

Anesthesia Workstation G4 Service Manual

67-2096 Rev A



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Introduction

This procedure will guide the user through the procedures required to Remove and install components on the Anesthesia Workstation G4.

Tools Required

- Torx T10 driver
- Torx T15 driver
- Torx T20 driver
- Phillips #1 screwdriver
- Standard Blade Screwdriver
- Cam Lock Key #2378
- M3 nut driver
- Zip Tie cutter

Replacing the UI and Keyboard

Remove and Replace the Keyboard

1. Remove the eight screws that secure the keyboard casing.

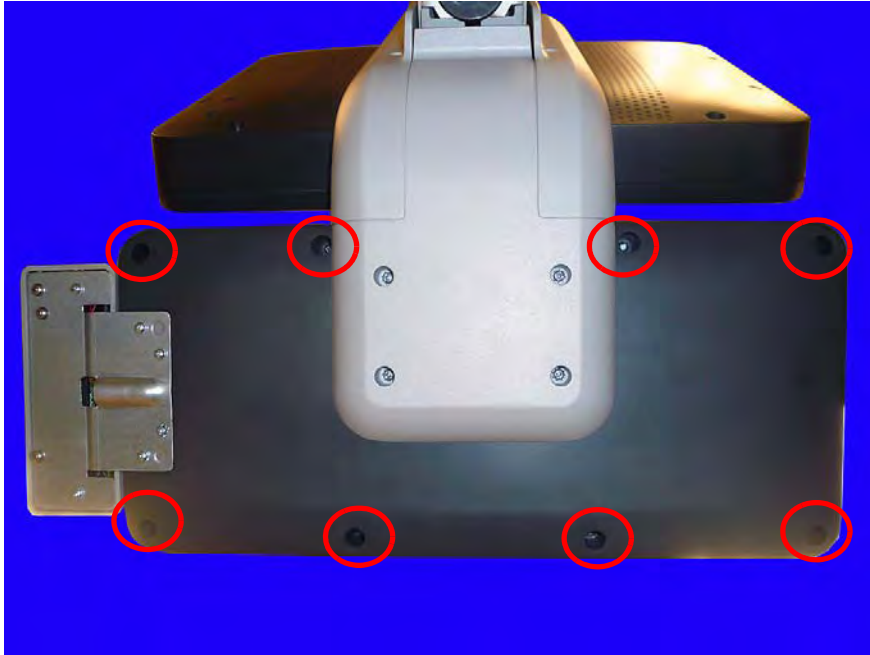


Figure 2-1. Remove the eight screws that secure the keyboard casing

2. If a card reader is present, remove the two innermost screws.

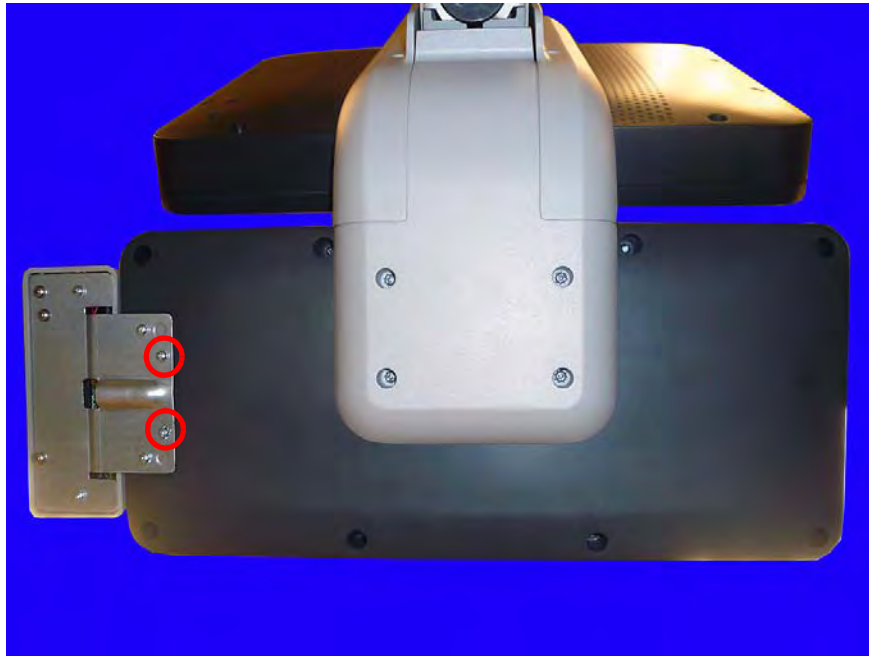


Figure 2-2. Remove the innermost screws on the card reader

3. Lift the keyboard from the keyboard holder.

Note: Do not lift the keyboard too far from its resting place as there are cables attached to the keyboard which need to be removed before the keyboard can fully be removed.



Figure 2-3. Lift the keyboard from the keyboard enclosure

4. Remove the data communication cable from the keyboard.



Figure 2-4. Remove the data communication cable

5. Remove the USB connector cable.

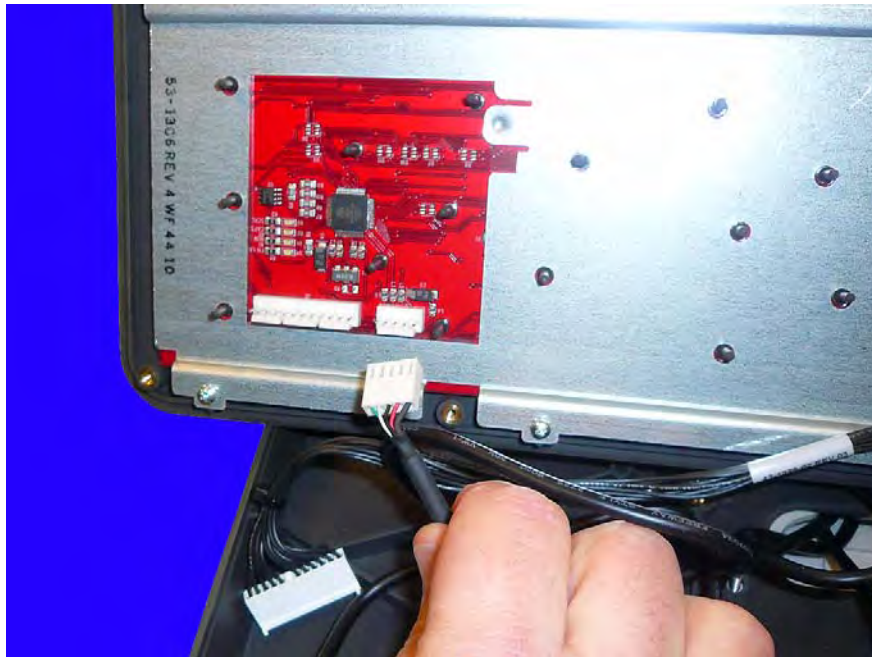


Figure 2-5. Remove the USB connector cable

6. Remove the keyboard ground cable that is connected to the UI bracket on the underside of the keyboard tray. Use an M3 nut driver to remove the nut.



Figure 2-6. Remove the keyboard ground cable

Remove the Card Reader

If the AWS G4 has a card reader attached that needs to be replaced, remove the card reader. If the card reader does not need to be replaced, proceed to [“Remove the Fingerprint Sensor”](#) on page 2-6.

1. Remove the two outermost screws that secure the card reader to the keyboard base.

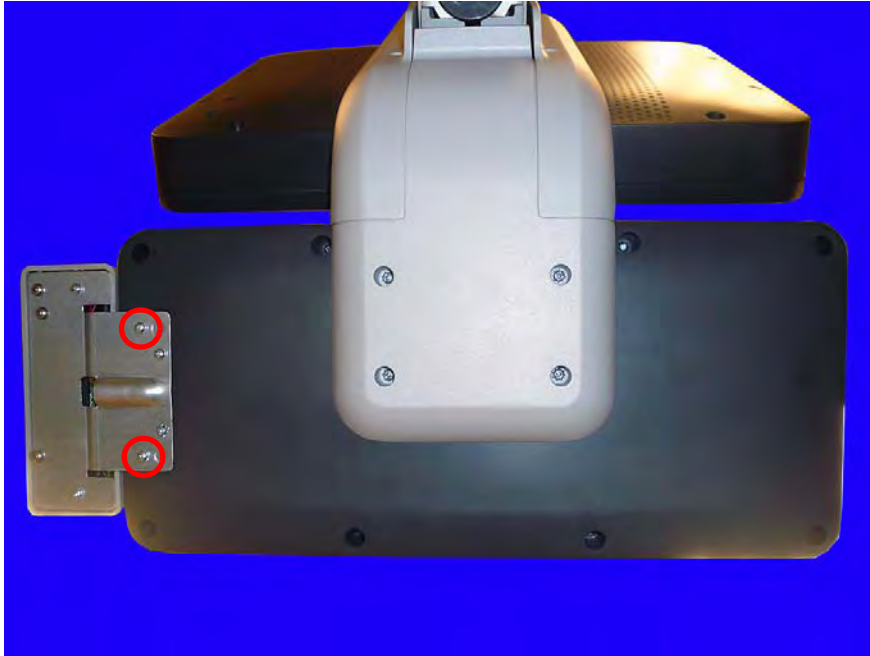


Figure 2-7. Remove the screws that secure the card reader to the keyboard base

2. Follow steps 1-3 in the section [“Remove and Replace the Keyboard”](#) on page 2-1.
3. Remove the card reader connection from the keyboard.

