and attempt to rotate it towards the chain. Proper tension should allow approximately 85° of rotation. If necessary remove more links from the chain until proper tension can be achieved. After tension has been set, tighten the jam nut to lock adjustment bolt into place.
ASSEMBLY INSTRUCTIONS

LOW PROFILE CONVEYOR ASSEMBLY (cont.)

Install Motor and Belt Guard

1. Mount the motor onto the motor mount plate (mounting hardware not furnished).
   Electrical motor and controls shall be installed by a qualified electrician and must meet the standards
   set by the National Electrical Code and all local and state codes.

2. Attach upper belt guard bracket (large bracket) to the crossmember on top of head (See illustration below).
   Secure bracket using two (2) 5/8" x 1 1/2" bolts and lock washers (crossmember has weld nuts already installed).

3. Attach the lower belt guard bracket (small bracket) to the reducer plate (end of bracket with longer leg attaches
   to the reducer plate). Secure using two (2) 1/2" x 1 1/4" bolts and nylon locknuts.

4. Install belt guard and secure to brackets using four (4) 1/2" x 1 1/4" bolts, flat washers and nylon locknuts.

5. Install the bushing (1 5/8" bore), key and 7.4" dia. sheave onto the motor shaft (leave loose for alignment with the
   reducer sheave). Position the sheave as close to the back of the belt guard as possible without actually contacting
   the guard.

6. Install bushing (1 1/8" bore), key and 9.4" dia. sheave onto the reducer shaft. Align sheaves by placing a straight
   edge across the face of the sheaves, Secure sheaves into place and tighten setscrews to lock into place.

7. Install belts and set tension. Using the adjustment bolts (See illustration below), set tension so there is
   approximately 1/2" (13 mm) of deflection on each belt when belts are firmly pressed in the center of the span
   between the sheaves.
When operational, the Dual Hopper Conveyor will move grain from the dump hoppers to the head section via the top channel in the dump hoppers. Grain moves in the opposite direction on each side of the drive head (See below).

Pre-assemble the Dual Hopper Conveyor on stands outside the trench. If possible, and the lifting device allows, assemble the complete conveyor, otherwise assemble head to boot on one side, lower into pit, and assemble the remainder of the conveyor on the other side. **NOTE: Mount brackets will need to be installed before lowering conveyor into pit, See Page 33.**

Grind any portions of the trunks (except center divider panel) extending past flanges before attempting to assemble sections together.

1. When placing trunk sections together, **make sure the center divider panel overlaps in the direction of chain movement** (See illustration below).

2. Connect the drive head to the dump hopper section. The dump hopper has six (6) weld nuts already welded on each end of the hopper (lower holes of the top flange on the hopper), **Note: There may be bolts threaded into these weld nuts for locating and protecting the threads during painting, if so, remove and discard these bolts.** The top flange of the drive head will attach to the weld nuts using 3/8” x 1 1/4” bolts and lock washers. Use 3/8” x 1 1/2” bolts and nylon locknuts for the remaining connections.
DUAL HOPPER CONVEYOR ASSEMBLY (con’t.)

Drive Head to Trunk Extension Connection

If a trunk extension is installed next to the drive head, the center divider panel needs to be overlapped in the same manner as the dump hopper section (overlap in the direction of chain travel). Trunk extensions are generally placed between the drive head and dump hopper sections.

The bottom and top channels have different height dimensions, therefore to always ensure correct orientation holes were put into the side panels of the trunk extensions to indicate the top of each section (See illustration below).

Secure the trunk extension to the drive head using 3/8” x 1 1/2” bolts and nylon locknuts.

If another trunk extension is installed onto the existing trunk extension, secure the trunk extensions together using 3/8” x 1 1/2” bolts and nylon locknuts.

The following pages show the connection of a dump hopper to dump hopper, trunk extension to dump hopper, trunk extension to trunk extension and dump hopper to spring take-up.
**DUAL HOPPER CONVEYOR ASSEMBLY (con’t.)**

### Dump Hopper to Dump Hopper Connection

Make sure to overlap the center divider panel as shown. The top flange mounting holes of the dump hoppers are also used to install the baffles and filler plates. These will be installed at a later time, therefore you only need to secure the sides and bottom flanges at this time. Secure using 3/8” x 1 1/2” bolts and nylon locknuts.

