REMOTE CONTROL 12VDC
SWIVEL SPOUT for
CHAIN COMMANDER 130
including “Optional LiteAll Kit”

OWNER’S & OPERATOR’S
MANUAL

Effective November 5, 2012

Model No’s.
SS121300E

Optional LiteALL Kit (Two Light)
DC443G

Optional Power Supply
DC449G (For connection to tractor battery)
DC444G (For connection to stand alone battery)
Policies and Procedures

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

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

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

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

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

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

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

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

Limited Warranty: (a) For a period of (1) year after receipt of goods by the original consumer buyer, Hutchinson/Mayrath will supply free of charge replacement parts for parts that prove defective in workmanship or material. Defective parts must be returned freight prepaid to a specified Hutchinson/Mayrath location. Only Hutchinson/Mayrath original repair parts may be used for warranty repairs. (b) This limited warranty does not extend to parts designed to wear in normal operation and be replaced periodically; or to damage caused by negligence, accident, abuse or improper installation or operation. (c) GOODS NOT MANUFACTURED BY HUTCHINSON/MAYRATH CARRY ONLY THE MANUFACTURER’S WARRANTY. (d) THIS UNDERTAKING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Failure to Follow the Instructions Contained in the Owner's & Operator's Manuals and the Items Listed Below Will Result in the Voiding of This Limited Warranty.

(1) Improper assembly, including failure to properly install all safety equipment.
(2) Improper installation.
(3) Unauthorized alternations of goods.
(4) Goods operated when obviously in need of repair.
(5) Use of unauthorized repair parts.
(6) Irresponsible operation.
(7) Used to handle materials other than free flowing, nonabrasive and dry materials, as intended.
(8) Damaged through abusive use or accident.

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

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

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

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

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

SAFETY DECALS

Check to ensure all Safety Decals are present and in good condition on all equipment being used.

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.

INTENDED USE STATEMENT

This product is intended to provide an electrical over mechanical means to divert the material being discharged from the spout of the Chain Commander 130 conveyor. By swinging the spout up and down and side to side, the apex of the commodity pile can be shifted for better fill with fewer moves of the main conveyor.

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.
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**GENERAL INFORMATION**

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

1. Some regulations specify that no one under the age of 16 may operate power machinery. This includes this auger. It is your responsibility to know what these regulations are in your area or situation.
2. Current OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in safe operation and servicing of all equipment which the employee is, or will be involved with."*

3. Unqualified persons are to stay out of the work area. See page 4.
4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine.

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

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

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<th>Training Sign-Off Sheet</th>
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DESIGNATED WORK AREA

A designated work area should always be established for auger operation. The following diagram will show the manufacturers designated work areas. These areas shall be marked off with colored nylon or plastic rope hung as portable barriers to define the designated work areas.

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

It shall be the duty of all operators to see that children and/or other persons stay out of the work areas! Entering the work area by anyone not involved in the actual operation, or trespass into a hazardous area by anyone, shall result in an immediate shut down by the operator.

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

Our conveyors and optional equipment are well made and we are proud of our line of equipment. We would like you, as our customer, to do your part in using caution and good judgement when using our equipment, as well as any other machinery.

It is important to be familiar with the following routine operating procedures before attempting start-up.

During the operation of your conveyor and swivel spout, one person shall be in a position to monitor the operation at all times.

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**Before adding power:**

1. Check that all fasteners and hardware are tight.
2. Check the electrical connections making sure they are properly connected and secured.
3. Make sure the electric cords are clamped or wire tied to the auger and are held off the ground and kept away from moving parts.
4. Verify there are **12 to 14 volts** to power the remote and receiver system.
5. Make sure all connections from the tractor battery are connected and secured.

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**MAINTENANCE**

Due to the small number of moving parts, very little maintenance is required on the swivel spout unit. However, the following items should be monitored:

1. **Electrical Components.** Check electrical cords for damage such as exposed wiring, cuts. Ensure connectors are secure and that they make a good solid connection.
2. **Drive Chain.** The drive chain which swings the spout from side to side should periodically be sprayed with a chain lubricant. Spray a liberal amount of lubricant on the entire length of chain.