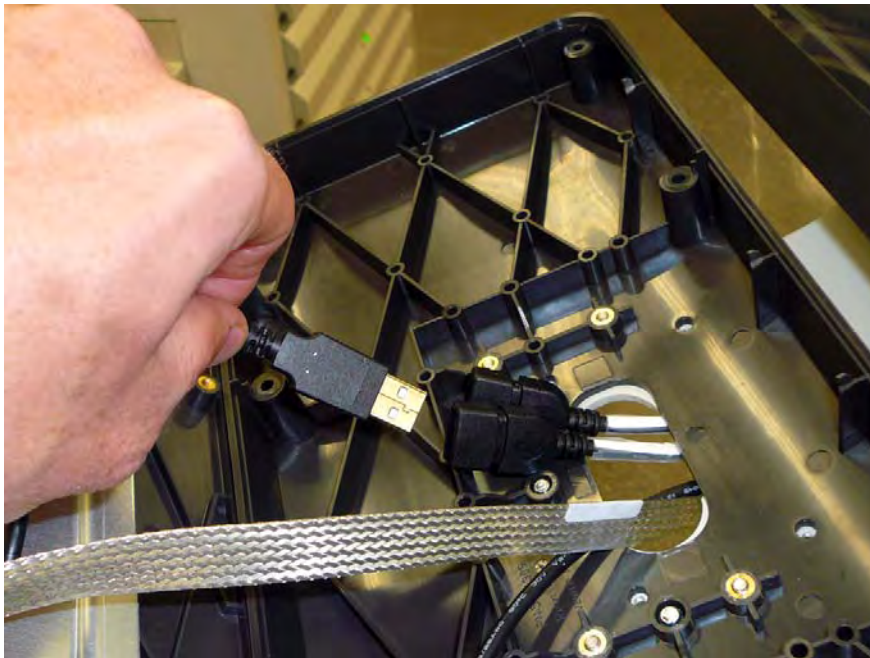


Figure 2-8. Disconnect the USB connection

Remove the Fingerprint Sensor

1. Remove the five screws that secure the fingerprint sensor to the keyboard.

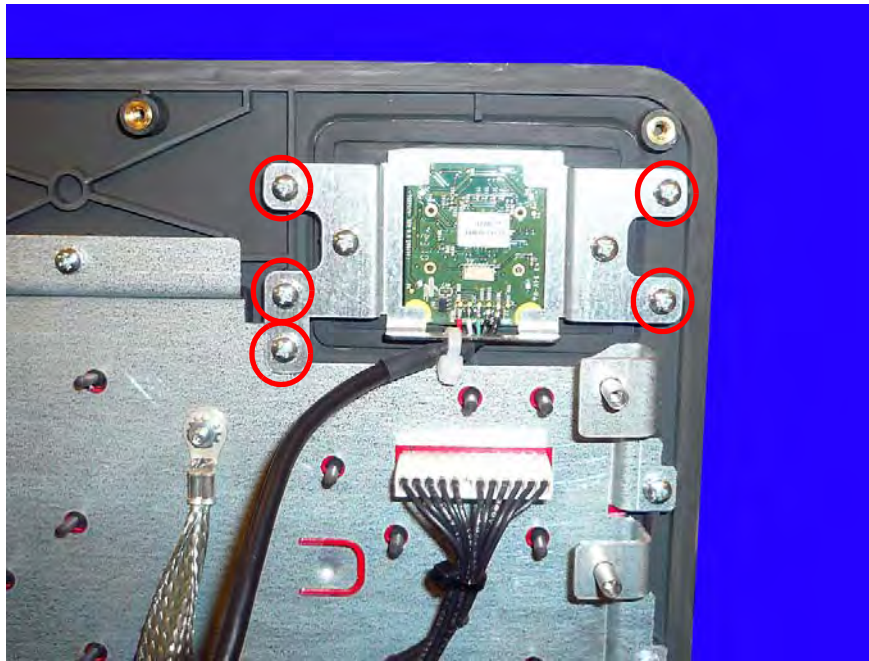


Figure 2-9. Remove the five screws that secure the fingerprint sensor

2. Remove the fingerprint sensor from the keyboard.

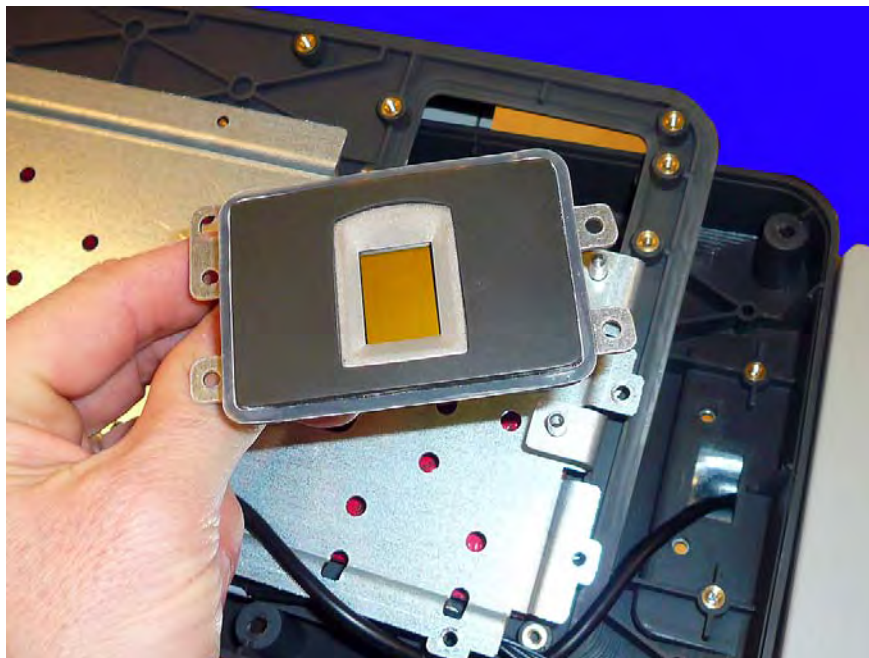


Figure 2-10. Remove the fingerprint sensor from the keyboard

Remove the Keyboard and Keypad

1. Remove the ten (10) screws that secure the mounting plate to the keyboard assembly.

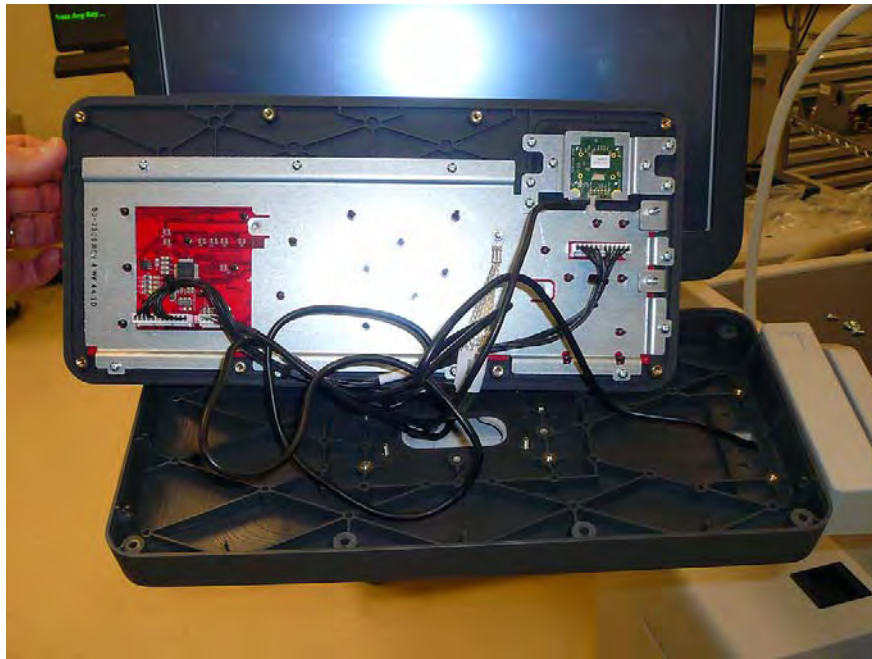


Figure 2-11. Remove the 10 screws that secure the mounting plate

2. Remove the plate from the keyboard assembly.

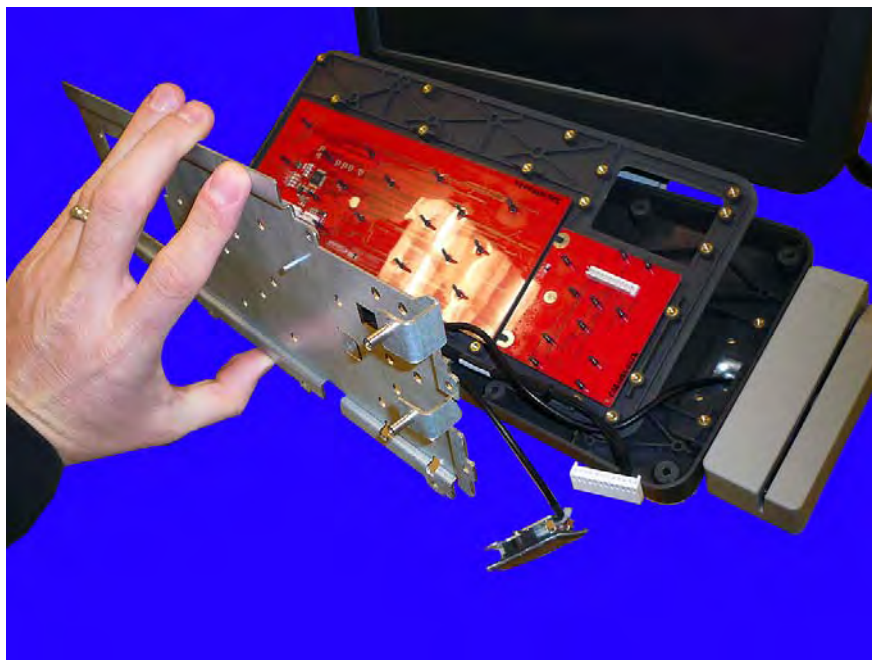


Figure 2-12. Remove the mounting plate that protects the keypad and keyboard

3. Remove the alphanumeric and the keypad and the numeric keypad.



Figure 2-13. Remove the alphanumeric keypad

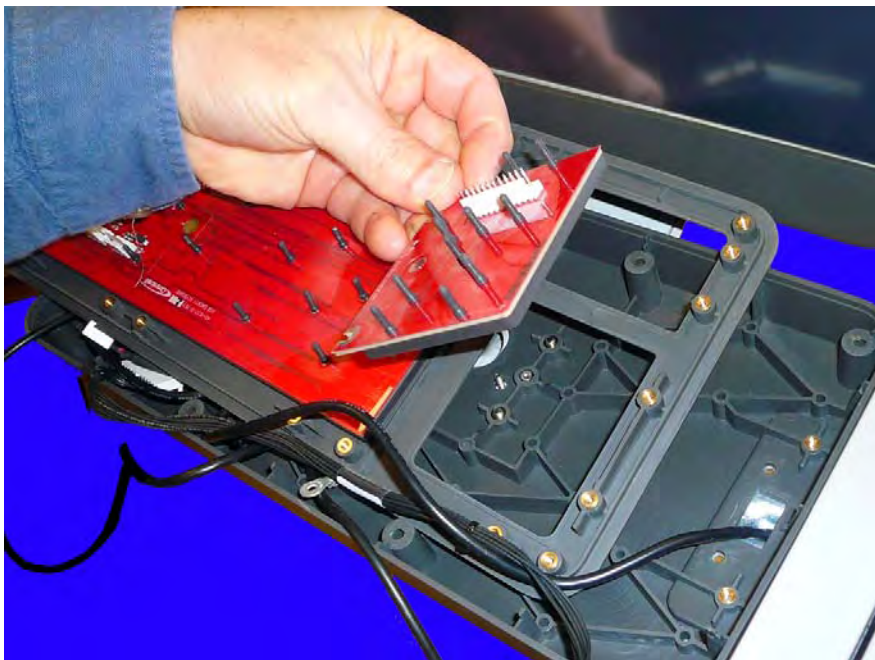


Figure 2-14. Remove the numeric keypad

4. Replace the keypads.
5. Replace the mounting plate by replacing the screws that had been previously removed.
6. Replace the fingerprint sensor by replacing the four screws that secure the sensor to the assembly.

7. Re-connect the cables that had been previously disconnected from the underside of the keypad.
8. Replace the ground cable.
9. Replace the card reader if it is present.
10. Set the keyboard back down onto the assembly base and secure the keyboard using the screws that were previously removed.

Remove and Replace the UI Assembly

1. If the scanner holder is present, remove the four screws that secure the scanner holder to the rear display bezel.



Figure 2-15. Remove the screws that secure the scanner holder to the rear display bezel

2. Remove the eight screws that secure the rear display bezel to the UI bracket.



Figure 2-16. Remove the eight screws that secure the rear display bezel

3. Lift and remove the rear display bezel from the UI.



Figure 2-17. Remove the rear display bracket from the UI

4. Remove the four screws that secure the rear shroud to the UI bracket.



Note: The four screws that secure the shroud are longer than the eight screws that secure the display bezel. Be sure to keep the screws separate as they are not interchangeable.