![Diagram of Dump Hopper to Dump Hopper Connection](image)

### Trunk Extension to Dump Hopper Connection

Make sure to overlap the center divider panel as shown. The top flange mounting holes of the trunk extension attach to the six (6) weld nuts using 3/8” x 1 1/4” bolts and lock washers. Use 3/8” x 1 1/2” bolts and nylon locknuts for the remaining connections.

![Diagram of Trunk Extension to Dump Hopper Connection](image)
DUAL HOPPER CONVEYOR ASSEMBLY (con’t)

Trunk Extension to Trunk Extension Connection
Make sure to overlap the center divider panel as shown. The bottom and top channels in the trunk sections have different height dimensions, therefore to always ensure correct orientation, holes were put into the side panels to indicate the top of each section. Make sure holes are facing up during assembly. Secure using 3/8” x 1 1/2” bolts and nylon locknuts.

Dump Hopper to Spring Take-Up Connection
Make sure to overlap the center divider panel as shown. The top flange of the spring take-up will attach to the six (6) weld nuts on the dump hopper using 3/8” x 1 1/4” bolts and lock washers. Secure the remaining connections using 3/8” x 1 1/2” bolts and nylon locknuts.
Install Mount Brackets (Dump Hoppers)

NOTE: The mount brackets need to be installed before the conveyor sections are lowered into the pit. The mount brackets used on the drive head can be installed now or they can be installed once the conveyor has been lowered into the pit (See Page 34 for installation procedures).

1. Install the mount brackets to the sides of the dump hoppers and secure using 3/8" x 1" carriage bolts, flat washers and nylon locknuts. The mount brackets are offset at one end, this short end goes towards the side of the hopper (See illustration below).

   After mounting brackets have been installed, the conveyor can now be lowered into the pit. Loosen (do not remove) the nuts on the u-bolts securing the angles to the conveyor support tubes and move angles towards the walls of the pit. Lower conveyor into pit onto the supports.

2. Verify that conveyor is centered and located properly above the transition to take-away conveyor. Raise the inner transition square and secure to the bottom of the head section using 3/8" x 1 1/4" bolts, flat washers, lock washers and non-lock nuts.

3. After conveyor is positioned properly, slide the angles on the support tubes against the sides of the trunk sections. Weld along the top edge of the angles to secure them to the sides of the trunk sections (See illustration on Page 34).

   NOTE: The trunk extensions, when used, do not require the mounting brackets (Ref. Page 34) or the clean-out panels (Ref. Page 37).

![](image)
**DUAL HOPPER CONVEYOR ASSEMBLY (con’t.)**

Weld along top of angles.

Install Mount Brackets (Drive Head)

1. Remove the four (4) carriage bolts securing the filler plates to the drive head and discard the filler plates (the filler plates are located in each of the four corners directly above the bearings, See illustration below).

   **Do Not** remove the filler plates unless the mounting brackets are to be immediately installed before lowering conveyor into pit. If mount brackets will be installed after the conveyor is lowered, leave the filler plates in position until conveyor has been lowered and is resting on the conveyor supports.

   There are four (4) bolts on each side of the drive head assembly that run almost parallel with the top bolts securing the bearings into place. Remove these four bolts and use them to install the mount brackets using the same mounting holes from which these bolts were removed.

   Note orientation of the mounting brackets below, short side bend in against drive head side.
Install Chain and Paddles

It will be necessary to use an electrical fish tape, wire or rope to pull the chain and paddles through the conveyor trunk sections. It is recommended to begin and end at the boot section as this will be where the chain’s tension will be determined.

**IMPORTANT!** When installing Paddles and Back Plates, make sure Chain Brackets are Aligned Properly.

Attach Paddles & Backing Plate to Brackets using 5/16 x 1 1/2” Bolts, Flat Washers & Nylon Locknuts.

Open Cover to Gain Access to Take-Up Sprockets.

Route Chains Thru Top Channel, Around Drive Sprockets, Thru Bottom Channel and Around Sprockets in Spring Take-Up.

Shown as Reference Only.
DUAL HOPPER CONVEYOR ASSEMBLY
INSTALL CHAIN & PADDLES (con’t)

Determine chain length needed for each side of the conveyor and assemble chain as needed for minimal cutting. Because there are dual chains in each trunk section, it is critical that chains are matched (paddles not offset). When routing chain and paddles, make sure the paddles are pushing the grain towards the head section in the upper channel of the trunk sections.