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**TOP VIEW OF SPOUT**

56”

56” SIDE SWING OFF CENTER

SWIVEL SPOUT
SHOWN AT MID TRAVEL POSITION

43” UP/DOWN SWING ANGLE

BUNKER WIDTH
130’ SHOWN
WIRING DIAGRAM

Wiring Diagram for Commander 130 Swivel Spout & Two LiteAll Kits

- Red Stripe Wire
  - Battery Pos. (+)
  - Battery Neg. (–)
- Black Wire
  - Power Source (Tractor Wiring Kit or Battery Kit)
- Junction Block
- To Power Source (Tractor Wiring Kit or Battery Kit)
- Red Stripe Wire
- Black Wire
- Existing PigTail from Receiver
- Plug (if LiteAll Kit not used)
- PigTail from LiteAll Wiring Kit

LED Light Inlet Hopper (Light 1)

- Red Stripe Wire
  - Inlet Hopper (Light 1)
- Black Wire
- To Up / Down Acuator

Up / Down Actuator Receiver

- Red Stripe Wire
  - In (IN)
  - Out (OUT)
- Black Wire
  - Pos. (+)
  - Neg. (–)
  - Connected to Receiver

To Side-to-Side Actuator Receiver

- Red Stripe Wire
  - Black Wire
WIRING DIAGRAM

Wiring Diagram for Commander 130 Swivel Spout & Two LiteAll Kits

- **LED Light (Discharge)**
  - Connect Red Stripe Wire to Pos. (+)
  - Connect Black Wire to Neg. (–)
- **Red Stripe Wire (IN)**
  - Connect Black Wire to Neg. (–)
- **Black Wire (OUT)**
  - Connect Red Stripe Wire to Pos. (+)
- **Spout Actuator Receiver**
  - B – Black
  - R – Red
  - BRW – Brown
  - BLU – Blue
- **Junction Box**
  - Blue Wire (connects with Red/Stripe wire)
  - Brown Wire (connects with Black wire)
  - Blue Wire (connects with Red/Stripe wire)
  - Brown Wire (connects with Black wire)
- **Up / Down Spout Actuator**
- **Side-to-Side Spout Actuator**
- **To Up / Down Actuator**
- **To LiteAll Module** (Light 2)
- **Red Stripe Wire**
- **Black Wire**
- **Blue Wire** (connects with Red/Stripe wire)
- **Brown Wire** (connects with Black wire)
- **Brown Wire** (connects with Black wire)
- **Red Stripe Wire**
1. Insert the pivot pin weldment (Ref. 4) into the bushing in the end of the frame weldment (Ref. 1), as shown.

2. Install the small roller chain sprocket (Ref. 9) onto the pivot shaft of the pivot pin (Ref. 4). Mount so hub of sprocket is toward the bottom. Install a 1/4" x 2" long key to secure the sprocket to the pivot shaft.

3. Slip the actuator mounting pivot ear weldment (Ref. 6) over the end of the pivot shaft of item 4 and secure to the shaft with a 5/16" bolt and locknut (Ref. 20 and 21).

4. Bolt the pivot plate weldment (Ref. 7) to the plate on the underneath side of the frame weldment (Ref. 1) using four 3/8" x 1" long carriage bolts with lock washers and nuts (Ref. 24, 25 and 26).

5. Slip two 1" flat washers (Ref. 14) onto the shaft of the pivot plate pin, along with the large sprocket weldment (Ref. 8) and another 1" flat washer (Ref. 14). Hold these in place on the pin by inserting a 1/4" x 2" long cotter pin through the hole in the end of the pivot plate pin. Note: The hub of the sprocket weldment (Ref. 8) should be toward the bottom.

6. Mount the frame weldment (Ref. 1) to the flange of the conveyor head assembly (1039680) and the mounting plate on the underneath side of the upper housing assembly (1040835). The frame (Ref. 1) should set on top the flange of the head assembly that is bolted to the discharge spout (1039579) and on the downward, or inlet side, of the plate on the housing assembly. Use the head to spout mounting bolts to secure the frame to the head and use four 3/8" x 1" long bolts with lock washers and nuts to secure the frame to the mounting plate on the upper housing.

7. Slip the 1-5/16" diameter holes in the pivot bars of the spout (Ref. 2) over the ends of the pivot pin weldment (Ref. 4) installed in step 1. Capture the spout onto the pivot pin using a collar (Ref. 5) and 5/16" x 1-3/4" all thread bolt and lock nut (Ref. 27 and 21) each end.