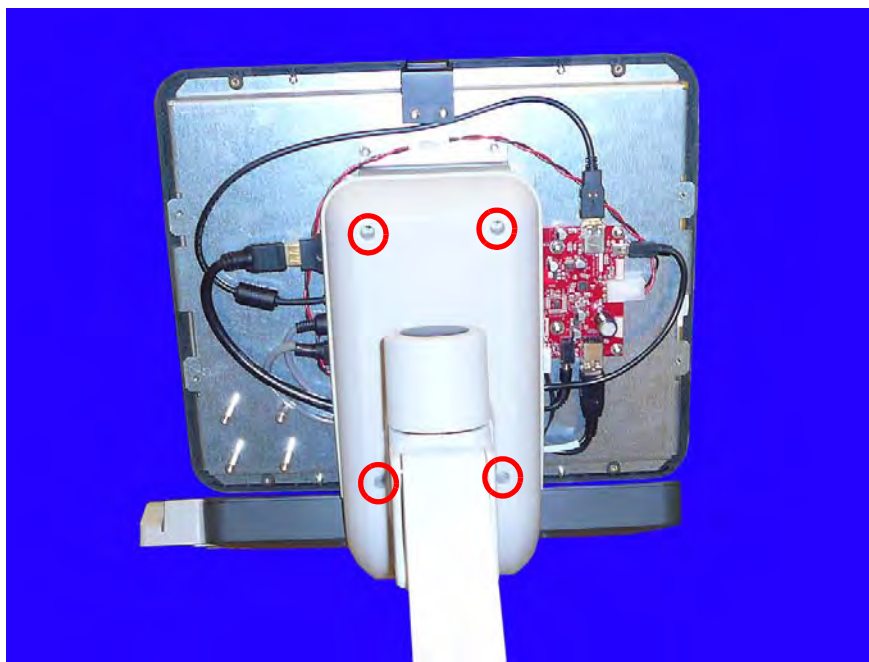


Figure 2-18. Remove the screws that secure the rear shroud to the UI bracket

5. Lift and remove the rear shroud from the UI bracket.



Figure 2-19. Remove the rear shroud from the UI bracket

6. Remove the two USB cables from the bottom of the hub board.

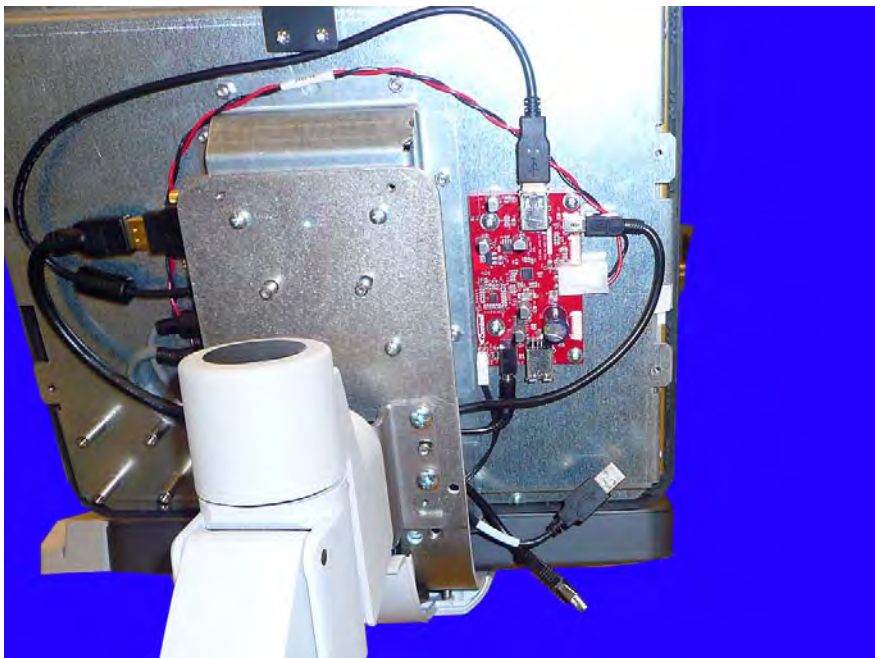


Figure 2-20. Remove the two USB cables from the bottom of the hub board

7. Remove the speaker cable from the hub board.

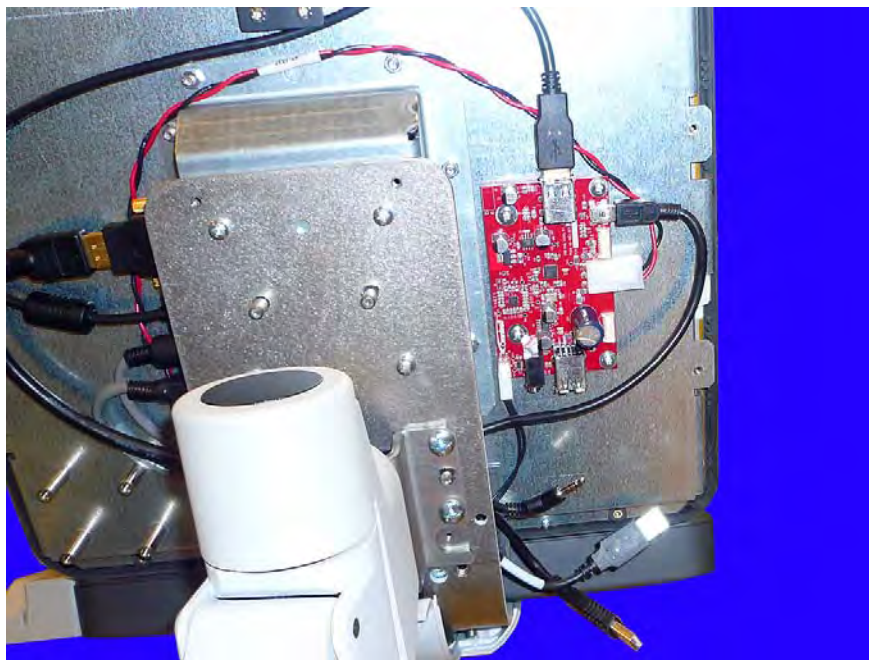


Figure 2-21. Remove the speaker cable from the hub board

8. Remove the data cable from the hub board.

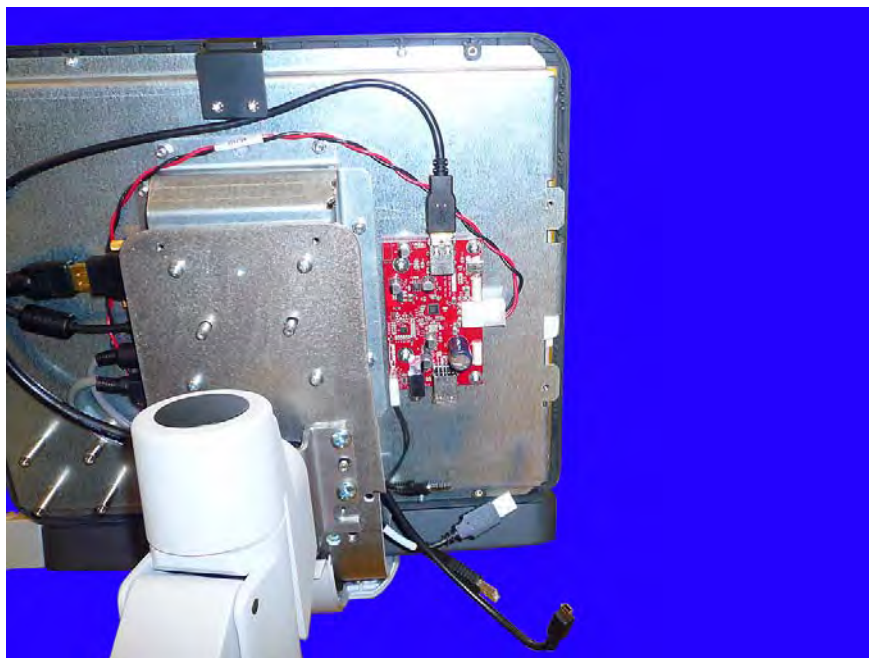


Figure 2-22. Remove the data cable from the hub board

9. Remove the HDMI cable from the HDMI to DVI converter.

10. ***Will add image of HDMI cable being removed.****

11. Remove the four screws that secure the UI to the bracket.

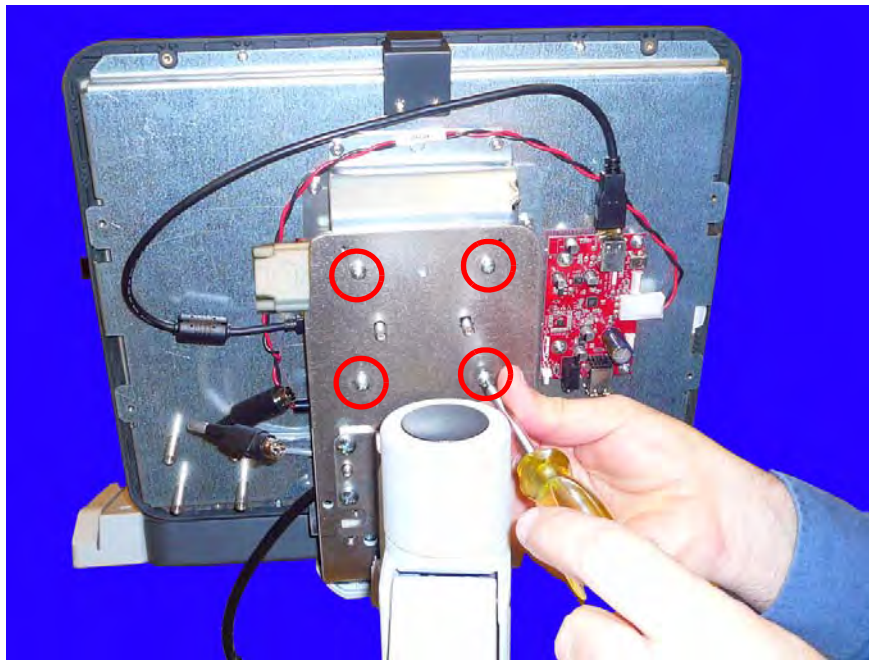


Figure 2-23. Remove the four screws that secure the UI to the bracket

12. When removing the final screw, hold the UI so that it does not fall from the bracket.

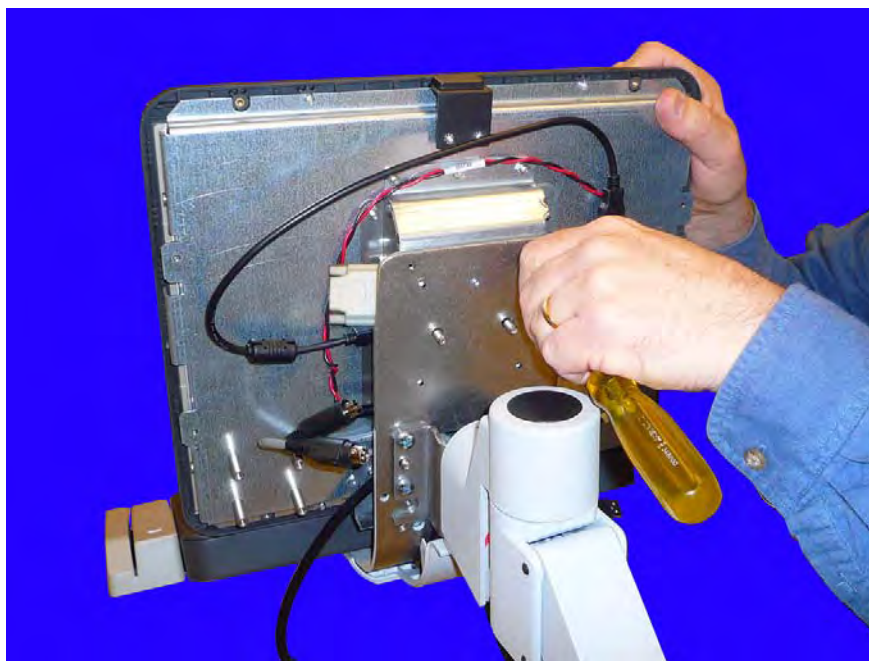


Figure 2-24. Hold the UI when removing the final screw from the bracket

13. Remove the UI from the bracket.

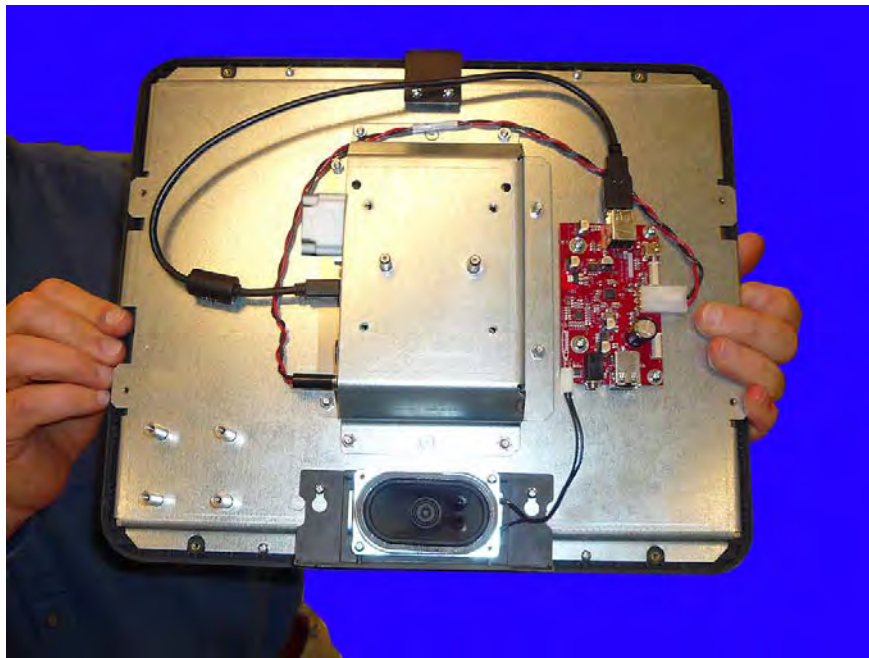


Figure 2-25. Remove the UI

Removing and Replacing the Articulating Arm

Remove the Keyboard and UI

Remove the keyboard as shown in [“Remove and Replace the Keyboard”](#) on page 2-1.

Remove the UI assembly as shown in [“Remove and Replace the UI Assembly”](#) on page 2-9

Remove the Articulating Arm

Remove the Cable Harness from the UI Bracket

1. Remove the two screws that secure the cable harness strain relief to the underside of the UI bracket.



Figure 3-1. Remove the screws that secure the cable harness strain relief to the UI bracket

3-2 Removing and Replacing the Articulating Arm

Remove the Articulating Arm

2. Pull the strain relief down from the arm enclosure.



Figure 3-2. Lower the strain relief

3. Remove the eight (8) screws that secure the keyboard top bezel in place.
4. Remove the nut that secures the ground strap to the bracket.
5. Lift the keyboard from the enclosure.
6. Disconnect the data connector.

