

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 not be of actual combine!

For Big Top Extension Model's:

New Holland

CR models 970, 9070, 9080, 9090, 8090, 7.90, 8.90, & 9.90

CX Models CX8080 & CX8090 2010 and Newer

Case I.H.

8010, 9010, 8120, 9120, 8230, & 9230

*****350 Bushel Grain Tanks*****

Please forward onto Customer

Step 1: Skirting Brackets and Hood Spacer Installation (See Figure 1-4)

Note: Ensure the Big Top Extension Kit has been properly installed before installing the Harvest Pro-Tech cover. There are 3 different brackets used to mount the skirting around the Big Top extension along with a bracket to properly position the plastic hoods. **Note:** Crary has two revisions to this Big Top kit. The newest kit has plastic corners that are pinned on and the older kit has rubber corners that are bolted on. When mounting the brackets on the newer Big Top, place the bracket on the steel extension panel and slide it over until it touches the pins that hold the plastic corners on. See Figure 1. For the older Big Top kit, remove the factory bolts and mount the brackets using the factory holes. See Figure 3. There are 2 front skirting brackets (1), they are the ones with the double bolt flange. These brackets will be mounted onto the front Big Top steel panel above the cab. The other two brackets (2 & 3) only have one mounting flange and should be mounted so the bracket hangs down past the factory extension and towards the center of the steel panels. See figure 2. Using the holes on the bracket as pilot holes, drill using a 5/16" drill bit through the Big Top Extension (Figure 3). Secure the brackets to the extension panels with 5/16" x 1" hex bolts and serrated nuts.

Mount the two side extension spacers (4) to the side panels of the Big Top extension. Center the spacer on the side Big Top extension panel and clamp it so the 2" flange is against the outside of a side panel and a 1/4" down from the top of the extension. With it clamped drill two 1/4" holes through the extension and spacer and secure with 1/4" x 1/2" hex bolts and nylon lock nuts. Repeat for the other side.

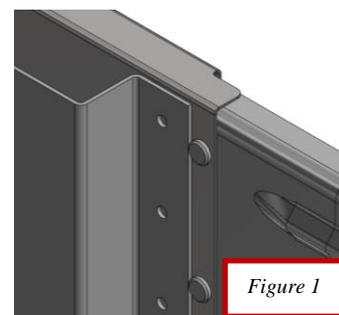


Figure 1

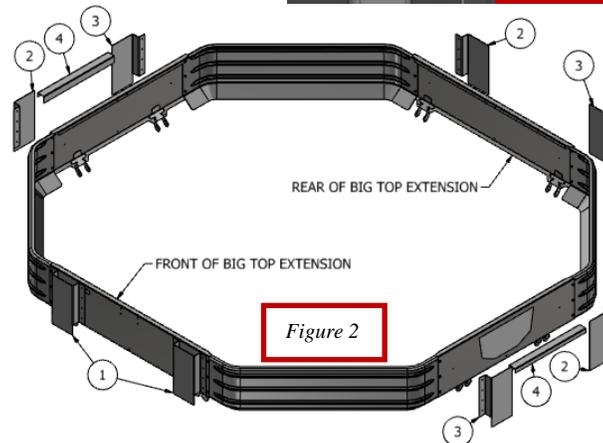


Figure 2



Front Auger Side

Figure 3

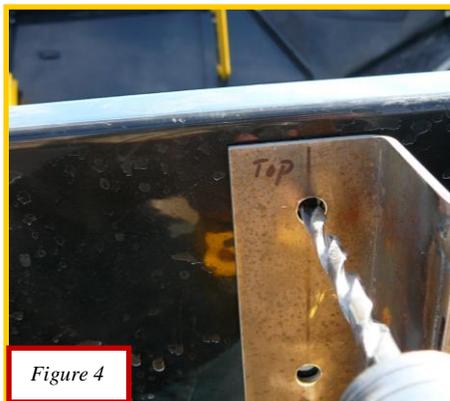


Figure 4

Step 2: Skirting Installation (See Figure 5-7)

To ensure that the tarp is tight, you must start at one of the front corners and work your way around the combine.

