Installation Guide

Retrofit Kit for USB Ready Intraoral Systems

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Wall-Mount Retrofit Kit

Introduction

The retrofit kit can be used to upgrade existing intraoral systems made between July 2008 and October 2010. These intraoral systems have USB cables already installed in the Articulated and Horizontal Arms.

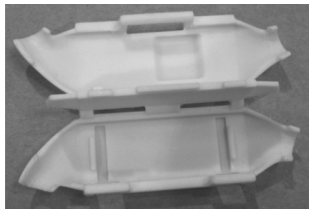
Note: The upgrade has to be accomplished after the intraoral system is installed.

Connecting the Articulating and Horizontal Arm Cables

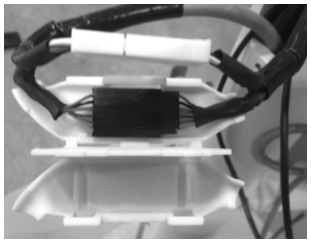
1. Open the Access Plate of the Horizontal Arm and pull out the connectors that connect the two Articulating Arm cables to the Horizontal Arm cables, as shown in Figure 1.

Figure 1: Connectors between Articulating Arm and Horizontal Arm Cables

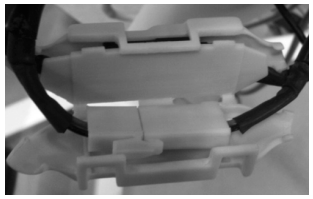
2. Install the Isolator following the steps shown on Figure 2. The purpose of the Isolator is to keep the connectors from pulling apart over time and provide additional insulation between the high voltage cables and the USB cable.



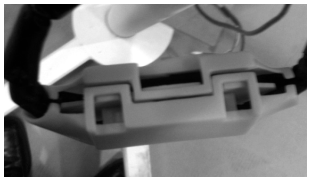
The Isolator is divided into two separate compartments



Place the black connector into the portion of the Isolator with an indentation



Close the compartment with the black connector. Place the white connector in the next compartment.



Close the second compartment

Figure 2: Installing the Isolator in the Horizontal Arm

3. Locate the USB cable originating from the Articulating Arm. Ensure that it is connected to the USB cable located in the Horizontal Arm, as shown on Figure 3.

   Note: Feed the excess USB cable into the Horizontal Arm taking care not to damage or pinch the USB cable.

Figure 3: Connecting optional Integrated Sensor Cable

4. Once the connections are verified and the Isolator is installed, dress the cables and push into the opening in the Horizontal Arm. Re-install the Access Plate.

Installing the Powered USB Hub

CAUTION!
Turn off the circuit breaker supplying power to the Intraoral unit or unplug the line cord.

1. Remove the cover from the Control Unit.
2. Disconnect mains wires from J4 on the Power Supply Board 30-08041.
3. Disconnect the ground wires from P1 and P2 on the Power Supply Board 30-08041.
4. Disconnect the cables from J1, J2, and J3 on the Power Supply Board 30-08041.