1. Attach the back plates and paddles to the chain mounting brackets as shown on the previous page (back plates against chain brackets, paddles in front of back plates). Secure the back plates and paddles using 5/16” x 1 1/2” bolts, flat washers and nylon locknuts (flat washers against paddles). Ensure all paddles are on the same side of all mounting brackets.

2. Open the hinged covers at each of the spring take-up sections, this will allow access to the take-up sprockets. Make sure the bearing slide plates are in the full forward position. If necessary, loosen the two jam nuts on the adjustment bolts and push bearing slide full forward.

3. Route the chain and paddles from the take-up section up and around the head sprockets and back again to the take-up section. Install chains around the take-up sprockets and secure using the connecting links provided (there is also a connecting half-link if necessary).

4. Set chain tension by holding the adjustment bolt with one wrench and turning the nut against the spring with another wrench. Adjust equally on each side in small increments (See below). Do Not tighten so much that the compression spring is fully compressed, there needs to be some compression available during operation [maximum compression, when setting chain tension, should keep the compression spring’s at about 4 1/2” (11.4 cm) in length]. To check chain tension, grasp one of the paddles and attempt to rotate it up towards the chain. Proper tension would allow minimal movement of the paddle (See illustration below).

5. After proper tension has been achieved, tighten the jam nuts together to lock into position.
**ASSEMBLY INSTRUCTIONS**

**DUAL HOPPER CONVEYOR ASSEMBLY (con’t.)**

**Install Clean-Out Panels**

1. Install the clean-out panels to each trunk section. The panels will slide in between the mounting brackets and the sides of the trunk sections (See illustration below). The Upper portion of the panels will rest on the angle iron along the top sides of the pit.

   It may be necessary to cut a portion of the panel to ensure proper fit (See illustration below). It’s also possible that the panel may sit too high when resting on the angle iron and create a gap. If so, fill the gap accordingly.

2. Make sure panels are resting on the angle irons and using the holes along the top of the trunk sides, secure the panels to the trunk sections using the self-tapping screws provided.
Install Filler Panels & Baffles

When installing the lower filler panels, it is recommended to install them on the grain flow side of the crossmembers. The upper filler panels are installed at each end of the dump hopper. When two or more dump hoppers are attached together, install an upper filler panel at each far end, with a baffle installed at each of the hoppers' connecting points (See illustration below).

NOTE: Install Lower Filler Panels on grain flow side of Crossmembers

1. Install the lower filler panels to the cross members in the dump hoppers as shown in the illustration on the following page (Page 39). Secure lower filler panels using 3/8" x 1 1/2" bolts, flat washers and nylon locknuts. Install a lower filler panel to the spring take-up connection and at the drive head connection as well, secure using the same hardware used for the other lower panels.

2. At the spring take-up connection to the dump hopper, attach one of the upper filler panels to the lower panel using 3/8" x 1 1/4" bolts, flat washers and nylon locknuts (position the “L” shaped portion of the upper panel towards the spring take-up section, See illustration above and on Page 39). Note: The angled ends of the upper filler panel should align with, and rest on the angled portion of the clean-out panels. Adjust accordingly, then tighten upper panel hardware.

3. At the drive head connection to dump hopper, install an upper filler panel to the lower panel. Secure upper panel using 3/8" x 1 1/4" bolts, flat washers and nylon locknuts (position the “L” shaped portion towards the head section (See illustration above and on Page 39).
3. Install the baffle plates onto each of the lower filler panels as shown below. The baffles should also be installed on the grain flow side of the lower filler panels. **Note: The angled ends of the baffles should rest on the angled portion of the clean-out panels. Adjust accordingly, then tighten hardware.**

Secure baffles using 3/8” x 1 1/4” bolts, flat washers and nylon locknuts.

4. Each baffle and upper filler plate will be secured to the clean-out panels using the angle brackets provided. There are two different angle brackets designed to fit the left or right side. Secure the appropriate angle bracket to the ends of the baffles and upper filler plates using 3/8” x 1 1/4” bolts, flat washers and nylon locknuts.

