

CARVEWRIGHT

W O O D W O R K I N G S Y S T E M

Replacing the LCD Cable

To remove and replace the LCD Cable you will need the following tools:

- #2 Phillips screwdriver (magnetic tip preferred)
- Socket wrench with 10mm socket

Removing the Side Panel

1. **Ready the machine.** Unplug it from the power outlet and place it on a stable work platform. Raise the head up nearly to the top (do not over-raise) and move the Z-truck to the center of the machine for best access.

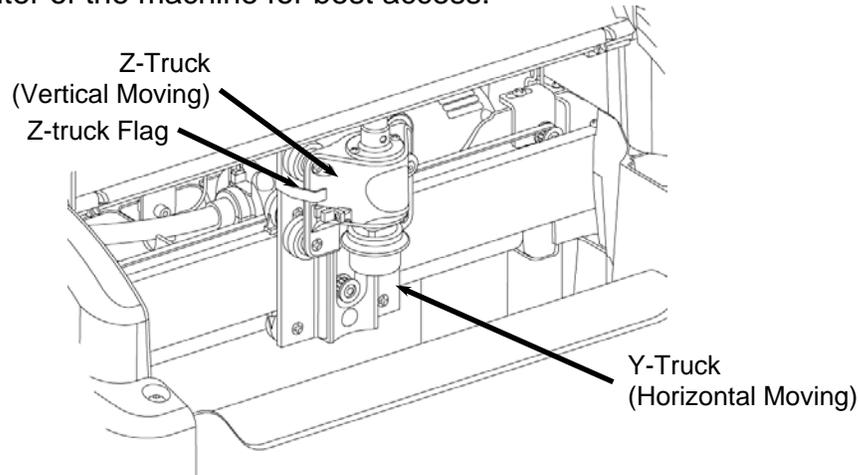


FIGURE 1: VIEW OF THE Z-TRUCK

2. **Ready the flexshaft for removal from the Z-truck.** Move the Z-truck to the very top of its travel (until it reaches the hard stop) so that the flexshaft support tube protrudes from the head cover (See Figure 2).

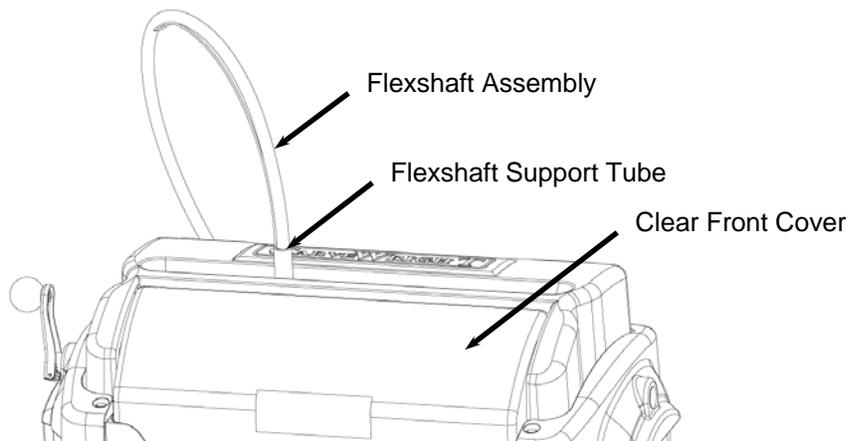


FIGURE 2: EXTERIOR VIEW OF THE FLEXSHAFT AND HEAD COVERS

- Detach the flexshaft from the top of the Z-truck.** The flexshaft assembly is retained by a ball detent located in the flexshaft receptacle (See Figure 3). Firmly grasp the flexshaft support tube while reaching under the clear front cover with your other hand to grab the Z-truck. Pull up firmly on the flexshaft support tube and twist slightly while bracing the Z-truck. **DO NOT PULL ON THE SHEATH.** The flexshaft will pop out of the detent. Wrap the end of the flexshaft in tape so that the core will not fall out and lay the detached flexshaft end to the side.