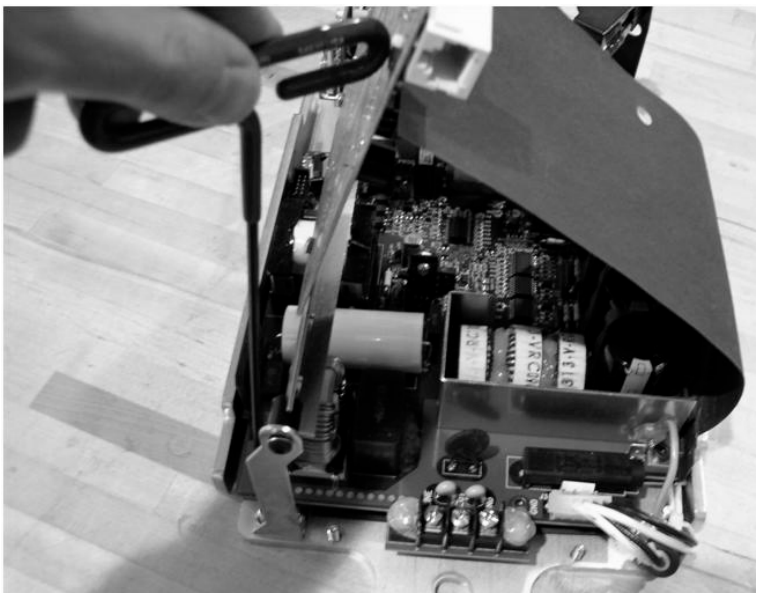


Figure 4: Disconnected Power Supply Cord

5. Use a 3 mm hex wrench to remove the mounting screws from the Power Supply Board 30-08041 (Figure 4).
6. Remove the Power Supply Board 30-08041 from the chassis.
7. Remove the fish paper from the chassis.
8. Use a 7 mm nut driver to remove the nuts that hold the Power Switch Harness Shield as shown on Figure 5.

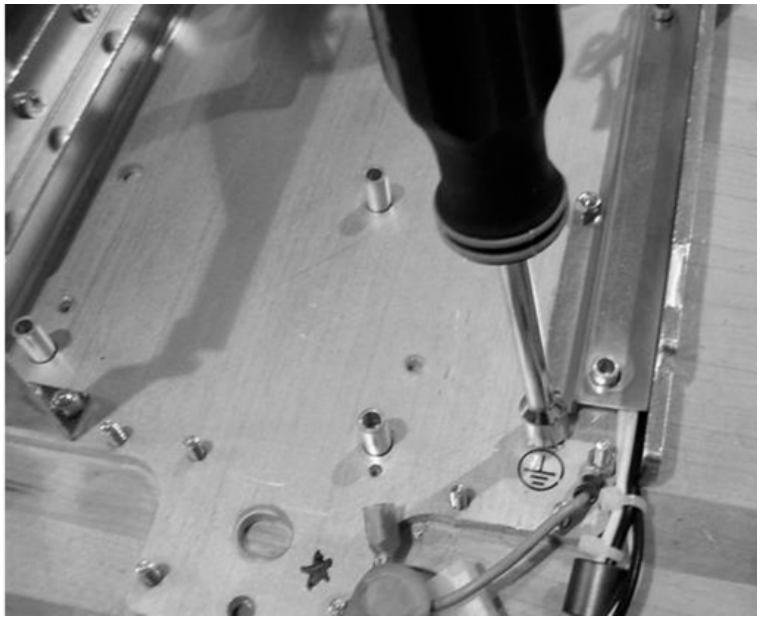


Figure 5: Removing the Power Switch Harness Shield

9. Use a 7 mm nut driver to remove the nut holding the Power Switch Bracket to the chassis as shown on Figure 6.

Figure 6: Removing the Power Switch Bracket

10. Use a 3 mm hex wrench to remove the two screws holding the Power Switch Bracket to the Casting as shown on Figure 7.

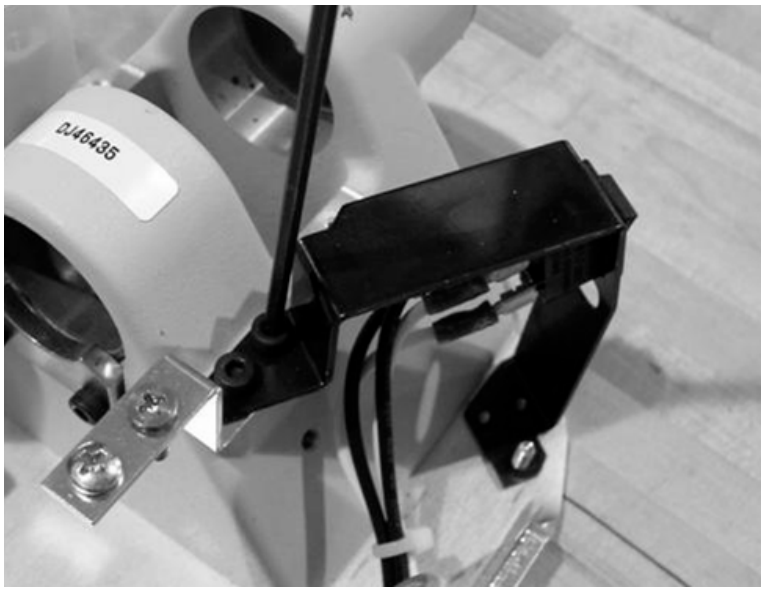


Figure 7: Removing the screws holding the Power Switch Bracket to the Casting

11. Remove the power switch harness from the chassis.
12. Lay the replacement Power Switch Harness into the Chassis as shown on Figure 8.