Secure angle brackets to the clean-out panels using the self-tapping screws provided (See illustration below).
**ASSEMBLY INSTRUCTIONS**

**DUAL HOPPER CONVEYOR ASSEMBLY (con’t.)**

**Install Drive Head Motor**

Use the instructions provided with the Dodge gearbox reducer to assemble the motor to the gearbox. These instructions contain critical information for correct installation. **Use reference given for the Separate Style Reducer with 3-Piece Coupling Motor Adapter, Reducer Size-40A, C-Face 140TC.**

1. After the motor has been installed onto the gearbox, attach the motor mount plate to the motor with one isolation mount between the motor and the plate, and the other isolation mount to the bottom side of the plate (See illustration below). Depending on motor base thickness, secure the motor and isolation mounts to the plate using either 3/8” x 2 1/2” or 3/8” x 2 3/4” or 3/8” x 3” bolts, flat washers and nylon locknuts. **Note: it may be necessary to install the bolts from the bottom side of the motor mount plate with the nylon nuts on top.**

2. A conveyor support tube will be used to help support the motor. Remove and discard the angles included with the supports, but retain the u-bolts and mounting hardware. Position the conveyor support against the bottom of the motor mount plate to determine where the supports will be secured to the pit walls.

3. Attach the conveyor support to pit walls using typical concrete mounting hardware and secure support to motor mount plate using the u-bolts and mounting hardware previously acquired.
**DUAL HOPPER CONVEYOR ASSEMBLY (con’t.)**

**Install Covers and Grates**

The following pages show the placements of the covers and grates for the basic 25' long Dual Hopper Chain Conveyor, use these pages to help determine location of the covers and grates.

Verify that all grates and covers are adequately supported (especially critical at center area) and are not able to shift. If customizing covers to fit around the exposed open areas around the take-away conveyor, make sure they are adequately supported and cannot shift as well.

At the opening where the low profile conveyor extends out, some type of stop should be welded to the angle irons to prevent the covers from shifting. It is also recommended to customize some type of cover around the opening surrounding the low profile conveyor trunks extending out of the pit, see illustration below (this also refers to any other take-away equipment that would be used and has some portion of it extending out of the pit).

**There are two covers that have a ledge for the grates to rest on.** These need to be positioned on each side of the drive head section in the take-away conveyor trench as shown on the following page (Page 42).

The illustration below shows the u-bolt that is recessed in the covers. Use the u-bolt to install and remove covers.

**Note:** When installing covers over the electric motor, ensure there is adequate clearance, if not, the cover may need to be modified.
Covers for Take-Away Components

Additional 59" wide Covers (w/ no grating ledge) can be added depending on width of drive way or length of take-away pit.

Weld some type of stop onto the angle iron to prevent covers from shifting.

Additional 59" wide Covers (w/ no grating ledge) can be added depending on width of drive way or length of take-away pit.
Covers & Grating for Drive Head Section

The 10" wide covers are used if adjoining trunk sections are dump hoppers, 5' extensions or 20" extensions.

If the adjoining trunk section is the 30" extension, use two 20" wide covers.
Grating for Dump Hopper Sections

Three (3) grates typical for all Dump Hoppers
Covers for Spring Take-Up Sections

Two 20” wide covers typical for Spring Take-Up Sections
Covers for Trunk Extensions

One 20” wide cover & one 10” wide cover for 30” wide Trunk Extensions

One 20” wide cover for 20” wide Trunk Extensions

20” Wide Covers

Three 20” wide covers for 5’ Trunk Extensions

5’ Trunk Extension Covers

Shown as Reference Only
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SAFETY DECALS & SIGNS

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<thead>
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<th>Part No.</th>
<th>Description</th>
<th>Ref.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1002310</td>
<td>Decal, Danger: Do Not Operate...</td>
<td>5</td>
<td>1021180</td>
<td>Decal, Yellow Retroreflective</td>
</tr>
<tr>
<td>2</td>
<td>1002301</td>
<td>Decal, Caution: General Operator</td>
<td>6</td>
<td>1021179</td>
<td>Decal, Red Retroreflective</td>
</tr>
<tr>
<td>3</td>
<td>1041833</td>
<td>Decal, Made in the Heart of America</td>
<td>7</td>
<td>1021181</td>
<td>Decal, Red/Orange Retroreflective</td>
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<tr>
<td>4</td>
<td>1001125</td>
<td>Decal, Hutchinson</td>
<td>8</td>
<td>34687</td>
<td>Serial No. Plate</td>
</tr>
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</table>
DUAL HOPPER DRIVE HEAD
COMPONENTS

