





SERIES 4000 CONVEYOR



Operators Manual











INTRODUCTION

Thank you for choosing USC, LLC for your equipment needs. We appreciate your business and will work diligently to ensure that you are satisfied with your choice.

OVERVIEW

The purpose of this manual is to provide you with the basic information needed to operate and maintain the Series 2000 Conveyor. It does not hold USC, LLC liable for any accidents or injuries that may occur.

OPERATOR RESPONSIBILITIES

As the purchaser/owner/operator of this equipment and control system, you have an obligation to install, operate, and maintain the equipment in a manner that minimizes the exposure of people in your care to any potential hazards inherent in using this equipment. It is critical that the owner of this equipment:

- Has a clear and documented understanding of the process this machine is being used in and of any resulting hazards or special requirements arising from this specific application.
- Allow only properly trained and instructed personnel to install, operate, or service this equipment.
- Maintain a comprehensive safety program involving all who work with this machine and other associated process equipment.
- Establish clear areas of staff responsibility (e.g. operation, setup, sanitation, maintenance, and repairs).
- Provide all personnel with necessary safety equipment.
- Periodically inspect the equipment to insure that the doors, covers, guards, and safety devices are in place and functioning, that all safety instructions and warning labels are intact and legible, and that the equipment is in good working order.
- In addition to the operating instructions, observe and enforce the applicable legal and other binding regulations, national and local codes.

As the person with the most to gain or loose from working safely, it is important that you work responsibly and stay alert. By following a few simple rules, you can prevent an accident that could injure or kill you or a co-worker.

• Disconnect, lockout, and tagout electrical and all other energy sources before inspecting, cleaning, servicing, repairing, or any other activity that would expose you to the hazards of electrical shock.

- Do not operate, clean, or service this equipment until you have read and understood the contents of this manual. If you do not understand the information in this manual, bring it to the attention of your supervisor, or call your local USC dealer for assistance.
- Any operator who is known or suspected to be under the influence of alcohol or drugs should not be allowed to operate the equipment.
- Understand and follow the safety practices required by your employer and this manual.
- **PAY ATTENTION** to what you and other personnel are doing and how these activities may affect your safety.
- Failure to follow these instructions may result in serious personal injury or death.

RECEIVING YOUR EQUIPMENT

As soon as the equipment is received, it should be carefully inspected to make certain that it has sustained no damage during shipment and that all items listed on the packing list are accounted for. If there is any damage or shortages, the purchaser must immediately notify your USC dealer. Ownership passes to purchaser when the unit leaves the USC, LLC. premises. The purchaser is responsible for unloading and mounting all components of the equipment.

Document the serial number of the machine for future reference. The serial number is located on the upper right corner of the main control panel mounting bracket.



SERIAL NUMBER:



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SAFETY INSTRUCTIONS A

Every year accidents in the work place maim, kill, and injure people. Although it may be impossible to prevent all accidents, with the right combination of training, operating practices, safety devices, and operator vigilance, the number of accidents can be significantly reduced. The purpose of this section is to educate equipment users about hazards, unsafe practices, and recommended hazard avoidance techniques.

SAFETY WORDS AND SYMBOLS

It is very important that operators and maintenance personnel understand the words and symbols that are used to communicate safety information. Safety words, their meaning and format, have been standardized for U.S. manufacturers and published by the American National Standards Institute (ANSI). The European Community (E.C.) has adopted a different format based on the International Standards Organization (I.S.O.) and applicable machinery directives. Both formats are presented below. Graphic symbols are not standardized, but most manufacturers will use some variation of the ones seen in this manual.



Indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury and/or property damage.



Provides additional information that the operator needs to be aware of to avoid a potentially hazardous situation.





Mandatory Lockout Power Symbol. Disconnect, lockout, and tagout electrical and other energy sources before inspecting, cleaning, or performing maintenance on this panel.



International Safety Alert Symbol. The exclamation point (!) surrounded by a yellow triangle indicates that an injury hazard exists. However, it does not indicate the seriousness of potential injury. The exclamation point (!) is also used with the DANGER, WARNING, and CAUTION symbols so the potential injury is indicated.



Electrocution Hazard Symbol. This symbol indicates that an electrocution hazard exists. Serious injury or death could result from contacting high voltage.



International Electrocution Hazard. This symbol indicates that an electrocution hazard exists. Serious injury or death could result from contacting high voltage.



Mandatory Read Manual Action Symbol. (I.S.O. format) This symbol instructs personnel to read the Operators Manual before servicing or operating the equipment.



Mandatory Read Manual Action Symbol. This symbol instructs personnel to read the Operators Manual before servicing or operating the equipment.



Notice is used to notify people of important installation, operation, or maintenance information which is not hazard related.



LOCKOUT / TAGOUT PROCEDURES

Lockout/Tagout is the placement of a lock/tag on an energy isolating device in accordance with an established procedure. When taking equipment out of service to perform maintenance or repair work, always follow the lockout/tagout procedures as outlined in ANSI Z344.1 and/or OSHA Standard 1910.147. This standard "requires employers to establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices and to otherwise disable machines or equipment to prevent unexpected energizing, start -up, or release of stored energy in order to prevent injury to employees."

CONTROLLED STOP

This is the stopping of machine motion by reducing the electrical command signal to 0 (zero) once the stop signal has been recognized.

HAZARD REVIEW



Electrocution Hazard

Electrocution accidents are most likely to occur during maintenance of the electrical system or when working on or near exposed high voltage wiring. This hazard does not exist when the electrical power has been disconnected, properly locked, and tagged out.



Automatic Start Hazard

This seed treating system is usually controlled by an automated system and may start without warning. Failure to properly disconnect, lockout, and tagout all energy sources of remotely controlled equipment creates a very A WARNING hazardous situation and could cause injury or even death. PLEASE STAY CLEAR AND BE ALERT.



YOU are responsible for the **SAFE** operation and maintenance of your USC, LLC Seed Treating System. **YOU** must ensure that you and anyone else who is going to operate, maintain, or work around the Seed Treating System be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alert you to good safety practices that should be adhered to while operating the Conveyor.

Remember, **YOU** are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Series 4000 Conveyor owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow them. All accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

GENERAL SAFETY

- 1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or unplugging the Conveyor.
- 2. Only trained persons shall operate the seed treater. An untrained operator is not qualified to operate the machine.
- 3. Have a first-aid kit available for use should the need arise, and know how to use it.







- 4. Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.
- 5. Do not allow children, spectators or bystanders within hazard area of machine.
- 6. Wear appropriate protective gear. This includes but is not limited to:
 - A hard hat
 - · Protective shoes with slip resistant soles
 - Protective goggles
 - Heavy gloves
 - Hearing protection
 - Respirator or filter mask
- 7. Place all controls in neutral or off, stop motor, and wait for all moving parts to stop. Then disable power source before servicing, adjusting, repairing, or unplugging.
- 8. Review safety related items annually with all personnel who will be operating or maintaining the Conveyor.

OPERATING SAFETY:

- 1. Read and understand the Operator's Manual and all safety signs before using.
- 2. Disconnect and disable electrical supply completely and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- 3. Clear the area of bystanders, especially children, before starting.
- 4. Be familiar with the machine hazard area. If anyone enters hazard area, shut down machine immediately. Clear the area before restarting.
- 5. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- 6. Stay away from overhead obstructions and power lines during operation and transporting. Electrocution can occur without direct contact.
- 7. Do not operate machine when any guards are removed.
- 8. Inspect welds and repair if needed.



