Combine Cover Manual

Please read entire Instructions before beginning!
Pictures are for reference only and may not be of actual combine!
*Note: Left side is referred to the unloading auger side.

For Model's:

John Deere S680, S690, S780, & S790

Please forward onto Customer

Step 1: Front Rolltube Bracket Installation (See Figure 1-4)

Mark the top two holes for the rolltube bracket 1” down from the bottom of the lip on the inside of the front extension panel and centered on the rib. It is recommended to use a center punch to mark the center. Drill 3/8” holes. (See Figures 1)

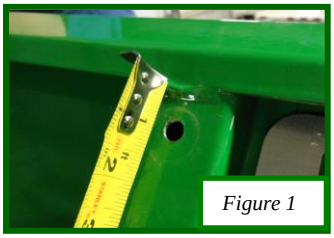


Figure 1

Center the bracket on the hopper and secure with 3/8” x 4” carriage bolts and plastic knobs. Drill the bottom holes in the center of the slots from the front side of the bracket through the hopper extension. (See Figure 3) Install the 3/8” x 1-3/4” carriage bolts and plastic knobs.

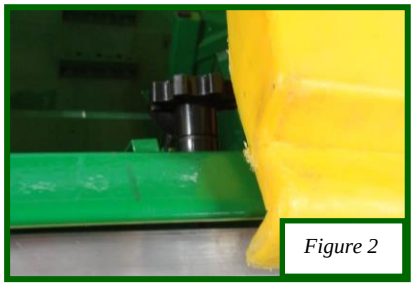


Figure 2


Figure 3

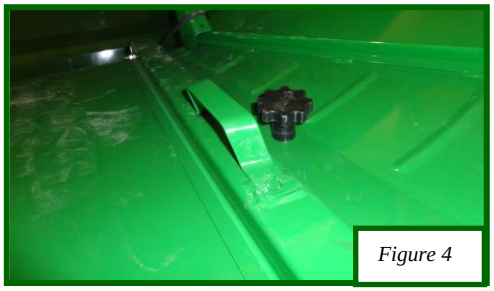


Figure 4

Step 2: Rear Rolltube and Rear Rolltube Bracket Installation (See Figure 5)

Insert the motor into the Rear rolltube and insert a 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)

Rolltube Bracket Installation Procedure: The measurements and hardware for the rear rolltube bracket are exactly the same as for the front rolltube bracket. Refer to Step 1.

Note: If the rear rolltube interferes with the folding handle then the handle will have to be adjusted to make clearance. It may be necessary to enlarge the slots on the handle mount to achieve the required clearance.

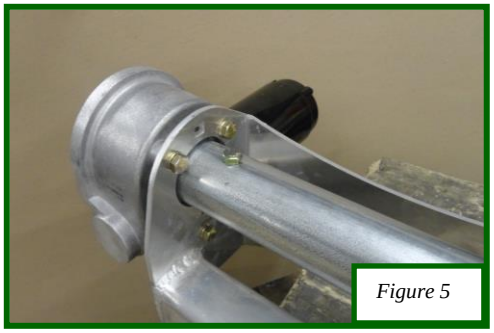


Figure 5

Step 3: Hood Assembly Installation (See Figure 6-7B)

Attach the hood latches to the hoods with 1/4"x1" truss head bolts 1/4" flat washers, 1/4" nylon washers. **Note:** The latch towards the center of the combine is different from the other two latches and has an extra bend in it. (See Figure 7B) Slide the plastic knob cable over one of the bolts of the latch. Put a washer on top of the cable and secure with a nylon lock nut. You will need a Robinson screwdriver to hold the truss head bolts from turning. Tighten the bolt so the head is slightly indented into the hood making sure the head of the bolts are smooth or they will wear the tarp.

Install the strap handles onto the inside of the hoods with 1/4"x3/4" truss head bolts, 1/4" flat washer, and 1/4" nylon lock nuts. Fold the end of the strap handle over and slide the bolt through both holes.

