Combine Cover Manual

For Model's:

John Deere 9650, 9750, 9850, 9660, 9760, 9860, 9670, 9770, 9870

C/W MAURER Extension

Please forward onto Customer

Step 1: Front Rolltube Brackets (See Figure 1-3)

Mount the front rolltube brackets to the front corners of the extensions with 5/16"x1" carriage head bolts, washers and nylon lock nuts.

Mark 4" from the end of the corner back on the front left corner extension. (See Figure 1) Then mark 4-1/2" down perpendicular from your mark. (See Figure 2) Drill a 5/16" hole at your mark.

Bolt the front left bracket (driver) to the extension so the top edge is parallel with the bend line on the extension. Drill the remaining holes in the extension and secure with 5/16"x1" carriage head bolts and nylon lock nuts. (See Figure 3)

Repeat for right side. (Passenger Side)

Figure 1

Figure 2

Figure 3

Step 2: Rear Rolltube Brackets (See Figure 4)

Mark 10" from the end of the corner back on the rear right corner extension. Place the rear right rolltube bracket (passenger) so the top edge of the bracket is on the bend line and the end is at the 10" mark. Mark all of the holes and drill 5/16" holes. Mount the rear rolltube brackets to the rear corners of the extensions with 5/16"x1" carriage head bolts, washers and nylon lock nuts.

Repeat for other side.

Figure 4

Step 3: Rear Rolltube Assembly Installation (See Figure 5-6)

Note: The hand rail may need to be modified to be able to lift up when tarp system is installed.

Insert the motor into the Rear rolltube and insert the 5/16" x 3" bolt through the predrilled hole. Bolt the motor to the bracket with 5/16" x 3/4" bolts and lock washers. (See Figure 5) Note: The body of the motor will hang to the bottom of the bracket when installed on the combine.

Slide the grey strap pulleys (D) on the rear rolltube and slide the rolltube onto the motor shaft.

Place one flangette (E) on the 1" shaft of the rear rolltube and slide the bearing on. Place the other flangette on and secure to the rear rolltube bracket with 5/16"x1" carriage head bolts and nylon lock nuts. Place the flangettes on the outside of the rolltube bracket. Tighten the set screws on the collar of the bearing to secure to the shaft.

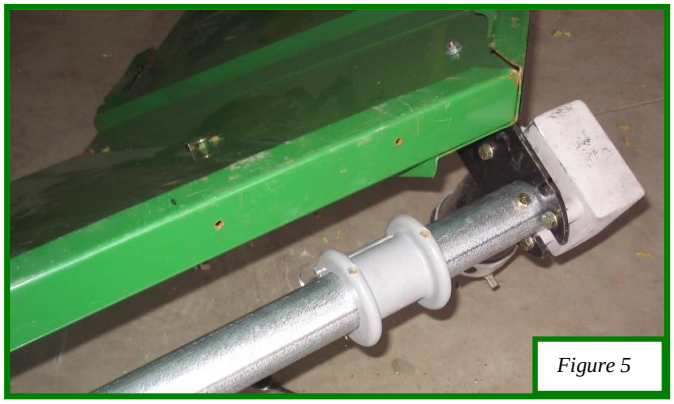


Figure 5

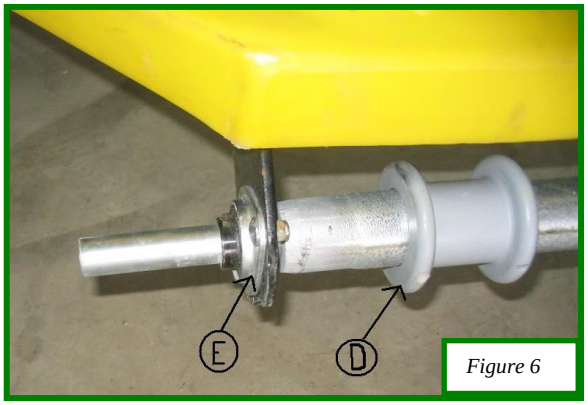


Figure 6

If your combine has the optional 8" tip up that goes on top of the Maurer extension you will require an additional kit to raise the rolltube assembly. Go to Step 4B to install the front \rolltube with 8" tip up kit or go to Step 4A to install the rolltube on just the Maurer extension.