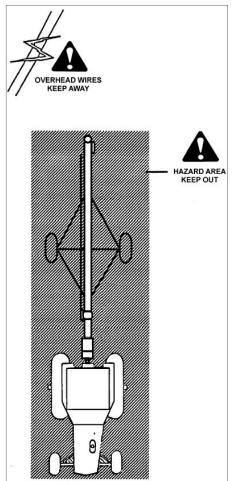






TRANSPORT SAFETY

- 1. Read and understand ALL the information in the Operator's Manuals regarding procedures and SAFETY when moving or transporting the Conveyor.
- 2. Check with local authorities regarding Conveyor transport on public roads. Obey all applicable laws and regulations.
- 3. Always travel at a safe speed. Use caution when making corners or meeting traffic.
- 4. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
- 5. Do not allow riders on the Conveyor or the towing vehicle when transporting.
- 6. Attach Conveyor to towing vehicle with a pin and retainer.
- 7. Lower Conveyor to its lowest position for transporting. Keep lift point at drawbar height.
- 8. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
- 9. Do not exceed 25 m.p.h. (40 km/h). Reduce speed on rough roads and surfaces.
- 10. Stay away from overhead obstructions and power lines when transporting. Electrocution can occur without direct contact.
- 11. Always use hazard warning flashers on tractor when transporting unless prohibited by law.





TIRE SAFETY

- 1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
- 2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- 3. Have a qualified tire dealer or repair service perform required tire maintenance.
- 4. When replacing worn tires, make sure they meet the original tire specifications. Never undersize.



Before placement of the Conveyor, be sure that ground is reasonably level. The Conveyor may topple or work improperly if the ground is too uneven, damaging the equipment and/or causing personal injury.



When releasing the Conveyor from the towing vehicle, test the intake end for downward weight. Do not raise the intake end above drawbar height. When the intake end is elevated too high with machine in raise position, the balance of weight quickly transfers to the discharge end,

MAINTENANCE SAFETY

- 1. Review the Operator's Manual and all safety items before working with, maintaining or operating the Conveyor.
- 2. Place all controls in neutral or off, stop motors, disable power source, and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- 3. Follow good shop practices:

Keep service area clean and dry. Be sure electrical outlets and tools are properly grounded. Use adequate light for the job at hand.

- 4. Keep hands, feet, hair and clothing away from all moving and/ or rotating parts.
- 5. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.



- 6. Before resuming work, install and secure all guards when maintenance work is completed.
- 7. Keep safety signs clean. Replace any sign that is damaged or not clearly visible.



PLACEMENT SAFETY

- 1. Move only with the appropriate equipment
- 2. Stay away from overhead power lines when moving the Conveyor. Electrocution can occur without direct contact.
- 3. Be familiar with machine hazard area. If anyone enters hazard areas, shut down machine immediately. Clear the area before restarting.
- 4. Operate the Conveyor on level ground free of debris. Anchor the Conveyor to prevent tipping or upending.

SAFETY SIGNS

- 1. Keep safety signs clean and legible at all times.
- 2. Replace safety signs that are missing or have become illegible.
- 3. Replaced parts that displayed a safety sign should also display the current sign.
- 4. Safety signs are available from your Authorized Dealer.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.

USC, LLC 🕕

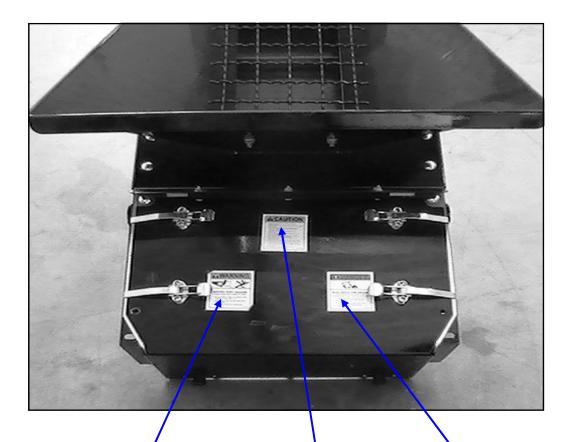
• Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.



Located on the USC equipment you will find safety labels. Always be sure to read and follow all directions on the labels.









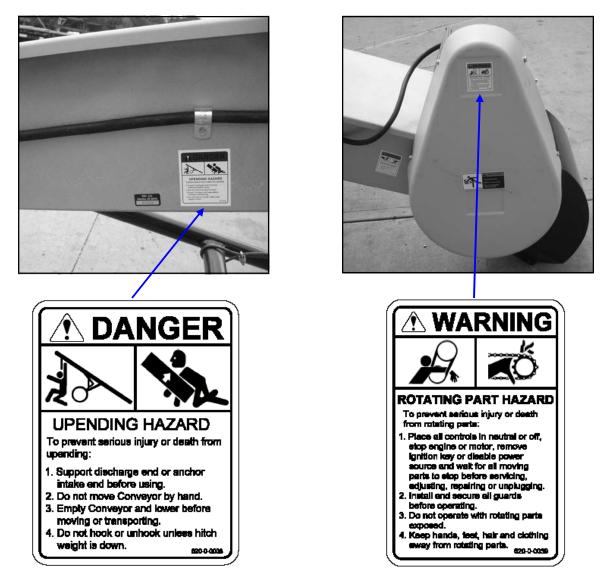
CAUTION A

- Read and understand the Operator's Manual before 1. operating. Keep all actually shields and devices in pla
- 2. a and in good working order. Make certain everyone is clear before operating or
- 3. moving the machine. Keep children, visitore and untrained people eway. Keep hande, feet, hair and clothing eway from mov-
- 4. 5.
- Ing parts. Shut off and disable power source before adjusting, servicing, repair or cleaning. Disconnect power before resetting motor overland. 6.
- Be sure electric motors are grounded. Support discharge and or anchor intake and to pre-7.
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11. Lower Conveyor well below level of power lines be-fore moving or transporting. Electrocution can occur without climact contact. 12. Keep swey from intuites. Keep others every. 13. Train operators annually. 220-0000

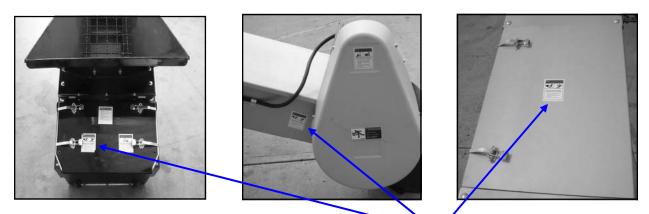




Think SAFETY! Work SAFELY!

REMEMBER—If Safety Signs have been damaged, removed, become illegible, or parts replaced without safety signs, new signs must be applied. New safety signs are available from your Authorized Dealer.





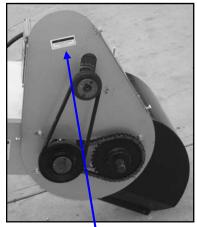
REMEMBER—If Safety Signs have been damaged, removed, become illegible, or parts replaced without safety signs, new signs must be applied. New safety signs are available from your Authorized Dealer.





Safety decal location (location may vary depending on motor model)

(I) USC, LLC





SECTION INSTALLATION В



HIGH VOLTAGE ~ Always disconnect the power source before working on or near the control panel or lead wires.



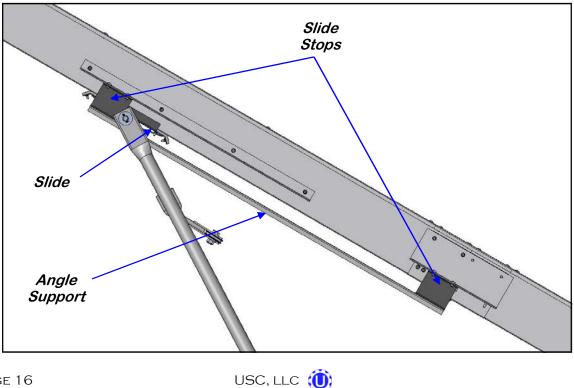
HIGH VOLTAGE ~ Use insulated tools when making adjustments while the controls are under power.