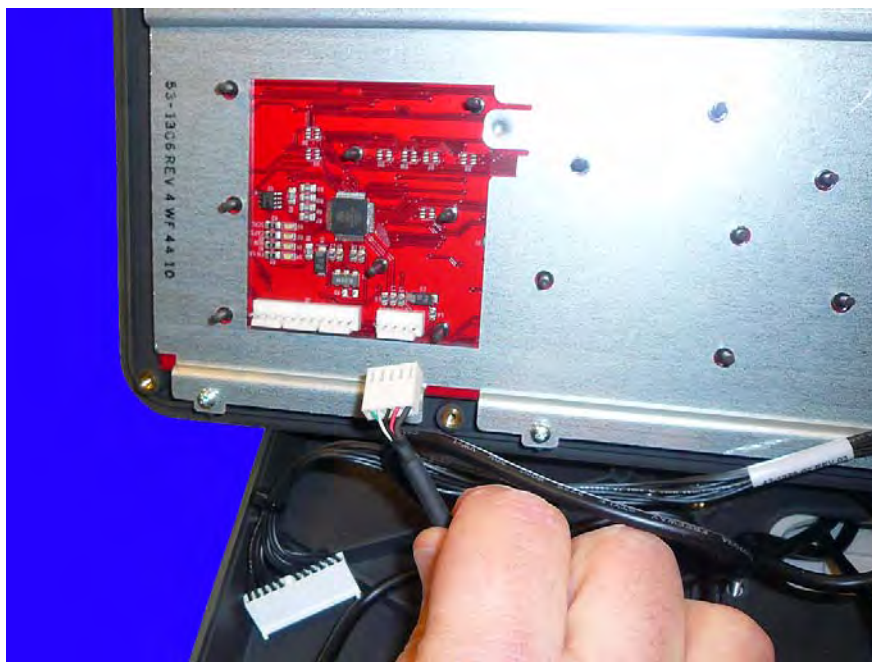


Figure 3-3. Disconnect the data connector

7. Feed the UI cables and the monitor cables through the opening in the UI bracket.

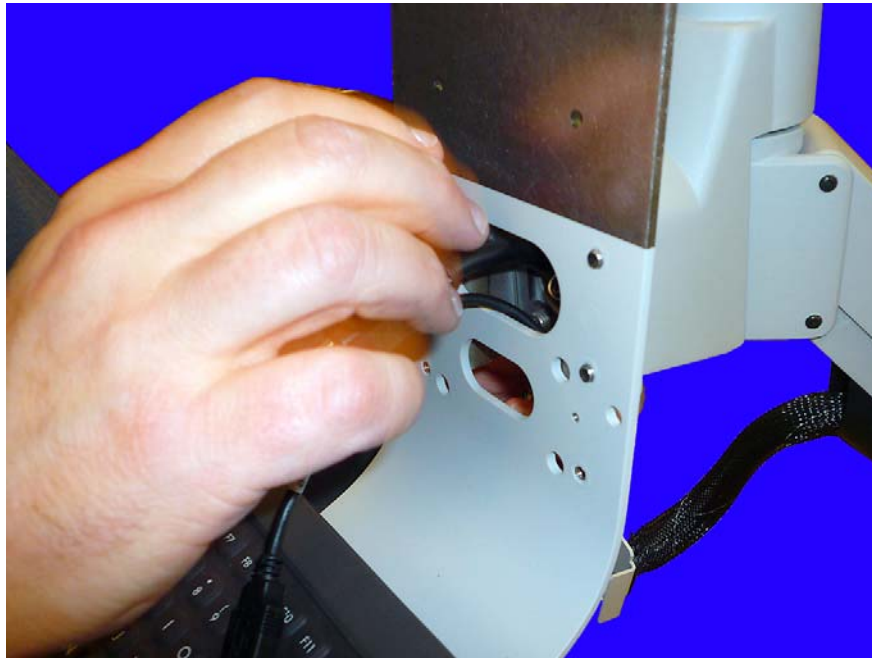


Figure 3-4. Feed the cables through the opening

8. Remove the cable harness from the UI bracket.



Figure 3-5. Remove the cable assembly from the UI bracket

3-4 Removing and Replacing the Articulating Arm

Remove the Articulating Arm

9. Remove the strain relief bracket from the cable assembly by squeezing the two tabs on the plastic strain relief that secure the metal plate.



Figure 3-6. Remove the strain relief bracket

10. Place a flat blade screwdriver into the opening opposite the knob on the interior side of the relief. Twist until the plastic strain relief pops open.



Important: If the screwdriver is placed in the opening nearest the knob and turned, the strain relief may break.



Figure 3-7. Remove the plastic strain relief

11. Remove the plastic strain relief from the cable assembly.



Figure 3-8. Remove the plastic strain relief

Remove the UI Bracket

1. Remove the cap from the connector point behind the UI bracket.



Figure 3-9. Remove the cap on the arm behind the UI bracket

2. Remove the screw and washer that secures the UI bracket to the Articulating arm.



Figure 3-10. Remove the screw and washer that secures the UI bracket to the arm

3. Remove the UI bracket from the articulating arm.



Figure 3-11. Remove the UI bracket

Remove the Cable Harness from the Articulating Arm

1. Carefully remove the plastic guard that aligns the cable assembly with the upper articulating arm.



Figure 3-12. Remove the plastic cover that aligns the cable assembly with the articulating arm

2. Remove the two screws that secure the cable assembly cover to the articulating arm.

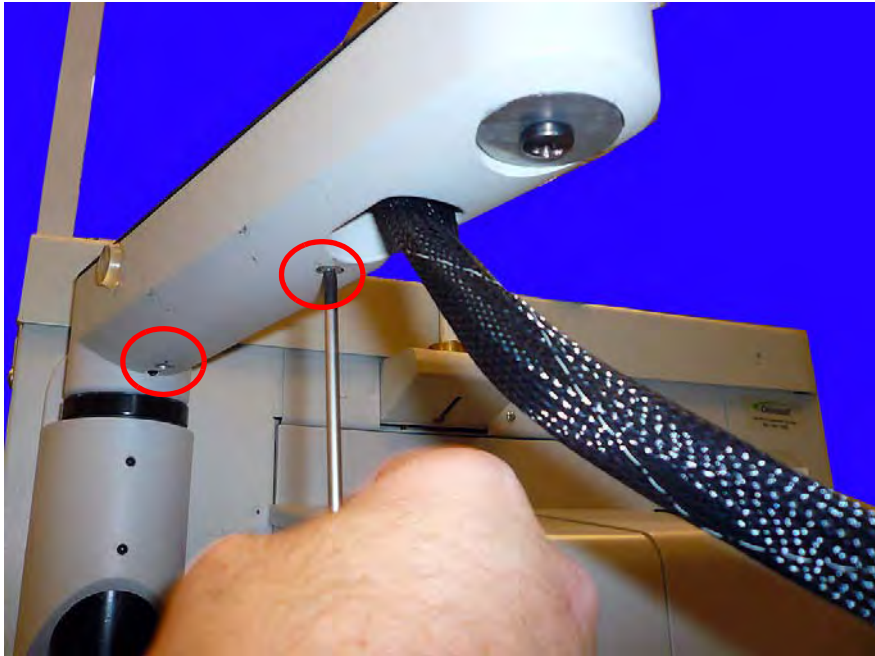


Figure 3-13. Remove the screws that secure the cable assembly cover

3. Remove the plastic cover from the lower articulating arm.
4. Remove the cable assembly from the lower articulating arm.



Figure 3-14. Remove the cable assembly from the lower articulating arm

5. Drop the cable assembly through the hole in the base of the articulating arm.



Figure 3-15. Remove the cable assembly from the articulating arm

Remove the Articulating Arm from the AWS G4



Note: Before replacing the entire articulating arm, complete an assessment of the damage to the old arm. If the problem is a gas spring failure or some sort of crack in the upper arm, replacing the lower arm may not be necessary. Also, if the lower arm does need to be replaced, the base may still be structurally intact. If that is the case, the base will not have to be replaced.

1. Loosen, but do not remove, the two screws that secure the articulating arm to the AWS G4 base.



Figure 3-16. Loosen, but do not remove the screws

2. Lift and remove the articulating arm from the base.



Figure 3-17. Lift and remove the articulating arm from the AWS G4 base

3. Remove the base from the AWS G4 by removing the two screws that secure the base to the AWS G4 frame.



Figure 3-18. Remove the base from the AWS G4 frame

Remove the Cable Harness

1. To remove the cable harness, first follow the directions in [“Remove the Cable Harness from the UI Bracket”](#) on page 3-1.
2. Next, follow the instructions in [“Remove the Cable Harness from the Articulating Arm”](#) on page 3-8.
3. Next, remove the E-Box. follow the Instructions in [“Prepare the E-Box for Removal From the AWS G4”](#) on page 4-1 and [“Remove the E-Box from the AWS G4”](#) on page 4-6.
4. Before removing the cables that are located behind the E-Box, please take note of the positions of the cables in the routing clips. When then new harness is installed, the cables need to be routed properly so that there is not too much slack on any one of the cables. If there is too much slack on any cable, the lid may not close properly.



Figure 3-19. Take note of the location of the cabling on the harness cables

5. Remove the cables from the routing clips on the G4 frame.



Figure 3-20. Remove the cables from the routing clips

6. Remove the ground strap on the inside of the E-Box enclosure.

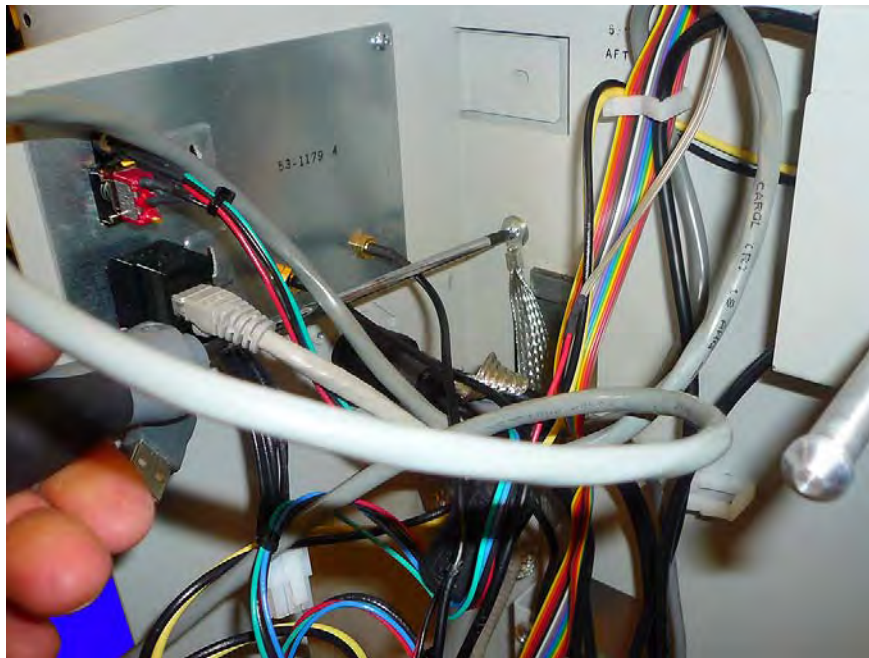


Figure 3-21. Remove the ground strap on the inside of the E-Box enclosure

7. Remove the two screws that secure the cable harness strain relief to the E-Box enclosure.



Figure 3-22. Remove the two screws that secure the strain relief to the E-Box enclosure