Step 4A: Front Rolltube Assembly Installation – Standard Height

(See Figure 7-9)

Carry the rolltube and tarp assembly up and place it on the cab of the combine. Position the end that is stamped PS on the right side (Passenger side) of the combine. Slide the rolltube holders (A) on the ends of the shaft with the tubing facing inward. (See Figure 7)

Lift the rolltube up and place into the rolltube brackets with the rolltube holders (A) on the inside of the rolltube brackets. Secure the rolltube holders to the rolltube brackets with 5/16"x1" carriage head bolts (C). (See Figure 8)

Center the rolltube/tarp assembly between the rolltube brackets by sliding the shaft in the rolltube holders.

Once centered drill through the rolltube holders and shaft with a 1/4" bit. Secure together with a 1/4"x1-3/4" bolt (B) and nylon lock nut.

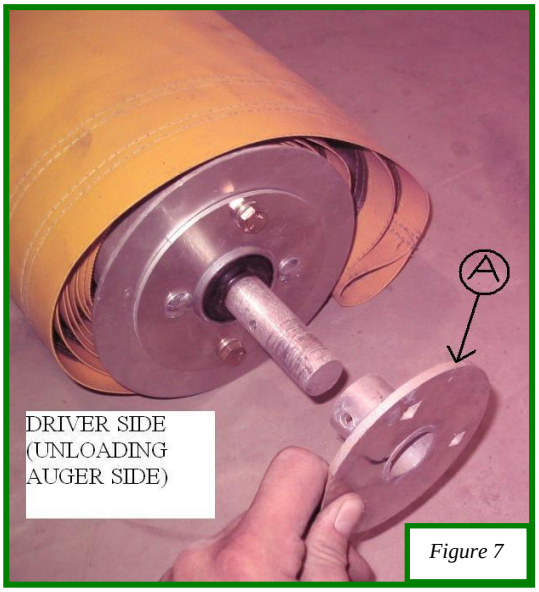


Figure 7

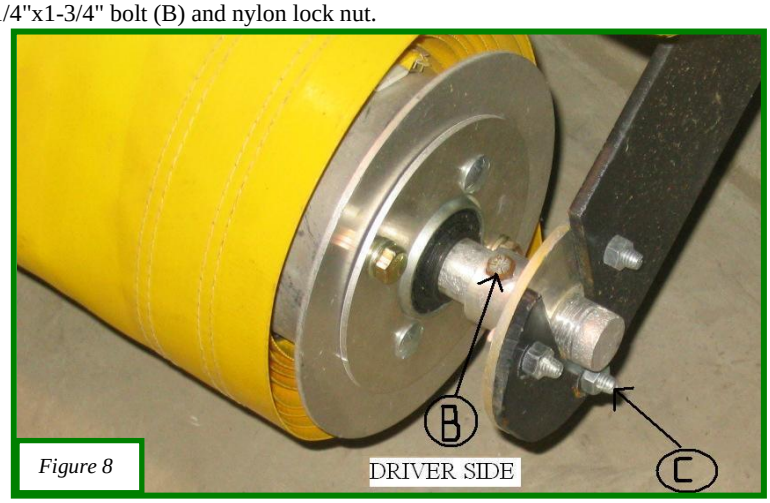


Figure 8

Step 4B: Front Rolltube Installation – 8" Tip Kit *(See Figures 9-10)*

Place the 2 plates on the outside of the rolltube brackets that are bolted to the combine extension already. Bolt together as shown in Figure 9. Then drill a 3/8" hole through rolltube bracket as shown in Figure 10. Loosely secure the plates to the rolltube brackets with 3/8"x1-1/4" hex bolt, washers and lock nuts through the holes in the plates shown in Figure 9.

Note: Bracket shown in Figure 9 may not be identical to actual bracket.