Install a plastic knob on the hood without a decal/writing on it on the inside lip of the hood. (See Figure 6) Drill around the same area as the black arrow shown in the Figure 7. Secure the cable with a 1/4"x3/4" bolt, washer and nylon lock nut.

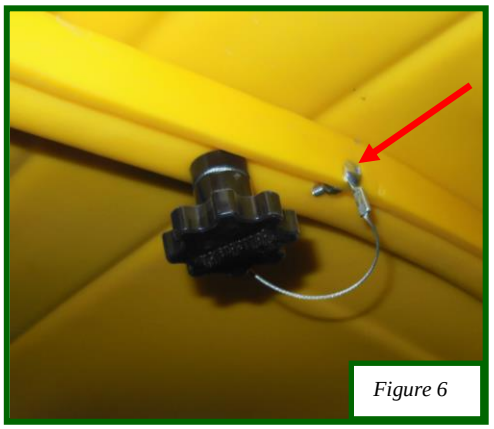


Figure 6


Figure 7

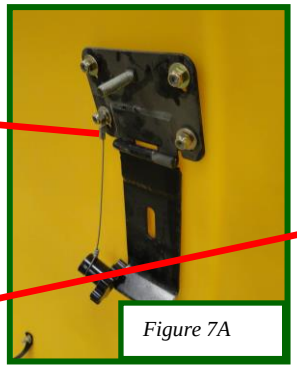


Figure 7A

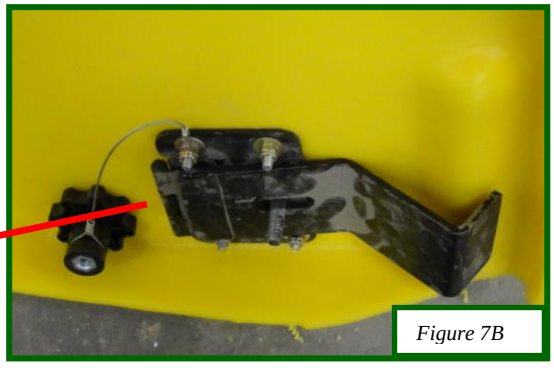


Figure 7B

Step 4: Hood Installation (See Figure 8-13)

Install the locating brackets for each hood. From the inside of the bracket to the hopper support brace measures 4". (See Figure 8) Drill two 3/8" holes at the bottom of the slots. If the holes are drilled closer to the top the bolts will hit the front or rear rolltube brackets. Use 3/8" x 1" carriage head bolts and nylon lock nuts to mount the bracket. The bracket is to be mounted so that it is touching the flange of the hopper. (See Figure 8)

Install the water trough hood first in the front right corner. With the hood in place swing the latch plate down so the lip catches under the hopper edge and thread on a plastic knob to secure to combine cover. It is easier to attach the hopper center 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. Adjust the latch so the bend in the latch plate sits on the edge of the hopper. This will make the latches install easier and secure the hoods properly. Repeat for other side of the combine.

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

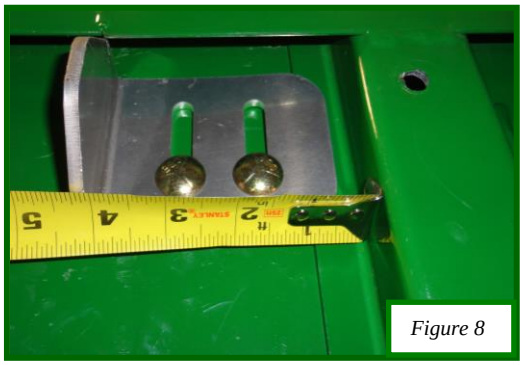


Figure 8


Figure 9


Figure 10

Press the 2 hoods together so the top is flush 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 water trough hood. Make sure you are drilling straight up and down. (See Figure 11) Install a 3/8" x 3" carriage head bolt through the hole and tighten with the plastic knob that was installed on the hood during hood assembly (see Figure 13). You may want to hammer the head of the bolt into the hood so it sucks into the plastic easier. If the bolt head does not get drawing in properly it will cause premature wear on your tarp and straps. Repeat for other side.