Lay out the tarp on the top of the extension so that it is accessible from a ladder or fork lift. Using C-clamps, or vise grips, wrap the skirting around the combine so that the top of the skirting is flush with the top of the skirting brackets. Leave the corners a little loose so that the 1" fiberglass flats can be installed. Starting on the front left corner (auger side), place a 1" fiberglass flat in the top and bottom pocket. Push the flat in only as far as the edge of the tarp, and place the edge of the tarp flush to the edge and flush with the top of the front skirting bracket (Figure 5). Clamp the fiberglass flat to the front bracket. Then where the end of the fiberglass flat is located in the tarp, hold it up to the skirting bracket that is on the side of the combine. Like before, clamp it so it is located flush with the top of the bracket and flush with the edge. Once it is clamped in place, drill with a 1/4" drill bit through the tarp, fiberglass flat and the side bracket. Bolt the tarp and flat to the bracket using a 1/4" x 1" Truss bolts and 1/4" Nylon nut. Now do the same on the front bracket. With one bolt in the front and one in the side bracket, adjust the flat so it is flat and flush with both brackets. When flush, drill and bolt one more bolt in each bracket. **Important:** For the front and rear skirting brackets, make sure the holes are drilled within 3.5" from the edge of the flat. This will leave enough space for the front and rear hood latches to sit properly in the right position. Once the top flat is bolted and in the right position, do the same procedure for the bottom of the tarp and flat. Try to keep the tarp as tight as possible when installing the bottom.



Figure 5

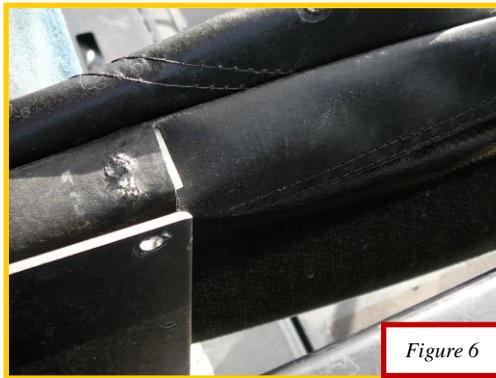


Figure 6

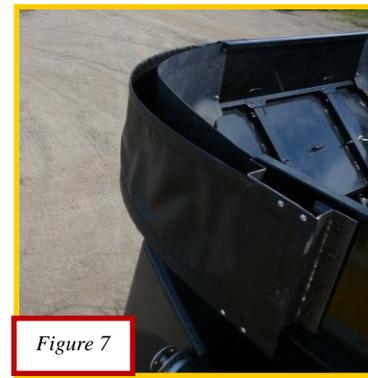


Figure 7

Once the front corner is done, move to the rear corner. Pull the tarp tight and flush with the bottom and top of the rear corner. Insert the top and bottom 1" fiberglass flats into the pocket where the tarp is sliced on the backside. (Figure 6). As before make sure both ends of the flat cover the face of each bracket and sit at the edge of each bracket. Clamp, and make sure the tarp looks tight. Drill a hole and bolt through the flat, tarp and each bracket. Adjust the angle of the flats so the tarp looks tight and then proceed with the second hole in each bracket. Now do the same procedure as the top for the bottom flat. Continue this till the final corner is done. The tarp should look tight all the way around like Figure 7.

Step 3: Front Rolltube Assembly Installation (See Figure 8-11)

On the front factory extension drill two 13/32" holes through the outside support braces 4" down from the inside lip of the extension and centered on the brace. (See Figure 7). Place the front rolltube bracket up against the factory extension so the bottom slotted holes in the bottom 1" x 2" tubing line up. Then slide two 3/8" x 3-1/4" carriage head bolts through the 1" x 2" tubing and the extension. Secure together with two plastic 3/8" female knobs on the inside of the hopper. Now drill a hole through the front skirting bracket and big top extension by using the slotted holes in the top 1" x 2" tubing as a pilot guide as shown in Figure 9. Using a 3/8" x 4" carriage head bolt and 3/8" female knobs, bolt the top 1" x 2" tubing to the skirting bracket and big top extension.