Ref.  Part No.  Part No.  Description

1  1044328  Drive Head f/ Dual Hopper, Complete
2  1044329  •Drive Head Weldment f/ 10 hp drive
3  1044046  •Reducer, Size 40, Dodge TIGEAR-2
4  1013973  •Gearbox, 511 Series 1:1 Ratio
5  1044337  •Shaft f/ Center Gearbox
6  1044336  •Cover, Chain Coupler
7  1044335  •Cover, Motor Chain Coupler
8  1042514  •Head Shaft
9  1042542  •Plate, Bearing Spacer
10 1029182  •Bearing, 1 1/2", 4-Bolt Flange
11 1034759  •Sprocket, 550 9T 1 1/2" bore

Ref.  Part No.  Description

12  1036078  •Key, 3/8" sq. x 2-1/2" long
13  41051  •Chain, Roller #80, 12 pitch w/ connecting link
14  1017967  •Chain Coupler Half, 1 1/4" bore
15  1022080  •Chain Coupling Half, 1 1/2" bore
16  34687  •Serial Number Plate
17  1038D  •Key, 3/8" sq. x 2" long
18  5169B1  •Key, 1/4" sq. x 1 1/4" long
19  1006231  •Plug, Gearbox Vent
20  1042709  •Filler Plate

* Indented Parts Names Indicate these Parts are Included in the Previous Assembly.
**PARTS LIST**

**DUMP HOPPER, TRUNK EXTENSIONS & CONVEYOR SUPPORTS**

<table>
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<tr>
<td>1</td>
<td>1042466</td>
<td>Dump Hopper (open top trunk)</td>
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<tr>
<td>2</td>
<td>1042464</td>
<td>Extension, 60&quot; Trunk f/ Dual Hopper</td>
</tr>
<tr>
<td>3</td>
<td>1042482</td>
<td>Extension, 30&quot; Trunk f/ Dual Hopper</td>
</tr>
<tr>
<td>4</td>
<td>1042915</td>
<td>Extension, 20&quot; Trunk f/ Dual Hopper</td>
</tr>
<tr>
<td>5</td>
<td>1043210</td>
<td>Conveyor Support Complete</td>
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<tr>
<td>6</td>
<td>1043209</td>
<td>• Angle Mount f/ Conveyor Support</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>1043206</td>
<td>• Tube, Outer f/ Conveyor Support</td>
</tr>
<tr>
<td>8</td>
<td>1043208</td>
<td>• Tube, Inner f/ Conveyor Support</td>
</tr>
<tr>
<td>9</td>
<td>33240</td>
<td>• U-Bolt, 1/2&quot; x 2 1/4&quot;</td>
</tr>
<tr>
<td>10</td>
<td>33025</td>
<td>• Washer, 1/2&quot; Flat</td>
</tr>
<tr>
<td>11</td>
<td>D1143</td>
<td>• Washer, 1/2&quot; Lock</td>
</tr>
<tr>
<td>12</td>
<td>D1149</td>
<td>• Nut, 1/2&quot;-13 Non-Lock</td>
</tr>
</tbody>
</table>

* Indented Parts Names Indicate these Parts are Included in the Previous Assembly.
## PARTS LIST

**BAFFLES, MOUNT BRACKETS, CLEAN-OUT PANELS & FILLER PANELS**

<table>
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<tr>
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<th>Part No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1042428</td>
<td>Panel, Clean-Out, 60&quot; long f/ Dual Hopper</td>
</tr>
<tr>
<td>2</td>
<td>1042577</td>
<td>Panel, Clean-Out, 40&quot; long f/ Dual Hopper Drive Head</td>
</tr>
<tr>
<td>3</td>
<td>1042492</td>
<td>Bracket, Mount, 56&quot; long f/ Dual Hopper Clean-Out Panel</td>
</tr>
<tr>
<td>4</td>
<td>1042509</td>
<td>Bracket, Mount, 28 3/8&quot; long f/ Drive Head Clean-Out Panel</td>
</tr>
<tr>
<td>5</td>
<td>1042495</td>
<td>Panel, Upper Filler</td>
</tr>
<tr>
<td>6</td>
<td>1042494</td>
<td>Panel, Lower Filler</td>
</tr>
<tr>
<td>7</td>
<td>1044108</td>
<td>Baffle Plate</td>
</tr>
<tr>
<td>8</td>
<td>1043814</td>
<td>Support Angle f/ Filler Panel</td>
</tr>
<tr>
<td>9</td>
<td>1043815</td>
<td>Support Angle f/ Filler Panel (reversed)</td>
</tr>
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</table>
### COVER PLATES & GRATES