With all the hoods on the combine, place the middle support bracket between the hoods. You may have to push the hoods apart to get the bracket between them. The hoods sit between the plates in 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 the 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. Repeat for other side. Insert the 1/4"x1-3/8" quick lock pins to secure the bracket in place. (See Figure 13)


Figure 11

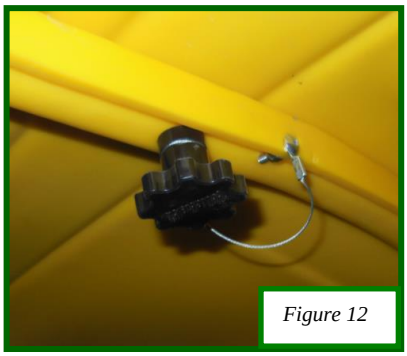


Figure 12


Figure 13

Step 5: Hood Support Installation (Refer to Figure 14-16)

Hold the Top Hood Support Bracket into the upper corner of the "Trough Hood" so that it is centered with the brace on the extension. (See Figure 24) Drill ¼" holes through the hood and bolt together with ¼" x ¾" truss head bolts and lock nuts. Measure up from the bend at the bottom of the extension brace to the edge of the Bottom Hood Support Bracket 2". (See Figure 15) Lag the bracket to the extension support with the self-drilling lag screws. Attach the Hood Support Tubing to the bracket using ¼" x 2 ½" quick pins. (See Figure 16)

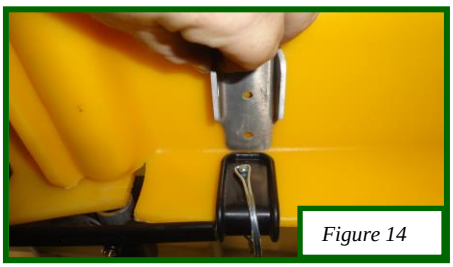


Figure 14

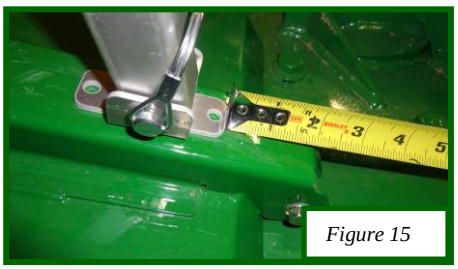


Figure 15


Figure 16

Step 6: Electrical Installation (See Figure 17 - 20)

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

Mounting Electrical Hardware

Mount the switch bracket on the inside of the sample door with 1/4"x1" bolts and nylon lock nuts. (Figure 17)

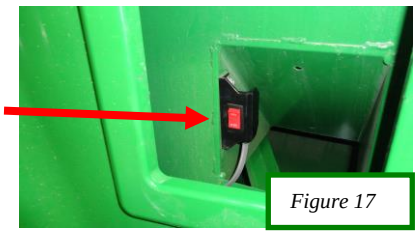


Figure 17

The solenoid block gets mounted on a plate under the right side body panel (Figure 18) with 1/4"x1" bolts and lock nuts. Open the panel and stand on the platform to access the mounting location.