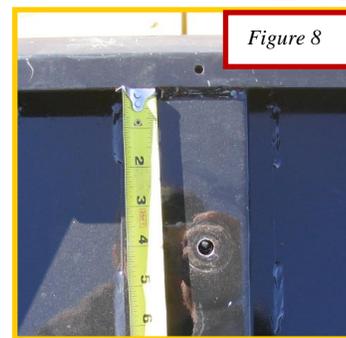


Figure 8

Carry up the rolltube assembly with the tarp on it and place it on the rolltube bracket (see Figure 11). The side of the rolltube marked "PS" goes on the right side of the combine. Secure the rolltube assembly to the bracket with the (6) 5/16" x 3/4" carriage head bolts and nylon lock nuts.



Figure 9



Figure 10



Figure 11

Step 4: Rear Rolltube Assembly Installation (See Figure 12)

With the rear extension up drill two 13/32" holes through the outside support braces 7" down from the top of the skirting bracket. (see Figure 11). Place the rear rolltube on the factory extension so the holes line up. Make sure you have the side with the motor on the right side (opposite of unloading auger). Slide two 3/8" x 4" carriage head bolts through the 1" x 2" tubing and the extension. Secure together with two plastic 3/8" female knobs on the inside of the hopper.

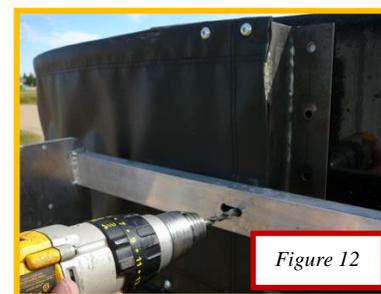


Figure 12

Step 5: Hood Assembly Installation (See Figure 13-20)

Attach the hood latches to the plastic hoods with 1/4" x 1" truss head bolts (3) 1/4" flat washers, 1/4" nylon washers. There are three different latches, four latches are longer with a piece of tubing welded on with 2-1/2" bolt (2) while the other is shorter with a 2-1/4" long bolt (1). The 2-1/2" latch (2) has to be bolted on the front or back of the hoods in the track. (Figure 13) When placing the front and rear latches on, make sure that the 3" tubing is to the outside of the plastic hood. (Figure 13)

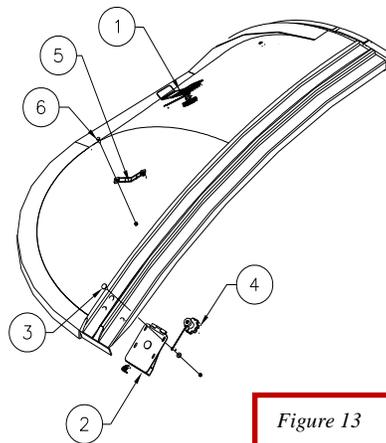


Figure 13

With each latch a knob (4) is installed. On one of the bolts slide the cable over the bolt and then place a 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. Make sure the tops of the bolts are smooth with no burrs so it will not wear/cut the tarp. If there are burrs use a file and remove them.

Install the strap handles (5) onto the inside of the hoods with 1/4" x 1" Truss head bolts (6), 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 as shown in Figure 16. Secure it with a 1/4" x 1" bolt, washer and nylon lock nut.

Once the hoods are prepped carry up one of the hoods with the water trough and place in the front right corner like the one in Figure 13. On the front and rear latches, the 3" offset tubing should sit on the inside of the skirting bracket to ensure the proper distance between hoods. (Figure 14) With the hood in place swing the latch plate down so the lip catches under the lip on the extension and thread on knob to secure to combine. It is easier to attach the middle latch first and then the end 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 you brought up. Secure the hood to the combine with the latches. Repeat for other side of combine. You may have to pull the hoods together hard so they snap/lock together.

