Guide for Installing or Replacing the Daughter Board on the CETAC ASX-130 Autosampler

This guide describes the necessary steps for installing or replacing the daughter board on the ASX-130 autosampler.

Accessing the Board inside the Autosampler

1. Place the autosampler on a flat surface (Figure 1) and turn the unit off. Remove the power and communication cables.

Figure 1. Front view of ASX-130 Autosampler.

2. Remove the two Kynar thumbscrews from the Y-axis home block (Figure 2).

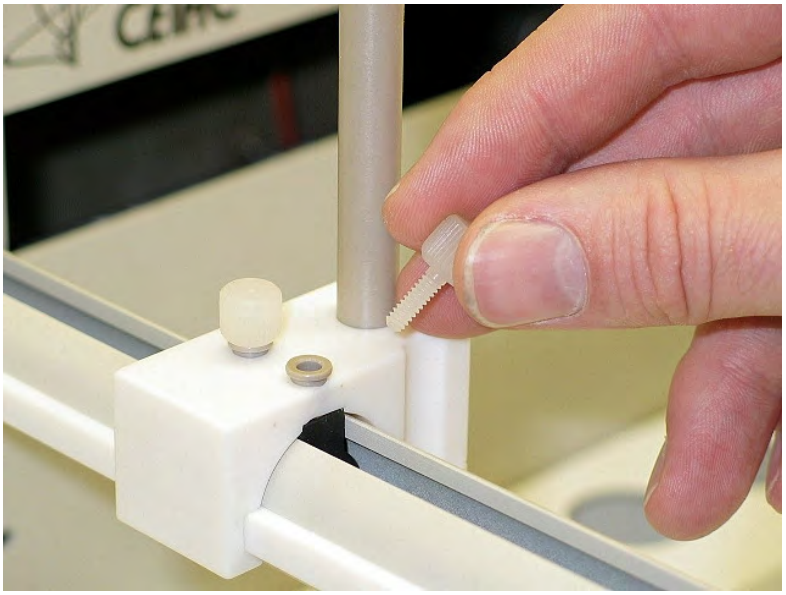

Figure 2. View of Y- axis home block with Kynar thumbscrews.

Figure 3. Z-drive removed from arm assembly.

3. Remove the whole Z-drive assembly from the arm by pulling the whole Z-drive assembly forward and off the autosampler arm (Figure 3).
4. Remove the standards rack if a removable rack is equipped. (Figure 3).

Figure 4. View of rinse station.

5. Once the Z-drive assembly is removed, remove the rinse station (Figure 4). It may be one of two types. Turn the rinse station ¼ turn counter-clockwise while pulling up. Also, the tubing located at the bottom of rinse station will have to be removed or moved aside

6. The autosampler tray should then be removed. Lift up the tray and pull out (Figure 6).

Figure 6. Removing the tray.

Figure 7. Front view of ASX-130 Autosampler showing front cover screws.

7. Next, the front cover needs to be removed. Remove the four corner screws (Figure 7).
8. The front cover can be removed by lifting it slightly and pulling forward (Figure 8).

Figure 8. View of ASX-130 Autosampler with the front cover being removed.

Figure 9. View of inner shield inside the ASX-130 Autosampler.

9. The four screws that hold the inner shield will have to be removed. (Figure 9).
10. Move the Y-axis assembly all the way to the right. The inner shield can be removed by lifting it up while pulling forward (Figure 10).

Figure 10. Removal of inner shield.

11. Remove all wiring connectors from the main board except the blue ribbon cable. This is easier removed when the board is out, You will need to remove the carriage and arm tube assembly, guide shaft, x-axis leadscrew assembly and at least one end plate.

12. Remove the blue ribbon cable from the carriage assembly by first bending the retaining clamp out of the way, then grasp the cable firmly and give a sharp tug (Figure 11). You can straighten the pins prior to re-assembly.

Figure 11. Removal of blue ribbon cable from carriage.

13. Loosen the guide shaft set screws at the right end of the guide shaft (Figure 12).

Figure 12. Loosening of guide shaft set screw.

14. Remove the three mounting screws for the right end plate (Figure 13). Two are counter sunk and one is a round head. The round head screw is used on the back of the chassis when re-assembled.