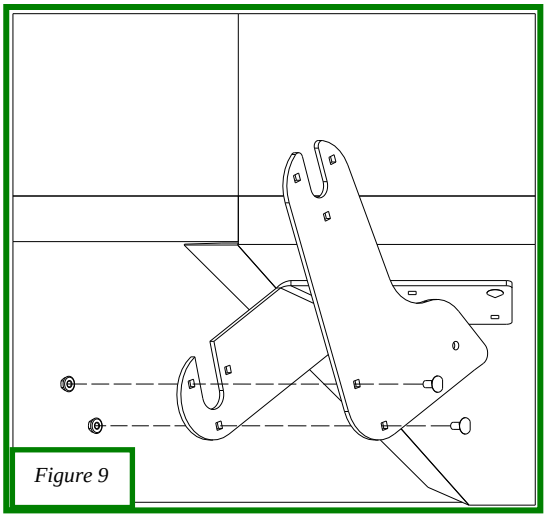


Figure 9

Carry the rolltube and tarp assembly up and place on the cab of the combine. Position the end that is stamped PS on the right side (Passenger Side) of the combine. Carry it up or use a forklift to lift it up onto the cab. Slide the rolltube holders on the ends of the shaft with the tubing facing inward. (See Figure 7) Secure the rolltube holders to the extension plates with 5/16"x1" carriage head bolts. (See Figure 9) Slide the straps over the pipe in the cut outs of the tarp and attach to the plastic strap pulleys on the rear rolltube assembly.

Figure 10

Step 5: Hood Assembly Installation (See Figure 11-17)

Attach the hood latches to the hoods with 1/4"x3/4" truss head bolts (3) 1/4" flat washers, 1/4" nylon washers. There are three latches per hood (1 &2)

When bolting the latches onto the hoods add the cable with the plastic knob (4) to one of the bottom corner bolts. Slide the cable over the bolt and then place the washer and secure with nylon lock nut. When tightening the bolts you will need to use a Robinson screw driver on the bolt so it will not turn. Tighten the bolt so the head of it is slightly indented in the hood. Once tighten make sure the head of the bolts are smooth or they will wear the tarp.

Install the strap handles (5) onto the inside of the hoods with 1/4"x3/4" truss head bolts, 1/4" flat washer, 1/4" nylon lock nuts. Fold the ends of the straps over and slide the bolt through both holes. Install a knob on the hood without a decal/writing on it on the inside lip of the hood. Drill around the same area shown in the Figure 24
Secure it with a 1/4"x3/4" bolt, washer and nylon lock nut.