8. Pull the cables out through the opening, which has slotted cutouts to help the video cable fit through.

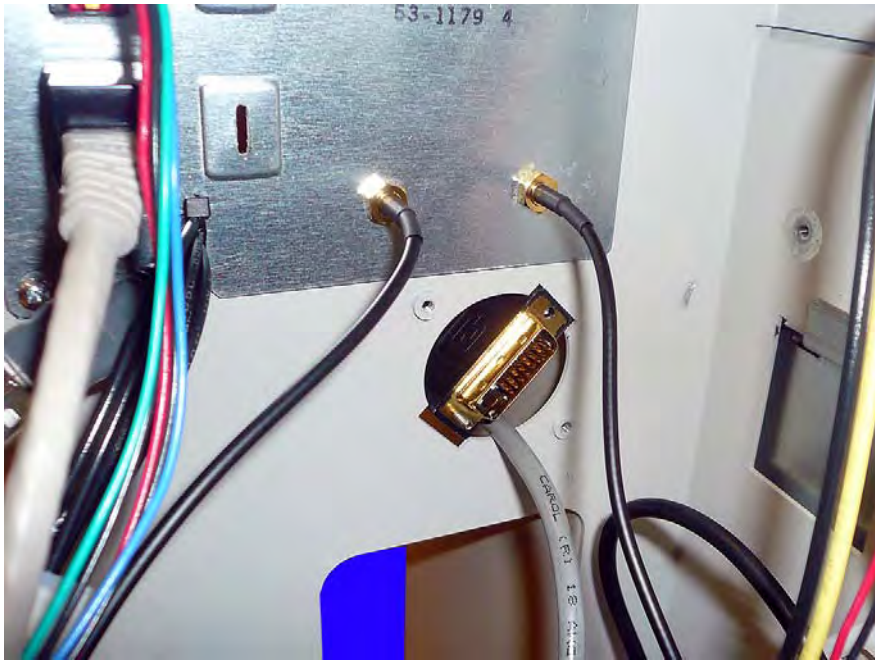


Figure 3-23. Remove the cables through the strain relief cutout

9. Remove the metal clip on the strain relief. Open the plastic strain relief clip and remove it from the cable harness.



Figure 3-24. Remove the strain relief and the plastic clip from the cable harness

3-16 | Removing and Replacing the Articulating Arm

Remove the Cable Harness

Removing and Replacing the E-Box on the AWS G4

The E-Box on the AWS G4 is located on the left side of the frame below the articulating arm.