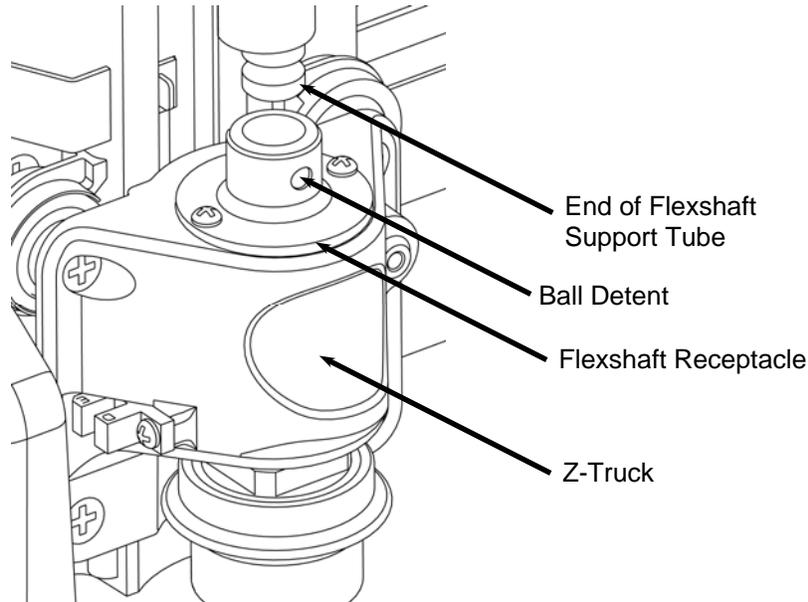


FIGURE 3: VIEW OF THE FLEXSHAFT CONNECTION TO THE Z-TRUCK

- Remove the cable protector for the cables routed from the base to the movable head along the inside of the left side panel assembly.** Remove the single screw as shown in Figure 4 with the #2 Phillips screwdriver. Use a magnetic tipped screwdriver if possible to avoid dropping the screws into the machine. Remove plastic cable protector from the machine.

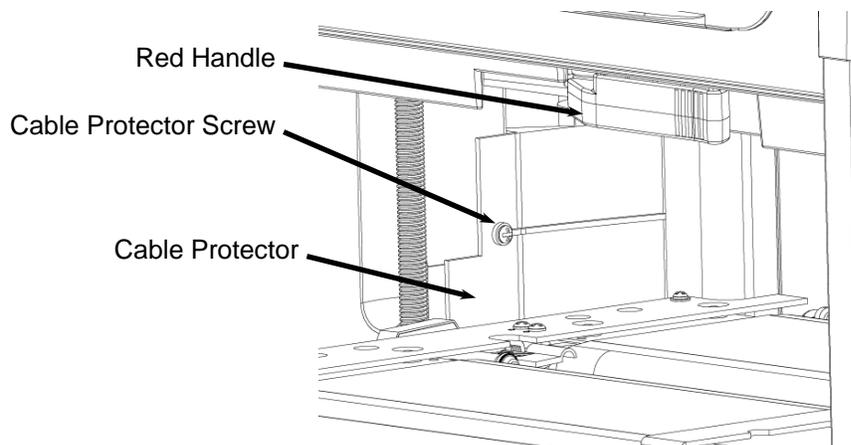
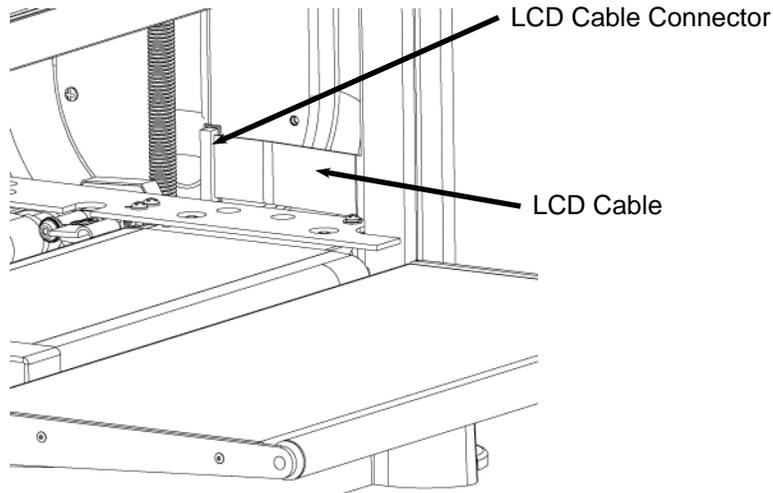


FIGURE 4: LOCATION OF THE HEAD CABLE PROTECTOR (LOOKING INTO THE MACHINE FROM THE FRONT)

5. **Unplug the LCD cable.** Grasp and pull the LCD cable connector straight out. Lay the cable end to the side of the panel.