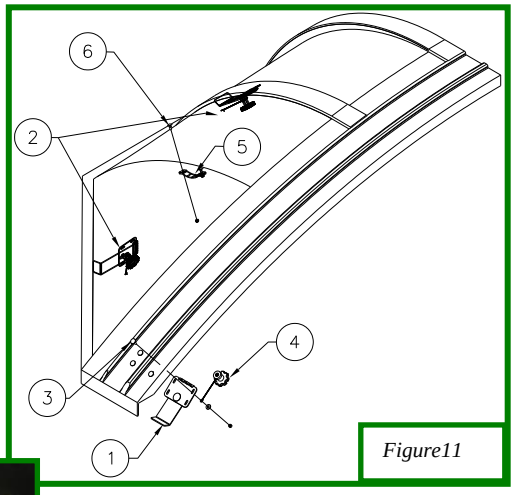


Figure11

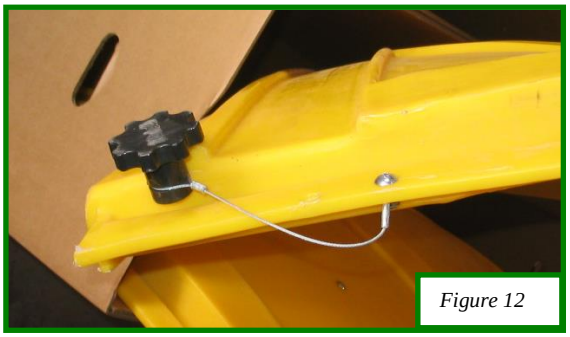


Figure 12


Figure 13

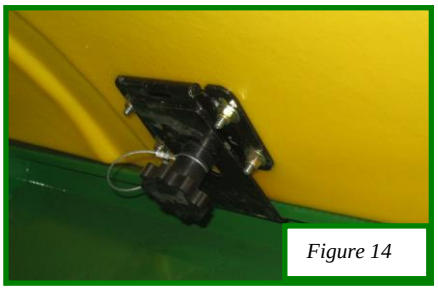


Figure 14

Once the hoods are prepped, carry the hood that looks like the one in Figure 6 and place it in either the front right (passenger) or rear left (driver) corner. With the hood in place swing the latch plate down so the lip catches under the lip on the extension and thread the plastic knob to secure to combine. It is easier to attach the latch on the front (for the passenger side) or rear (for the driver side) factory extension panels and then the two side latches on the side extension panels. Next bring up one of the hoods with the decal/writing on it. Place the hood so it locks into the water trough of the first hood you brought up. Secure the hood to the combine with the latches.


Figure 15

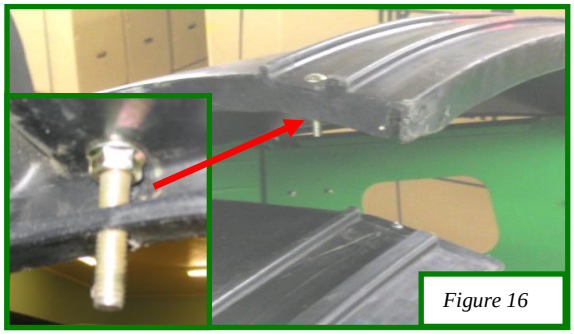


Figure 16

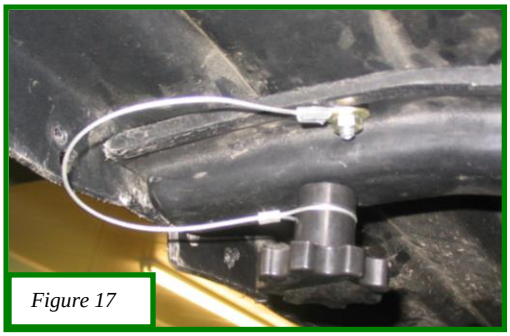


Figure 17

NOTE: If the lip of the second hood doesn't want to go into the trough of the first hood lift both hoods up in the middle until the lip goes into the trough and then lower them down. The end latches may have to be unhooked to do this.
Line the two hoods up so that the top is flush and the ribs are lined up. Find the pre drilled hole in the top hood with the decal/writing on it and drill through the bottom hood. Make sure the drill is straight up and down. (See Figure 15)

Pull the hoods apart. On the top hood with the decal/writing install a 3/8" x 2-1/4" carriage head bolt through the pre drilled hole that was just used as a guide to drill the bottom hood. Slide the bolt through the top and thread a 3/8" serrated flange nut on. (See Figure 16) Hammer the head of the carriage bolt into the hood so it pulls into the plastic easier.

Put the hoods back together so the bolt goes through the bottom hood and screw the plastic knob on to clamp the hoods together. (See Figure 17)

Repeat for other side of the combine.

With all hoods on the combine place the middle support bracket between the hoods. You have to push the hoods apart to get the bracket between the hoods. The hoods sit between the plates the middle support bracket. This will keep your hoods at the correct spacing.

Position the middle support bracket so the pipe is at the splice of 2 hoods. Makes sure the bracket is below the top of the hood and drill 1/4" holes through the hood and the back tab of the bracket using the holes in the bracket as a template. Insert the 1/4"x1-3/8" quick lock pins to secure the bracket in place. (See Figure 18)


Figure 18

Step 6: Electrical Installation (See Figure 19 -28)

Mount the switch bracket to the edge of the hopper (Figure 20) with 1/4"x1" bolts and nylon lock nuts or on the inside of the sample door (Figure 19).