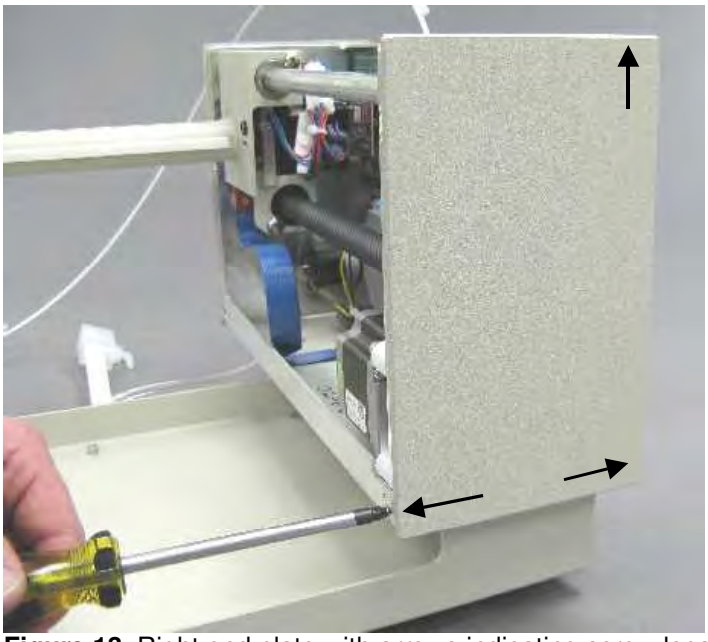

Figure 13. Right end plate with arrows indicating screw locations.

15. Remove right end plate. It may be necessary to lightly tap with a small hammer or mallet, as the fitting is sometimes quite snug. Underneath the lead screw end bearings is a wave washer. Set these aside to replace during re-assembly. (Figure 14).

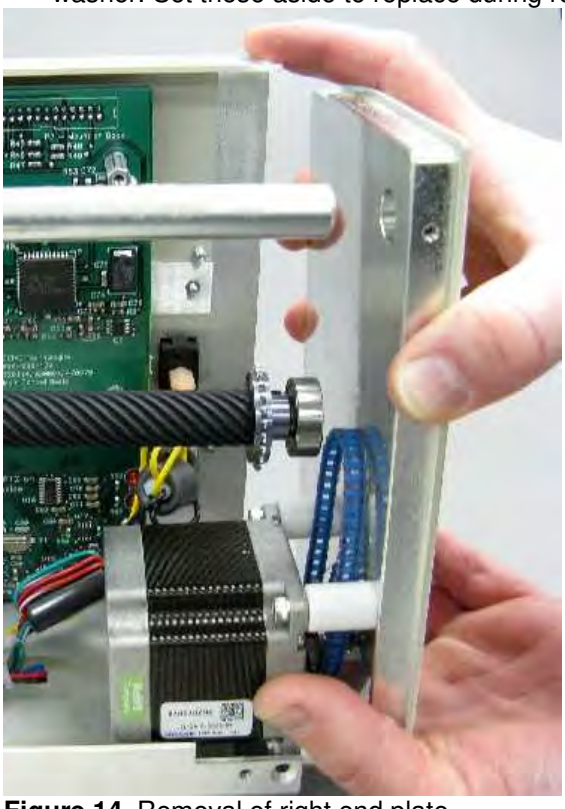

Figure 14. Removal of right end plate.

16. Grasp the guide shaft, carriage assembly, and x-axis lead screw assembly and remove by pulling out of the left side. Set these aside for re-assembly.
17. Remove the voltage regulator heat sink using a 1/4” nut driver (Figure 15). Set this aside for re-assembly.