Permanent installation may require additional electrical cords since each installation is unique.

ASSEMBLING CONVEYOR

- 1. Using a forklift, pick up the conveyor in the center.
- 2. Remove the angle supports from the slide stops and install them on the bottom of the slide stops. Make sure to place the slide in between to two stops before connecting angle supports.



INSTALLING UNDER-CARRIAGE

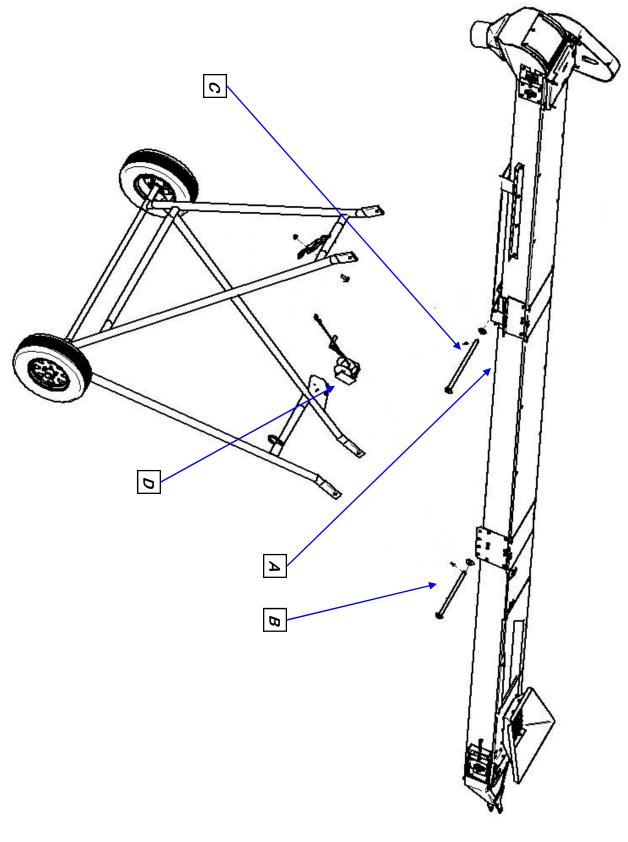
- 1. Lay the Under-Carriage flat on the ground.
- 2. Using a forklift, pick up the conveyor in the center *(A)* and bring over the top of the under-carriage.
- 3. Connect the bottom under-carriage to the bottom part of the conveyor using the pin provided *(B)*.
- 4. Lift up the conveyor until the undercarriage can be connected to the slide on the conveyor *(C)*.
- 5. Lower the conveyor down so the bottom end of the conveyor is sitting on the ground.
- 6. Install the winch to the bracket on the under-carriage *(D)*.





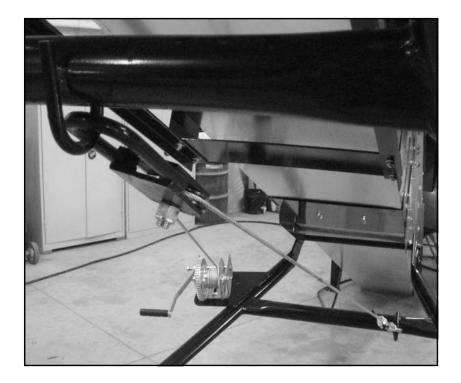
Picture of Slide Assembly after Installation





INSTALLING UNDER-CARRIAGE

- 7. Attach the cable to the crank.
- 8. String the cable through the pulley and attach to the lower portion of the undercarriage (see pictures below)







<u>SET-UP</u>

The following steps outline the initial set-up of your USC Series 2000 Conveyor:

- 1. Clear the area of bystanders, especially small children, before starting.
- 2. Be sure there is enough clearance from overhead obstructions and power lines or other equipment to move the machine into its working position.
- 3. Attach the Conveyor to an appropriate towing vehicle.
- 4. Move conveyor as near as possible to desired position.
- 5. Set the park brake on the towing vehicle before dismounting.
- 6. Unhook the unit from the towing vehicle.
- 7. Use the winch to raise the machine so it clears the truck, trailer or wagon.
- 8. Place chocks in the front and rear of each wheel.
- 9. It will be necessary to stake or weight the intake end to prevent upending when the machine is emptying.
- 10. Review the Workplace Safety Diagram for your model prior to starting work. Follow all setup instructions and do not allow any unauthorized people into the working area.
- 11. Have a certified electrician provide power to the conveyor. Provide convenient shutdown switches and comply with local electrical codes. The conveyor can also be plugged directly into a USC seed treater control panel.



Ensure that the seed treater panel and the conveyor are rated for the same power before plugging the conveyor into the seed treater panel.

12. Reverse the above procedure when removing the machine from its working position.

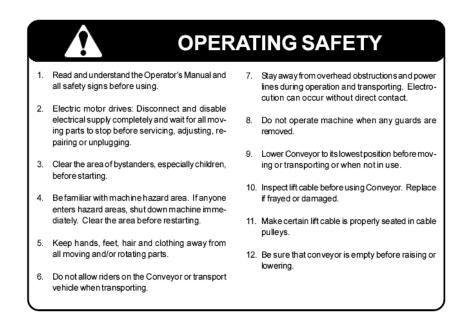


<u>NOTES</u>



SECTION C

MECHANICAL OPERATION



The USC, LLC Series 4000 Belt Conveyor is designed to efficiently move seed between a storage facility or seed totes and a truck, trailer or wagon. Power is provided by an electric motor. Be familiar with the machine before starting.

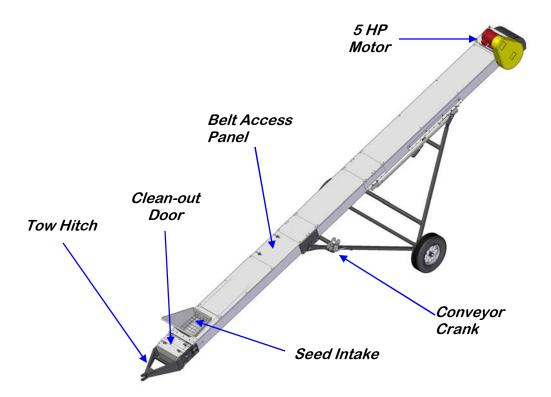
It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, and prudence of personnel involved in the operation, transport, maintenance and storage of equipment or in the use and maintenance of facilities.

NOTICE Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your conveyor will provide many years of trouble-free service.



SYSTEM OVERVIEW

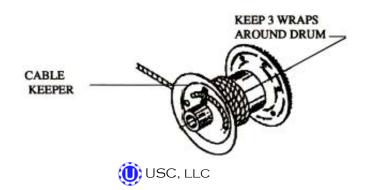


CONTROLS

- <u>Electric Drive:</u> Have a licensed electrician provide power to the machine per the National Electrical Code ANSI/NFPA 70 and local codes. Install an ON, OFF switch for the convenience of the operator.
- <u>Manual Winch:</u> A winch is located on the transport frame and is used to raise and lower the conveyor. Turn the handle clockwise to raise and counterclockwise to lower.



Maintain at least 3 wraps of cable on the drum at the maximum reach. The drum cable clamp is not designed to hold load.



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PRE-OPERATION CHECKLIST

Efficient and safe operation of the USC, LLC Series 4000 Belt Conveyor requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining the good mechanical condition of the Conveyor that this checklist is followed.