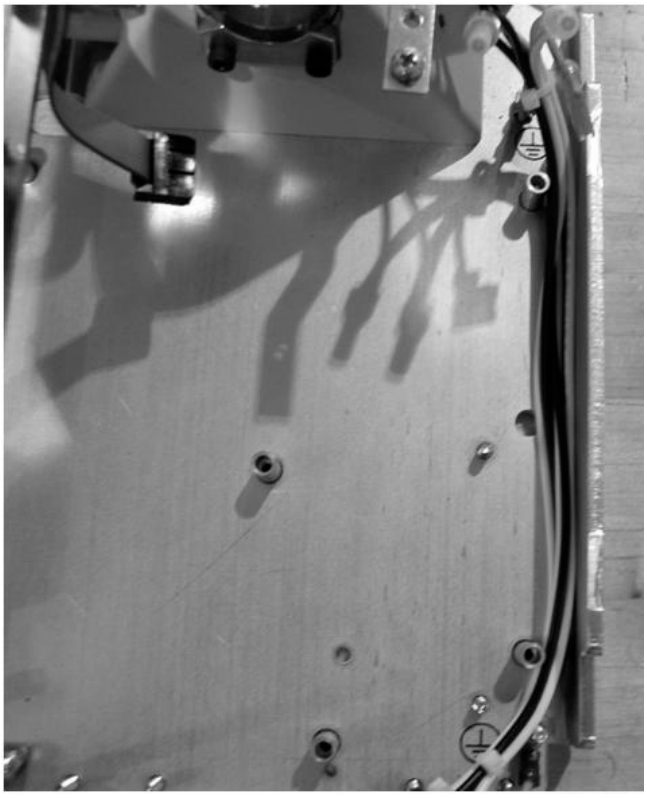


Figure 8: Laying the Replacement Power Switch Harness

13. Replace the nut and screws that hold the new Power Switch Bracket as shown on Figure 9.

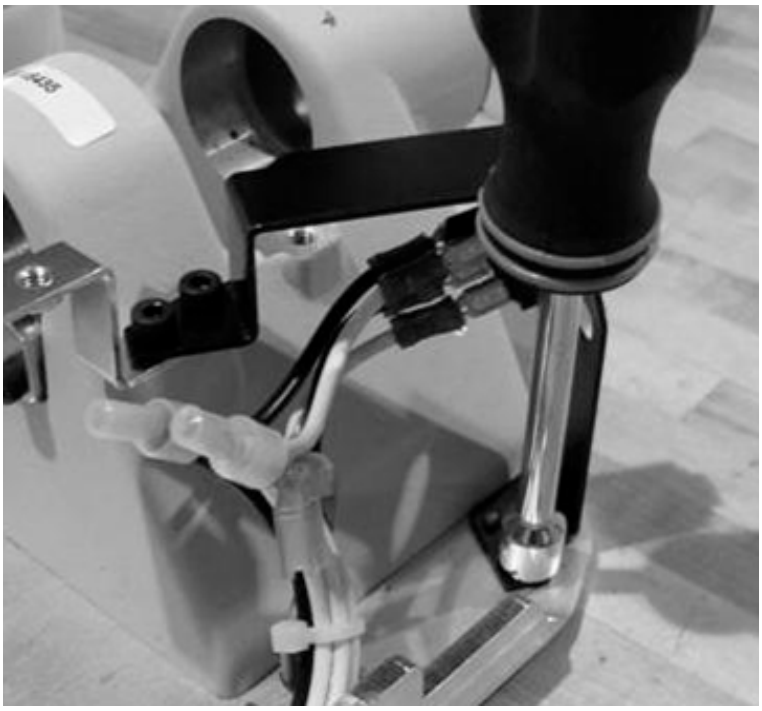


Figure 9: Attaching the new Power Switch Bracket

14. Use a 7 mm nut driver to replace the nuts that hold the Power Switch Harness Shield as shown on Figure 10.