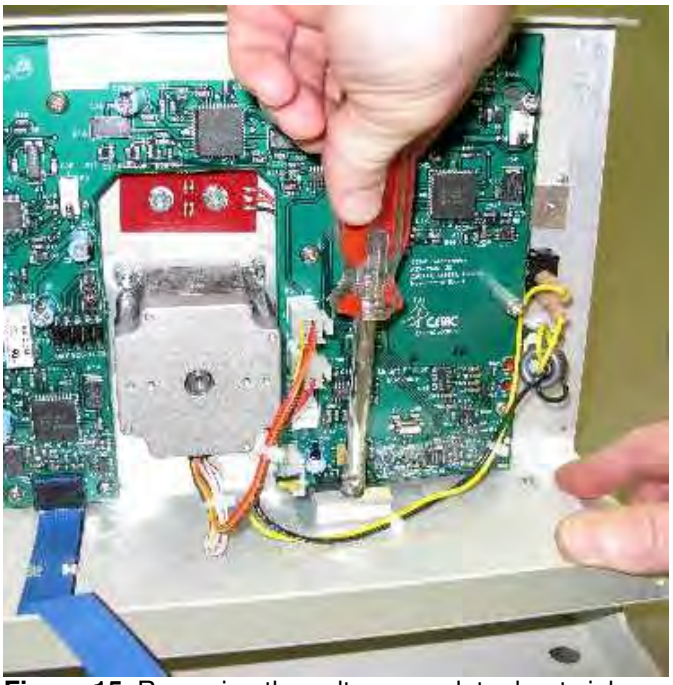

Figure 15. Removing the voltage regulator heat sink.

18. Remove the four standoffs with the 1/4” nut driver (Figure 16).Set these aside for re-assembly.

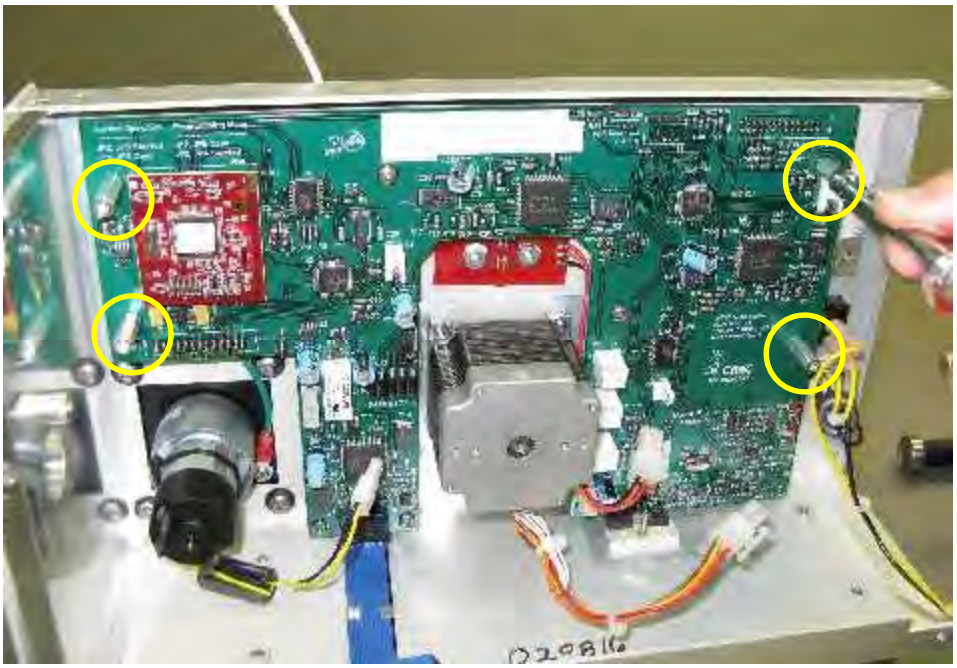

Figure 16. Removing the four stand-offs.

19. Remove the 6 Phillips head screws holding the board in place (Figure 17). Unclasp the blue ribbon cable from the bottom clamp.