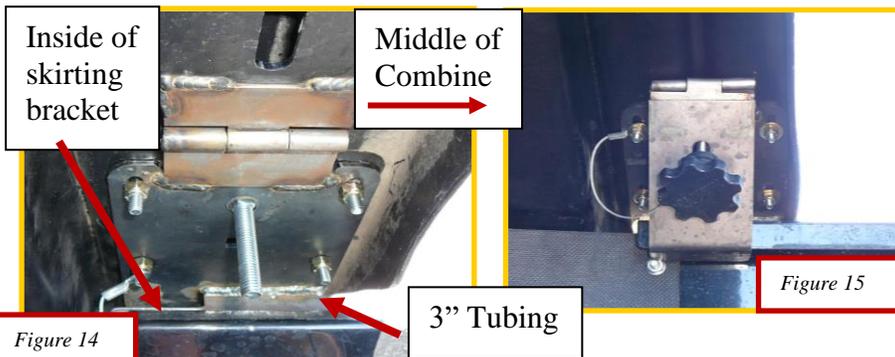


Figure 14

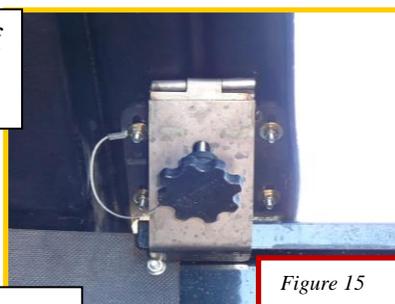


Figure 15

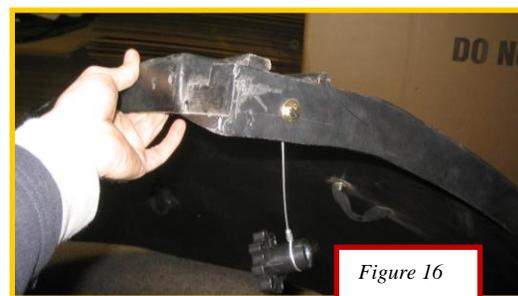


Figure 16

Press the 2 hoods together tight so they are flush on top and the ribs line up with each other. Drill a 3/8" hole through the pre-drilled hole in the hood with the decal/writing on it and the other hood making sure the drill straight up and down. Pull the hoods apart and on the hood with the decal/writing 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 and then through the bottom lip on the hood. (see insert picture in Figure 18) You will want to hammer the head of the bolt into the hood so it sucks into the plastic easier. Put the hoods back together so the bolt goes through the other hood and screw the knob on to clamp the hoods together. (See Figure 19) Repeat for other side.