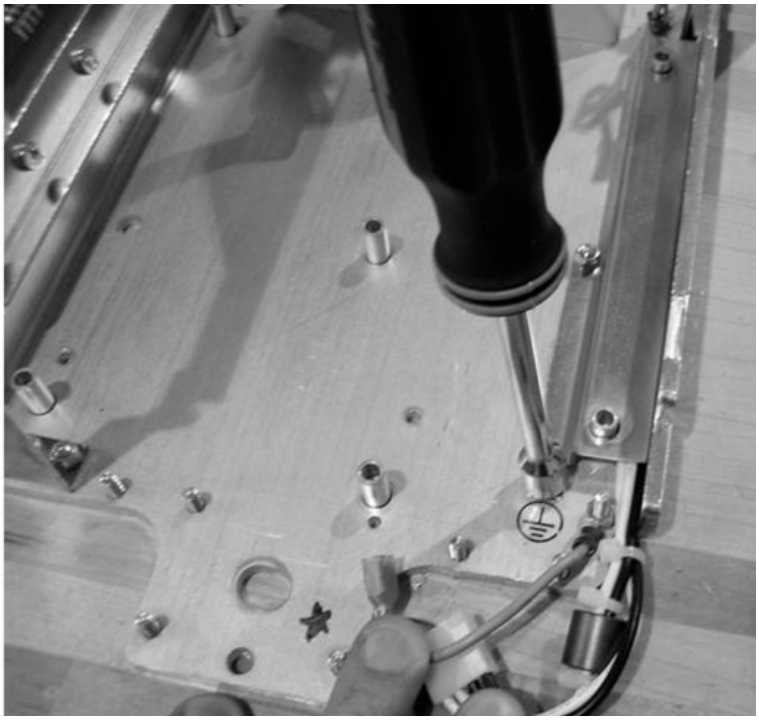


Figure 10: Replacing the Power Switch Harness Shield

15. Use a 6 mm nut driver to attach the Plastic Standoffs to the Casting as shown on Figure 11.

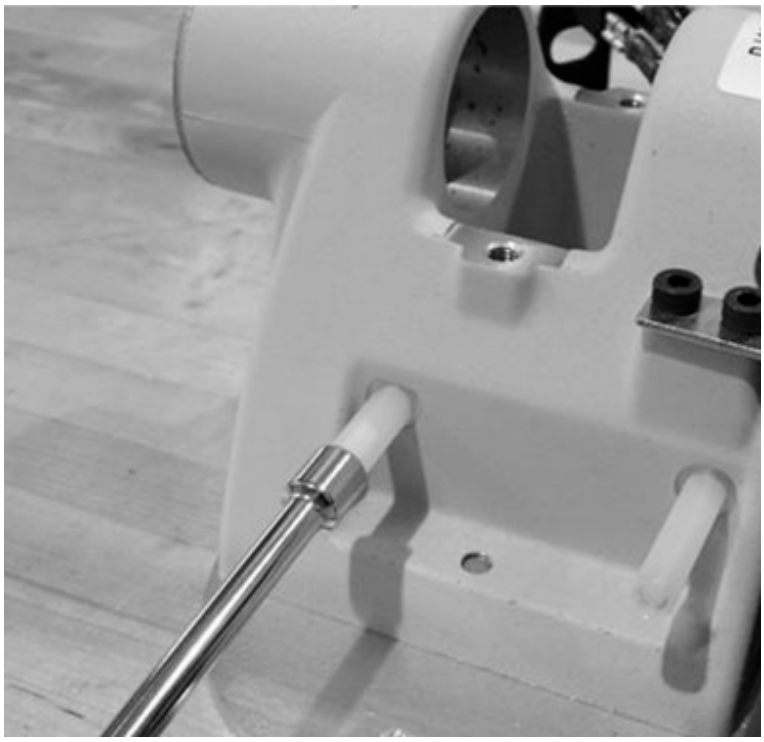


Figure 11: Attaching the Plastic Standoffs to the Casting

16. Use the 2.5 mm hex wrench to attach the USB Hub (part #30-08155) to the plastic standoffs with two screws as shown on Figure 12.