Prepare the E-Box for Removal From the AWS G4

1. Use cam lock key #2378 to unlock the E-Box cover.

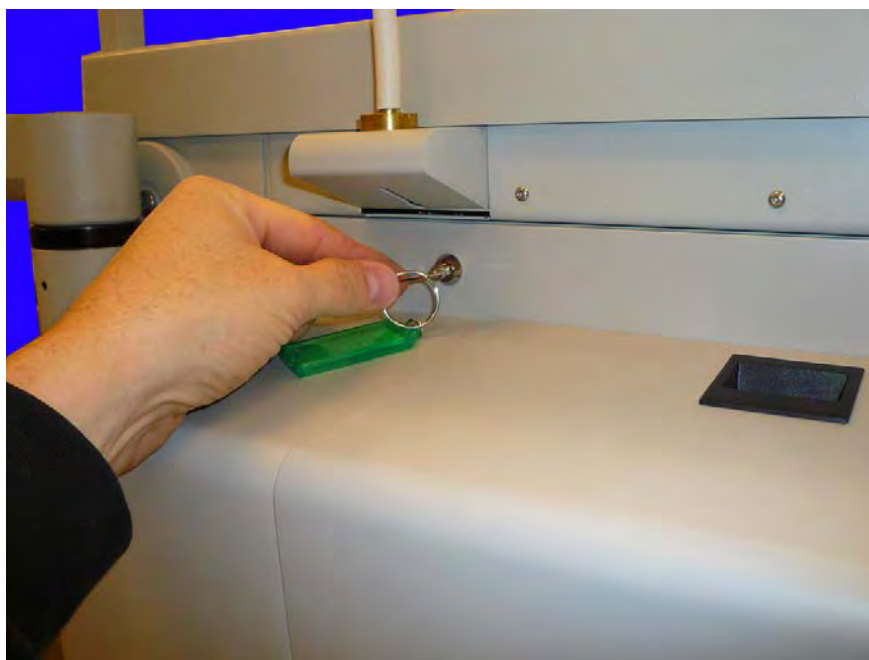


Figure 4-1. Unlock the E-Box cover

2. Pull the lever to release the cover.

4-2 Removing and Replacing the E-Box on the AWS G4

Prepare the E-Box for Removal From the AWS G4

3. Pull the E-Box cover out from the AWS G4 frame and remove it.

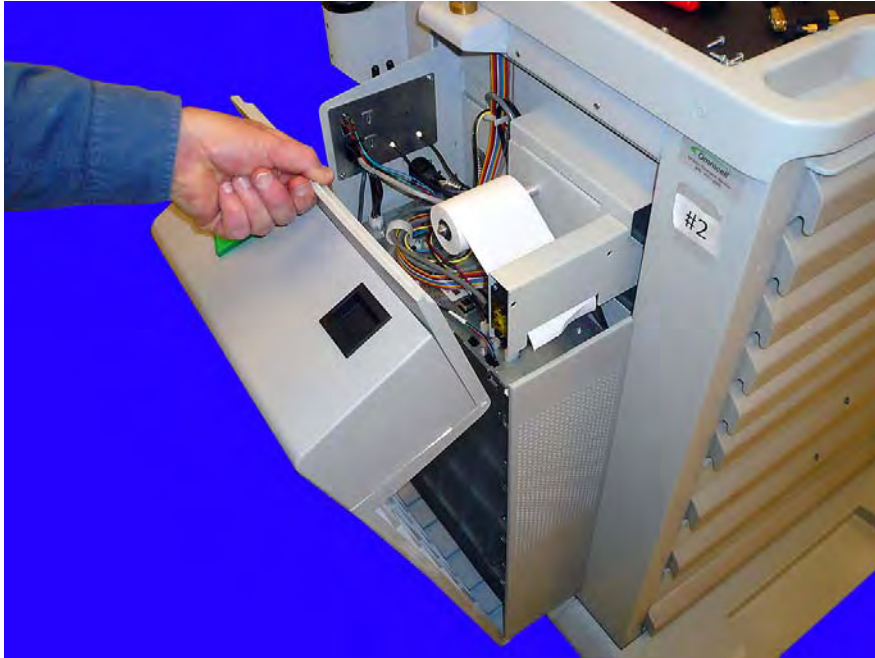


Figure 4-2. Remove the lid

4. Disconnect the ERB cable, if present.

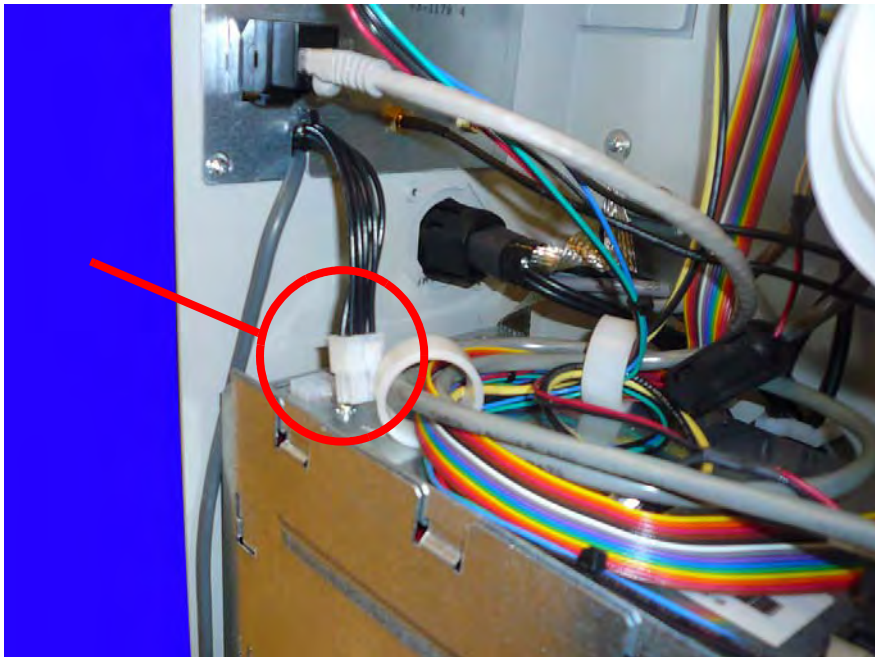


Figure 4-3. Remove the ERB cable, if present

5. Remove the power switch cable and any power cables that may be attached to the top side of the E-Box.

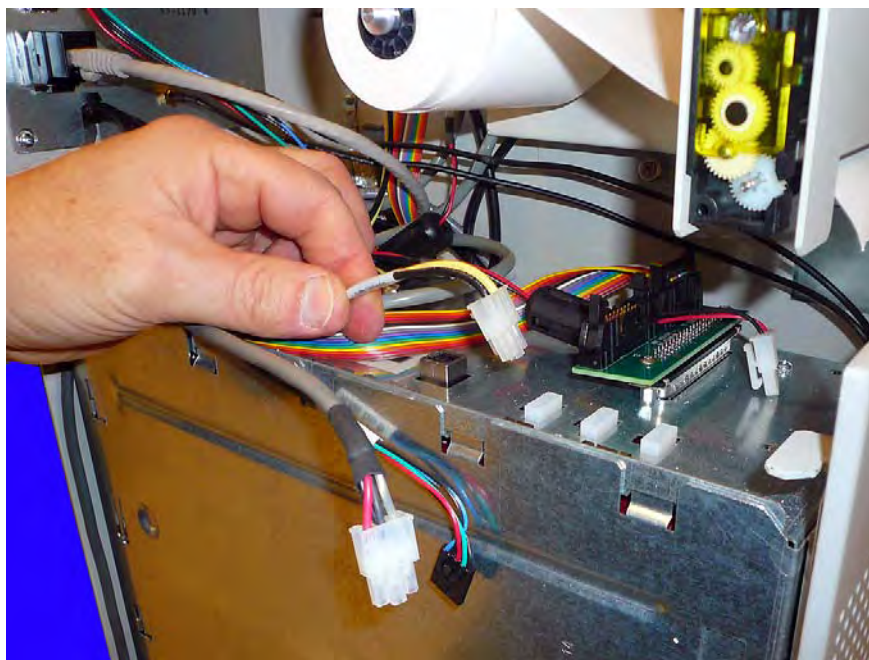


Figure 4-4. Remove the cables connected to the top of the E-Box

6. Lift the platen lever and remove the printer paper from the spool.



Figure 4-5. Lift the platen lever and remove the printer paper from the spool

7. Disconnect the wireway ribbon cable from the wireway card on the E-Box.

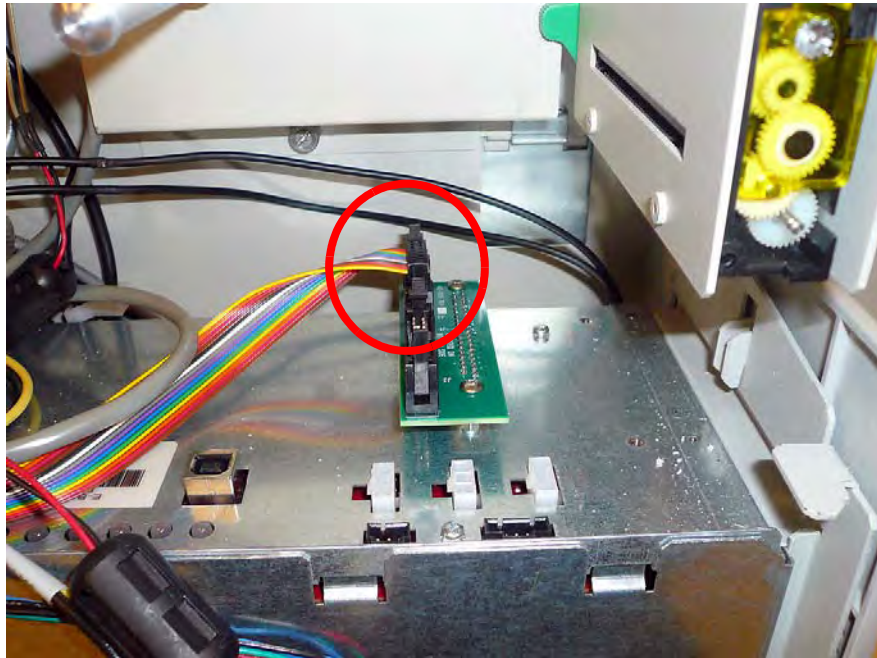


Figure 4-6. Remove the wireway ribbon cable from the wireway card

8. Remove the cables from the plastic cable organizer on the top of the E-Box.

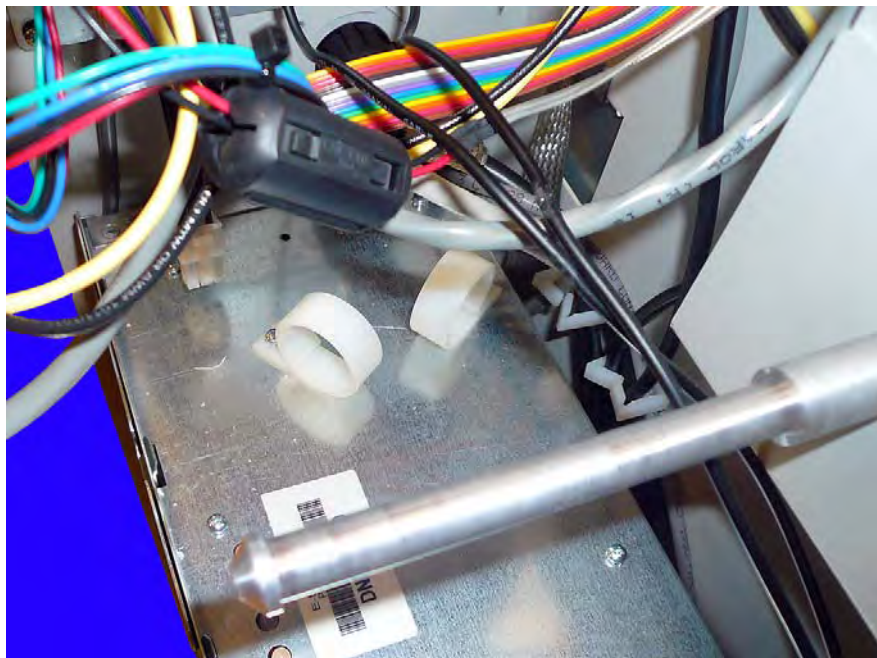


Figure 4-7. Remove the cables from the cable organizers

9. Remove the cables from the bottom of the E-Box.



Figure 4-8. Remove the cables from the bottom of the E-Box

10. If the AWS G4 has wireless connectivity, disconnect the two wireless data cables.