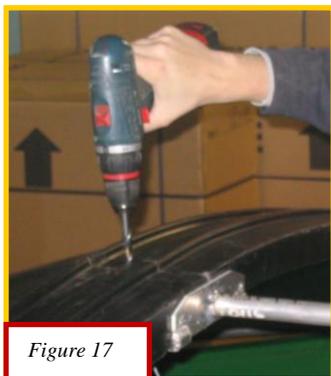


Figure 17

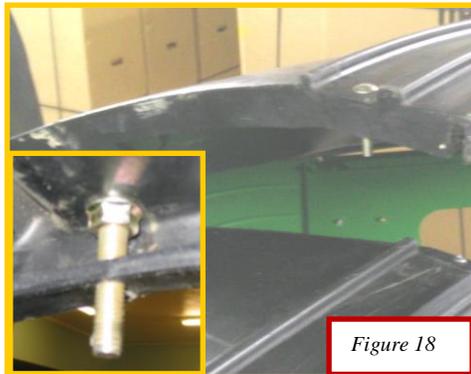


Figure 18

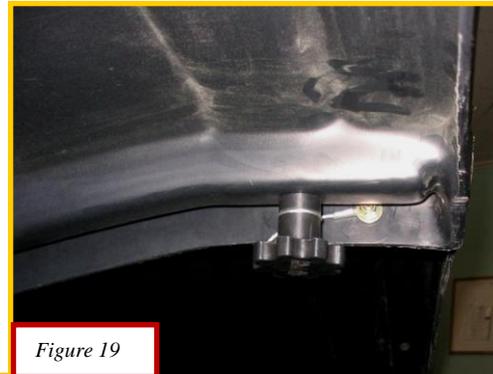


Figure 19

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 in-between the hoods. The hoods sit in-between the plates the middle support bracket. This will keep your hoods at the correct spacing and height. Position the middle support bracket so the pipe is at the seam of both hoods. Makes 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. Repeat for other side. Insert the 1/4" x 1-3/8" quick lock pins to secure the bracket in place. (See Figure 20)



Figure 20

FOR CASE AFX ELECTRICAL INSTALLATION INSTRUCTIONS SKIP TO STEP 6B

*Note: Left side is referred to the unloading auger side.

Step 6A: New Holland CX & CR Electrical Installation (See Figure 21-22)

Mounting Electrical Hardware

Fold down all the extension except for the side right (passenger) one. Mount the switch bracket to the edge of the hopper with 1/4"x1" bolts and nylon lock nuts.

The solenoid block gets mounted to the bracket underneath the engine cover located at the rear of the door. Drill two 1/4" holes through the bracket making sure that the solenoid block will be lower than the top edge so it will not interfere with the cover lid. Secure the solenoid block to the bracket with 1/4"x1" bolts and lock nuts. (Figure 22)



Figure 21

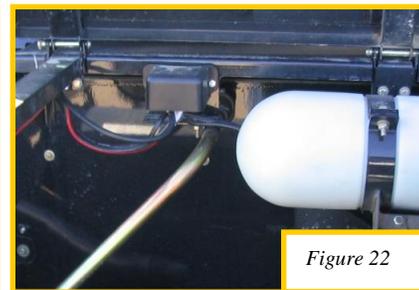


Figure 22

Electrical Wire

Wire from Switch to Solenoid Block (14-3 Wire)

Run the 14-3 wire from the solenoid block to the toggle switch located at the front of the combine hopper. From the switch follow along the side extension and through the bottom angle support of the extension to the solenoid block. Secure the wire by the switch with a wire clip and bolt it to the hopper with the bolt holding on the switch bracket. Also secure the wire to the air cleaner bracket with a wire clip and 1/4" x 1" lag screw.

The three wires at the switch all get a 14Ga female end crimped on. The black wire is attached to the middle post. The GREEN wire is attached to the post that is on the same side of the switch marked OPEN. The WHITE wire is attached to the post that is on the same side of the switch marked CLOSED.

The WHITE and GREEN wire at the solenoid block both get a 14Ga female ends crimped on. The BLACK wire gets a 14Ga -1/4" ring terminal crimped on. The BLACK wire gets bolted onto the positive post of solenoid block marked (+). The GREEN wire connects to the left post on the solenoid block. The WHITE wire connects to the right post.

Wire from Solenoid Block to Motor (#6 Double Strand)

Run the remaining #6 double strand wire underneath the top platform to the right side of the combine. (See Figure 23) Use plastic ties to secure the wire to the over flow bottle and radiator support brace. Finish running the wire to the motor in later steps when it's installed on the combine.

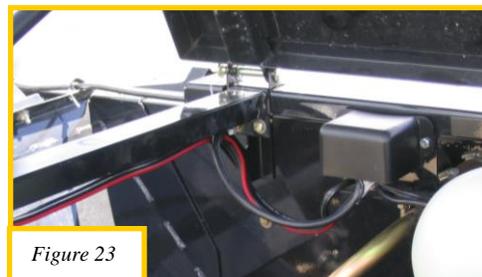


Figure 23

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 doesn't matter which motor wire goes on which post of the solenoid. If the motor runs the wrong direction change the wires on the motor.