Figure 19


Figure 20

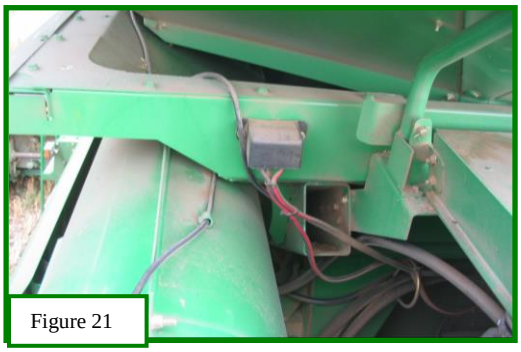


Figure 21

The solenoid block gets mounted to the back of the hopper between the safety railing and the unloading auger (Figure 21) with 1/4"x1" bolts and lock nuts.


Figure 22

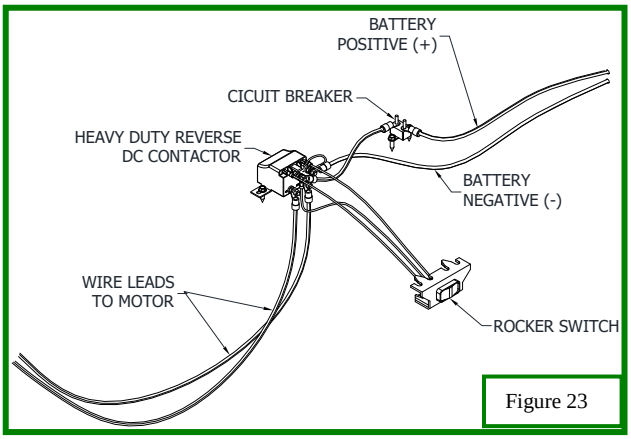


Figure 23

Fold the left (driver) side and back hopper extensions down to run wire. Wire from the toggle switch at the front to the solenoid block using 14-3 wire. Follow the driver's side under the fold up extension and down through the angle supports of the extension to the solenoid block. Secure the wire using wire clips and zip ties. (See Figures 19-22)

The three wires at the switch all get 14ga female spade ends crimped on. The black wire is attached to the center post. The GREEN wire goes on the post that is on the same side of the switch marked CLOSE. The WHITE wire goes on the post that is on the same side of the switch marked OPEN. At the solenoid the WHITE and GREEN wires both get 14ga female spade connectors crimped on and the BLACK wire gets a 14ga – ¼" ring terminal crimped on. Bolt the BLACK wire onto the positive post (+) of the solenoid. The GREEN wire connects to the left post on the solenoid block and the WHITE wire connects to the right post. NOTE: If the motor runs the wrong way reverse the WHITE and GREEN wires at the solenoid.

Wire from Battery to Solenoid Block

Older than 2006

Run the #6 double strand wire from the battery to the solenoid block securing with plastic ties along the way. Pull the wire up from the channel to the solenoid block and then cut the wire, leaving a little slack in the wire to be able to crimp the wire ends on. (See Figure 24-25)

2006 and newer

Run the #6 double strand wire from the battery to the solenoid block up from the battery which is located on the right side of the combine just in front of the rear tire. Run the wire up from the battery and along the width of the combine with the rest of the wiring and hoses (Figure 26-28). Secure the wire with plastic ties.

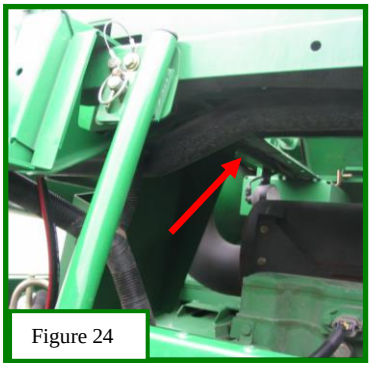


Figure 24

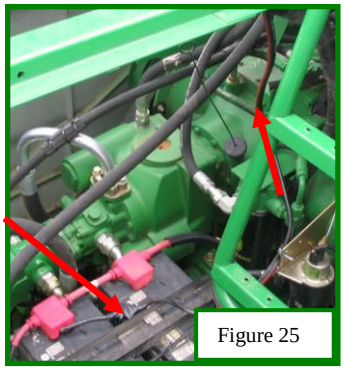


Figure 25

Slide a red rubber boot onto the positive wire and a black rubber boot onto the negative wire. Crimp two #6-1/4" ring terminals to the ends. The wire with the red stripe will be the positive wire and will get bolted on the positive post marked (+) along with the black 14Ga wire running from the switch. The black wire or negative wire will be bolted onto the bottom negative post (-).