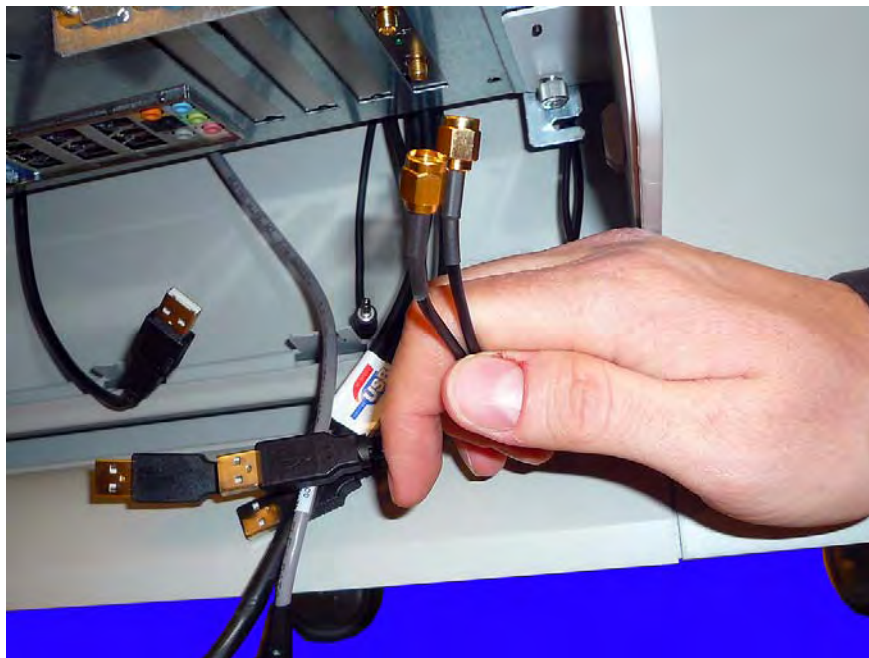


Figure 4-9. Remove the wireless connectors

Remove the E-Box from the AWS G4

1. Remove the two thumb screws at the base of the E-Box. Use a screwdriver if necessary.

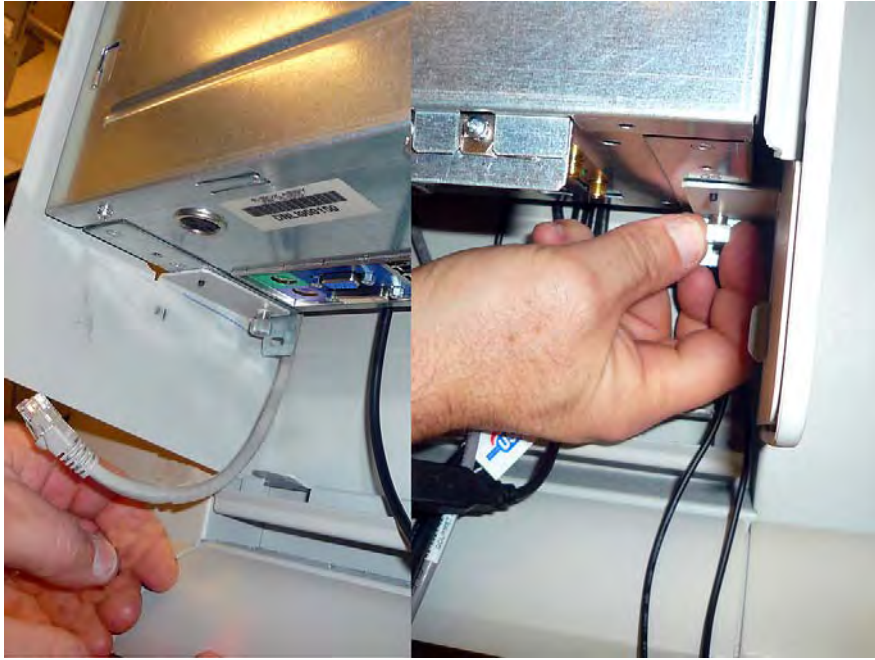


Figure 4-10. Remove the thumb screws from the base of the E-Box

2. Lift the E-Box up and back to disengage it from the keyhole retainers, which are located behind the E-Box. Remove it from the enclosure.



Figure 4-11. Lift and remove the E-Box from the enclosure

Remove the Printer

1. If the E-Box cover has not been removed, remove the E-Box cover. Use key #2378 to open the cover.
2. Turn the printer bracket lever up away from the bottom of the printer wall.



Figure 4-12. Turn the printer bracket lever up

3. Loosen the thumb screw located below the printer paper.



Figure 4-13. Loosen the thumb screw

4. Push in slightly on the printer bracket to expose the tab that secures the bracket behind the G4 frame wall.



Figure 4-14. Push the printer bracket in slightly

5. Pull the bottom of the printer bracket out from the frame to release the bracket tab from the frame.



Figure 4-15. Pull the bottom of the printer bracket

6. Slide the top of the printer bracket from the opening and remove it from the enclosure.



Important: Do not lift the bracket too far from the enclosure, USB cables still connect the printer to the wiring chassis and can be damaged if pulled.