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

- 1. Service the machine per the schedule outlined in Section F, Maintenance (pg 32).
- 2. Use only an electric motor of adequate power to operate the machine.
- 3. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.
- 4. Check worksite. Clean up working area to prevent slipping or tripping.
- 5. Check winch and cable for security and operation. There should be at least 3 complete wraps of cable around winch drum in full down position. Cable anchor on winch drum must be tight. Inspect cable for fraying or damage and replace if damaged or frayed.
- 6. Check that cable clamps are secure.
- 7. Check that drive belt and conveying belt are not frayed or damaged and that they are properly adjusted and aligned.
- 8. Be sure Conveyor wheels are chocked.
- 9. Check that discharge and intake areas are free of obstructions.



Anchoring and/or support of Conveyor during operation is necessary. When lower half of Conveyor empties of material, the weight balance transfers to the upper end of the machine, which can cause upending.



OPERATING

When using the Conveyor, follow this procedure:

- 1. Clear the area of bystanders, especially small children, before starting.
- 2. Review the Pre-Operation Checklist (page 24) before starting.
- 3. Review the Workplace Hazards schematic and use extra care when inside the hazard area. Keep all bystanders out of this area. Should anyone enter this area, stop the machine immediately.
- 4. Set the conveyor in position. To achieve rated capacity, the conveyor should be run **no steeper than 30°.** Molded flights on the belt minimize material rollback during operation.
- 5. Drive or back the truck or wagon into position for loading.
- 6. Turn the electric motor ON and begin the flow of material and unload.
- 7. To stop the conveyor; stop the flow of material and run until the belt is empty. Turn off motor and lock out power source.

Operating hints

- Direct the flow of material into the input hopper when moving material. Do not "flood feed" the inlet hopper.
- Always listen for any unusual sounds or noises. If any are heard, stop the machine and determine the source. Correct the problem before resuming work.
- Never allow anyone into the workplace hazard area. If anyone enters, stop immediately. Make them LEAVE before resuming work.
- Do not run the machine for long periods of time with no material on the belt. It increases the wear. Try to run the conveyor only when moving material.
- Do not support the discharge end directly on the truck box, trailer or wagon. Stake the intake (hopper) or weight it down to prevent upending.
- Use a Car Unloader or similar conveyor to move grain from under the bin discharge into the Series 4000 conveyor hopper when emptying low clearance facilities.

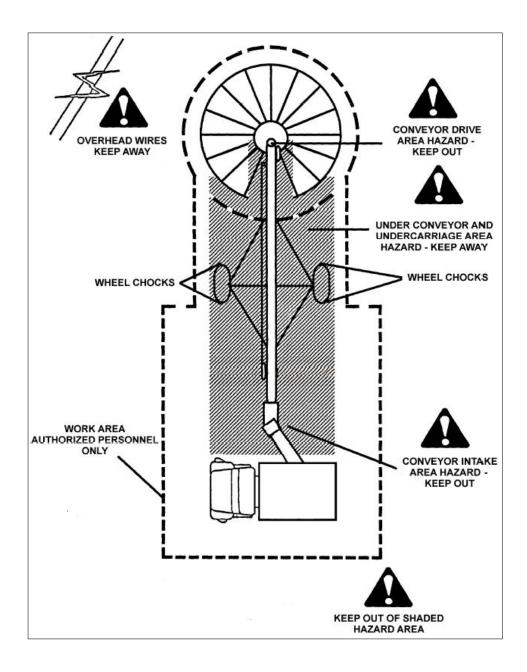


Emergency Stopping

Although it is recommended that the machine be emptied before stopping, in an emergency situation, stop or shutdown the power source immediately. Correct the emergency before resuming work.

Restarting

When the machine is shut down inadvertently or for an emergency, the belt may still be covered with material. It may be necessary to tighten the drive belt slightly to handle the heavier-than-normal starting loads.



MACHINE BREAK-IN

Although there are no operational restrictions on the Conveyor when used for the first time, it is recommended that the following mechanical items be checked:

Before starting

- 1. Read the Conveyor Operator's Manual.
- 2. During the conveyors first few minutes of operation, check conveyor belt alignment to ensure belt is tracking correctly when running empty and also during loaded conditions.

After operating or transport for 1/2 hour

- 1. Re-torque all the wheel bolts.
- 2. Re-torque fasteners and hardware.
- 3. Check that all safety decals are installed and legible. Apply new decals if required.
- 4. Check the drive belt tension and alignment. Tension or align as required.
- 5. Check the conveying belt tension and alignment. Tension or align as required.
- 6. Check that all guards are installed and working as intended.

After operating for 5 hours and 10 hours

- 1. Re-torque all wheel bolts, fasteners and hardware.
- 2. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.
- 3. Check safety decals. Install new ones if required.
- 4. Check the drive belt, and conveying belt tension and alignment. Tension or align as required.
- 5. Then go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

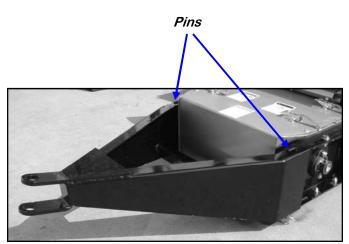


D TRANSPORTING

ATTACHING / UNHOOKING

It is recommended that the Conveyor be attached to an appropriate towing vehicle whenever it is moved. Follow this procedure when attaching to or unhooking from a towing vehicle:

- 1. Slide hitch over take-up and align holes.
- 2. Install pins through hitch and take-up and install bridge pins.
- 3. Make sure that bystanders, especially small children, are clear of the working area.
- 4. Be sure the conveyor wheels are chocked.
- 5. Be sure that there is sufficient room and clearance to back up to the machine.



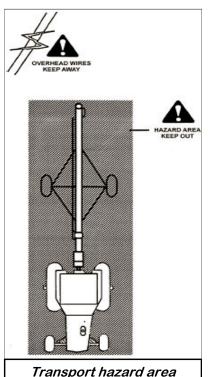
Conveyor Hitch

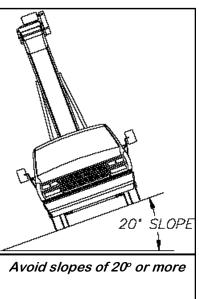
- 6. Align the drawbar of the towing vehicle with the hitch of the Conveyor while backing up.
- 7. Set the park brake before dismounting.
- 8. Align the hitch to the drawbar and install a hitch pin with a retainer (not supplied).
- 9. Remove chocks from machine wheels.
- 10. Move to new location.
- 11. Reverse the above procedure when unhooking.

TRANSPORTING

USC, LLC Series 4000 Conveyors are designed to be easily and conveniently moved from place to place. When transporting, follow this procedure:

- 1. Review the Transport Safety Schematic before starting.
- 2. Be sure all bystanders are clear of the machine.
- 3. On electric motor drive units, unplug the power cord, wrap around frame, and secure to prevent dragging.
- 4. Attach to a towing vehicle using a hitch pin with a retainer.
- 5. Remove chocks from the wheels.
- 6. Lower the conveyor into its fully down position so that the cross tube rests on the stop plate.
- 7. Electrocution can occur without direct contact.
- 8. Never go across slopes of more than 20°. It is better to go straight up or straight down a slope.
- 9. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic.
- 10. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
- 11. It is not recommended that the machine be transported faster than 25 mph (40 km/h). Table 1 gives the acceptable transport speed as the ratio of towing vehicle weight to Conveyor weight.
- 12. Do not allow riders on the machine or towing vehicle.
- 13. During periods of limited visibility, use pilot vehicles or add extra lights to the machine.
- 14. Always use hazard flashers on the vehicle when transporting unless prohibited by law.







E TROUBLESHOOTING

Below is a table describing the most frequent problems and solutions with the USC Series 4000 Conveyor. For further assistance, contact your local USC dealer.