Wire from Battery to Solenoid Block (#6 Double Strand)

Run the #6 double strand wire from the battery to the solenoid block which is located underneath the engine cover. Have the wire follow the existing power wires running to the starter. They are located in a plastic conduit. Use the plastic ties to secure the wire to the plastic conduit. Once the wire is up by the starter, run the wire to the support brace that goes up and over the engine. Screw in a wire clip at the bottom of the brace and run the wire along the underside of it. Secure the wire to the brace with two more wire clips and plastic ties. The wire clips go on the front and back of the brace underneath the top side. Also secure the wire with plastic ties in the bends of the tubing to keep tight. Cut the wire leaving a little slack by the solenoid and battery so wire ends can be crimped on.

Slide a red rubber boot onto the positive wire and a black rubber boot onto the negative wire. Then crimp two #6-1/4" ring terminal crimped 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 #6 black wire will be bolted onto the bottom negative post (-).

The wire ends at the battery get two #6-1/4" studs crimped on. The positive wire (red) gets a circuit breaker spliced inline right by the battery. Cut the positive wire 3" - 4" back from the end and crimp two #6-#10 studs on and bolt circuit breaker inline. Wrap the circuit breaker with electrical tape to prevent shorts from happening. Connect wire ends to battery later.

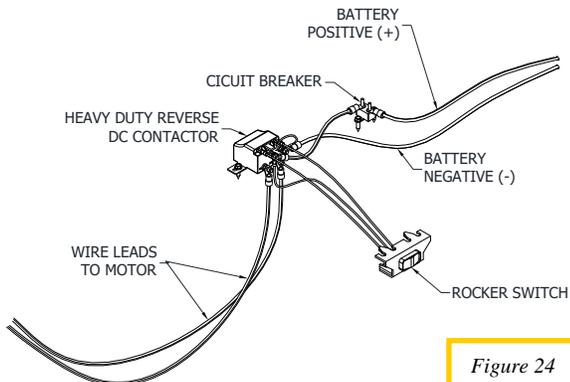


Figure 24

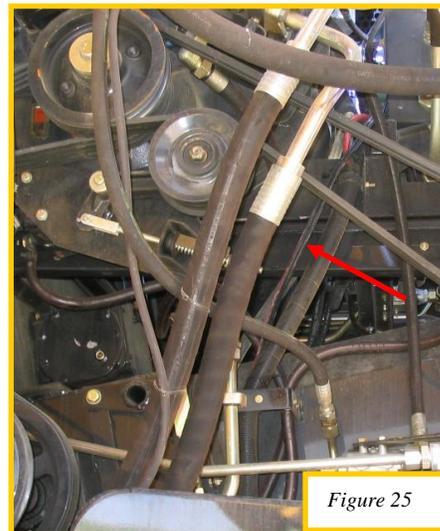


Figure 25

SKIP TO STEP 7 TO CONTINUE INSTALLATION

Step 6B: Case AFX Electrical Installation (See Figure 26-29)

Mounting Electrical Hardware

Fold down all the extension except for the right (passenger) side one. Mount the switch bracket to the edge of the hopper with 1/4"x1" bolts and nylon lock nuts. The solenoid block gets mounted to the back of the hopper by the unloading auger. Place the solenoid block on the back of the hopper and drill two 1/4" holes through the solenoid block and the grain hopper. Fasten to the combine with 1/4"x1" bolts and lock nuts. (Figure 27)



Figure 26

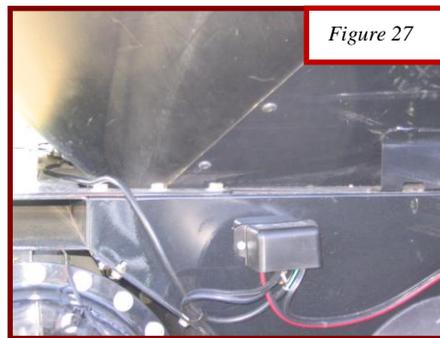


Figure 27

Electrical Wire

Wire from Switch to Solenoid Block (14-3 Wire)