On the positive wire at the battery splice a Circuit breaker within 6" of the positive post. (See Figure 25) Use two #6-#10 ring terminals in the splice and bolt the circuit breaker inline. Wrap the circuit breaker with electrical tape to help prevent shorts. Connect the wire ends to battery later.

From the solenoid block run the remaining #6 double strand wire along the rear hopper extension and through the angle supports on the bottom of the hopper extension to the right side of the combine. Secure the wire to the hopper with the supplied wire clips. Finish wiring to the motor.

The ends at the solenoid both get a black rubber boot and a #6-1/4" stud crimped on. Connect the wires to the bottom posts on the solenoid. It does not matter which wire goes on which post.

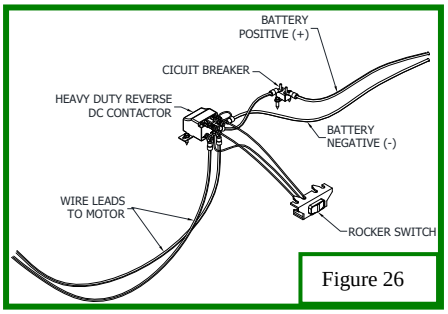


Figure 26

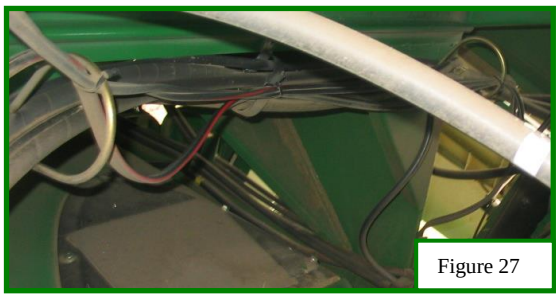


Figure 27


Figure 28

Step 7: Tarp Installation

(See Figure 29-30)

At to the front rolltube assembly wrap the tarp around the front rolltube (clockwise when looking from the left driver side) once or twice until there is a little bit of tension on the tarp. Slide the pipe into the pocket and put one of the straps on the pipe in the cut out in the tarp. Repeat for the other side. Center the pipe in the pocket and run the straps to the back.


Figure 29

Remove the quick pins from the plastic strap pulleys and secure the strap to the pulley by sliding the quick pin back through the pulley and through the pocket in the strap. Adjust the position of the strap pulley on the rear rolltube by loosening the set screws in the pulley. Once close, tighten the **4 set screws** and repeat for other side. The strap runs in-between the ribs on the hood.

Once both straps are connected, close the tarp by pressing the **CLOSE** direction on the switch. When the tarp is closed check alignment of the strap pulleys to see if one side is tighter than the other. If one side is tighter than the other, loosen the sets screws of the tight pulley and turn the pulley back so it has the same tension as the other strap. There are 4 set screws on each pulley. The set screws are 90 degrees from each other. Note: Once the straps are tensioned and the tarp roles open and closed properly, drill 3/16" holes at each set screw location. This will prevent the pullies from slipping on the roll tube. The tarp MUST be open to adjust the position of the pulleys because there is extreme pressure on the straps.

Double check to make sure the straps are wrapping up on the pulleys correctly (See Figure 30). If the straps are wrapping up wrong, the outside wires on the switch need to switched around to change the direction of the motor. When the straps wrap up wrong the tarp might not be able to close fully.