8. Connect one of the Linak linear actuators (Ref. 11) to the frame weldment (item 1), as shown. Use a 1/2" x 2-1/2" long bolt and locknut (Ref. 18 and 19). The base end (non extendable) of the actuator mounts to the frame. The rod on the base end of the actuator should be sandwiched in between the mounting plates on the frame (Ref. 1). The actuator should be positioned, so that the motor portion is on the bottom.

9. Connect the extendable end of the actuator just installed (Ref. 11), so that the actuator rod is sandwiched in between the two mounting plates on the arm of the larger sprocket weldment (Ref. 8). Secure actuator to sprocket arm using a 1/2" x 2-1/2" long bolt and locknut (Ref. 18 and 19).

10. Connect the base end (non extendable) of the other Linak linear actuator (Ref. 11) to the actuator mounting pivot ear (Ref. 6) installed in step 3 above. Use a 1/2" x 2-1/2" long bolt and locknut (Ref. 18 and 19).

11. Connect the extendable end of the actuator just installed (Ref. 11) to the swivel spout weldment (item 2) installed in step 7 above, so that the actuator rod is sandwiched in between the two mounting plates on the bottom side of the spout. Secure with a 1/2" x 2-1/2" long bolt and locknut (Ref. 18 and 19).

12. The retracted pin to pin length of the linear actuators is approximately 15-3/4" (40 cm), so at 19-11/16" the actuator will be at mid travel of it's stroke. Apply 12 VDC power to the actuator that is mounted to the frame weldment (Ref. 1) and extend the rod until the center to center pin distance is 19-11/16".

13. Position the spout (Ref. 2), so that it is straight in line with the conveyor housing (1040835). This will be the center point of spout side to side travel.

14. While maintaining this centered spout position and the 19-11/16" pin to pin dimension of the actuator, install the number 50 roller chain (Ref. 10) around the two sprockets (Ref. 8 and 9). NOTE: By positioning the actuator and sprockets as described, the spout will swing approximately 55 degrees to the left when the actuator is fully retracted and approximately 55 degrees to the right when the actuator is fully extended.
15. Connect the extension spout weldment (Ref. 3) to the swivel spout weldment (Ref. 2) using two 1/2” x 1-1/4” long bolts with flat washers and locknuts (Ref. 19, 22 and 23).

16. Attach the two spout support chains (Ref. 13) to the inside of the side panels of the swivel spout (Ref. 2) using two 3/8” x 1-1/4” long carriage bolts with flat washers and locknuts (Ref. 29, 30 and 28). NOTE: When the chains are not being used to support the extension spout, the loose end of each chain should be inserted from the outside into the keyhole slot in the side of the swivel spout (Ref. 2) so that the end of the chain isn’t laying in the extension spout (Ref. 3).

17. Attach the spout support chain bracket (Ref. 12) to the inside of the extension spout (Ref. 3), using four 3/8” x 1” long carriage bolts with locknuts (Ref. 24 and 28). NOTE: The slots in the top of the chain bracket should point away from the conveyor, so that links of the support chain can be inserted into them to support the spout.

18. When the conveyor is down in the transport position, the end of the extension spout (Ref. 3) should be raised to provide adequate ground clearance for transporting. Simply swing the extension spout around until it is approximately perpendicular to the swivel spout (Ref. 2) and hook the appropriate links of the support chains into the slots in the support chain bracket (Ref. 12). Note that the extension spout extends past the end of the conveyor and this must be accounted for when making turns with the conveyor.

19. Mount the electrical junction box (Ref. 16) to the side of the frame weldment (Ref. 1), using two 1/4” x 3/4” long bolts with flat washers and locknuts (items 31, 32 and 33). NOTE: The junction box can be mounted to either the right or left hand side of the frame (Ref. 1), but later wiring instructions will assume that it is on the right hand side.

20. If the optional two light wiring kit is also being installed on the conveyor, mount the LED light (Ref. 34, page 8) to the flat surface of the spout directly below the end of the 1039680 head assembly. Use the bolt and nut provided with the light for mounting.

21. Now proceed to the instructions for installing the remote control components and wiring.
12 VDC ELECTRICAL COMPONENT INSTALLATION

Anytime left hand or right hand side of the conveyor is referred to, it is as if a person were standing at the inlet (boot) end of the conveyor and looking toward the discharge (head) end of the conveyor. Reference drawings shown on pages 15 and 16. For additional reference see pages P-3 of the parts section.