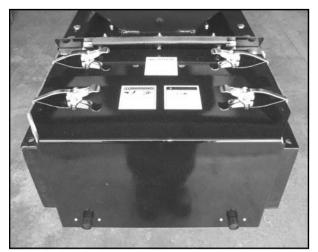
Problem	Possible Cause	Solution
Conveyor will not run.	 Not turned on. Conveying belt loose. Drive belt loose. 	 Start power source or turn on power. Tighten and align belt. Tighten drive belt.
Belt edge fraying.	1. Belt not aligned.	1. Align and tension belt.
Low conveying capacity.	 Angle too steep. Slow operating speed. Conveyor belt slipping. Drive belt slipping. 	 Reposition with angle at 30°. Increase operating speed. Tighten belt. Set drive belt tension.



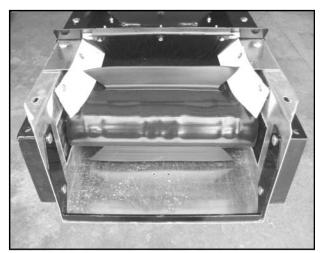
<u>Unplugging</u>

In unusual moisture or material conditions, the machine can plug. When unplugging, follow this procedure:

- 1. Place all controls in neutral or off, stop motor, disable and lock out power source before unplugging.
- 2. Unbolt and remove the necessary conveyor covers.
- 3. Unlatch and open the hinged tail cover.
- 4. Remove plugged material.
- 5. Install and secure conveyor covers, close and re-latch hinged tail cover.



Bottom clean-out door



Bottom clean-out door removed



F MAINTENANCE

Proper maintenance of the USC seed conveyor is critical for peak performance, reliability and accuracy of this system. The following is a guideline for the type of maintenance and servicing that should be performed on this unit. Your environment and uses may require additional maintenance and service beyond this list to assure a reliable and safe unit. The operator of this unit has ultimate responsibility to identify areas of concern and rectify them before they become a hazard or safety issue. There is no substitute for a trained, alert operator.



Do not put this unit into operation with any questionably maintained parts. Poor performance or a hazard may occur.

FLUIDS AND LUBRICANTS

<u>Grease</u>

Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium-based grease.

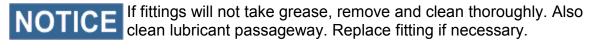
Storing Lubricants

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

GREASING

Use a Maintenance Checklist to keep record of all scheduled maintenance.

- 1. Use a hand-held grease gun for all greasing.
- 2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
- 3. Replace and repair broken fittings immediately.



SERVICING INTERVALS

Every 40 hours or Weekly

- 1. Check the conveyor belt tension and alignment.
- 2. Grease conveyor bearings.
 - Two bolt flanged bearings, tail roller bearings right and left (2 locations).
 - Two bolt flanged bearings, drive roller bearings right and left (2 locations).
 - Two bolt flanged bearings, jackshaft bearings right and left (2 locations).
- 3. Check the drive belt tension and alignment. The belts will deflect approximately 1/4 to 1/2 inch when properly tensioned. (right)
- 4. Remove yellow guard and check chain tension





Every 200 hours or Annually

- 1. Repack wheel bearings.
- 2. Wash machine.
- 3. Check pulley bushing for wear (right). To inspect pulley:
 - Lower the conveyor to its lowest position.
 - When the conveyor has reached the lowest position, it will stop at the pins.
 - Unwind the winch two more turns, or until enough slack in the cable is achieved.
 - Loosen and remove the bolt.
 - Inspect the bushing on the pulley for wear.
 - Reverse steps 1-4 for re-assembly.



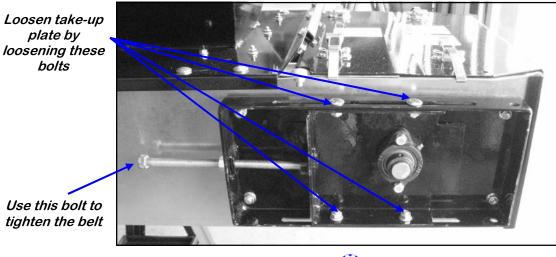
CONVEYING BELT TENSION AND ALIGNMENT

A contoured belt with molded flights is used to convey material along the frame. The tension and alignment of the belt should be checked weekly, or more often if required, to be sure that it does not slip or run to one side. A properly tensioned belt will not slip when it is operating. Operating the belt with less slippage will increase the belt life and causes less stress on bearings, pulleys and shafts.

To maintain the belt, follow this procedure:

NOTICE Place all controls in neutral or off, stop motor and disable power source before working on belt.

- 1. Use the take-up bolts located at the tail to set the tension of the belting.
- 2. If the belt needs to be tightened to prevent slippage, use the take-up adjustments on the tail end only.
- 3. The belt is tightened by turning both take-up adjustments an **equal** number of turns.
- 4. Use the drive roller to check the alignment. The belt should be centered.
- 5. Turn the belt 1/2 revolution when the belt is new and check the drive and tail roller. If out of alignment, the belt will move to the loose side. Loosen the bearing mounting bolts and use the bearing position bolts to set the position. Tighten mounting bolts.
- 6. Run and check again. Check frequently during the first few minutes of operation and then several times during the first 10 hours. The belt normally seats itself during the first 10 hours of operation and can be checked weekly after that.
- 7. The belt is properly aligned when the belt runs in the center of the head and tail rollers.



CONVEYING BELT ALIGNMENT

- A misaligned belt will track toward the loose side. Set the tracking by loosening the bearing mounts on the tight side and using the bearing position bolt to move the end of the head roller toward the tail. Tighten the bearing mount when the belt is centered on the head roller.
- 2. Run the belt and check the tracking again. Loosen the tight side slightly again if required. Repeat the adjusting and checking procedure until the belt centers on the input end roller and remains centered when running.
- 3. Always repeat this aligning procedure when installing a new belt. Check frequently during the first 10 hours of operation. After 10 hours, the belt is normally seated and checking the alignment can be done less frequently.



Loosen bearings



Adjusting tracking

BELT REPLACEMENT

- 1. Rotate the belt until the seam is visible.
- 2. Move the tail roller to its loosest position.
- 3. Pull all the slack to the seam area.
- 4. Remove the wire connector and open the belt.
- 5. Attach one end of the replacement belt to the belt end being removed.
- 6. Pull the old belt out and the new belt will be threaded into place.
- 7. Disconnect the old belt.
- 8. Connect the ends of the new belt together and secure.
- 9. Set the belt tension.
- 10. Check and set the belt alignment



Belt Seam



Check alignment



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DRIVE BELT TENSION & ALIGNMENT

Power to the conveying belt is transmitted through a V-belt. The V-belt drive system must be maintained at the proper belt tension and pulley alignment to obtain the desired performance and life. When maintaining the belt drive system for the electric drive model, follow this procedure:



Turn motor off and unplug power cord or turn off power and lock out **NOTICE** the master panel before starting maintenance on drive belt system.

Drive Belt Tension

- 1. Push on the center of the belt span with a force of approximately 5 to 10 lbs.
- 2. The belts will deflect approximately 1/4 to 1/2 inch when properly tensioned.
- 3. Move the motor up, using the adjustment bolts, to set drive belt tension (right).
- 4. Close and secure guards.



Motor base adjustment

Drive Belt Alignment

- 1. Lay a straightedge across the pulley faces to check the alignment (right).
- 2. Use the pulley hub or the motor mounting plate slots to move the pulley to the required position for alignment.
- 3. Tighten hub bolts to secure pulley on shaft.
- 4. Check belt tension
- 5. Close and secure guards.

Drive Belt Replacement

- 1. Lower motor to its loosest position.
- 2. Remove old belt and replace with a new one.
- Raise motor to set the belt tension.
- 4. Check pulley alignment. Adjust if required.
- 5. Close and secure guards.



Lay a straightedge across pulley faces

STORAGE G

When storing the USC Series 4000 Conveyor for long periods of time, the following procedure must be followed to reduce the chance of rust, corrosion and fatigue of the treater. You can also use these steps when storing the machine for the winter.