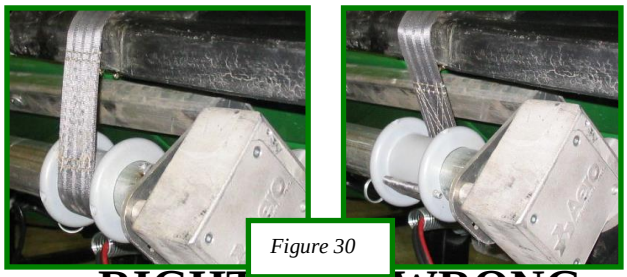


Figure 30

RIGHT **WRONG**

With the tarp open, center the pull pipe in the pocket of the tarp. Secure the straps to the pipe with plastic clips and the #10x3/4" wafer tek screws by placing the clip over the strap on the rear pipe and drilling through the strap and pipe. When done this will not allow the straps not to slide off the rear pipe. (See Figure 31)


Figure 31

Step 8: Dismantling of Hopper Top for Transportation (See Figure 32-34)

Open the tarp fully and then remove the quick pins from the strap pulleys on the rear rolltube assembly so the straps are free. Once the straps are removed, place the quick pins back in the strap pulleys so they don't get missed placed. Throw the straps to the front of the combine. Remove the middle support pipe by taking out the 1/4"x1-3/8" quick pins and pushing the hoods out. Remove the quick pins from the upright support braces and remove the braces. Next loosen the latches on the front left (driver) corner hood. Remove hood and place it in hopper of the combine. Then loosen the latches off the rear left (driver) corner hood and place on top of the other as shown in Figure 30. Repeat for the other side. Take the bubble up down and set on top of the hoods to keep them secure. The corner extension plates get removed and set in the hopper. Then fold in the front and rear extensions and tuck the straps into the tarp and rolltube assembly so they don't blow around. Finally fold the side extensions in and then all the tarp components are in the hopper.


Figure 33


Figure 34

Transporting with a Combine Cover

For transporting any combine with a Michel's Harvest Protect System on a trailer, it is recommended that the system be disassembled and the hopper extensions be folded in. Otherwise the load may be over height. If it is decided to leave the system assembled, it is done **at your OWN risk**. Michel's recommends double-checking to make sure all the latches are tight, securing the hoods properly to the combine and to have the tarp all the way in the **OPEN position**. Reduced speeds are recommended. Michel's Industries assumes **NO** responsibility or liability for any damage or injuries that may occur should the hoods blow off during transport.

Operating Instructions

To open and close the tarp system, simply hold the rocker switch mounted just outside of the cab. PLEASE NOTE: ensure you are hitting "open" on the switch to open the tarp and "close" on the switch to close the tarp. When opening the tarp, you must let go of the switch when the tarp is all the way open. If you continue to hold the switch in the open position the tension of the tarp will unwrap all of the strap on the rear strap pulleys and begin to close up again. When closing the tarp simply hold "close" on the switch until the circuit breaker cuts the motor out.

Warranty

Michel's Industries warrants their products for a period of one year from date of purchase. **ONLY** the Super Tork electrical motor has 18-month warranty from date of purchase and is **VOID** if opened or tampered with. Any parts returned to Michel's Industries LTD. will be shipped prepaid by the customer and will be returned F.O.B. St.Gregor, Sk. Canada. We will not assume responsibility for shipping, labor or travel expenses. Please Note: We reserve the right to make improvements; therefore, specifications are subject to change without notice.

Trouble Shooting / Maintenance

Problem	Solution
1. There is no tension of the front Roll Tube and the tarp is loose when all the way open	1. Open the tarp all the way open. Remove the straps from the strap pulleys by pulling the quick pins out and wrap the tarp on the front Roll Tube one turn Clockwise, when looking from the left. (driver side) This will add tension to the spring in the Front Roll Tube. Hook the straps back up to the strap pulleys. **Refer to "Tarp Installation" in your installation manual.**
2. The Tarp Material is not closing all the way covering the hopper completely.	2. First check to make sure your switch is set up so "close" closes the tarp and "open" is opening your tarp with the straps winding on the rear pulleys the correct way. **Refer to "Tarp installation" in your Installation Manual. See pictures of the wrong and right way for the pulleys to wind the straps.**
3. Motor, switch, and Solenoid (reverse DC contactor) Troubleshooting	3. If the straps are winding correctly you may have a faulty circuit breaker. Contact Michel's Industries or your local dealer for further instructions.
4. All Electrical	4. Refer to the following Electrical Troubleshooting sheet.

