

Michel's

Harvest
Pro-Tech

Combine Cover Manual



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Please read entire Instructions before beginning. Pictures are for reference only and may be different on some models.

For Model's:

John Deere 9560, 9570, 9650, 9660, 9670, 9750, 9760, 9770, 9860,
9870

STS Big Top Extension W/WO Tip Up
(Factor Extension Removed)

Please forward onto Customer

Step 1A: Front Rolltube Bracket (Single Extension) (See Figure 1-5)

Mark the top holes for the rolltube bracket 14" over from the corner edge and 1" down from the bend. Mark each hole with a center punch and drill 3/8" holes. See Figures 1 & 2.

After drilling the top mounting holes use the long spacers as a template and drill the bottom spacer holes. Install the rolltube bracket with the arms in the upmost position. (See Figure 3) Use 3/8" x 2" bolts, washers, and plastic knobs on the bottom holes and 3/8" x 3" carriage bolts, washers, and plastic knobs on the top to secure the rolltube bracket. (See Figure 5)



Figure 1

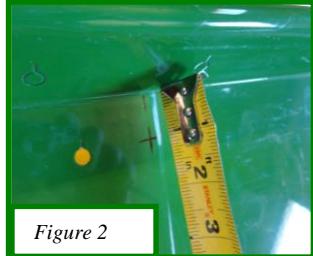


Figure 2



Figure 3



Figure 4

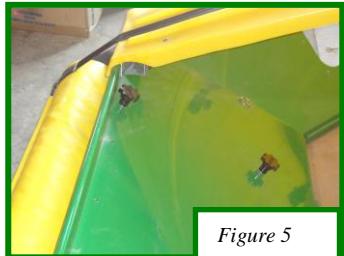


Figure 5

Step 1B: Front Rolltube Bracket (Double Extension)

(See Figure 6-9)

Mark the holes for the rolltube bracket 14" over from the corner edge (Figure 6) and 5-1/2" down from the top of the rolled edge. (Figure 7) Mark each hole with a center punch and drill 3/8" holes. Install the rolltube bracket with the arms in a downward position. (Figure 8) Use the small aluminum spacers on the inside vertically for support. (Figure 9) Use 3/8" x 3" carriage bolts, washers, and plastic knobs to secure the rolltube bracket.



Figure 6



Figure 7



Figure 8



Figure 9

Step 2: Rear Rolltube Brackets (See Figure 10-11)

The measurements and hardware for the rear rolltube bracket are the same as for the front rolltube bracket. This is true for both the single and the double extension kits. The electric motor mounting holes on the rear rolltube bracket need to be closer to the top of the bracket as seen in Figure 10. This will ensure that the electric motor hangs in the correct position.

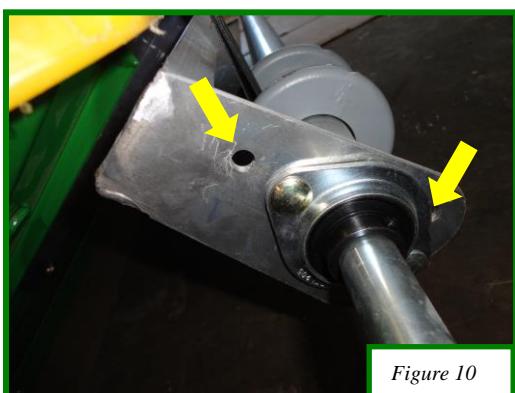


Figure 10



Figure 11

Step 3: Hood Latch Bracket Installation (See Figure 12-13)

Note: Mount the hood latch brackets with the holes and the notch to the bottom of the bracket. Measure the distance to the closest side of the latch bracket from the flat edge of the rolled edge on the extension panel. Place the bracket on the extension level to the top of the rolled edge and on the line that you have just measured. Mark the holes, center punch, and drill $\frac{1}{4}$ " holes. Bolt together with $\frac{1}{4}$ " x $\frac{3}{4}$ " bolts and lock nuts.

