

Michel's

Harvest Pro-Tech

Combine Cover Manual



Installation Instructions – Page 2-5

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Please read entire Instructions before beginning. Pictures are for reference only and may not be of actual combine!

For Model's:

New Holland

CR models 6080, 6090, 8080, 8090, 970, 9070, 9080, 9090, 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: Hood Assembly Installation (See Figure 1-8)

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 two different latches, one latch is longer with a piece of tubing welded and a 2-1/4" bolt (2) while the other is shorter with a 1" long bolt (1). The 2-1/4" latch (2) has to be bolted on the front or back of the hoods in the track. (Figure 1) With each latch a knob (4) gets bolted. Slide the cable and washer over one of the bolts and secure with a 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.

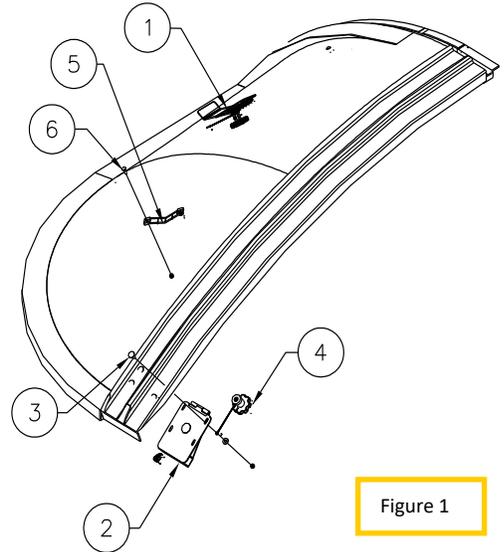


Figure 1

Install the strap handles (5) onto the inside of the hoods with 1/4" x 3/4" 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 Figures 2 & 3. Secure it with a 1/4" x 3/4" 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 (passenger) corner. 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. (See Figure 4) 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. You may have to pull the hoods together hard so they snap/lock together. Repeat for other side of combine.



Figure 2



Figure 3



Figure 4

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 through the bottom lip and then the other hood making sure you are drilling straight up and down. (see Figure 5) Repeat for other side. 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 a 3/8" serrated flange head nut on and then through the bottom lip on the hood. (see the inset picture of Figure 8) You will want to hammer the head of the bolt into the hood so it sucks into the plastic easier. Repeat for other side.



Figure 5

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 9) 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. (see Figure 10) Position the middle support bracket so the pipe is at the splice of the hoods. Make sure the bracket is below the top of the hood and drill a 1/4" holes through the hood and the back tab of the bracket. Use the holes in the bracket as a template. Insert the 1/4" x 1-3/8" quick lock pins to secure the bracket in place. (see Figure 10) Repeat for other side.



Figure 6

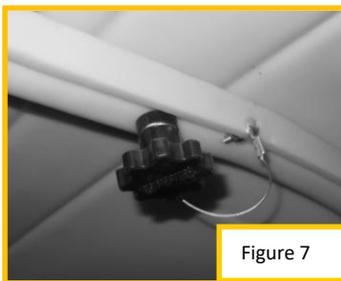


Figure 7

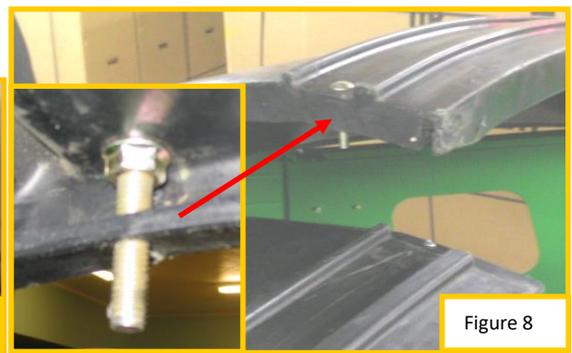


Figure 8

Step 2: Front Rolltube Assembly Installation (See Figure 9)

With the front extension up 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 1). Fold the extension down and place the front rolltube (tarp) on the extension so the holes line up. Make sure you have the side marked Passenger (PS) on the rolltube assembly on the passenger (right) side of the combine. Then slide two 3/8" x 3-1/4" carriage head bolts the 1" x 2" tubing and the extension. Secure together with two plastic 3/8" female knobs on the inside of the hopper. Place the extension back up into place.

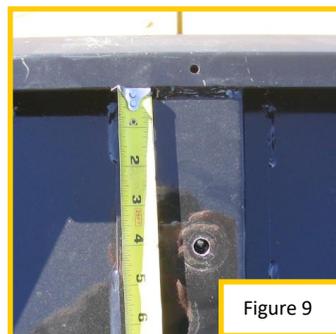


Figure 9

**** Notice ** Case I.H. 7230, 8230, 9230 Combines drill holes only 2" down to prevent rolltube from hitting the cab.**



Figure 10

Step 3: Rear Rolltube Assembly Installation (See Figure 10)

With the rear extension up drill two 13/32" holes through the outside support braces 3" down from the inside lip of the extension and centered on the brace. (see Figure 3). Fold the extension down and place the rear rolltube on the extension so the holes line up. Make sure you have the side with motor is on the passenger side (opposite of unloading auger). Slide two 3/8" x 3-1/4" carriage head bolts the 1" x 2" tubing and the extension. Secure together with two plastic 3/8" female knobs on the inside of the hopper. Place the extension back up into place.