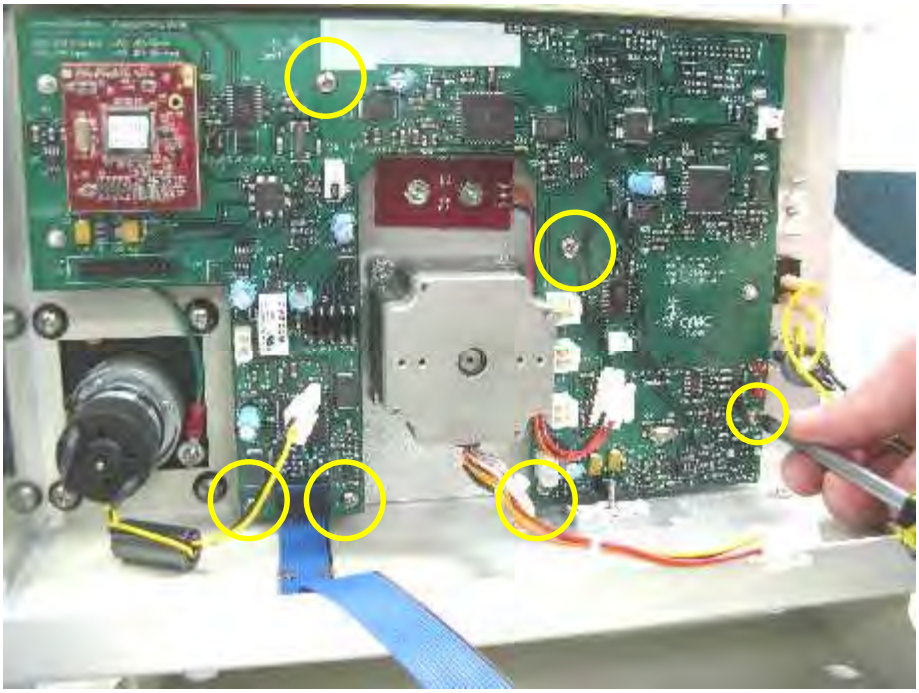

Figure 17. Removing the six screws holding the board in place.

20. Remove the board by pulling forward from the top (Figure 18).

Figure 18. Removing the main board. Rabbit processor is the small board in the top left corner.

21. Remove the Auxiliary access cover plate and discard (Figure 19). If replacing a daughter board, proceed to step 24.

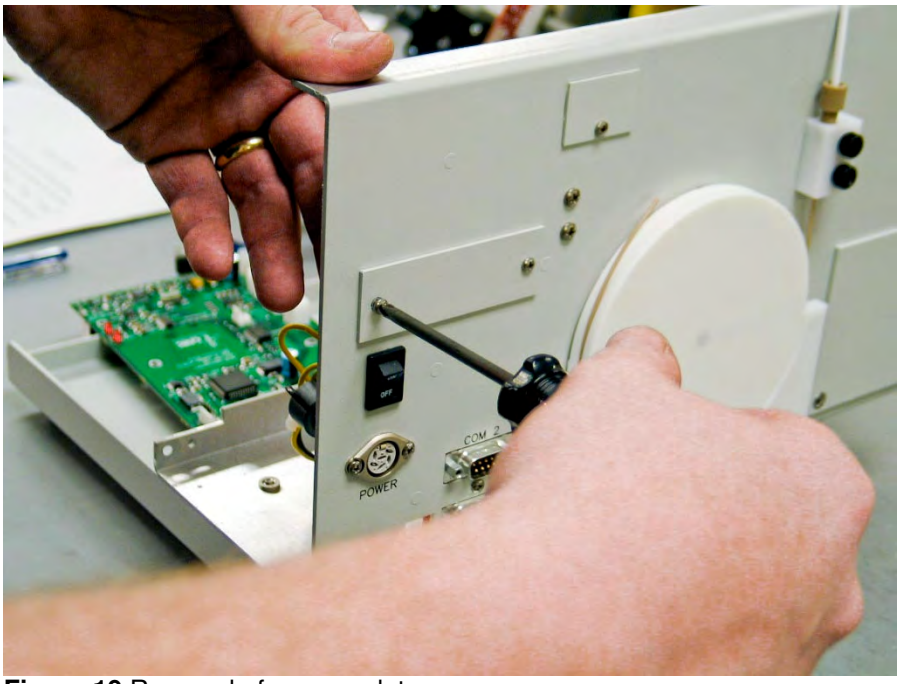

Figure 19 Removal of access plate.

22. Remove stand-off with 1/4" nut driver and discard (Figure 20). Remove the spacer located under the stand-off and place with the other two spacers received with the installation kit.

