

# V-710DM

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## Regenerative Drive Upgrade Installation Guide



Part Number: 00900473

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Printed in the USA.

# INSTALLATION INSTRUCTIONS

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## WARNING!

Unplug the power cord from the power source before performing this procedure.

*This upgrade is to be performed by a qualified technician only. Please read through these instructions completely before beginning work on this upgrade.*

*You will be removing the original DC motor drive board assembly, and replacing it with a regenerative drive board assembly. The new unit is supplied with the wire harnesses and connectors necessary for the upgrade. Save all the screws you remove for resealing the new parts. Some wires will need to be reused and will require new connectors to be crimped onto them (provided).*

**Tools required:** Medium size Phillips screwdriver, 11/32” and 1/2” wrenches, wire cutters, crimping tool, and a set of socket head (hex) wrenches.

**Time required:** About 60 minutes.

**Step 1:** Remove power by unplugging the power cord from the power source to the feeder.

**Step 2:** Open the feeder’s back shell by removing the two screws (one on each side of the feeder) securing the back shell in place. See Figure 1.



**Fig. 1**

**Step 3:** Disconnect the motor and sheet sensor wires at their quick-disconnects.

**Step 4:** Remove the back shell from the base plate by disconnecting it at the hinge. This can be done in one of two ways:

**A)** Remove the two flat head screws accessible underneath the base plate that secure the hinge to the base plate, OR

**B)** Remove the four button head screws that secure the hinge to the back shell.

## Installation Instructions (continued)

**Step 5:** Remove relay from the clamp, and remove the motor drive board adapter plate from its mount using a 3/32" socket head wrench. See Figures 2 and 3.



Fig. 2



Fig. 3

**Step 6:** Remove the violet wire from the spade type quick-disconnect terminal and all other wires from the screw terminals on the original motor drive board. See Figure 4.

**Step 7:** Remove the four screws securing the dynamic brake resistor to the side plate of the feeder using a 1/8" socket head wrench. See Figure 5.



Fig. 4



Fig. 5

**Step 8:** Remove all the wires from the relay, except the black and blue wires to the relay coil, as shown in Figure 6. The ballast resistor with wiring and other miscellaneous wiring may now be removed. Retain the relay with wiring and the sensor wiring harness for reinstallation. See Fig. 7.



Fig. 6



Fig. 7

## Installation Instructions (continued)

**Step 9:** Remove the speed control knobs and pot from the feeder as shown in Figures 8 and 9.



Fig. 8



Fig. 9

**Step 10:** Cut the fork terminals off of the brown and blue AC line wires leading from the LOAD side of the Corcom® EMI filter.

**Step 11:** Cut the fork terminals off the brown and blue wires leading to the relay coil and the sensor connector. See Figure 10.

**Step 12:** Using the supplied wire crimp joint (butt end splice), fasten two of the original blue wires with one end of the 4' blue wire. See Figure 11.

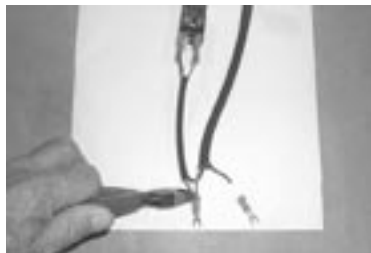


Fig. 10



Fig. 11

**Step 13:** Strip back 3/8" of insulation from the wires referred to in Step 10, and crimp new female spade type quick-disconnects onto the wires from the EMI filter and the wires from the relay and sensor. Match wire colors. See Figure 12.



Fig. 12

**Step 14:** Cut the fork terminal and the female quick-disconnect off of the black and red motor wires leading from the 3-wire plastic motor connector. Cut the red wire to the same length as the black wire.

## Installation Instructions (continued)

**Step 15:** Strip back 3/8" of insulation from each of the wires located in step 14, and crimp new female spade type quick-disconnects onto the wires as shown in Figure 13.



*Crimp new quick-disconnects onto existing wires*

**Fig. 13**

**Step 16:** Install the new speed control pot assembly/harness with the insulator disc mounted between the pot and the inside of the feeder's back shell. See Figure 14.

**Step 17:** Secure the new speed pot assembly to the back shell with lock nut and washer as shown in Figure 15, and resecure the speed control knob.

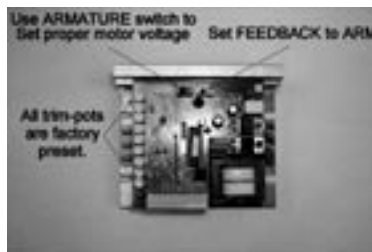


**Fig. 14**



**Fig. 15**

**Step 18: IMPORTANT!** The trim-pots on the new drive have been factory preset, but make sure that the motor voltage ARMATURE switch is set to the left position at 90VDC for **115VAC feeders** or to the right position at 180VDC for **230VAC feeders**. Also make sure the FEEDBACK switch is set in the left position to ARM. Refer to Figure 16.



**Fig. 16**

## Installation Instructions (continued)

**Step 19: IMPORTANT!** Also be sure that both of the LINE switches are set to the proper AC input voltage: 115 for 115VAC feeders and 230 for 230VAC feeders.