FOR CASE AFX ELECTRICAL INSTALLATION INSTRUCTIONS SKIP TO STEP 4B

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

Step 4A: New Holland CX & CR Electrical Installation (See Figure 11-12)

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" x 1" 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" x 1" bolts and lock nuts. (Figure 12)

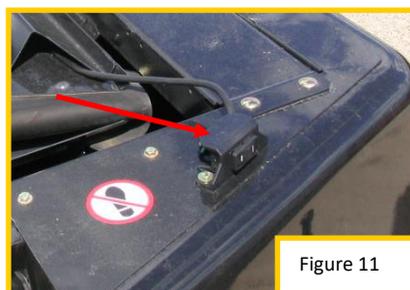


Figure 11

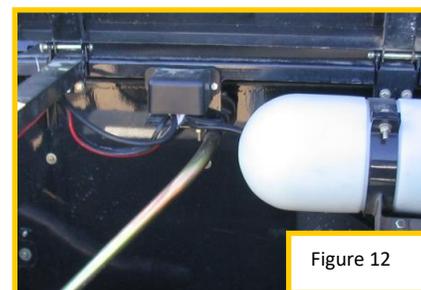


Figure 12

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 14) 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.

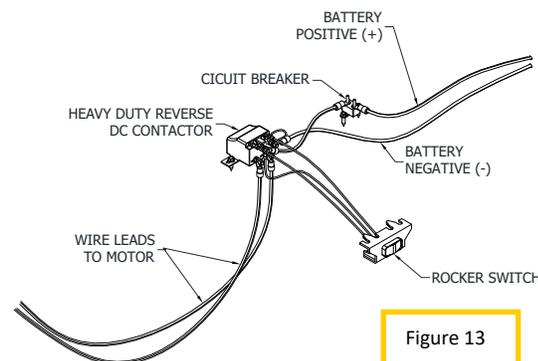


Figure 13

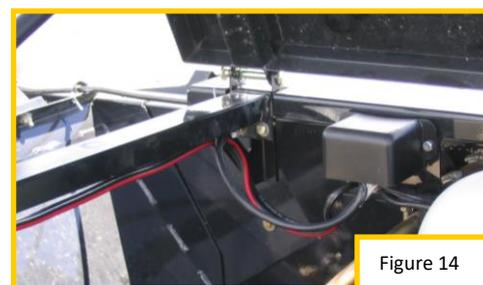


Figure 14

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.

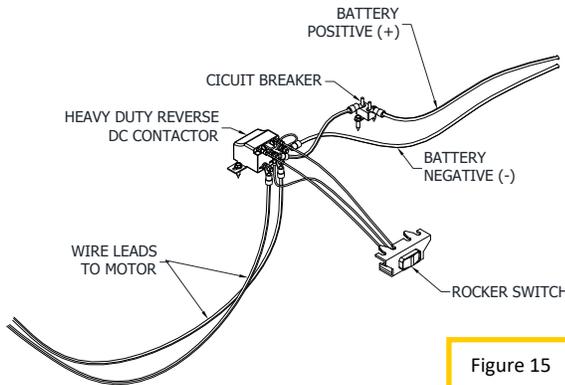


Figure 15

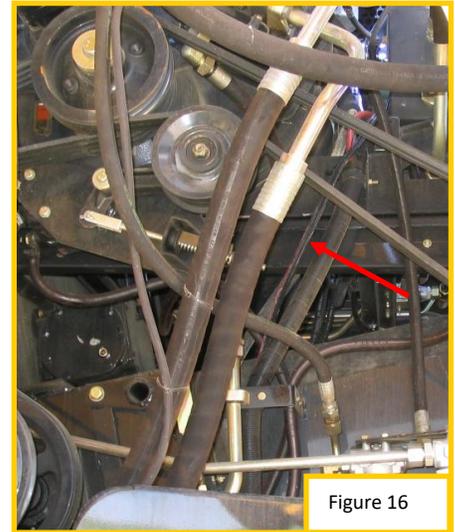


Figure 16

SKIP TO STEP 5 TO CONTINUE INSTALLATION

Step 4B: Case AFX Electrical Installation (See Figure 17-20)

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" x 1" 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" x 1" bolts and lock nuts. (Figure 17)



Figure 17

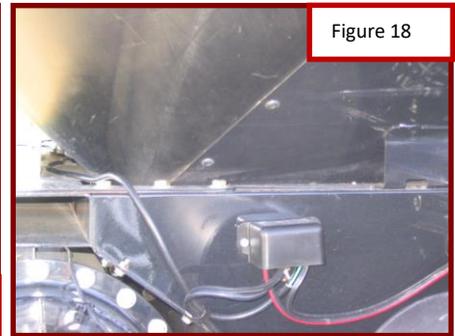


Figure 18

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.