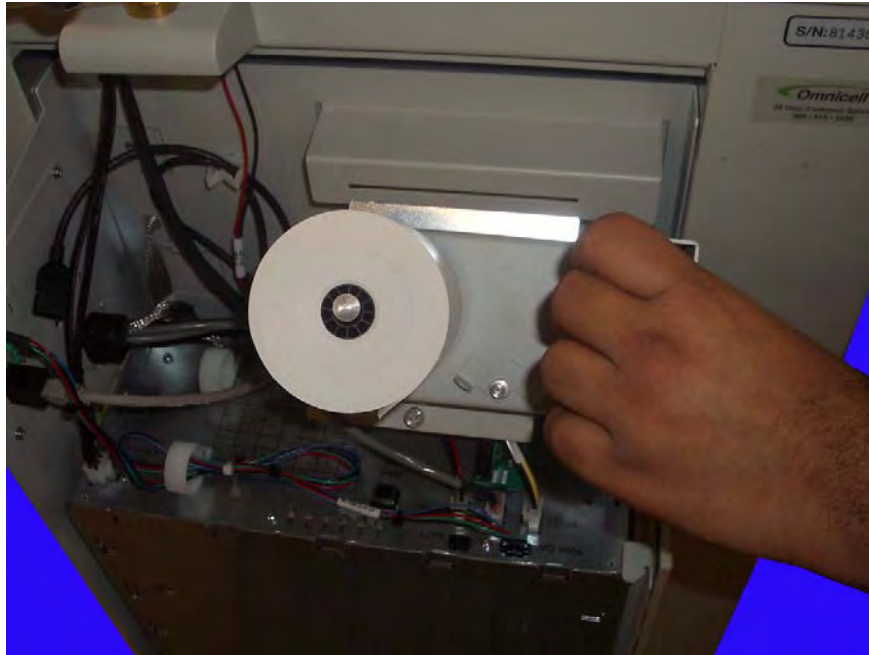


Figure 4-16. Remove the printer assembly from the enclosure.

7. Use a zip tie cutter to remove the zip tie that secures the USB printer to the side of the printer bracket.

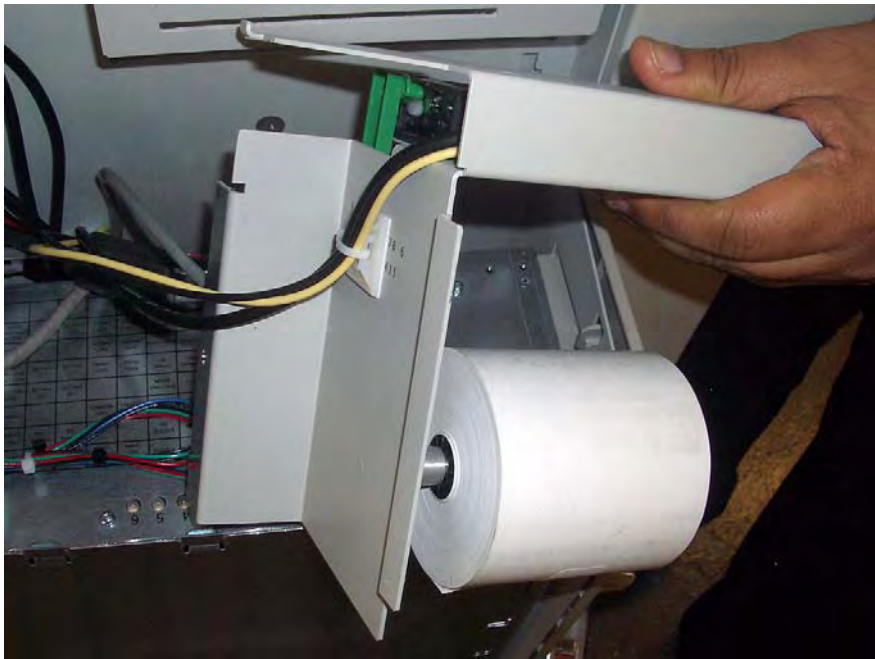


Figure 4-17. Cut the zip tie that secures the USB cable to the printer bracket

8. Remove the two screws that secure the printer in the printer enclosure. Use a Torx T10 driver.

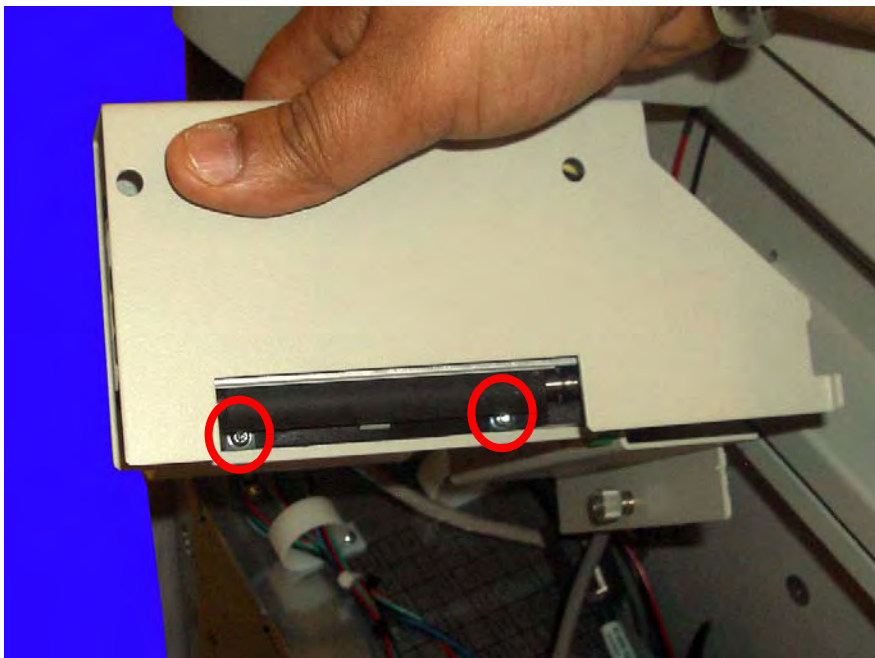


Figure 4-18. Remove the two screws that secure the printer to the bracket.

9. Remove the printer from the enclosure.

10. Remove the mini USB cable connector from the printer.

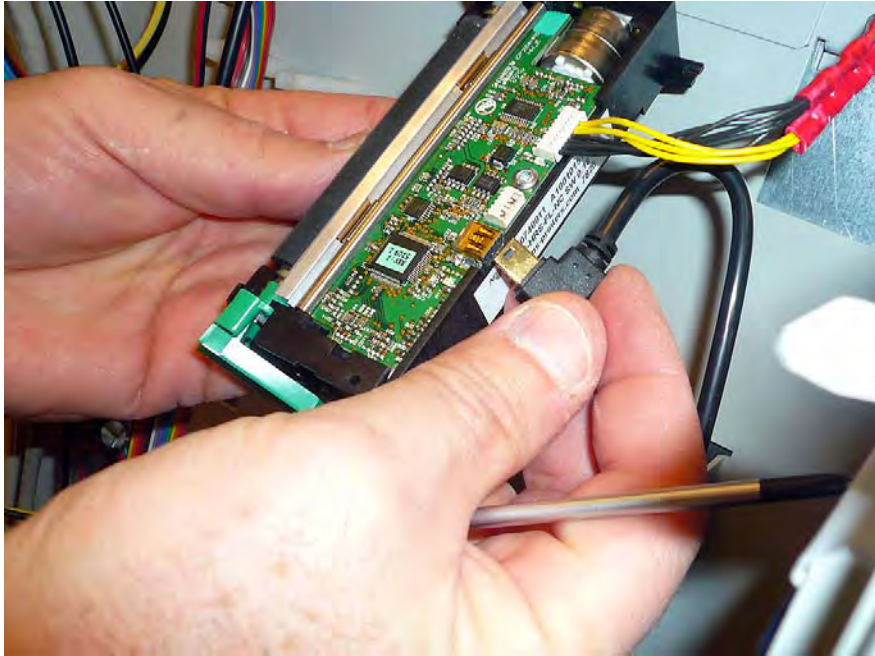


Figure 4-19. Remove the mini USB connector from the printer

11. Remove the power connector from the printer.

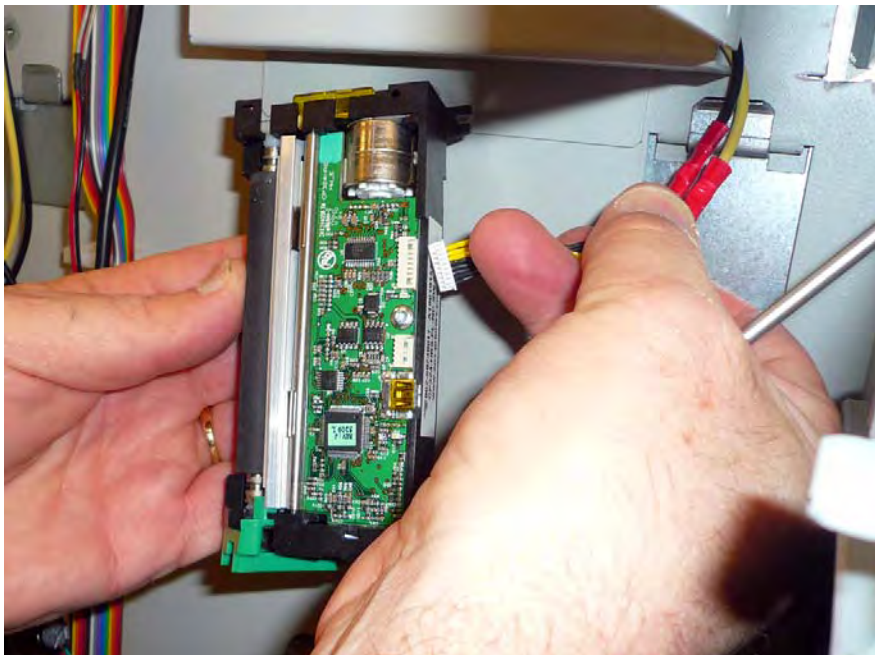


Figure 4-20. Disconnect the power cable from the printer

Glossary

Glossary_Term	Glossary_Description
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