1. Mount the control component mounting bracket (Ref. 3, part number 1041285) to the flange of the connecting band, which secures the boot assembly of the conveyor to the first housing section. Although there are two connecting bands at this location, it is preferred to use the top connecting band, so that it is more accessible. Use two of the existing connecting band bolts for mounting the bracket. Note: the connecting band flange is shown pointing toward the right hand side of the conveyor since this is how the band is noted to be installed in the conveyor assembly instructions. If the flange is pointing toward the left side of the conveyor the mounting bracket can be installed on that side, as well.

2. Mount the two brace straps (Ref. 4, part number 1041286) to the underneath side of the mounting bracket (Ref. 3). The straps mount to the same two bolts of the connecting band that the mounting bracket (Ref. 3) is secured with. Mount the other end of each strap to the 3-1/2" wide bottom flange of the mounting bracket (Ref. 3) using two 3/8" x 1" bolts with lock washers and non lock nuts.

3. Mount the Shur Co junction block (Ref. 5) to the back side of the 3-1/2" wide bottom flange of the mounting bracket (Ref. 3) using two 3/8" x 1" bolts with lock washers and non lock nuts. Mount the junction block so that the two male contact pins are pointing towards the inlet end of the conveyor. Reference to the wiring diagram on page 6 will make this clearer.

4. If an optional light kit is being installed on the conveyor in addition to the swivel spout, install a rubber grommet (Ref. 6) into the 1-5/16" diameter hole in the lower middle portion of the mounting bracket (Ref. 3).

5. Install a rubber grommet (Ref. 7) into each of the two 2-1/16" diameter holes near the edges of the mounting bracket (Ref. 3).

6. Mount one of the Shur Co 12 VDC wireless receivers (Ref. 1, part number 1041013) to the mounting bracket (Ref. 3) using four 5/16" x 3/4" long bolts with lock washers and non lock nuts. The receiver should be centered over one of the larger rubber grommets (Ref. 7) installed in the previous step. Insert the pigtail wire from the receiver through the grommet. Mount so that the “O” and “C” letters are on the end of the receiver closest to the conveyor housing, as shown.

7. Repeat step 6 for the other wireless receiver (Ref. 1).

8. If an optional light kit is being installed on the conveyor in addition to the swivel spout, install the light module (Ref. 2, part number 1041016) to the mounting bracket (Ref. 3) using four #12 x 3/4" long self tapping screws. Place four plastic spacer washers (Ref. 8) between the module and the mounting bracket to hold the module off the bracket. The module should be centered over the smaller rubber grommet (Ref. 6) installed in step 4 above. Mount so that the “Light 1” and “Light 2” letters are closest to the conveyor housing (i.e. readable when standing beside the conveyor). Insert the wires from the back side of the light module through the grommet.

9. Remove the eight screws that attach the covers to each of the two receivers (Ref. 1) and carefully lift the covers off. There are wires attached to the covers that are also attached to the receivers, so use caution whenever removing the receiver covers.
10. Locate one of the 130’ long power cords with eyelet terminals attached on both ends of the cord. From the back side of the mounting bracket (Ref. 3), insert one end of the power cord up through the large grommet (Ref. 8) in the bracket and also through the grommet on the back side of the receiver. Work with the receiver closest to the inlet end of the conveyor first.

11. Connect the eyelet terminals of this power cord to the posts on the receiver as shown in Fig. below. The red/striped wire will attach to the (IN) post and the black wire will attach to the (OUT) post. Temporarily reinstall the cover and secure it with two screws (the cover will need to be removed again when programing the remote control unit. Note: This receiver is going to be used for up down movement of the swivel spout so mark the other end of the power cord that is connected to the receiver so that it can be distinguished after the wire has been run to the other end of the conveyor.

12. Repeat steps 10 and 11 with the other power cord and other receiver. Mark the end of this power cord so that it can be distinguished from the first power cord.

13. Please refer to the overall wiring diagram as you proceed (Ref. pages 6 and 7). Locate the electrical grease packet from the parts box. Apply a light coat of the grease to the two male prongs on the junction block (Ref. 5) which was mounted to the back side of the mounting bracket (Ref. 3).

14. Now apply a light coat of the electrical grease to the prongs of the two pigtail wires coming out of the back of the two receivers (Ref. 1).