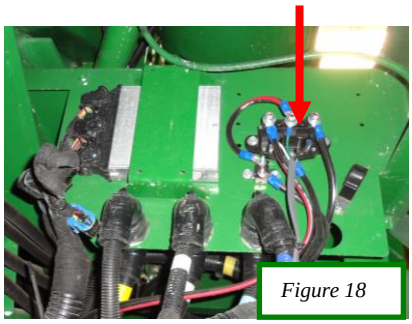


Figure 18

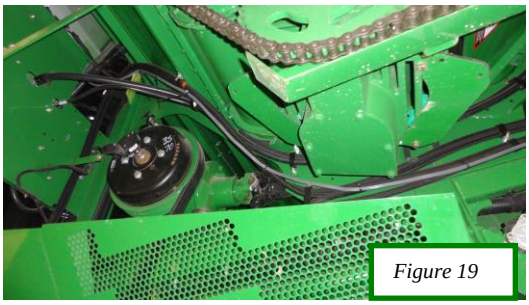


Figure 19

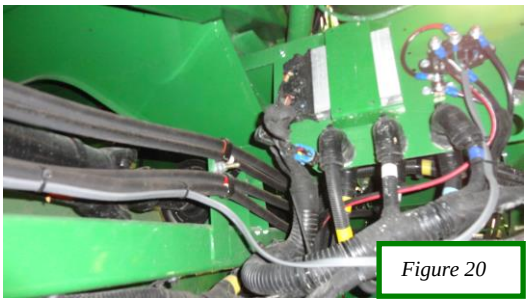


Figure 20

Electrical Wire

Run the 14-3 wire from the solenoid block to the toggle switch located at the front of the combine. From the solenoid block follow the hydraulic lines forward and go up to the switch. Use zip ties to fasten the wire to the hydraulic hose. (See Figure 19-20)

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 (#6 Double Strand)

Run the #6 double strand wire from the Positive and Negative terminals at the front of the rear right tire. (See Figure 22) Secure the wire with plastic ties. Pull the wire up from the terminals to the solenoid block and then cut the wire, leave a little slack in the wire so you are 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. 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 black wire or negative wire will be bolted onto the bottom negative post. (-)

The wire ends at the terminals get two #6-1/4" ring connectors crimped on. The positive wire (red) gets a Circuit breaker spliced inline right by the positive terminal. Cut the positive wire maximum 6" from the positive post and crimp two #6-#10 ring connectors on and bolt circuit breaker inline. Mount the circuit breaker to the combine with ¼" x 1" lag screws or bolts and wrap the circuit breaker with electrical tape to help prevent shorts from happening. **Note:** Connect wire ends to the battery terminals after everything else is hooked up.

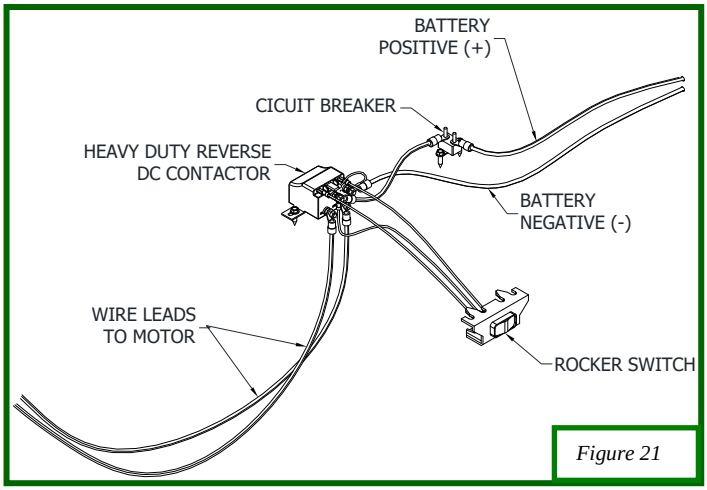


Figure 21

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

Run the remaining #6 double strand wire from the solenoid block up and underneath the access cover fastening it to the hydraulic line across the back of the hopper. 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. If the motor runs the wrong way, reverse the wires at the motor.