**FIGURE 5: LOCATION OF THE LCD CABLE
(LOOKING INTO THE MACHINE FROM THE BACK)**

6. **Remove the left side panel assembly.** Using the 10mm socket remove the two hex head bolts (and washers) from the top of the assembly. Remove the two Phillips head screws from the base of the side panel with the screwdriver. Lift off the side panel.

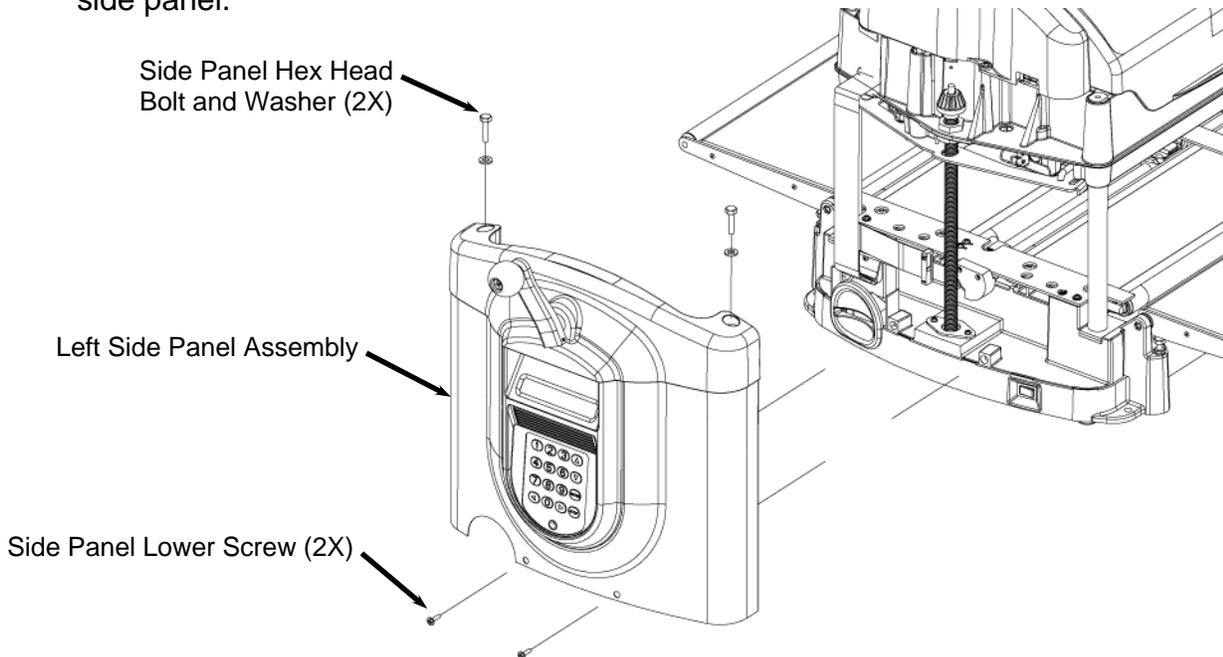


FIGURE 6: EXPLODED VIEW OF THE LEFT SIDE PANEL FASTENERS

7. **Clean the machine.** Make sure to remove all dust behind and around the base of the panel. This will assure a smooth reassembly, and that no dust will get into the open connectors.

8. **Remove the ribbon cable bend guard.** There are three ribbon cables that are threaded through a small slot in machine base (two going to the head of the machine and one going to the LCD screen). There is a plastic bend guard on the outside edge of the opening that protects the ribbon cable and assures that the cables are not folded. Remove the guard screw and pull off the guard.