A dust mask and protective rubber gloves shall be used when cleaning the machine.

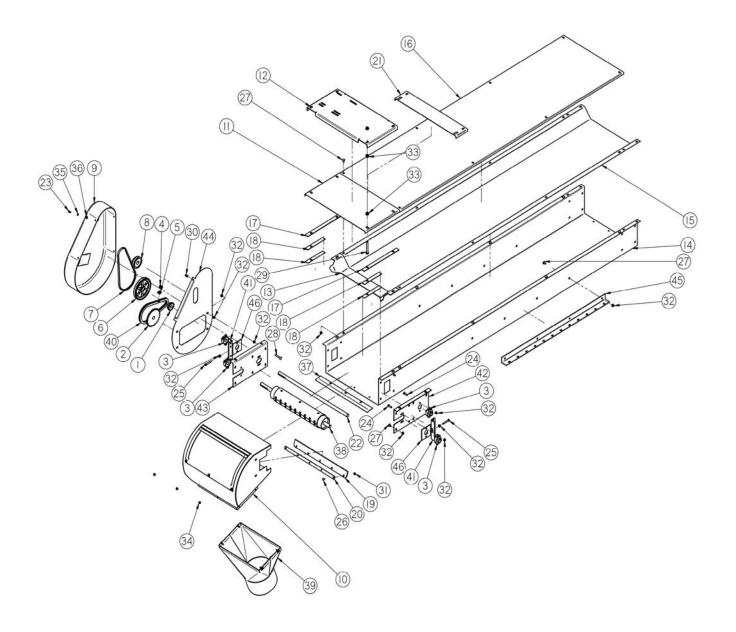
- 1. Clear the area of bystanders, especially small children.
- 2. Thoroughly wash the entire machine to remove all dirt, mud, debris or residue.
- 3. Inspect all moving or rotating parts to see if anything has become entangled in them. Remove the entangled material.
- 4. Lubricate all grease fittings. Make sure that all grease cavities have been filled with grease to remove any water residue from the washing. This also protects the bearing seals.
- 5. Touch up all paint nicks and scratches to prevent rusting.
- 6. Move to storage area.
- 7. Select an area that is dry, level and free of debris.
- 8. Unhook from towing vehicle.
- 9. Place blocks under the intake or the jack if required.
- 10. If the machine cannot be placed inside, cover the electric motor with a water proof tarpaulin and tie securely in place.
- 11. Store machine in an area away from human activity.
- 12. Do not allow children to play on or around the stored machine.



H H MECHANICAL DRAWINGS

The following pages show the parts for series 2000 conveyors. Please have the part number ready when ordering parts.

SERIES 4000 CONVEYOR HEAD SECTION

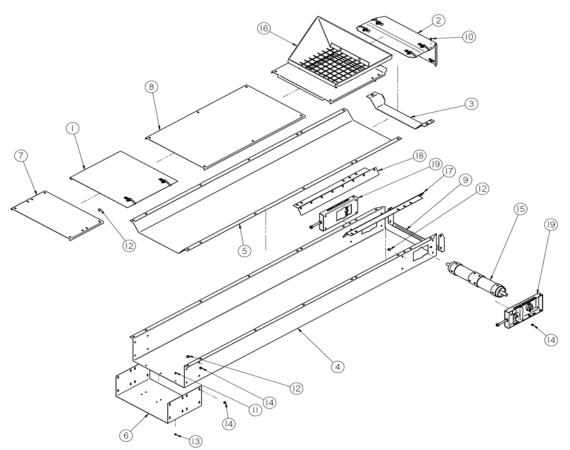


SERIES 4000 CONVEYOR HEAD SECTION PARTS LIST

ltem Number	USC Part Number		Quantity
1	01-02-0076	Sprocket #50 12T 1.0000 in Bore Type B	1
2	01-02-0109	Sprocket #50 29T 1.00 in Bore Type B	1
3	01-03-0042	BRG FLG MNT 1.000ID 2BOLT ECNTRC	4
4	01-04-0005	#50 CNTG LINK	1
5	01-04-0003	#50 OFFSET LINK	1
6	01-04-0007	SHEAVE BK75 1.00 BORE	1
7	01-08-0059		
8	01-08-0053	BELT BX38 SHV BK36 1.125 FHSH BORE	1
9			
	05-06-0035		1
10	05-07-0176	TAPERED DISCHARGE SPOUT WELDMENT	1
11	05-10-2541	TOP CVR DSCHG 24BW	1
12	05-10-2542	MTR MNT 24BW	1
13	05-10-2543	TROUGH TRANS PLT 24BW	1
14	05-10-2544	FRAME-24BW HEAD SECTION	1
15	05-10-2547	TROUGHING PAN 24BW HEAD SECTION	1
16	05-10-2550	TOP COVER 24BW 10FT MID SECTION	1
17	05-10-3266	SPCR UB HEAD CVR 10GA	2
18	05-10-3267	SPCR UB HEAD CVR 16GA	4
19	05-10-3566	PLT S4000 CNVR BLT SCRAPER RBBR	1
20	05-10-3567	PLT S4000 CNVR BLT SCRAPER HLDR	1
21	05-10-3560	PLT CNVR SPLICE HEAD CVR S4000	1
22	05-11-0171	32 X 1 INCH JACK HEAD SHAFT	1
23	06-01-0006	BOLT .250-20 X .750 ZP GR5	4
24	06-01-0053	BOLT .375-16 X 1.25 ZP GR5	8
25	06-01-0071	BOLT, .375-16 X 2 1/2 ZP G5 FULL THREAD	2
26	06-01-0122	BOLT, CARRIAGE, .250-20x.75 G5 ZP	5
27	06-01-0153	BOLT CRG .375-16X.750 ZP SHORT NECK	27
28	06-01-0154	BOLT CRG .375-16 X 2.50 FTH ZP GR5	4
29	06-01-0157	BOLT, .500-13 X 4" UNC ZP GRADE 5 fth	4
30	06-02-0047	NUT .250-20 U-CLIP NUT	4
31	06-03-0013	NUT,LOCK, FLG .250-20 ZP SERRATTED	5
32	06-03-0014	NUT,LOCK, FLG .375-16 ZP SERRATTED	48
33	06-03-0015	NUT,LOCK, FLG .500-13 ZP SERRATTED	12
34	06-03-0019	NUT LOCK FLG .3125-18 ZP GR5	3
35	06-04-0001	WSHR LOCK SPLT .250 ZP	4
36	06-05-0001	WASHER, FLAT .250	4
37	13-04-0095	KIT S2000 CLOSE GAP AT HEAD SECT	1
38	13-05-0089	WDMT 23.5 X 4 HEAD PLLY	1
39	13-05-0098	6" CONVEYOR REBAG SPOUT S4000	1
40	13-05-0185	50 ROLLER CHAIN 28.5IN	1
41	280-2-0016	TRACKING ANGLE WELDMENT	2
42	280-3-0031	HEAD PLATE LH	1
43	280-3-0032	HEAD PLATE RH	1
44	280-3-0053	SHIELD BACKPLATE	1
45	280-3-0057	TRANSPORT STOP PLATE	2
46	280-3-0112	BEARING SPACER PLATE	2
-		(I) USC, LLC	Page 39