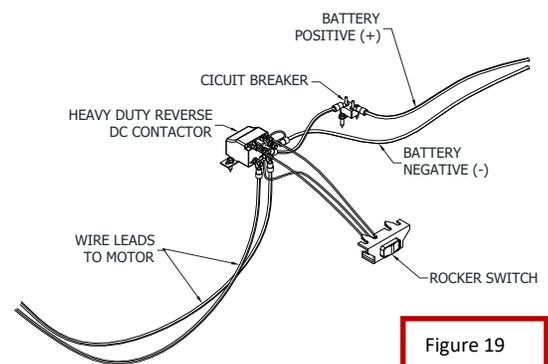


Figure 19

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 19) Secure the wire to the conduit and hydraulic lines with plastic ties.

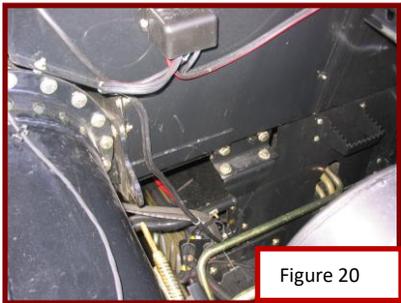


Figure 20

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.

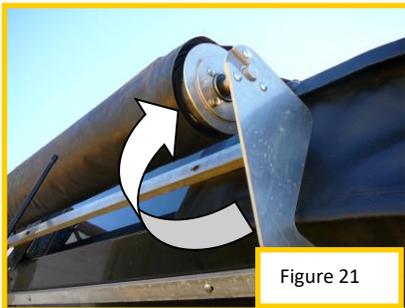


Figure 21

Step 5: Tarp Installation (See Figure 21-24)

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 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.

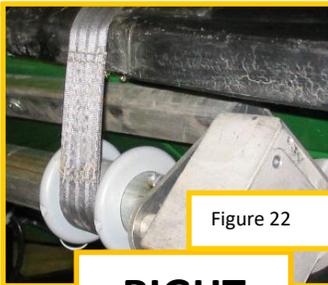


Figure 22



Figure 23

RIGHT

WRONG

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. They are straight across from one another. Note: If the pulleys slip a 3/16" hole can be drilled at each set screw. The set screw will lock in the hole and not allow the pulley to slip. Make sure that the strap tensions are set the same before drilling holes in 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 21 & 22). 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 24)

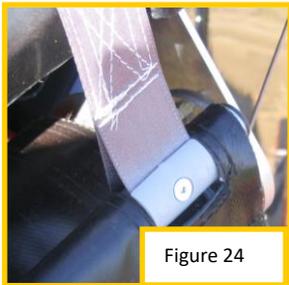


Figure 24

Step 6: Dismantling of Hopper Top for Transportation (See Figure 25-26)

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" x 1-3/8" 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. Take the bubble up down and fold in the front and rear extensions. Then fold in the side extensions and tuck in the straps into the corners and rolltube assembly so they don't blow around.



Figure 25

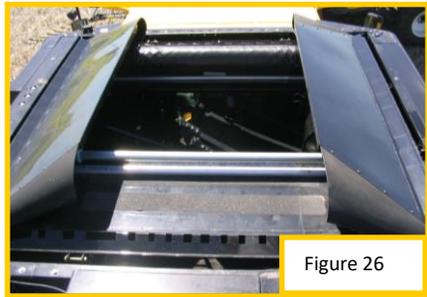


Figure 26

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

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.

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.

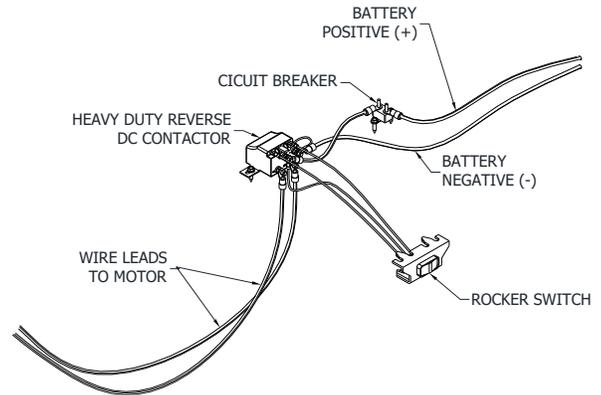
1. Switch
2. Solenoid
3. No power at the solenoids
4. Loose connections on the switch or solenoid

- **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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