Measurements:

Hook the tape measure on the outside of the extension panel and measure towards the center of the panel. (See Figure 12)

For the Front and rear panels, measure 4" to the short side of the hood latch bracket. (See Figure 13)

On the Angled (corner) panels, measure 25" to the short side of the hood latch bracket. At the front side of the hopper the bracket is measured from the front corner towards the center of the extension panel and at the backside of the hopper the bracket is measured from the back corner towards the center of the extension panel.

The side panels are measured 26" to the short side of the hood latch bracket. Both brackets are measured from the outside towards the center of the side panel.



Figure 12

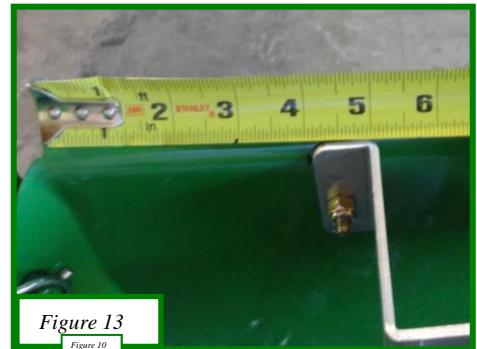


Figure 13

Figure 10

Step 4: Hood Assembly Installation (See Figure 14-21)

Attach the hood latches to the hoods with $\frac{1}{4}$ " x $\frac{3}{4}$ " truss head bolts (3) $\frac{1}{4}$ " flat washers, $\frac{1}{4}$ " nylon washers. There are three latches per hood (1 &2). **Note:** The end latch (1) has a smaller base plate than the side latches (2).

With each latch a knob (4) gets bolted on. Slide the cable over one of the bolts, then place a washer and secure with nylon lock nut. When tightening the bolts, use a Robinson screwdriver and hold the bolt so it will not turn. Tighten the bolt so the head is slightly indented into the hood. Once tight make sure the head of the bolts are smooth or they can wear the tarp.

Install the strap handles (5) onto the inside of the hoods with $\frac{1}{4}$ " x $\frac{3}{4}$ " truss head bolts (6), $\frac{1}{4}$ " flat washer, $\frac{1}{4}$ " nylon lock nuts. Double 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 15. Secure it with a $\frac{1}{4}$ " x $\frac{3}{4}$ " bolt, washer and nylon lock nut.