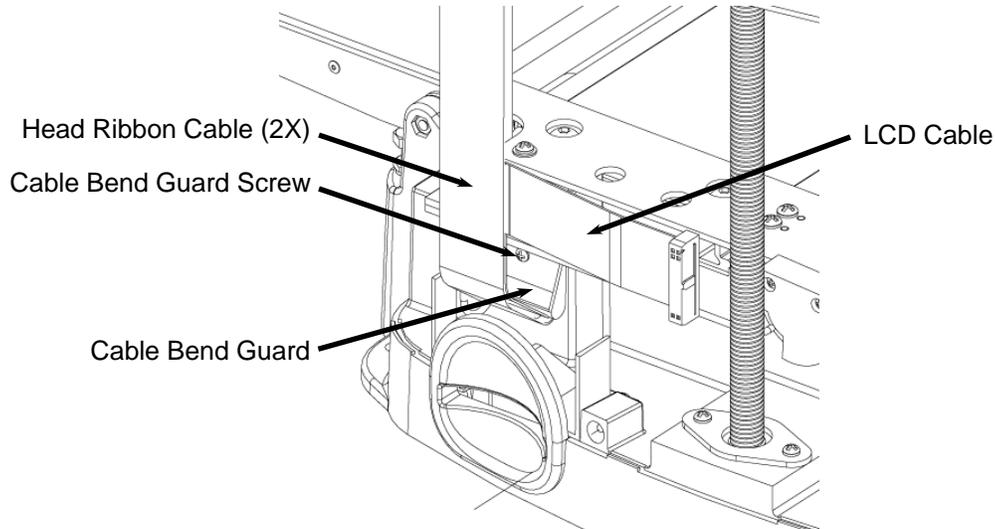


FIGURE 7: REMOVING THE RIBBON CABLE GUARD

9. **Remove the bottom cover.** Carefully lay the machine on its back with the dust collection port facing down. Remove the 12 screws securing the black sheet metal cover onto the base (four of which are located in the rubber feet) and remove the cover.