Note the silk screen labels on the circuit board and position the switch to the left or to the right as indicated in Figure 17.

**When setting up for a 115VAC feeder:** SW1 should be set to the left, and SW2 should be set to the right.

**When setting up for a 230VAC feeder:** SW1 should be set to the right and SW2 should be set to the left.

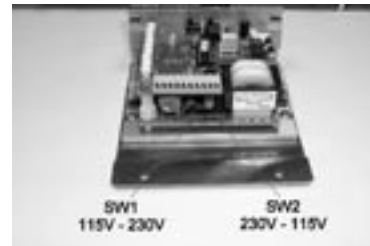


Fig. 17

**Step 20:** Fasten the new motor drive board onto the mounting plate using 4 screws from the kit. See Figure 18.

**Step 21:** Install drive board assembly with plate. Notice the tab on the plate that must slide into the slot located inside the feeder back shell. You will need to start at an angle to allow room for the drive's heat sink to fit around the EMI filter. Secure the drive mount plate to the standoffs using the same screws that were removed when taking the original drive out. See Figure 19.



Fig. 18



Fig. 19

## Installation Instructions (continued)

**Step 22:** Connect the RED motor lead to the drive at the terminal labeled A2. Connect the BLACK motor lead to the drive at the terminal labeled A1. Connecting the motor wires in the opposite order will result in the motor running in the reverse direction. See Figure 20.

**Step 23:** Connect the BLUE wire leading from the LOAD side of the EMI filter and the relay/sensor harness to the drive at terminal L2. Connect the BROWN wire leading from the LOAD side of the EMI filter to the drive at terminal L1. See Figure 21.



Fig. 20



Fig. 21

**Step 24:** Take the GREEN wire with the YELLOW STRIPE supplied with this upgrade, and connect the female spade connector to the drive at the terminal labeled GND. This is the earth ground wire.

**Step 25:** Remove the nut from the chassis ground lug. Take the ring connector end of the ground wire referred to in step 26, slide it over the ground lug, replace the nut and secure the wire in place. Do not allow any of the other ground wires to slip off of the ground lug during this step and make sure that ALL ground wires originally connected here are secure. Also make sure that the ground wire that leads to the power entry module is secured at both ends. This wire is required for operator safety. See Figure 22.



Fig. 22

*Make certain all ground wires are secured and terminated at the grounding lug.*

*Make certain the lead to the ground pin of the power entry module is secured.*



## Installation Instructions (continued)

**Step 26:** Plug the speed control/drive-inhibit interface connector into the mating connector on the drive as shown in Figure 23.



**Fig. 23**

**Step 27:** Connect the blue and black drive-inhibit wires to the relay. The blue wire is connected to Pin 1 and the black wire is connected to Pin 5 of the relay. Fasten the relay to the drive motor board adapter plate using the adhesive tape supplied with this kit. See Figure 24.