15. Plug the prongs of the pigtail wires into the junction block (item 5), as shown in the wiring diagram (Ref. page 6). The “UP/DOWN” receiver pigtail connects to the bottom side of the junction block directly opposite the prongs of the junction block that connects to the power source wire and the “SIDE-TO-SIDE” receiver pigtail connects to the top side of the junction block directly above the prongs of the junction block that connects to the power source wire.

16. Route the two power cord wires that were connected to the two receivers in steps 11 and 12 above, up along the conveyor housing toward the discharge end. At each of the truss supports run the wires through one of the 1-1/4” diameter holes in the truss mount plates. This will provide support for the wires at 10 foot intervals.

17. Remove the four screws which secure the cover to the junction box (Ref. 16 shown on pages 8 and 9) of the swivel spout assembly instructions. This box is mounted to the swivel spout frame near the discharge end of the conveyor.

18. Insert the ends of the two power cords that were attached to the two receivers (Ref. 1) in steps 11 and 12 above into the bottom openings of the junction box (Ref. wiring diagram page 7). The wire that was designated as the UP/DOWN actuator power cord will connect to the two terminals on the left hand side of the junction box as seen looking into the box (note the black wire connects to the left and the red wire connects to the right). The wire that is connected to the SIDE-TO-SIDE receiver connects to the two terminals on the right hand side of the junction box (note the black wire connects to the left and the red wire connects to the right). Note: Although either receiver can be used to control either actuator, by following the connections shown in the wiring diagram it makes the receiver closest to the inlet end of the conveyor always the Up/Down controller and the receiver furthest from the inlet end of the conveyor always the Side-to Side controller.
19. Now locate the wires from the actuator which controls side-to-side movement of the swivel spout. This is the actuator which is connected to the arm on the sprocket weldment (Ref. 8) of the swivel spout instructions. Connect the wires from this actuator to the two terminals on the right hand side of the junction box (Ref. 16). Note: The blue actuator wire should be on the same terminal screw as the red power cord wire and the brown actuator wire should be on the same terminal screw as the black power cord wire.

20. Repeat step 19 for the actuator which controls the up/down movement of the swivel spout.

21. Replace the cover on the junction box (Ref. 16).

22. If the optional light kit is also being installed, locate the pigtail wire in the light kit and plug it into the junction block (Ref. 5), as shown. Ref. wiring diagram, page 6. Apply electrical grease to the prongs on the pigtail prior to plugging it into the junction block. Apply electrical grease to the prongs of the wire coming from the light module (Ref. 2) and plug it into the pigtail wire just installed.

23. Also for the optional light kit, install one of the LED lights (Ref. 9, page 15) to the top of the end panel at the inlet hopper on the boot assembly. Use the attachment bolt supplied with the light. Route the wire attached to this light along the side of the boot housing where it will not come in contact with any moving parts of the conveyor and connect it to one of the short wires coming out the back of the light module (Ref. 2). Ref. wiring diagram, page 6.

24. Also for the optional light kit, locate the 130 foot long roll of wire for the discharge spout wire and route it up the side of the conveyor with the power cord wires that were run for the two swivel spout linear actuators. Note: On some units it may be possible for this to be several 20 foot long sections of wire rather than one 130 foot wire. If so, connect each individual section of wire together as it is routed up the side of the conveyor. Apply electrical grease at all connections.

25. Also for the optional light kit, the second LED light should be installed to the discharge spout of the conveyor. Reference (Ref. 34), step 20 of the swivel spout installation instructions.

26. Connect the wire from the second LED light at the discharge to the 130 foot long wire that was run up the side of the conveyor in step 24 above. Any excess wire can be merely wrap around one of the 12 inch housing tubes prior to making the connection to the light.
12 VDC ELECTRICAL COMPONENT
INSTALLATION - cont.
**Install Power Cord for Tractor or Stand Alone Battery Connection**

The power cord used to make the tractor or battery connection may already be preassembled from the factory. If it has been preassembled, the power cord can installed using Steps 1 and 2 shown below.

If the power cord has NOT been preassembled, refer to the Assemble Tractor Power Cord instructions below Fig. 12.

1. Connect the plug end of the power cord to the two prongs on the lower portion of the junction block (prongs are opposite the pigtail connection from the up/down actuator receiver). Reference wiring diagram on page 6.