<table>
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<th>Part No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>1043203</td>
<td>Cover Plate w/ Grate Ledge (solid cover) 59&quot; x 20&quot; x 5 3/4&quot;</td>
</tr>
<tr>
<td>2</td>
<td>1043201</td>
<td>Cover Plate (solid cover) 59&quot; x 20&quot; x 5 3/4&quot;</td>
</tr>
<tr>
<td>3</td>
<td>1042485</td>
<td>Cover Plate (solid cover) 50&quot; x 10&quot; x 3 3/4&quot;</td>
</tr>
</tbody>
</table>

### DUAL HOPPER DRIVE MOTOR

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1044347</td>
<td>Motor, 10HP C-Face Expl. Proof 215T Frame, 3PH 230/460V</td>
</tr>
<tr>
<td>2</td>
<td>1043304</td>
<td>Mount, Motor f/ Dual Hopper Drive</td>
</tr>
<tr>
<td>3</td>
<td>1044346</td>
<td>Mount, Vibration Dampening</td>
</tr>
<tr>
<td>4</td>
<td>1043210</td>
<td>Support, Conveyor</td>
</tr>
<tr>
<td>5</td>
<td>33375</td>
<td>Bolt, 3/8&quot;-16 x 2 1/2&quot;</td>
</tr>
<tr>
<td>(5)</td>
<td>33068</td>
<td>or Bolt, 3/8&quot;-16 x 2 3/4&quot;</td>
</tr>
<tr>
<td>(5)</td>
<td>1044350</td>
<td>or Bolt, 3/8&quot;-16 x 3&quot;</td>
</tr>
<tr>
<td>6</td>
<td>33024</td>
<td>Washer, 3/8&quot; Flat</td>
</tr>
<tr>
<td>7</td>
<td>33136</td>
<td>Nut, 3/8&quot;-16 Nylon Lock</td>
</tr>
</tbody>
</table>

*Discard Angles from Conveyor Support*
**SPRING TAKE-UP COMPONENTS & CHAIN and PADDLES**

The Complete Spring Take-Up Assembly can be Obtained, Order Part No. 1042515. (the complete assembly includes items 1 thru 18).

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1042516</td>
<td>Spring Take-Up Boot Weldment</td>
</tr>
<tr>
<td>2</td>
<td>1029182</td>
<td>Bearing, 1 1/2” 4-Bolt Flange</td>
</tr>
<tr>
<td>3</td>
<td>1042523</td>
<td>Slide Plate Weldment</td>
</tr>
<tr>
<td>4</td>
<td>1023716</td>
<td>Guide Bar</td>
</tr>
<tr>
<td>5</td>
<td>1042704</td>
<td>Mount, Bearing Slide</td>
</tr>
<tr>
<td>6</td>
<td>1042705</td>
<td>Tail Shaft</td>
</tr>
<tr>
<td>7</td>
<td>1034759</td>
<td>Sprocket, 550 9 tooth</td>
</tr>
<tr>
<td>8</td>
<td>1036078</td>
<td>Key, 3/8” sq. x 2-1/2” long</td>
</tr>
<tr>
<td>9</td>
<td>1025765P</td>
<td>Spring, Compression</td>
</tr>
<tr>
<td>10</td>
<td>1042528</td>
<td>Take-Up Bolt</td>
</tr>
<tr>
<td>11</td>
<td>D1152</td>
<td>Nut, 3/4”-10, Non-Lock</td>
</tr>
<tr>
<td>12</td>
<td>1029957</td>
<td>Washer UHMW f/ Compression Spring</td>
</tr>
<tr>
<td>13</td>
<td>33027</td>
<td>Washer, 3/4” Flat</td>
</tr>
<tr>
<td>14</td>
<td>1018308</td>
<td>Latch, Rubber, 071 SER “F”</td>
</tr>
<tr>
<td>15</td>
<td>1031890</td>
<td>Screw, #6 x 1/2” Machine</td>
</tr>
<tr>
<td>16</td>
<td>1018272</td>
<td>Washer, #6 Lock</td>
</tr>
<tr>
<td>17</td>
<td>1018273</td>
<td>Nut, #6 Non-Lock</td>
</tr>
<tr>
<td>18</td>
<td>1002310</td>
<td>Decal, Danger: Do Not Operate...</td>
</tr>
<tr>
<td>19</td>
<td>1041552</td>
<td>Paddle, 3/8” thick UHMW</td>
</tr>
<tr>
<td>20</td>
<td>1041803</td>
<td>Plate, Paddle Backing</td>
</tr>
<tr>
<td>21</td>
<td>1034761</td>
<td>Chain w/ Brackets, 80 pitch</td>
</tr>
<tr>
<td></td>
<td></td>
<td>130 7/16” shipping length</td>
</tr>
<tr>
<td>22</td>
<td>40352</td>
<td>Connecting Link</td>
</tr>
<tr>
<td>23</td>
<td>41492</td>
<td>Offset Link (Not Shown)</td>
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The Chain and Paddles (Items 19 thru 23) are the same as used with the Low Profile Conveyor.
### LOW PROFILE CONVEYOR COMPONENTS