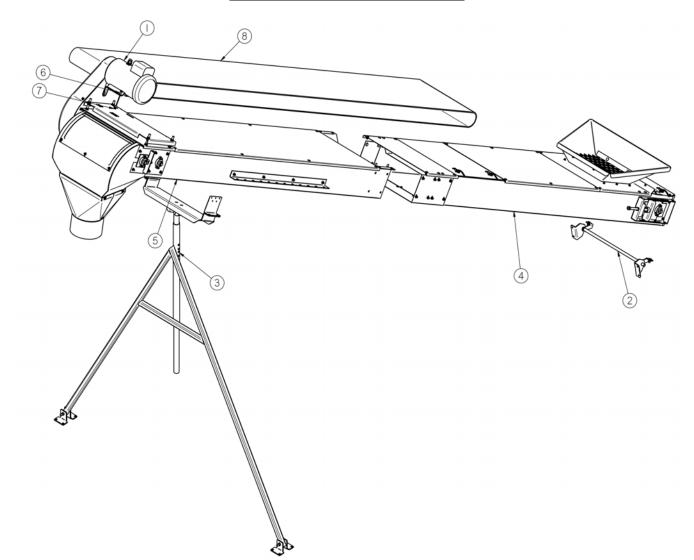


SERIES 4000 CONVEYOR TAIL SECTION

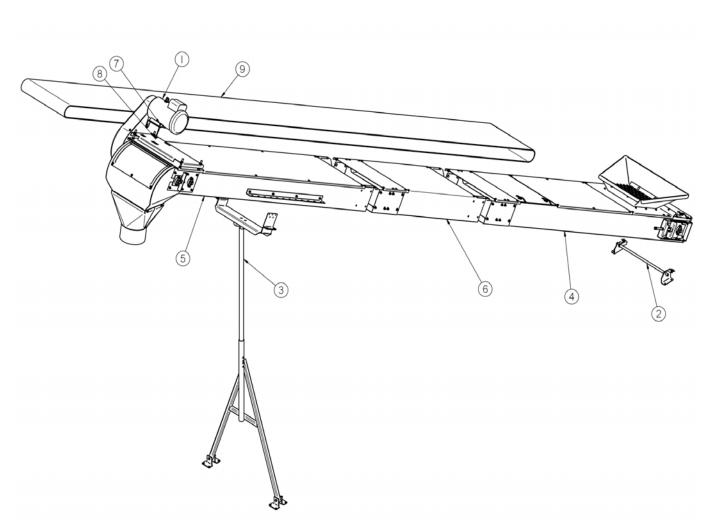


Item Number	USC Part Number	Description	Quantity
1	05-06-0050	ASSY REMOVABLE CVR 24BW	1
2	05-06-0051	ASSY CLEANOUT CVR S2000 CNVR	1
3	05-10-2543	TROUGH TRANS PLT 24BW	1
4	05-10-2545	FRM-24BW TAIL SECTION	1
5	05-10-2548	TROUGHING PAN-24BW TAIL SECTION	1
6	05-10-2551	PLT FORMED SPLICE 24BW	1
7	05-10-2552	SPLICE CVR 24BW	1
8	05-10-2555	TOP CVR 4FT 24BW	1
9	05-10-2561	BRKT PORT S2000 CLEANOUT DOOR CLMP	1
10	06-01-0004	BOLT .250-20 X .500 ZP GR5	2
11	06-01-0150	BOLT, CARRIAGE, .250-20x.50 G5 ZP	6
12	06-01-0153	BOLT CRG .375-16X.750 ZP SHORT NECK	46
13	06-03-0013	NUT,LOCK, FLG .250-20 ZP SERRATTED	8
14	06-03-0014	NUT,LOCK, FLG .375-16 ZP SERRATTED	46
15	13-05-0090	15.5 X 4 TAIL PULLEY WELDMENT	1
16	13-08-0019B	ASSY S4000 CNVR INLT HOPP	1
17	280-2-0026	SKIRTING ASSY LH	1
18	280-2-0027	SKIRTING ASSY RH	1
19	280-2-0045	TAIL TAKE-UP ASSEMBLY	2

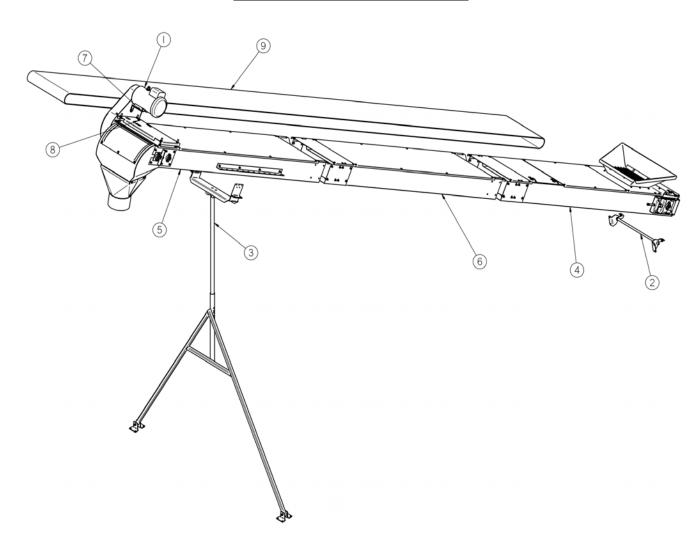
USC, LLC



Item Number	USC Part Number	Description	Quantity
1	01-01-0107	MTR 5HP 1750RPM 184T TEFC 1PH	1
	01-01-0108	MTR 5HP 1750RPM 184T TEFC 3PH	1
2	05-05-0038	SR 4000 HEAD SUPP	1
3	05-05-0043	S4000 STAND 96 TO 132	1
4	05-07-0315	ASSY CNVR 24IN TAIL SECT	1
5	05-07-0316	ASSY CNVR 24IN HEAD SECT	1
6	06-01-0189	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	4
7	06-03-0014	NUT,LOCK, FLG .375-16 ZP SERRATTED	4
8	11-02-0077	BELT CNVR CLTS 2024	1

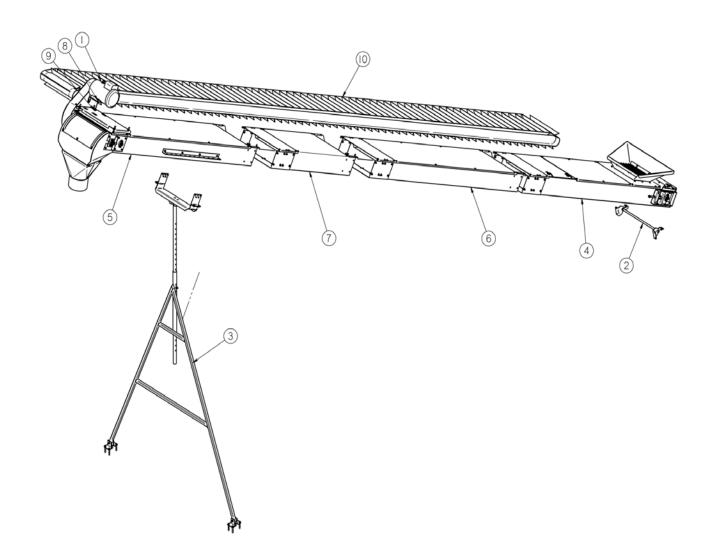


Item Number	USC Part Number	Description	Quantity
1	01-01-0107	MTR 5HP 1750RPM 184T TEFC 1PH	1
	01-01-0108	MTR 5HP 1750RPM 184T TEFC 3PH	1
2	05-05-0038	SR 4000 HEAD SUPP	1
3	05-05-0041	S4000 STAND 68 TO 98	1
4	05-07-0315	ASSY CNVR 24IN TAIL SECT	1
5	05-07-0316	ASSY CNVR 24IN HEAD SECT	1
6	05-07-0320	ASSY CNVR 24IN 5FT MID SECT	1
7	06-01-0189	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	4
8	06-03-0014	NUT,LOCK, FLG .375-16 ZP SERRATTED	4
9	11-02-0074	BELT CNVR CLTS 2524	1