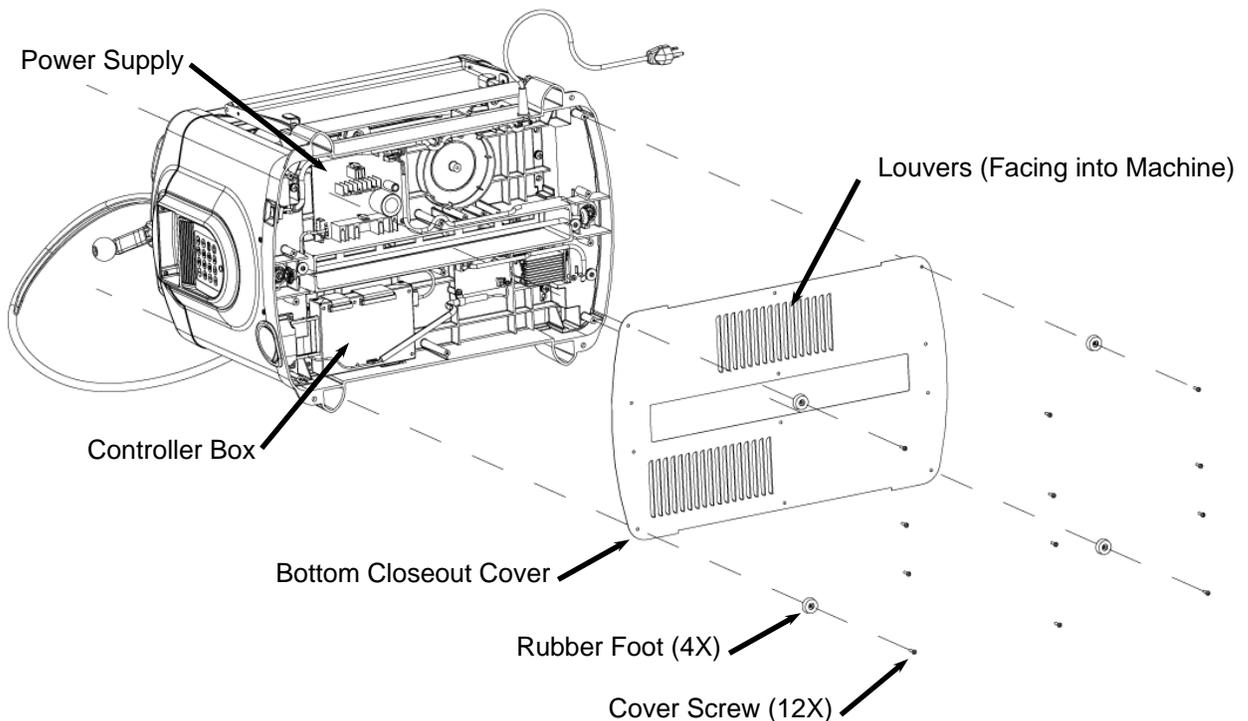


FIGURE 8: REMOVAL OF THE BOTTOM COVER

10. **Unplug the four cables connected to the controller.** Locate the controller box and unplug the DC power cable, the 40-pin ribbon connector, the 16-pin ribbon connector, and the AC motor control cable.

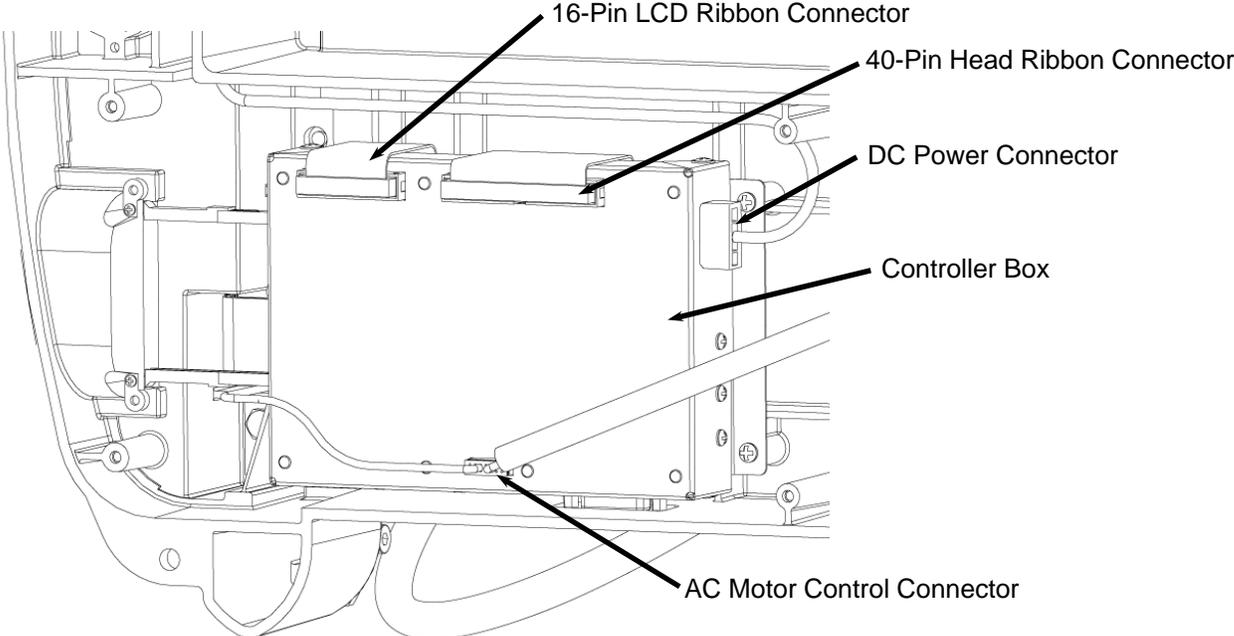


FIGURE 9: LOCATION OF THE CONTROLLER CONNECTORS

11. **Release the memory card guide arms.** These arms guide the memory card into the controller box and insure that the card connects properly. Remove the two screws securing these arms to the base casting.