2. Insert a long pin through the top of the junction block to secure plug in place (See Fig. 12).

6. Slide the connector and plug back together and secure with the screw previously from the side of the metal connector.

7. Tighten the setscrew at the bottom of the connector to secure the power cord to the connector.

8. After the tractor power cord has been assembled, refer to Steps 1 & 2 and Fig. 12 in the previous column to ensure proper connection to the junction block located on the receiver mount plate.

**Assemble Power Cord (if not preassembled from factory)**

3. Remove the screw from the side of the metal connector and separate the connector from the plug (See Fig. 13).

4. Loosen the setscrew at the bottom portion of the connector. Insert the wires through the connector.

5. Strip approximately 1/2” of insulation from the ends of the power cord.

   Attach the wires to the plug as shown in Fig. 13 (the red/striped wire should be at the top of the plug where the flat tab is located). It may be necessary to loosen the two screws on the plug terminals in order for the wire ends be properly inserted into the terminals.

   Tighten the screws to secure the wire ends in place.
The power cord and tractor plug used on the tractor may already be preassembled from the factory. If it has been preassembled, the power cord can be installed using the following steps.

If the power cord has NOT been preassembled, refer to “Assemble Tractor Power Source Connection” instructions on Page 19.

1. Route the tractor power source cord from the back of the tractor to the battery compartment. The tractor plug is fastened to a universal mount plate that allows you to mount the plug onto any tractor (the hardware used to mount the universal bracket is not furnished).

Determine a mounting location for the tractor plug and secure it to the back of the tractor (See Fig. 19 for location reference).

2. Connect wires to battery. (Reference battery connection shown on page 22.) Attach the red/striped 12” jumper wire to the positive ( + ) battery terminal.

Attach the black wire to the negative ( - ) battery terminal (See Fig. 20).

Use the wire ties and clamps to secure all wiring to prevent it from being damaged.

The receiver installation is now complete. Connect the tractor power cord from the receiver to the plug on back of the tractor.

See Page 20 for remote control programming.
**Assemble Tractor Power Source**  
*(Optional: Catalog No. DC449G)*  
**Connection**

NOTE: This assembly may come complete from the factory. If so, disregard steps 1-5.

1. Attach the tractor plug mount bracket to the tractor plug and secure using two (2) 5/16" x 1" bolts, flat washers, lock washers and non-lock nuts (See Fig. 18 on Page 16 for reference). Locate the power cord that does not have any terminals attached to either end. Slide the rubber boot onto one end of the power cord. Loosen the screws that will secure the wires to the tractor plug to ensure the wire ends will fit into the openings.

2. Split the end of the cord to separate the black and red/striped wires so there is enough length of each wire to attach the wires to the tractor plug. Strip approx. 1/2" (13 mm) of insulation from the ends of the cord and attach the wires to the plug as shown (red/striped wire should be at the top of the plug where the flat tab is located (See illustration below). Slide the rubber boot onto the tractor plug and secure lower portion of the boot with a wire-tie.

3. At the opposite end of the cord, split the cord to separate the black and red/striped wires. Cut off a 12” piece of the red/striped wire. Use the eyelet terminals as a guide to determine how much insulation to strip from the wire ends. Crimp a small eyelet terminal on one end and a large eyelet onto the opposite end. Strip the insulation from the remaining red/striped wire on the long power cord and crimp on a small eyelet terminal. Crimp a large eyelet terminal onto the end of the black wire.

4. Attach the circuit breaker to the red/striped wires as shown below. Connect the 12” pigtail’s small eyelet to the “Batt” post on the circuit breaker (copper colored post) and the other end of the circuit breaker (AUX) to the small eyelet on the long power cord.

5. Attach the universal support bracket to the bottom of the tractor plug mount bracket using two (2) 3/8” x 1” bolts and nylon locknuts (See Fig. 18 on Page 16).

6. Refer to Steps 1 & 2 of the “Tractor Power Source Connections (preassembled)” instructions on Page 16 for installing the power cord assembly to the tractor.
**Program Remote Control Unit**

The remote control transmitter will power up when the lid is opened. The transmitter will power down when the lid is closed, or when the lid is left open three (3) minutes after the last button is pushed. The select button will cycle between the channels allowing you to choose the appropriate channel to program.