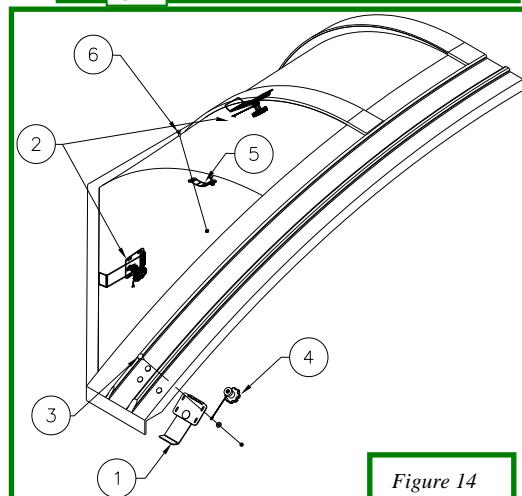


Figure 14

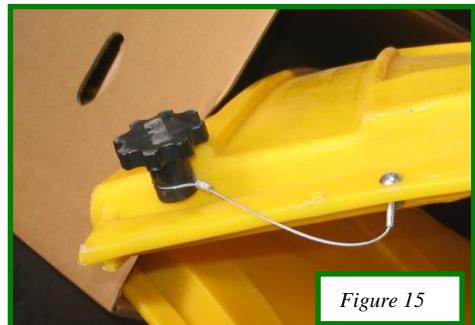


Figure 15



Figure 16

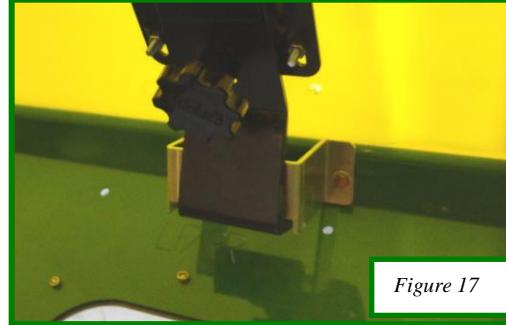


Figure 17

Once the hoods are prepped, carry up one of the hoods with the water trough and place in either the front right or rear left corner. With the hood in place swing the latch plate down so the lip catches under the latch bracket Thread on the plastic knob to secure them to combine. (See Figure 17) It is easier to attach the front or back latch first and then the two side ones. Next bring up one of the hoods with a decal/writing on it. Place the hood so it locks into the water trough of the first hood. Secure the hood to the combine with the latches. Repeat for other side of the combine.

Press both hoods tight together so they are flush on top and the ribs line up with each other. Drill a $\frac{3}{8}$ " hole through the pre-drilled hole in the hood with the decal/writing on it through the other hood making sure you are drilling straight up and down. (See Figure 18) Repeat for other side.



Figure 18

Pull the hoods apart. The hood with the decal/writing on it, install a 3/8" x 2-1/4" carriage head bolt through the hole. Slide the bolt through the top and thread on the 3/8" serrated flange head nut on. (See the inset picture of Figure 19) Hammer the head of the bolt into the hood so it sucks into the plastic easier. Repeat for other side.

Put the hoods back together so the bolt goes through the other hood and screw the knob so it clamps the hoods together. (See Figure 20)

With all hoods on the combine, place the middle support bracket between the hoods. You have to push the hoods up and apart to get the bracket between the hoods. The hoods sit in-between the plates in the middle support bracket. This will keep your hoods at the correct spacing and height. Position the middle support bracket so the pipe is centered between both hoods. Make sure the bracket is below the top of the hood and drill a 1/4" holes through the hood and 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. Repeat for other side. (See Figure 21)

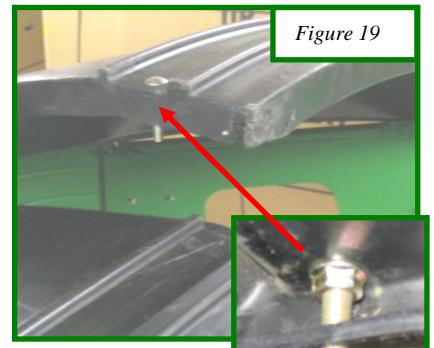


Figure 19



Figure 20



Figure 21

Step 5: Hood Support Installation

(Refer to Figure 22-24)

Measure 2" up from the hinge on the extension panel brace that is under the "Trough Hood" at the bottom edge to the Bottom Hood Support Bracket. (See Figure 23) Lag the bracket to the extension support with the self-drilling lag screws. Hold the Top Hood Support Bracket into the upper corner of the "Trough Hood" so that it is lined up with the brace on the extension. Drill 1/4" holes through the hood and bolt together with 1/4" x 3/4" truss head bolts and lock nuts. (See Figure 24) Attach the Hood Support Tubing to the bracket using 1/4" x 2 1/2" quick pins.



Figure 22



Figure 23



Figure 24

Step 6: Electrical Installation (See Figure 25-31)

Mount the switch bracket to the edge of the hopper (Figure 25) with 1/4" x 1" bolts and nylon lock nuts or on the inside of the sample door (Figure 26). The solenoid block gets mounted to the back of the hopper between the safety railing and the unloading auger (Figure 27) with 1/4" x 1" bolts and lock nuts.



Figure 25



Figure 26

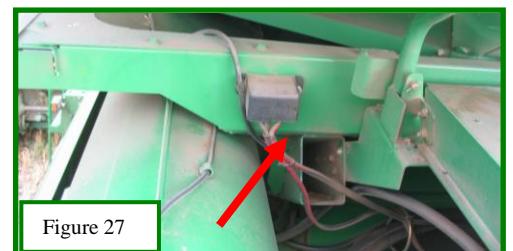


Figure 27

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 27)

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 - 1/4" 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.

