

Blackmore Cylinder Seeder Encoder Replacement Instruction sheet

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This is a brief summary of the steps required to properly change a Cylinder Seeder encoder. This service should be performed by someone familiar with electrical wiring. Expect the procedure to take an hour or two. Before performing any service on the machine disconnect electric power from the machine. Many of the areas to be worked on have hazardous voltages.

1. Remove Conveyor belt by loosening tension on the belt and pulling out the splice wires (Before removal mark all belt tensioner shafts with a marker. Loosen equal turns and record number)
2. Remove belt sliders (the full length white plastic pieces beneath belts) set aside.
3. On most machines there is a clear plastic cover that runs along the inside of the aluminum frame to cover the exposed electrical terminals, remove the cover.
4. With the terminal cover off, identify the conveyor motor near the output end of the seeder (Large black Bodine or Leeson motor) to which the encoder is attached. The encoder is a 2 inch (5cm) diameter black round piece with a gray colored cable. There are two or three motors on the machine. Do not remove any covers from the motor that drives the cylinder head. The motor will fail if the cover is removed.
5. Remove the two mounting screws on the flexible mount on the encoder, which hold it to the conveyor motor. There are also two set screws that hold the center piece of the encoder to the shaft on the motor. Loosen set screws and remove encoder. Note it may be necessary to rotate the conveyor roller to see set screws.
6. With old encoder removed from motor follow the cable to the inside of the control box. Refer to included wiring diagram to identify the correct cable inside the control box.
7. There are two ways to install the new cable for the encoder, both involve pulling the new wires through by attaching them to the old wires as they are pulled out.

Method #1

- A. Disconnect encoder wires from the terminals on the PLC.
- B. Tape a 12-16 gauge wire to the end of the old encoder cable.
- C. Using both hands (One on the cable inside of the frame and the other inside control box) push and pull the wire through the liquid tight (conduit) fitting. Some lubricant on the wire will help.
- D. Once the wire is pulled through, keep pulling until the 12-16-gauge wire has come through enough to connect to the new encoder wires. Remove wires from the old encoder and reverse the process to pull the new encoder wires into the control box.

Method #2

- A. Disconnect encoder wires from the terminals to the PLC.
 - B. Cut the cable on the old encoder about two to three inches from the can.
 - C. Strip back 2 inches of insulation on the old encoder cable.
 - D. Twist and tape the small wires together on the new encoder cable and the old encoder cable that you just stripped the insulation from.
 - E. With both hands use one hand to pull the cable from inside the control cabinet and push the old cable from the inside of the frame. Because of the liquid tight connection pulling the cable may be difficult so use some form of lubricant to ease pulling the wire.
8. Pull enough cable into the control box to route the cable the same as the old one.
 9. Make the wiring connections to the PLC terminals as listed in the wiring diagram.
 10. Re-Attach the encoder to back of the conveyor motor. Install screws to the encoder flexible connector first. Then tighten the two set screws for the motor shaft connection. It may be necessary to rotate conveyor drive roller to access both setscrews.
 11. With encoder in place and all wiring secure, reconnect electric power (belts still off) turn on the seeder as with normal start up. Turn on the conveyor belt and flip the toggle switch to manual. Cylinder head should rotate. Change screens (to # 6) and test head in both forward and reverse. If the head does not run in both directions then re-check wiring.
 12. Replace the frame cover, belt slides, and the conveyor belt to proper tension. Test machine

If you have any other questions please feel free to call Blackmore Co.

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