1. Remove the cover from the up/down receiver, being careful not to damage the wires attached to the cover.
2. Make sure the receiver has power.
3. On the remote, depress the select button until the “Front Hopper” light is illuminated. (This will be the up/down function of the swivel spout.)

4. On the receiver solenoid, hold the white button on the bottom side of solenoid down for 5 seconds (you may have to use a pen or small screwdriver as the button may be difficult to press). **After 5 seconds you will hear a beep.**
5. On the remote, press the “Open/On” button 5 times slowly. Each time you press the button the solenoid will beep. After the 5th button press, the solenoid will beep twice. The remote should now be programmed to the up/down actuator.
6. Replace the cover onto the receiver.
7. Repeat steps 1 through 6 for the side-to-side receiver. For step 3, however, select the “Back Hopper” on the transmitter.

8. To operate the spout “up and down”, select “Front Hopper” on the transmitter. Press and hold the “Open/On” button to raise the spout. Release the button to stop hopper movement.
9. To swing the spout side to side, select “back hopper” on the transmitter. Press and hold the “Open/On” button to swing the spout to the right. Release the button to stop the spout movement. Press and hold the “close/off” button to swing the spout to the left. Release the button to stop the spout movement.

**OPTIONAL LITEALL KIT**

An optional LED light kit is available for use with the remote control application. The light module is installed onto the 12VDC receiver mount plate. The light system can be operated using the same remote control unit used for the 12VDC receiver. If the 12VDC receiver and mount plate have already been installed, go to instructions for programming the lights on page 21.

If the receiver has not yet been installed, go to Step 8 on page 12 and Step 22 on page 14.
ASSEMBLY INSTRUCTIONS

1. Make sure the LiteALL module is connected to a power source.

2. On the remote, depress the select button until the "Lights" channel light is illuminated (See Fig. 29).

3. On the LiteALL module, hold the "Light 1" button down for 5 seconds...the "Power" LED light will go off and the "Light 1" LED will turn on.

4. On the remote control unit, press the "Open/On" button 5 times slowly. Each time the button is pressed, the "Light 1" LED on the LiteALL module should blink. After the 5th button press, the "Light 1" LED on the module will blink twice. Then the "Power" LED on the module will turn back on. The LiteALL system is now programmed.

5. Repeat steps 3 and 4 for the "Light 2" LED on the module.

6. To operate the LiteALL system:
   Press the select button on the remote control unit until the "Lights" channel light is illuminated.
   Press the "Open/On" button to turn lights on.
   Press "Close/Off button to turn lights off.
Battery Connections

Shown as reference for proper battery connections.