<table>
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<th>Ref. No.</th>
<th>Part No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
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<td>Head Assembly f/ Low Profile Conveyor (See Parts Breakdown on Page P-9)</td>
</tr>
<tr>
<td>2</td>
<td>1042435</td>
<td>Extension, 60” Trunk f/ Low Profile Conveyor</td>
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<tr>
<td>2</td>
<td>1042913</td>
<td>Extension, 20” Trunk f/ Low Profile Conveyor</td>
</tr>
<tr>
<td>2</td>
<td>1042908</td>
<td>Extension, 30” Trunk f/ Low Profile Conveyor</td>
</tr>
<tr>
<td>3</td>
<td>1042437</td>
<td>Corner, 30° f/ Low Profile Conveyor</td>
</tr>
<tr>
<td>4</td>
<td>1042583</td>
<td>Extension, Trunk w/ Dual Pit Inlet</td>
</tr>
<tr>
<td>5</td>
<td>1042497</td>
<td>Short Boot f/ Low Profile Conveyor</td>
</tr>
<tr>
<td>6</td>
<td>1010A</td>
<td>Bearing, 1 1/2” 4-Bolt Flange</td>
</tr>
<tr>
<td>7</td>
<td>1034759</td>
<td>Sprocket, 550 9 tooth 1 1/2” bore</td>
</tr>
<tr>
<td>8</td>
<td>4049A1</td>
<td>Key, 3/8” sq. x 1 1/2” long</td>
</tr>
<tr>
<td>9</td>
<td>1041550</td>
<td>Tail Shaft</td>
</tr>
<tr>
<td>10</td>
<td>1042505</td>
<td>Seal, UHMW Bearing</td>
</tr>
<tr>
<td>11</td>
<td>1042594</td>
<td>Transition, Inner f/ dual Pit Inlet</td>
</tr>
<tr>
<td>12</td>
<td>1042597</td>
<td>Transition, Outer f/ Dual Pit Inlet</td>
</tr>
<tr>
<td>13</td>
<td>1043210</td>
<td>Support, Conveyor</td>
</tr>
<tr>
<td>14</td>
<td>1002310</td>
<td>Decal, Danger: Do Not Operate...</td>
</tr>
<tr>
<td>15</td>
<td>1041756</td>
<td>Spout, 90° f/ Low Profile Conveyor</td>
</tr>
<tr>
<td>16</td>
<td>1018308</td>
<td>Latch, Rubber</td>
</tr>
<tr>
<td>17</td>
<td>1031890</td>
<td>Screw, #6 x 1/2” Machine</td>
</tr>
<tr>
<td>18</td>
<td>1018272</td>
<td>Washer, #6 Lock</td>
</tr>
<tr>
<td>19</td>
<td>1018273</td>
<td>Nut, #6 Non-Lock</td>
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</tbody>
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The Chain and Paddles are the same as used on the Dual Hopper Conveyor, See Page P-7 for Parts Breakdown.
### LOW PROFILE CONVEYOR HEAD & DRIVE COMPONENTS