Run the 14-3 wire from the solenoid block to the toggle switch located at the front of the combine hopper. From the switch follow along the side extension and through the bottom angle support of the extension to the solenoid block. Secure the wire by the switch with a wire clip and bolt it to the hopper with bolt holding on the switch bracket. Also secure the wire to the air cleaner bracket with a wire clip and 1/4" x 1" lag screw.

The three wires at the switch all get a 14Ga female end crimped on. The black wire is attached to the middle post. The GREEN wire is attached to the post that is on the same side of the switch marked OPEN. The WHITE wire is attached to the post that is on the same side of the switch marked CLOSED.

The WHITE and GREEN wire at the solenoid block both get a 14Ga female ends crimped on. The BLACK wire gets a 14Ga -1/4" ring terminal crimped on. The BLACK wire gets bolted onto the positive post of solenoid block marked (+). The GREEN wire connects to the left post on the solenoid block. The WHITE wire connects to the right post.

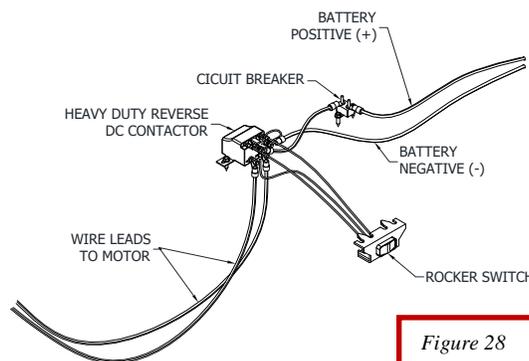


Figure 28

Wire from Battery to Solenoid Block (#6 Double Strand)

Run the #6 double strand wire from the battery to the solenoid block which is located at the back of the hopper directly above the battery. From the battery follow the plastic red conduit running up the combine until it starts going to the front of the combine. Keep going up following some hydraulic lines and then straight up through the wire clip you previous put on. Finish going to the solenoid block and leave a little slack at the solenoid block and battery to allow you to crimp on the wire ends and then cut the wire. (See Figures 28) Secure the wire to the conduit and hydraulic lines with plastic ties.

Slide a red rubber boot onto the positive wire and a black rubber boot onto the negative wire. Then crimp two #6-1/4" ring terminal crimped 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 #6 black wire will be bolted onto the bottom negative post (-).

The wire ends at the battery get two #6-3/8" studs crimped on. The positive wire (red) gets a circuit breaker spliced inline right by the battery. Cut the positive wire 3" - 4" back from the end and crimp two #6-#10 studs on and bolt circuit breaker inline. Wrap the circuit breaker with electrical tape prevent shorts from happening. Connect wire ends to battery later.

Wire from Solenoid Block to Motor (#6 Double Strand)

Run the remaining #6 double strand wire up to the back extension and into the angle support to the other side of the combine. Secure the wire to the combine with wire clips and plastic ties. Leave slack where the wire goes into the angle support because when you fold the extension in the angle support moves inward. 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 doesn't matter which motor wire goes on which post of the solenoid. If the motor runs the wrong direction reverse the wires on the motor.

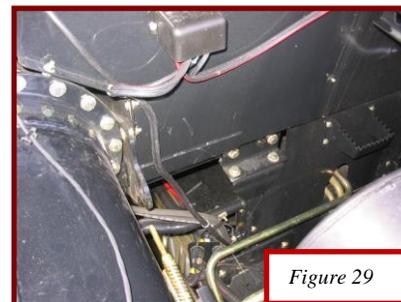


Figure 29

Step 7: Tarp Installation

(See Figure 30-33)

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.