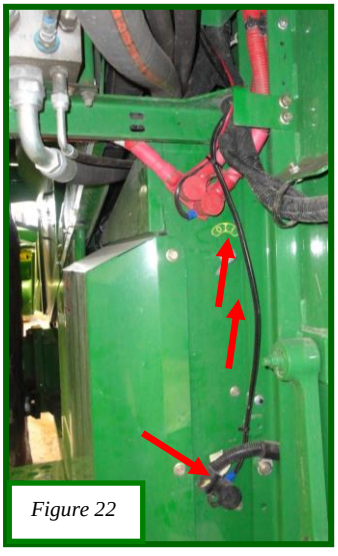


Figure 22

Figure 23

Step 7: Front Rolltube Installation (Refer to Figure 24-26)

Carry the rolltube and tarp assembly up and place on the cab of the combine. Position the end that is stamped PS (passenger side) 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. Center the tarp assembly in the frame and secure the rolltube holders to the rolltube brackets with 5/16"x1" carriage head bolts. Drill a ¼" hole through the rolltube holder and rolltube and install a ¼"x1- 3/4" bolt and lock nut.

Figure 24

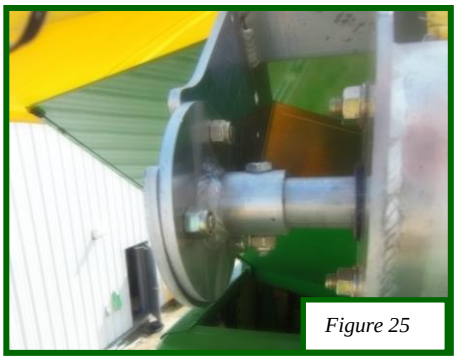


Figure 25

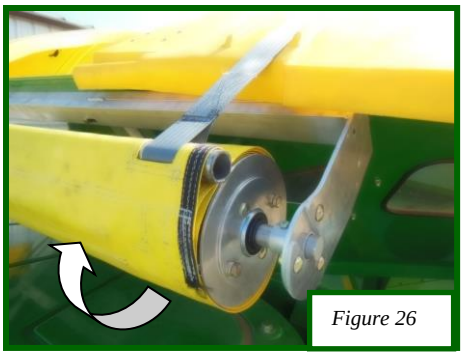


Figure 26

Step 7: Tarp Installation (See Figure 25-28)

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.

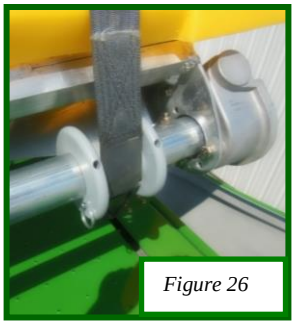


Figure 26

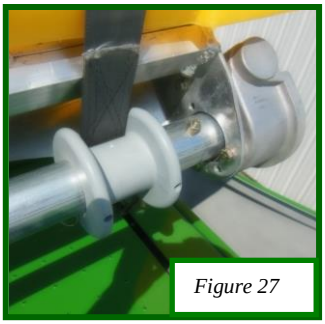


Figure 27

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. 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 29). 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 #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 to slide off the rear pipe. (See Figure 28)

Figure 28

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

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 th 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.

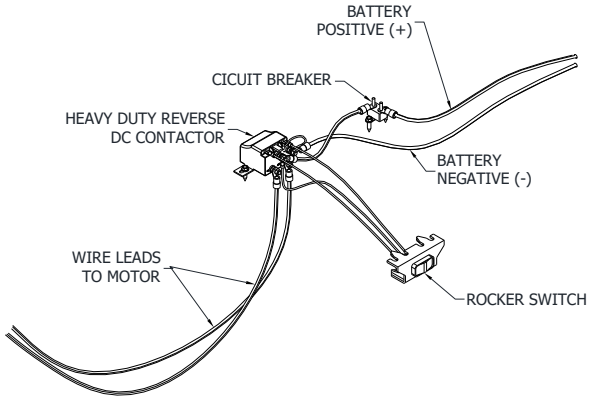
Michel's Industries, Ltd.
P.O. Box 119
St. Gregor, Saskatchewan
S0K 3X0 Canada
Ph#(306)366-2184 or Fax#(306)366-2145

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 motor does not run both directions, it will need to 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.

Michel's Industries, Ltd.
P.O. Box 119
St. Gregor, Saskatchewan
S0K 3X0 Canada
Ph#(306)366-2184 or Fax#(306)366-2145