**Fig. 24**

**Step 28:** Reattach the back shell/hinge to the feeder base plate, and reconnect the motor and sensor wires.

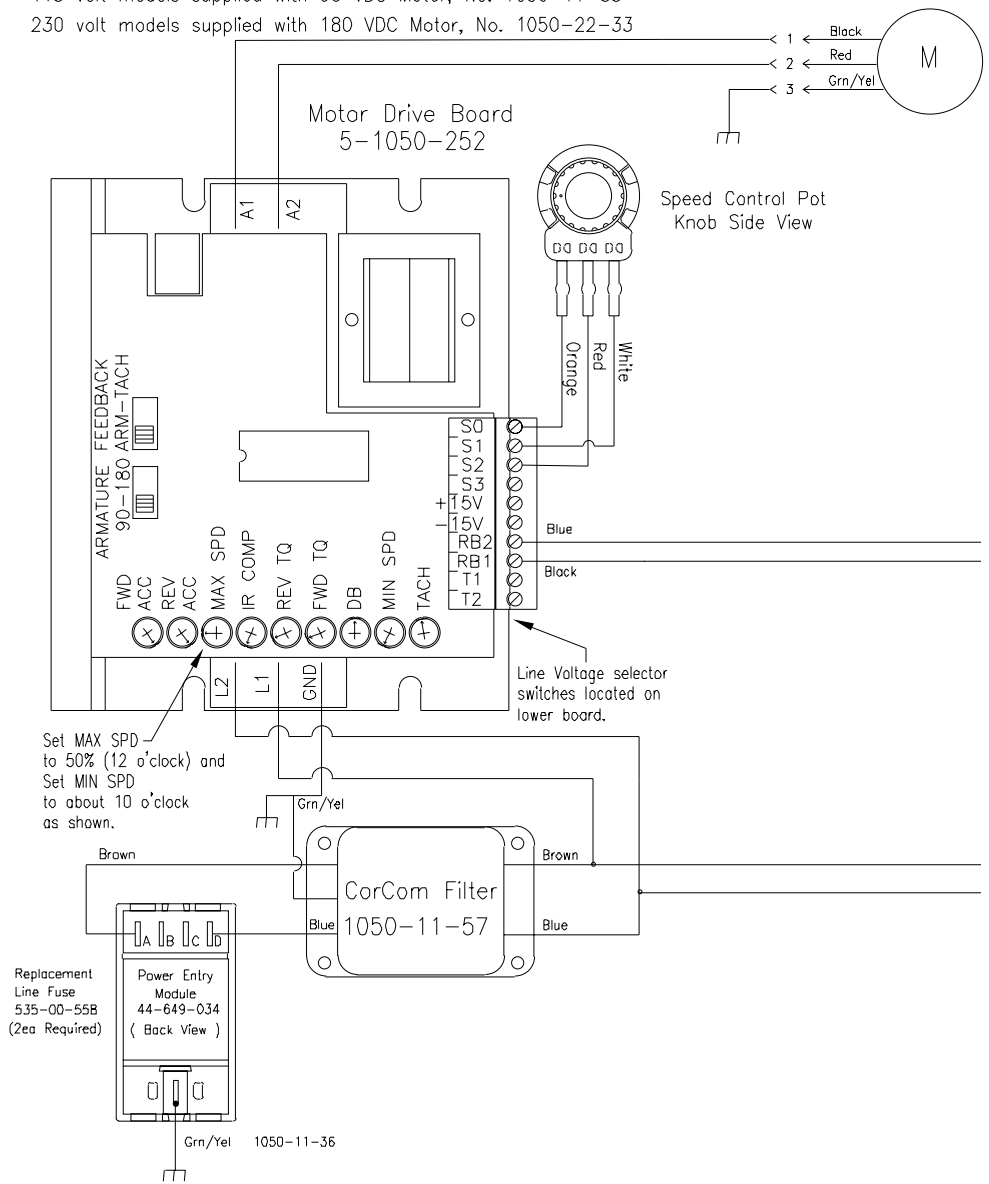
**Step 29:** Connect the AC power cord to the power input module, plug into the proper AC source, turn on the power switch and cycle test the feeder. Figure 25 indicates the parts removed during this upgrade. The upgrade is now complete.



**Fig. 25**

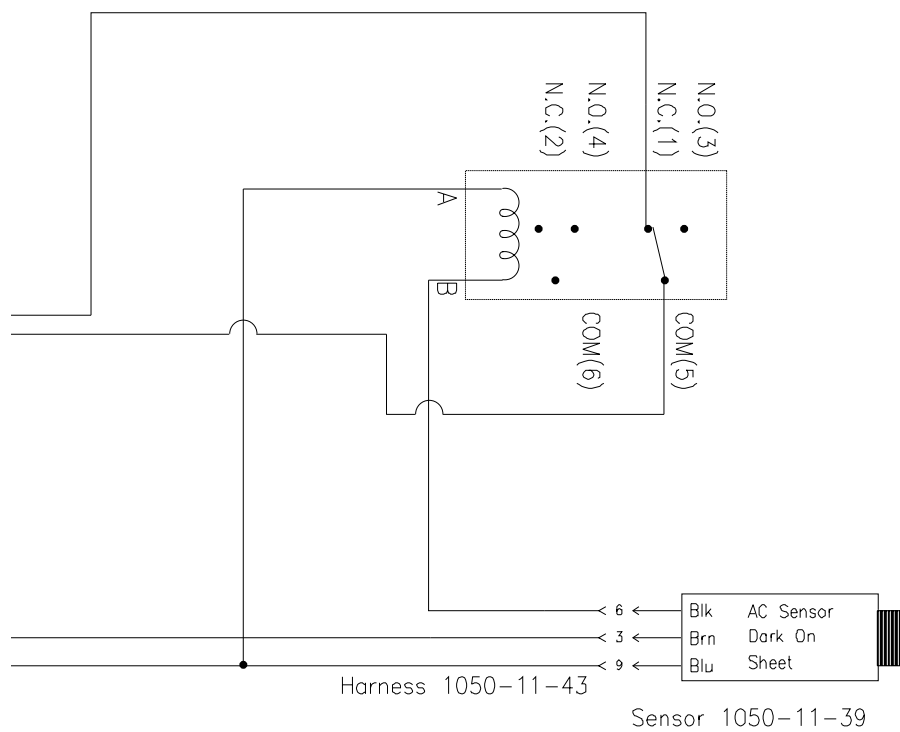
# SCHEMATIC

115 volt models supplied with 90 VDC Motor, No. 1050-11-33  
 230 volt models supplied with 180 VDC Motor, No. 1050-22-33

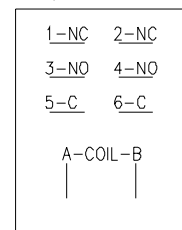


Power Cord 115 volt models, no. 535-00-002  
 Power Cord 230 volt models, no. 53500210 Cont. Europe

# SCHEMATIC



\* Relay Bottom View



115vac Models

\* Relay 535-00-453

Motor 1050-11-33 (90Vdc)

230vac Models

\* Relay 535-00-457

Motor 1050-22-33 (180Vdc)





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