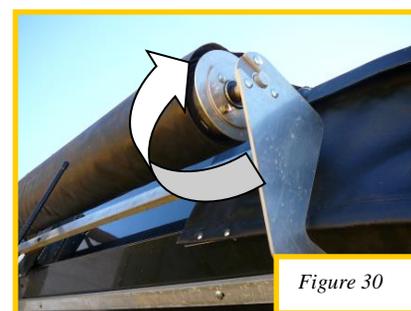


Figure 30

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 4 set screws in the pulley. Once close, tighten the 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

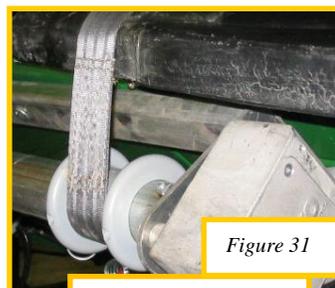


Figure 31

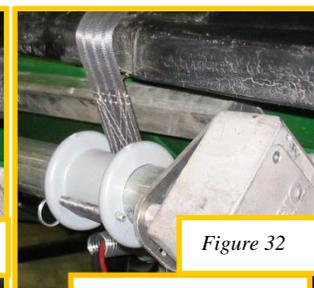


Figure 32

RIGHT

WRONG

open and closed properly, drill 3/16" holes at each set screw location. This will prevent the pulleys 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 31 & 32). 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.

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 33)

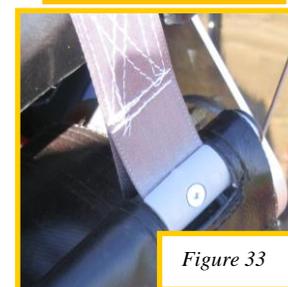


Figure 33

Step 8: Dismantling of Hopper Top for Transportation

(See Figure 34)

Open the tarp fully and then remove the quick pins from the plastic pulleys on the rear rolltube assembly so the straps are free. Once straps are removed, place quick pin back in the plastic pulley so it doesn't get missed placed. Throw the straps to the front of the combine. Next remove the middle support pipe by taking out the 1/4"x1-3/8" quick pins and pushing the hoods out. Next loosen the latches on the front left (driver) corner hood. Remove hood and place 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 beside. Repeat for the other side. Remove the big top extensions and remove the



Figure 34

front rolltube. Place in hopper. Fold in the front and rear factory extensions. Then fold in the side extensions.

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
<ol style="list-style-type: none"> 1. There is no tension of the front Roll Tube and the tarp is loose when all the way open 	<ol style="list-style-type: none"> 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.
<ol style="list-style-type: none"> 2. The Tarp Material is not closing all the way covering the hopper completely. 	<ol style="list-style-type: none"> 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.
<ol style="list-style-type: none"> 3. Motor, switch, and Solenoid (reverse DC contactor) Troubleshooting 	<ol style="list-style-type: none"> 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.
<ol style="list-style-type: none"> 4. All Electrical 	<ol style="list-style-type: none"> 4. Refer to the following Electrical Troubleshooting sheet.

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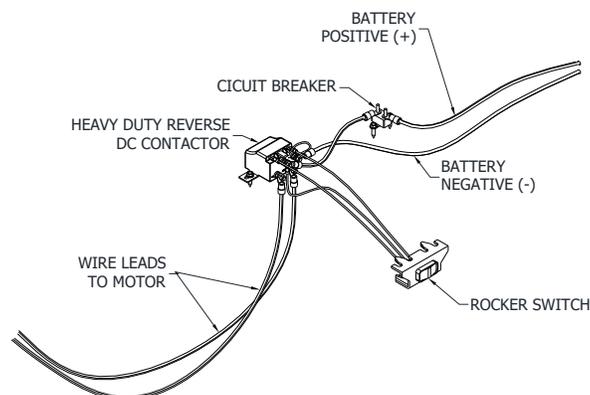
Trouble Shooting Electric System

- 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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