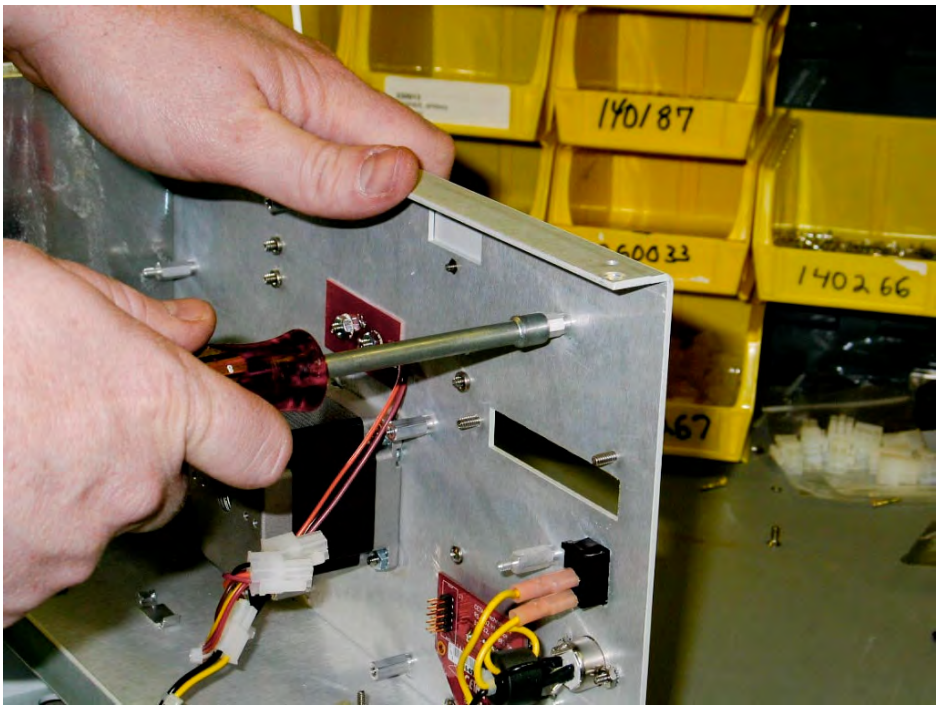

Figure 20 Removal of stand-off.

23. Place a washer then a spacer on the three mounting posts (Figure 21).

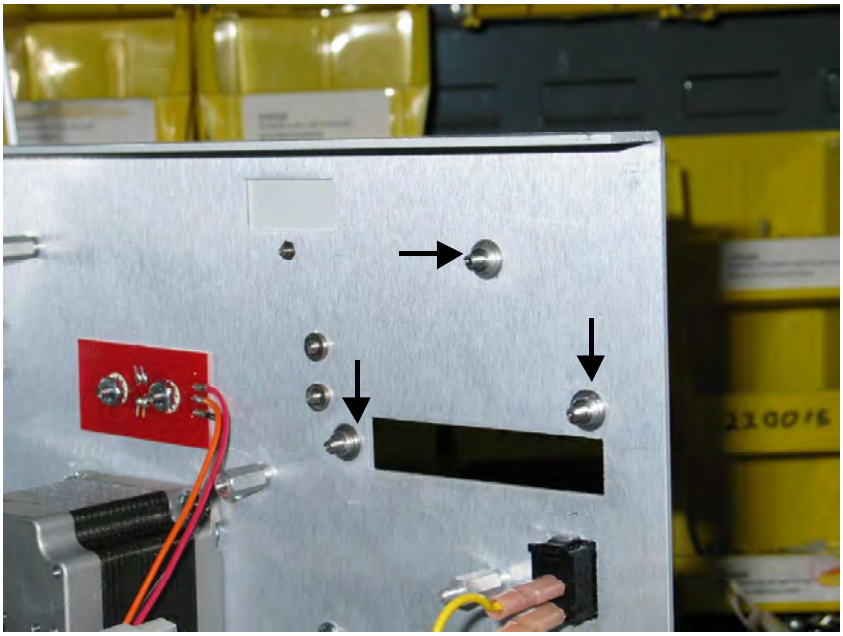

Figure 21 Washers and spacers installed.

24. If a daughter board is installed, remove the holding hardware then the daughter board. Install the new daughter board on the three studs. Secure to the bottom two posts with the 5/16" nuts provided in the kit. Secure to the top post with the 3/8" standoff using a ¼" nut driver (Figure 22).