Michel's Industries, Ltd.
P.O. Box 119
St. Gregor, Saskatchewan
S0K 3X0 Canada

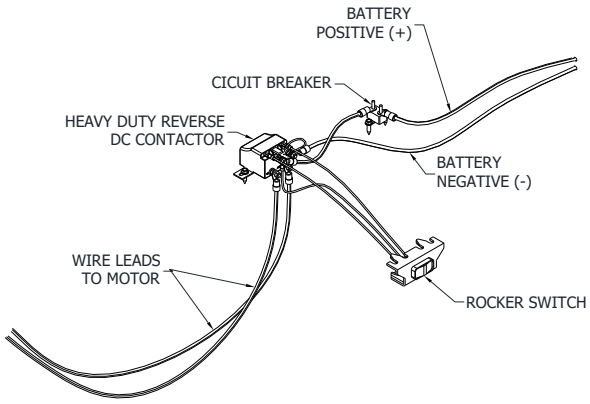
Ph#(306)366-2184 or Fax#(306)366-2145

Trouble Shooting Electric System

1) The motor does not work. How to check and see if the problem is the motor?
Unhook the wires at the motor. Use a set of jumper (booster) cables and hook up one end directly to a 12v battery using red for positive and black for negative. On the other end hook one clamp on to one of the motor posts and the other on the remaining motor post. The motor should start turning. Then witch the clamps on the motor and the motor should turn the opposite direction. If the motor does not run both directions, it will need to be replaced. ***DO NOT TAMPER WITH MOTOR OR GEAR BOX AS THIS WILL VOID THE WARRANTY.*** For a replacement motor or warranty, call 1-306-366-2184.

2) If the motor tests ok, but when the switch is used it still does not work. Check the following.

- Trace the wire from the motor to the solenoid block and check for damage and cuts.
- At the solenoid block double-check all connections to make sure they are all tight and clean.
- If the connections are all tight press the switch open and close and have somebody listen if the solenoid clicks in both directions.
- If the solenoid clicks when the switch is pressed both ways then there is a problem with the wire running from the solenoid to the motor.
- If the solenoid only clicks one way then there is a problem with either the switch or the solenoid or there could be a loose connection.
- If the solenoid does not click, then there are 4 things that may be causing the problem.
    1. Switch
    2. Solenoid
    3. No power at the solenoids
    4. Loose connections on the switch or solenoid



- **Test Switch** – First see if there is power coming to the switch by using a 12v tester with the ground attached to the combine frame and the positive to the positive (+) post of the switch.
    i. If there is no power at the switch then there will be no power at the solenoid, or the wire has a loose connection, or the wire has been damaged between the switch and the solenoid.
    ii. If there is power then see if there is power leaving the switch. Press the switch to one side and check for power on the opposite side of the switch. Check both directions.
        a. If there is no power at one or both sides then the switch needs to be replaced.
        b. If there is power on the switch on both sides then check the solenoid to see if there is power coming from the switch.
- **Test for power at the Solenoid -** Use a 12v tester and connect the ground/negative to the negative post of the solenoid and the positive to the positive (+) post to see if there is power. If there is no power at the solenoids, then there are 3 things that could be wrong.
    i. Loose connection on your battery
    ii. Wire is damaged
    iii. Circuit breaker

  Trace the wire back to the battery checking for damage and loose connections. If there is no damage or loose connections test for power on both sides of the circuit breaker. If there is no power, bypass the inline circuit breaker and test to see if there is power at the solenoid. If there is power then the circuit breaker needs to be replaced.
- **Test for power at the Solenoids coming from the Switch.** Connect the ground to the negative post of the solenoid and the positive to one of the small posts that a 14G wire is connected to. Press the switch either way to see if there is power coming to the post. Check both posts.
    i. If there is no power coming to one or both of the posts then check the wire for damage or loose connections.
    ii. If there is power at both posts then test to see if there is power leaving the solenoid.
- **Test for power leaving the Solenoids**. With the ground attached to the negative post, connect the positive to the one of the outside posts. Press the switch either way to see if there is power there. Check both posts
    i. If there is power at both posts then check the wire running to the motor for damage and loose connections.
    ii. If there is no power at one or both posts then the solenoid needs to be replaced.

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