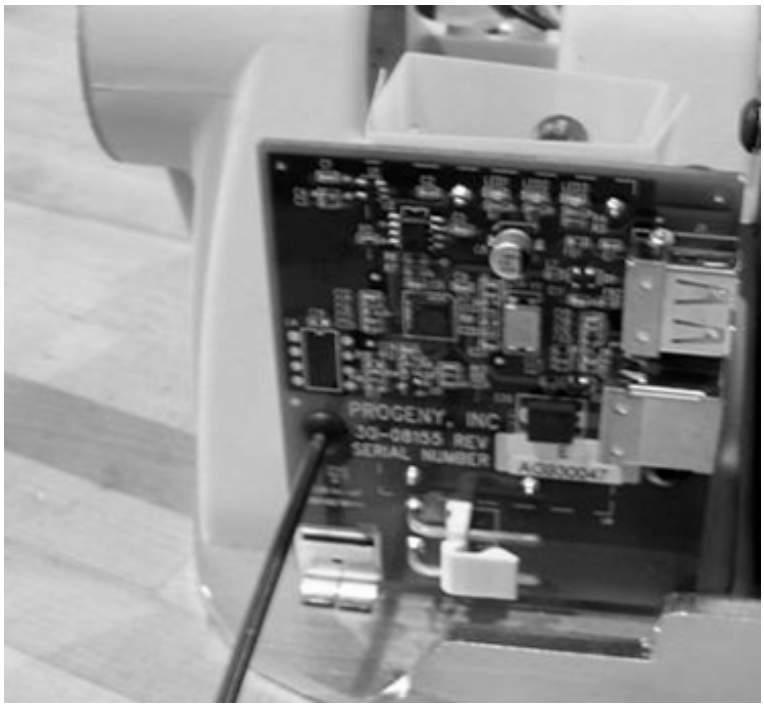


Figure 12: Attaching the USB Hub

17. Route the remaining portion of the Power Switch Harness as shown and plug it into the USB Hub as shown on Figure 13.

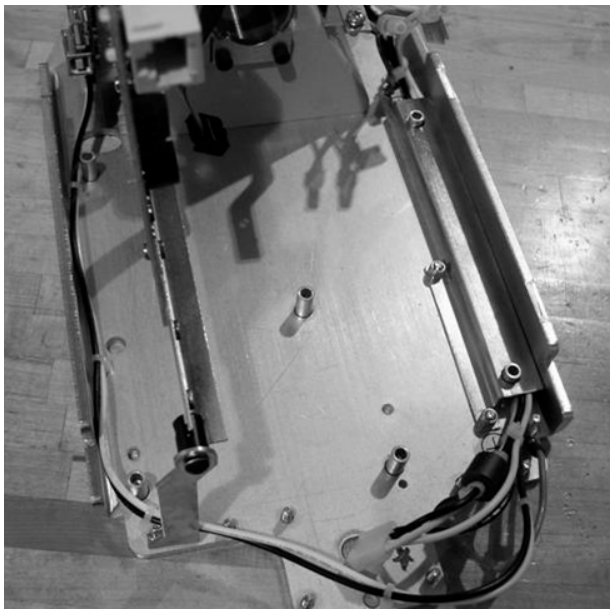


Figure 13: Routing the Power Switch Harness

18. Replace the fish paper onto the chassis.
19. Replace the Power Supply Board 30-08041 onto the chassis as shown on Figure 14.