12 Volt System (One 12 Volt Battery)

Correct Incorrect Incorrect Incorrect

12 Volt System (Two 6 Volt Batteries)

Correct Incorrect Incorrect Incorrect

12 Volt System (Two 12 Volt Batteries)

Correct Correct Correct

24 Volt System (Two 12 Volt Batteries)

Correct Incorrect Incorrect Incorrect
<table>
<thead>
<tr>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1041193</td>
<td>Frame Weldment</td>
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<tr>
<td>2</td>
<td>1041234</td>
<td>Swivel Spout Weldment</td>
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<tr>
<td>3</td>
<td>1041761</td>
<td>Extension Spout Weldment</td>
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<td>4</td>
<td>631322</td>
<td>Pivot Pin Weldment</td>
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<td>553547</td>
<td>Pivot Pin Collar</td>
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<td>6</td>
<td>1041109</td>
<td>Actuator Mounting Pivot Ear Weldment</td>
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<td>7</td>
<td>631324</td>
<td>Pivot Plate Weldment</td>
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<td>8</td>
<td>1041233</td>
<td>Sprocket Weldment 50B 40 x 1&quot; Bore</td>
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<td>9</td>
<td>8820D</td>
<td>Sprocket 50B 22 x 1-1/4&quot; Bore</td>
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<td>10</td>
<td>553552</td>
<td>Chain RC-50 x 67 Links (not shown)</td>
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<td>11</td>
<td>1041249</td>
<td>Linear Actuator, 6800N, 8&quot; Stroke</td>
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<td>12</td>
<td>1041820</td>
<td>Spout Support Chain Bracket</td>
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<td>13</td>
<td>1017766</td>
<td>Chain 3/16&quot; Proof x 33 links (not shown)</td>
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<td>14</td>
<td>D1160</td>
<td>Washer, 1&quot; Flat (two above &amp; one below Ref. 8)</td>
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<td>15</td>
<td>4020A1</td>
<td>Key, 1/4&quot; x 1&quot; long (for Ref. 9 to Ref. 4) (not shown)</td>
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<td>16</td>
<td>1041847</td>
<td>Junction Box Kit</td>
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<td>17</td>
<td>D1263</td>
<td>Cotter Pin, 1/4&quot; x 2&quot; long</td>
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<td>18</td>
<td>1002229</td>
<td>Bolt, 1/2&quot; x 2-1/2&quot; long</td>
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<td>19</td>
<td>33138</td>
<td>Nylock Nut, 1/2&quot;</td>
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<tr>
<td>20</td>
<td>1002217</td>
<td>Bolt, 5/16&quot; x 2-1/2&quot; long</td>
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<td>21</td>
<td>33135</td>
<td>Nylock Nut, 5/16&quot;</td>
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<td>22</td>
<td>33082</td>
<td>Bolt, 1/2&quot; x 1-1/4&quot; long</td>
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<td>23</td>
<td>33025</td>
<td>Washer, 1/2&quot; Flat</td>
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<td>24</td>
<td>1001631</td>
<td>Carriage Bolt, 3/8&quot; x 1&quot; long</td>
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<td>25</td>
<td>D1149</td>
<td>Nut, 3/8&quot; Hex</td>
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<td>26</td>
<td>D1150</td>
<td>Lock Washer, 3/8&quot;</td>
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<td>27</td>
<td>1002215</td>
<td>Bolt, 5/16&quot; x 1-3/4&quot; long, all thread</td>
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<td>28</td>
<td>33136</td>
<td>Nylock Nut, 3/8&quot;</td>
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<td>30</td>
<td>33024</td>
<td>Washer, 3/8&quot; Flat (not shown)</td>
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<td>31</td>
<td>4605-1</td>
<td>Bolt, 1/4&quot; x 3/4&quot; long (not shown)</td>
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<td>33022</td>
<td>Washer, 1/4&quot; Flat (not shown)</td>
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<tr>
<td>33</td>
<td>4003</td>
<td>Nylock Nut, 1/4&quot; (not shown)</td>
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<tr>
<td>34</td>
<td>1041017</td>
<td>LED Light (This is part of the Optional DC443G Light Kit)</td>
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<tr>
<td>35</td>
<td>1041955</td>
<td>Liner, 1/4&quot; Rhino Hide Urethane f/Swivel Spout (Ref. 2)</td>
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<td>36</td>
<td>1041956</td>
<td>Liner, 1/4&quot; Rhino Hide Urethane f/Extension Spout (Ref. 3)</td>
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<td>37</td>
<td>33015</td>
<td>Bolt, Elevator 1/4&quot; x 1-1/4&quot;</td>
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<tr>
<td>38</td>
<td>33143</td>
<td>Lock Washer, 1/4&quot;</td>
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<tr>
<td>39</td>
<td>33150</td>
<td>Nut, 1/4&quot; Non-Lock</td>
</tr>
</tbody>
</table>
## Parts List

**Swivel Spout 12VDC Electrical**

<table>
<thead>
<tr>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>1041013</td>
<td>Wireless Receiver</td>
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<tr>
<td>2</td>
<td>1041016</td>
<td>Light Module (for Optional Lift Kit)</td>
</tr>
<tr>
<td>3</td>
<td>1041285</td>
<td>Control Mount Plate</td>
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<tr>
<td>4</td>
<td>1041286</td>
<td>Control Mount Gusset</td>
</tr>
<tr>
<td>5</td>
<td>1041916</td>
<td>Junction Block</td>
</tr>
<tr>
<td>6</td>
<td>1041050</td>
<td>Rubber Grommet (for Optional Light Kit)</td>
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<td>7</td>
<td>1041915</td>
<td>Rubber Grommet for 2-1/6&quot; Panel Holes</td>
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<td>8</td>
<td>1041918</td>
<td>Plastic Spacer Washer (for Optional Light Kit)</td>
</tr>
<tr>
<td>9</td>
<td>1041017</td>
<td>LED Light, 24 Watt (for Optional Light Kit)</td>
</tr>
</tbody>
</table>

If any replacement wiring or wiring components are required, contact the factory.