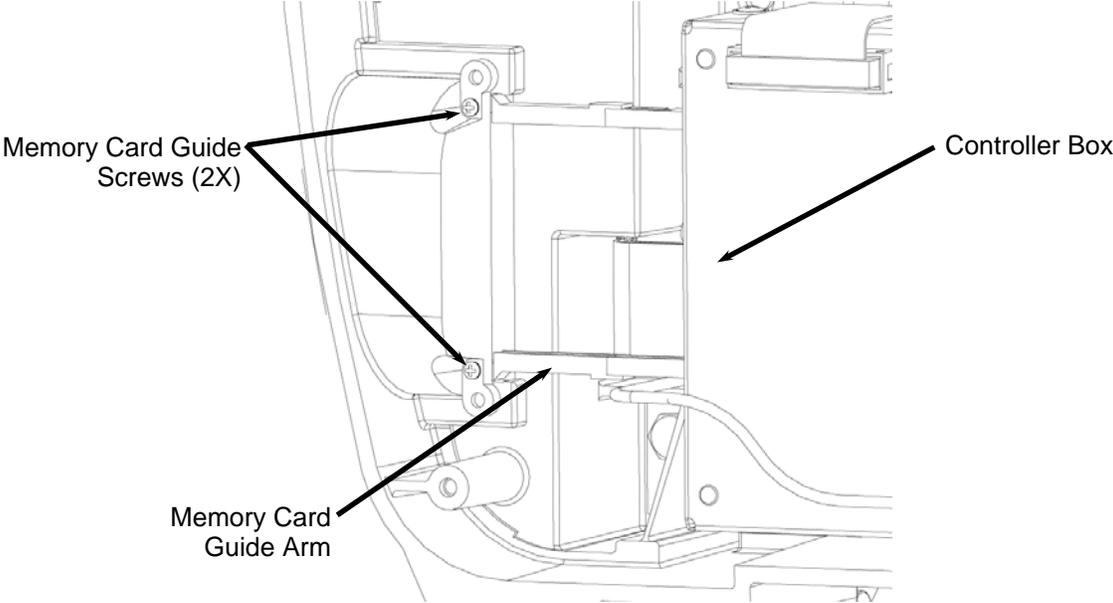


FIGURE 10: REMOVAL OF SCREWS SECURING THE MEMORY CARD GUIDE ARMS

12. **Remove the controller box.** Use the #2 Philips head screw-driver to remove the four screws that attach the controller box to the base casting. Gently slide the box toward the center of the machine to clear the memory card guide arms and lift the box free. Caution: These arms are delicate and can be broken if they are bent.