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<td>Head Weldment f/ Low Profile Conveyor</td>
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<tr>
<td>2</td>
<td>1047185</td>
<td>Plate, Motor Mount</td>
</tr>
<tr>
<td>3</td>
<td>1040862</td>
<td>Reducer, Dodge TA2115H05</td>
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<tr>
<td>4</td>
<td>1041779</td>
<td>Kit, Bushing f/ Reducer</td>
</tr>
<tr>
<td>5</td>
<td>1047174</td>
<td>Plate, Take-Up (reducer side)</td>
</tr>
<tr>
<td>6</td>
<td>1041613</td>
<td>Plate, Take-Up (bearing side)</td>
</tr>
<tr>
<td>7</td>
<td>1010A</td>
<td>Bearing, 1 1/2&quot; 4-Bolt Flange</td>
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<tr>
<td>8</td>
<td>1041772</td>
<td>Head Shaft</td>
</tr>
<tr>
<td>9</td>
<td>1034759</td>
<td>Sprocket, 1 1/2&quot; bore w/ keyway</td>
</tr>
<tr>
<td>10</td>
<td>1036078</td>
<td>Key, 3/8&quot; sq. x 2-1/2&quot; long</td>
</tr>
<tr>
<td>11</td>
<td>1043937</td>
<td>Bolt, Take-Up</td>
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<tr>
<td>12</td>
<td>D1170</td>
<td>Nut, 5/8&quot;-11 Non-Lock</td>
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<tr>
<td>13</td>
<td>1041629</td>
<td>Spacer, f/ 5/8&quot; Nut</td>
</tr>
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<td>14</td>
<td>1041630</td>
<td>Retainer f/ 5/8&quot; Nut</td>
</tr>
<tr>
<td>15</td>
<td>1047180</td>
<td>Cross Support</td>
</tr>
<tr>
<td>16</td>
<td>1041617</td>
<td>Slide Rod f/ Motor Mount</td>
</tr>
<tr>
<td>17</td>
<td>3324A1</td>
<td>Collar, 1&quot; f/ Slide Rod</td>
</tr>
<tr>
<td>18</td>
<td>1047183</td>
<td>Mount, Reducer Spacer</td>
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### Motor Not Furnished

<table>
<thead>
<tr>
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<th>Part No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>19</td>
<td>1041625</td>
<td>Rod, Take-Up f/ Motor Mount</td>
</tr>
<tr>
<td>20</td>
<td>1041773</td>
<td>Panel, Moveable Divider</td>
</tr>
<tr>
<td>21</td>
<td>3235A1</td>
<td>Sheave, QD 2-Belt 7.4&quot;</td>
</tr>
<tr>
<td>22</td>
<td>3192A1</td>
<td>Bushing, QD SK 1 5/8&quot; bore</td>
</tr>
<tr>
<td>23</td>
<td>3075A1</td>
<td>Sheave, QD 2-Belt 9.4&quot;</td>
</tr>
<tr>
<td>24</td>
<td>3188A1</td>
<td>Bushing, QD SK 1 1/8&quot; bore</td>
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<tr>
<td>25</td>
<td>1041793</td>
<td>Belt Guard f/ Low Profile Conveyor</td>
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<tr>
<td>26</td>
<td>1023004</td>
<td>Belt, B-59</td>
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<tr>
<td>27</td>
<td>1041798</td>
<td>Support, Upper f/ Belt Guard</td>
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<td>29</td>
<td>1002301</td>
<td>Decal, Caution: General Operator</td>
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<td>30</td>
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<td>Decal, Hutchinson</td>
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<td>32</td>
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<td>Decal, Yellow Retroreflective</td>
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<td>Access Cover</td>
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</table>
**TORQUE CHART**

**General Torque Specification Table**

Use the Following Torques When Special Torques Are Not Given

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

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>SAE Grade No.</th>
<th>SAE 2</th>
<th>SAE 5</th>
<th>SAE 8*</th>
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<td>13.6</td>
<td>16.3</td>
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<td>31.2</td>
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*Thick nuts must be used with Grade 8 bolts.