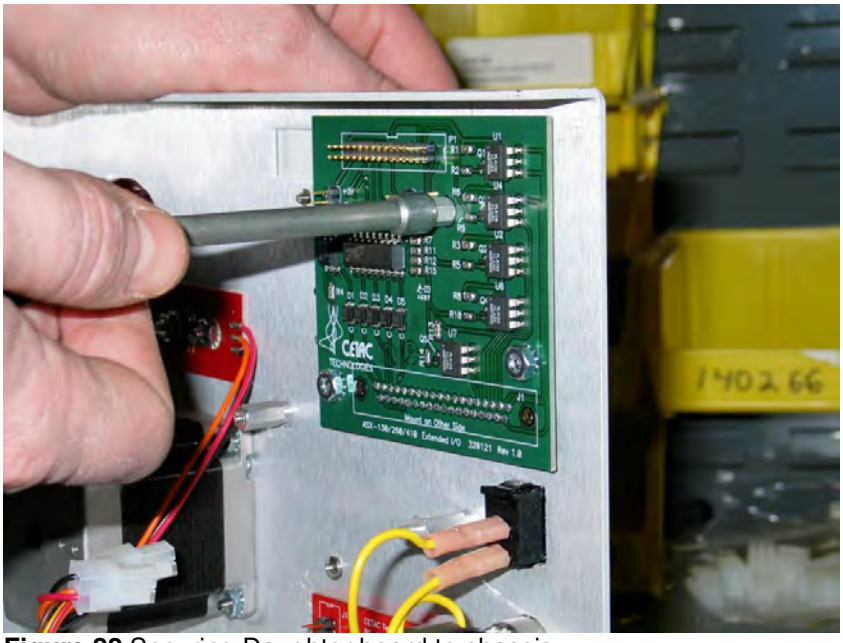

Figure 22 Securing Daughter board to chassis.

25. Install the main board in the chassis. Ensure the 10-pin connector on the back of the board is seated correctly in the connector of the communications interface board mounted behind it (Figure 23). Also ensure the pins are seated correctly for the daughter board.

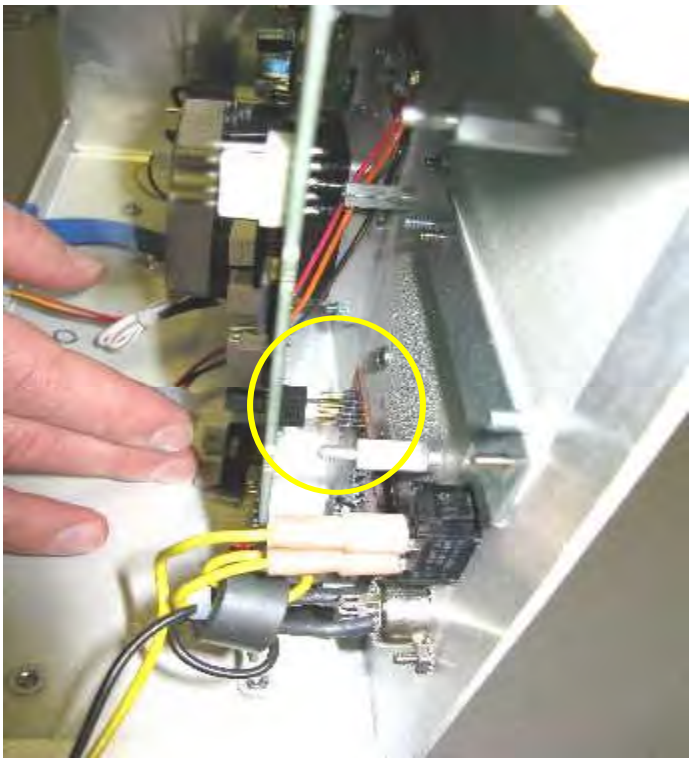

Figure 23. Installing the 10-pin connector to the communication interface board.

26. Install the six mounting screws to secure the main board. Start all six before tightening them.
27. Install the four standoff's. Take care not to over tighten as the studs can easily break.
28. Re-clamp the blue ribbon cable.
29. Re-connect all wiring harnesses to the main board, except the x-motor. This will be connected after installation of the right end plate.
30. Position the right end plate in place and line up the guide shaft and x-axis lead screw assembly. Ensure the x-axis drive belt is looped over the motor gear and lead screw gear. It's not necessary to get the belt on the gears at this point. It may be necessary to lightly hit the endplate with a mallet or plastic head hammer to seat the bearing. Also ensure the wave washer is in place under the bearing.
31. Secure the end plate with three screws beginning with the round head screw in the rear. Tighten the guide shaft set screw.
32. Position the x-axis drive belt over the motor gear. Start the belt on the lead screw gear, then rotate the lead screw to get the belt in place.
33. Replace the shield, cover, drip tray, rinse station, and z-drive assembly.
34. Proceed with functionality testing.