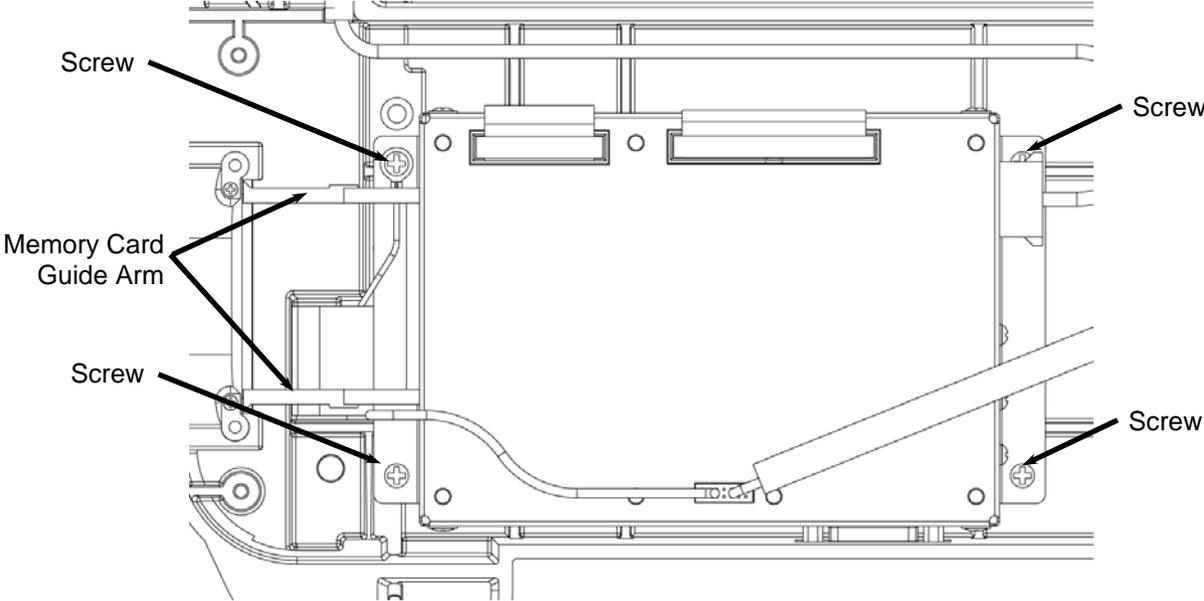


FIGURE 11: CONTROLLER BOX ATTACHMENT

13. **Remove the LCD ribbon cable.** Before removing the LCD cable, make sure to note how it is assembled into the machine. There are several bends that need to be made in the cable as well as a proper orientation. The LCD ribbon cable is threaded through a small slot in the base of the machine. Identify the correct cable by verifying that it is the 16-pin cable or by locating the unplugged connector on the other side. Gently feed the ribbon cable (and connector) through the slot. Be careful not to tear or pinch the head ribbon cables.

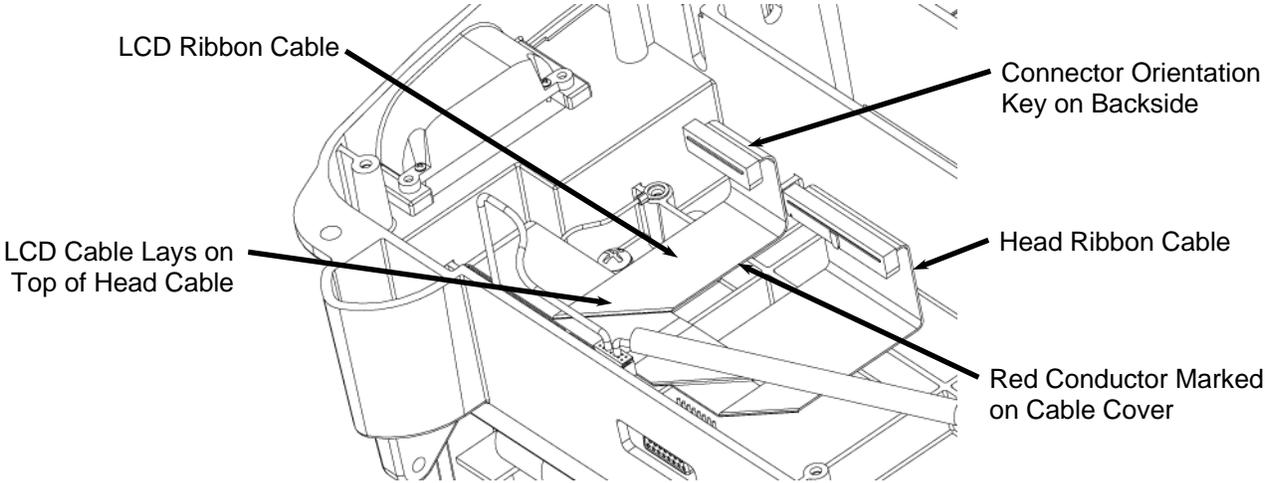


FIGURE 12: POSITION AND ORIENTATION OF THE LCD RIBBON CABLE

Reassembling the Machine

1. **Replace the LCD Cable.** Install the new LCD cable into the machine as shown in Figure 12. Use the old cable as needed to put the fold-overs in the correct position along the cable. Figure 13 shows the shape of the cable as it would appear in the machine (with the bottom of the machine pointing to the top of the page). Make sure that the red conductor is facing the correct direction and that the LCD ribbon cable sits on top of the head ribbon cable.