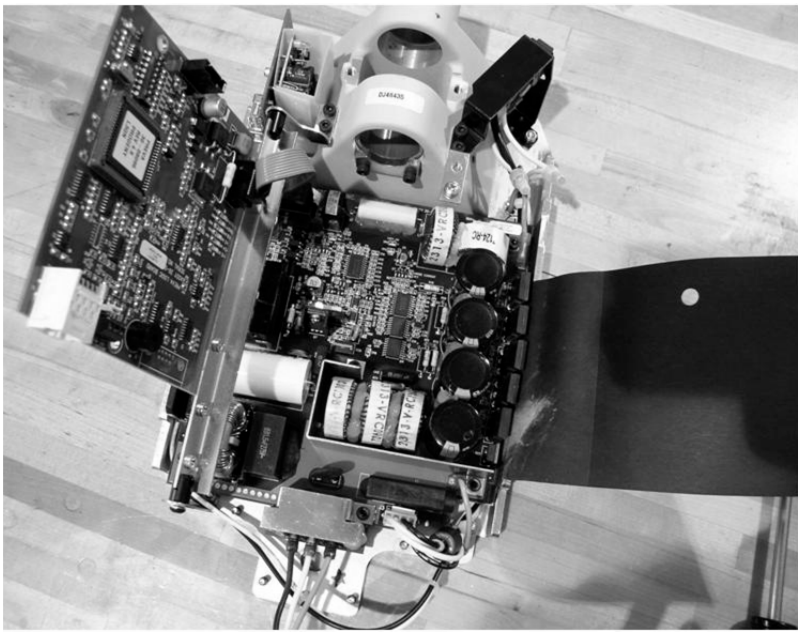


Figure 14: Replacing the Power Supply Board

20. Attach the cables to J1, J2, and J3 on the Power Supply Board 30-08041.
21. Attach the ground wires from P1 and P2 on the Power Supply Board 30-08041.
22. With power still OFF, connect mains wires from J4 on the Power Supply Board 30-08041.

Connecting the Horizontal Arm Cables to the Control Unit

1. Verify that the black connector from the Horizontal Arm is attached to point J4 of the Power Supply Control Board 30-08043, as shown in Figure 15.

   Note: The plug must be properly oriented. Be sure that the latch on the connector aligns with the latch on the PCB connector.

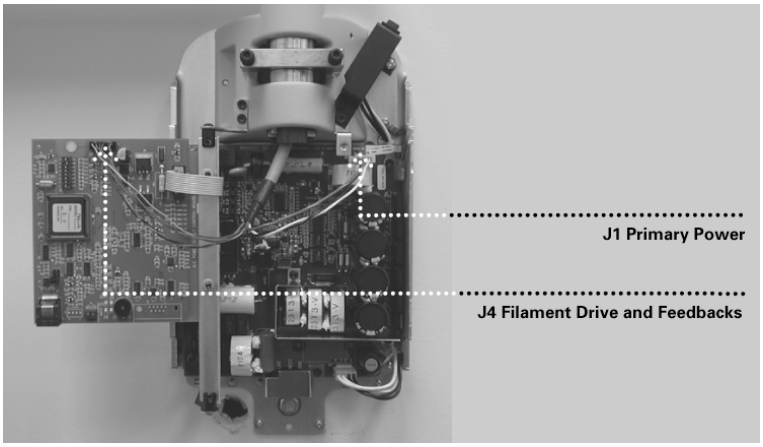


Figure 15: Connecting the Horizontal Arm Cables to the Control Unit

2. Verify that the white connector from the Horizontal Arm is attached to point J1 on the Power Supply Board 30-08041, as shown in Figure 15.

   Note: The plug must be properly oriented. Be sure that the latch on the connector aligns with the latch on the PCB connector.

Connecting the Horizontal Arm Cables to the Powered USB Hub

1. Locate the free end of the USB cable originating from the Horizontal Arm. If it is secured with a cable tie, carefully cut the cable tie.
2. Plug the USB cable from the Horizontal Arm into the Powered USB Hub at J1 (see Figure 16).
3. Attach the outbound 5 m USB cable into the Powered USB Hub at J3 (see Figure 16).