Item Number	USC Part Number	Description	Quantity
1	01-01-0107	MTR 5HP 1750RPM 184T TEFC 1PH	1
	01-01-0108	MTR 5HP 1750RPM 184T TEFC 3PH	1
2	05-05-0038	SR 4000 HEAD SUPP	1
3	05-05-0043	S4000 STAND 96 TO 132	1
4	05-07-0315	ASSY CNVR 24IN TAIL SECT	1
5	05-07-0316	ASSY CNVR 24IN HEAD SECT	1
6	05-07-0319	ASSY CNVR 24IN 10FT MID SECT	1
7	06-01-0189	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	4
8	06-03-0014	NUT,LOCK, FLG .375-16 ZP SERRATTED	4
9	11-02-0039	BELT CNVR CLTS 3024	1
			DAGE 42

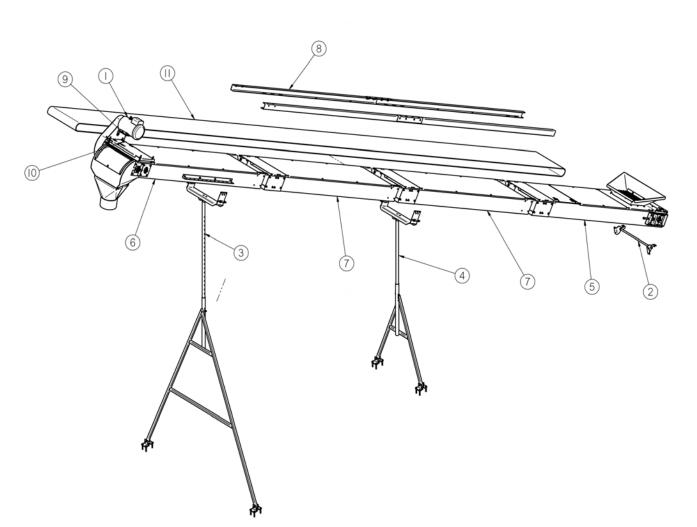
SERIES 4000 CONVEYOR 3524



Item Number	USC Part Number	Description	Quantity
1	01-01-0107	MTR 5HP 1750RPM 184T TEFC 1PH	1
	01-01-0108	MTR 5HP 1750RPM 184T TEFC 3PH	1
2	05-05-0038	SR 4000 HEAD SUPP	1
3	05-05-0039	S4000 STAND 132 TO 208	1
4	05-07-0315	ASSY CNVR 24IN TAIL SECT	1
5	05-07-0316	ASSY CNVR 24IN HEAD SECT	1
6	05-07-0319	ASSY CNVR 24IN 10FT MID SECT	1
7	05-07-0320	ASSY CNVR 24IN 5FT MID SECT	1
8	06-01-0189	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	4
9	06-03-0014	NUT,LOCK, FLG .375-16 ZP SERRATTED	4
10	11-02-0038	BELT CNVR CLTS 3524	1

USC, LLC ወ

SERIES 4000 CONVEYOR 4024 PARTS LIST



USC Part Number	Description	Quantity
01-01-0107	MTR 5HP 1750RPM 184T TEFC 1PH	1
01-01-0108	MTR 5HP 1750RPM 184T TEFC 3PH	1
05-05-0038	SR 4000 HEAD SUPP	1
05-05-0039	S4000 STAND 132 TO 208	1
05-05-0041	S4000 STAND 68 TO 98	1
05-07-0315	ASSY CNVR 24IN TAIL SECT	1
05-07-0316	ASSY CNVR 24IN HEAD SECT	1
05-07-0319	ASSY CNVR 24IN 10FT MID SECT	2
05-08-0093	KIT STRONGBACK 40 FT CNVR	1
06-01-0189	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	4
06-03-0014	NUT,LOCK, FLG .375-16 ZP SERRATTED	4
11-02-0075	BELT CNVR CLTS 4024	1
	01-01-0107 01-01-0108 05-05-0038 05-05-0039 05-05-0041 05-07-0315 05-07-0316 05-07-0319 05-08-0093 06-01-0189 06-03-0014	01-01-0107 MTR 5HP 1750RPM 184T TEFC 1PH 01-01-0108 MTR 5HP 1750RPM 184T TEFC 3PH 05-05-0038 SR 4000 HEAD SUPP 05-05-0039 S4000 STAND 132 TO 208 05-05-0041 S4000 STAND 68 TO 98 05-07-0315 ASSY CNVR 24IN TAIL SECT 05-07-0316 ASSY CNVR 24IN HEAD SECT 05-07-0319 ASSY CNVR 24IN 10FT MID SECT 05-08-0093 KIT STRONGBACK 40 FT CNVR 06-01-0189 BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG 06-03-0014 NUT,LOCK, FLG .375-16 ZP SERRATTED



Item Number	USC Part Number	Description	Quantity
1	01-01-0107	MTR 5HP 1750RPM 184T TEFC 1PH	1
	01-01-0108	MTR 5HP 1750RPM 184T TEFC 3PH	1
2	05-05-0038	SR 4000 HEAD SUPP	1
3	05-05-0039	S4000 STAND 132 TO 208	1
4	05-05-0046	S4000 STAND 200 TO 296	1
5	05-07-0315	ASSY CNVR 24IN TAIL SECT	1
6	05-07-0316	ASSY CNVR 24IN HEAD SECT	1
7	05-07-0319	ASSY CNVR 24IN 10FT MID SECT	2
8	05-07-0320	ASSY CNVR 24IN 5FT MID SECT	1
9	05-08-0092	KIT STRONGBACK 45 FT CNVR	1
10	06-01-0189	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	4
11	06-03-0014	NUT,LOCK, FLG .375-16 ZP SERRATTED	4
12	11-02-0076	BELT CNVR CLTS 4524	1

LIMITED WARRANTY

USC, LLC, (Manufacturer) warrants its seed treating equipment as follows:

1. <u>Limited Warranty</u>: Manufacturer warrants that the Products sold hereunder will be free from defects in material and workmanship for a period of 12 months from date of shipment. If the Products do not conform to this Limited Warranty during the warranty period, Buyer shall notify Manufacturer in writing of the claimed defects and demonstrate to Manufacturer satisfaction that said defects are covered by this Limited Warranty. If the defects are properly reported to Manufacturer within the warranty period, and the defects are of such type and nature as to be covered by this warranty, Manufacturer shall, at its expense, furnish replacement Products or, at Manufacturer's option, replacement parts for the defective products. Shipping and installation of the replacement Products or replacement parts shall be at the Buyer's expense.

2. **Other Limits:** THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES, EX-PRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Manufacturer does not warrant against damages or defects arising from improper installation (where installation is by persons other than Manufacturer), against defects in products or components not manufactured by Manufacturer, or against damages resulting from such non-Manufacturer made products or components. Manufacturer passes on to the Buyer the warranty it received (if any) from the maker of such non-Manufacturer made products or components. This warranty also does not apply to Products upon which repairs and/or modifications have been effected or attempted by persons other than pursuant to written authorization by Manufacturer. Manufacturer does not warrant against casualties or damages resulting from misuse and/or abuse of product(s), acts of nature, effects of weather, including effects of weather due to outside storage, accidents, or damages incurred during transportation by common carrier.

3. <u>Exclusive Obligation</u>: THIS WARRANTY IS EXCLUSIVE. The sole and exclusive obligation of Manufacturer shall be to repair or replace the defective Products in the manner and for the period provided above. Manufacturer shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, shall Manufacturer be liable for incidental, special, or consequential damages.

4. <u>Other Statements:</u> Manufacturer's employees or representatives' oral or other written statements do not constitute warranties, shall not be relied upon by Buyer, and are not a part of the contract for sale or this limited warranty.

5. <u>**Return Policy:**</u> Approval is required prior to returning goods to USC, LLC. A restocking fee will apply.

6. <u>Entire Obligation</u>: This Limited Warranty states the entire obligation of Manufacturer with respect to the Products. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