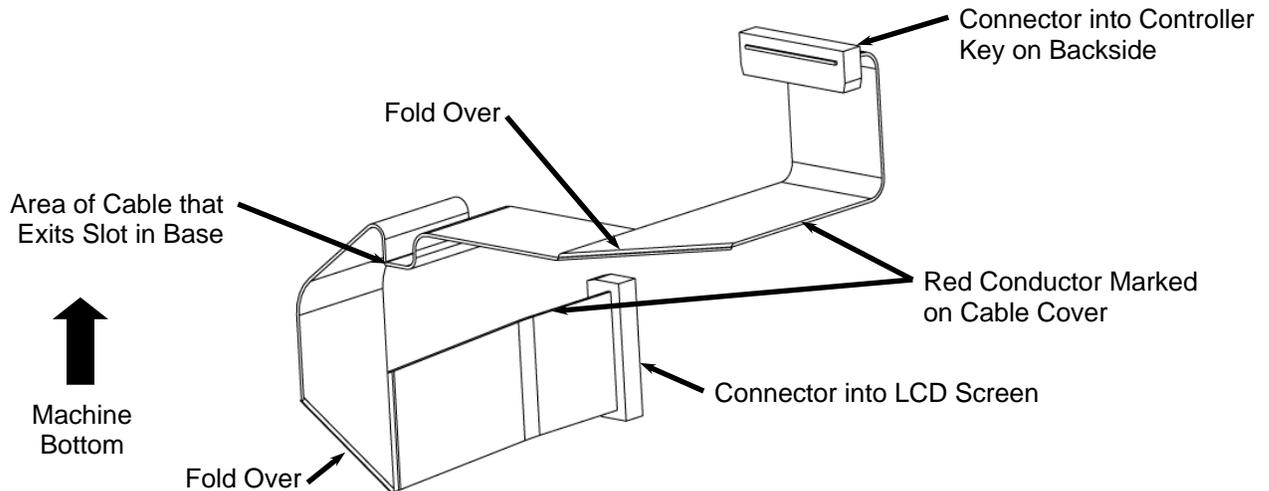


FIGURE 13: LCD CABLE ORIENTATION (AS SEEN IN THE MACHINE)

2. **Re-insert the controller box.** Slide the memory card guide arms into the slot in the side of the base and position the holes in the box over the holes in the base casting.
3. **Secure the controller box.** Replace and tighten the four screws that secure the controller box to the base casting. Next replace and tighten the two screws that secure the memory card guide arms to the base casting.
4. **Reconnect the controller cables.** Connect each of the four cables going to the controller box. Each cable connector has an orientation keying feature that restricts the connector from being plugged in backwards. **DO NOT FORCE A CONNECTOR.** If the connector does not seat easily please check the orientation and try again.
5. **Replace the bottom cover.** Replace the metal cover with the louvers pointing into the machine (see Figure 8). Insert and tighten the 12 screws. The four rubber feet are placed at the corners of the machine.
6. **Replace the ribbon cable bend guard.** Place the ribbon cable bend guard back into position and insert the screw. Make sure that the three ribbon cables are looped underneath the guard as shown in Figure 7 and that the cables are not folded.
7. **Replace the right side panel assembly.** Place the side panel assembly back onto the machine making sure that the bottom of the panel sits into the grooves and tabs

located on the base casting. Insert the two bottom screws and tighten with a #2 Phillips screwdriver. Insert the top hex head bolts (with washers) and tighten with the 10mm socket.

8. **Plug in the LCD ribbon cable.** Plug the LCD ribbon cable into its connector located in a cutout on the back of the side panel assembly (see Figure 5).
9. **Re-assemble the cable protector.** While holding the three ribbon cables up against the side panel, slide the plastic cable protector into position over the screw hole in the side panel. Insert and tighten the screw. Verify that the cables are well secured behind the cable protector and that none are bent or pinched.
10. **Prepare the flexshaft assembly for re-insertion into the machine.** Gently pull the protruding flexshaft core (with squared end) out of the sheath several inches. Push the core back into the sheath and make sure that it slips into, and engages, the cutting motor. It will drop into the receptacle on the motor side about 5/8ths of an inch. Turn the core by hand and feel for resistance of the motor. If the shaft spins without resistance, push the core inward while rotating until it drops into the slot and engages the motor.
11. **Insert the flexshaft into cutting head.** Looking through the slot in the top cover, locate the flexshaft receptacle on the top of the Z-truck. Inside the receptacle there is a square recess that mates with the exposed square end of the flexshaft core. Turn the chuck on the bottom of the cutting head (open the safety cover for access) until the square core end can be inserted into the recess. Press the flex shaft all the way down into its receptacle. A click will be heard and felt as the shaft snaps into place.
12. **Test the machine functions.** Make sure that everything is put back together correctly by turning the machine on and doing several checks. Plug in the machine, insert the memory card, and turn on the machine. Try several different keypad functions to make sure that the new cable is connected correctly.