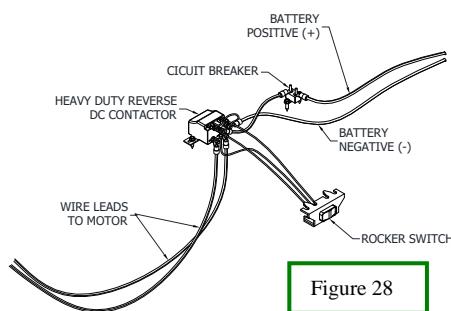


Figure 28

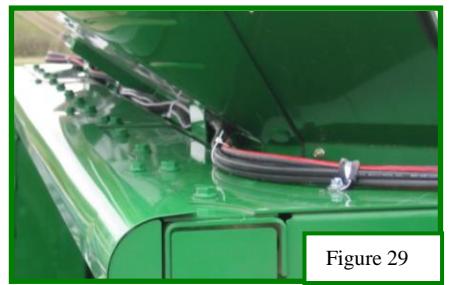


Figure 29

Wire from Battery to Solenoid Block

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.

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 31) 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.

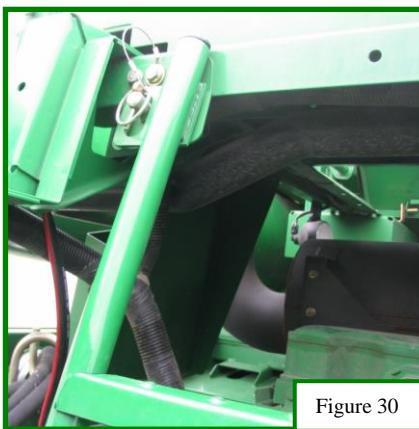


Figure 30



Figure 31

Step 5: Front Rolltube Installation

(See Figure 32-33)

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 of the combine. Lift the rolltube up and place into the rolltube brackets with the rolltube holders on the inside of the rolltube brackets. Secure the rolltube holders to the rolltube brackets with 5/16" x 1" carriage head bolts.



Figure 32



Figure 33

Step 6: Tarp Installation

(See Figure 34-37)

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.

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.

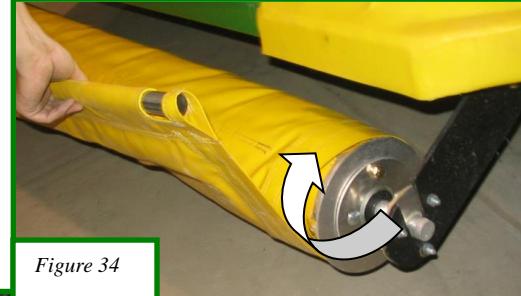


Figure 34

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 pulleys from slipping on the roll tube.

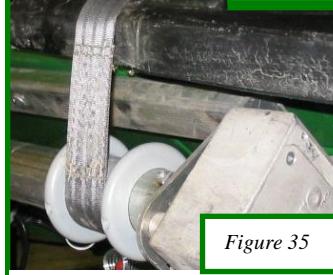


Figure 35



Figure 36

The tarp MUST be open to adjust the position of the pulleys because there is extreme pressure on the straps.

RIGHT

Double check to make sure the straps are wrapping up on the pulleys correctly (See Figure 35). 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.

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 #10 x 3/4" 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 37)

FOR INSTALLATION HELP PLEASE PHONE (306) 366-2184

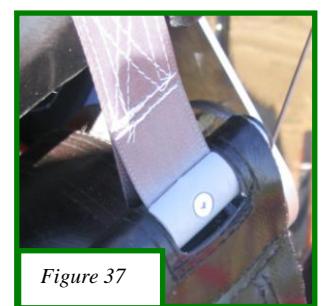


Figure 37

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

1. There is no tension of the front Roll Tube and the tarp is loose when all the way open
2. The Tarp Material is not closing all the way covering the hopper completely.
3. Motor, switch, and Solenoid (reverse DC contactor) Troubleshooting
4. All Electrical

Solution

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. 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. 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. Refer to the following Electrical Troubleshooting sheet.

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 jumpers (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 switch 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.