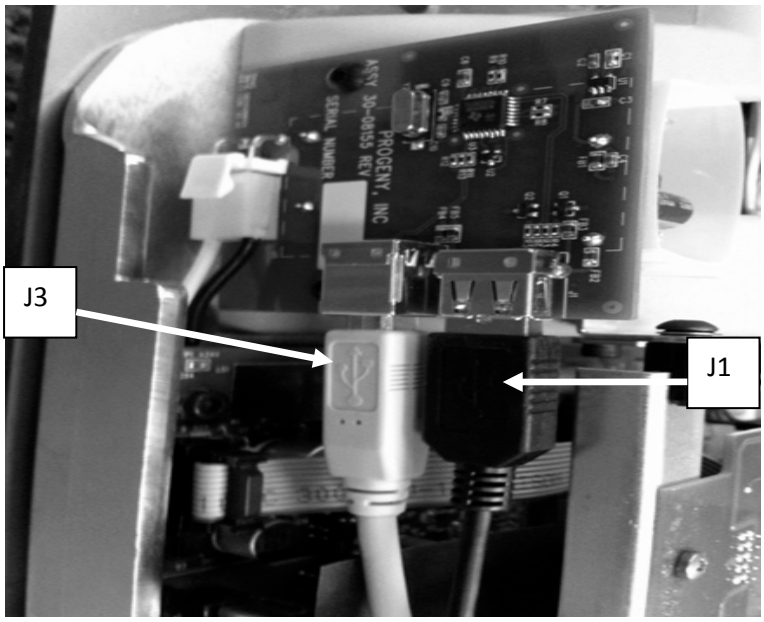


Figure 16: Connecting the Horizontal Arm Cables to the Powered USB Hub

4. Dress the outbound 5 m USB cables with cable ties as shown on Figure 17.

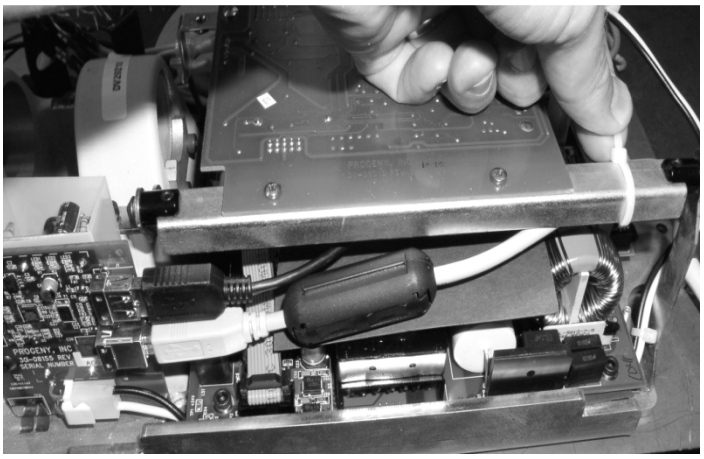


Figure 17: Dressing of the outbound 5 m USB cable

5. Attach the other end of the outbound 5 m USB cable to an available High-Speed USB port on the Computer.

Installing the Cover of the Control Unit

1. Cut and clear a notch in the control cover using a set of diagonal cutters as shown on Figure 18.
2. Feed the outbound 5 m USB extender cable through the notch in the bottom of the Control Unit cover and replace the cover.

Figure 18: Installing the Cover of the Control Unit

Installing the Optional Integrated Sensor

1. Attach the sensor holder to the Articulating Arm by peeling off the tab and exposing the sticky tape as shown on Figure 19.

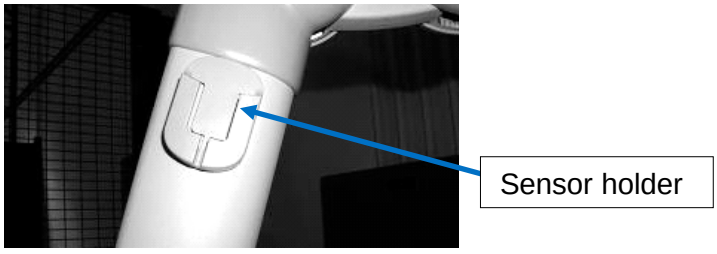


Figure 19: Attaching the Sensor Holder to the Articulating Arm

1. Remove the end caps (closest to the tube head) from the Articulating Arm by pulling them apart as shown on Figure 20.

Figure 20: Removing the End Caps

2. Locate the USB cable on the tube head end of the Articulating Arm – see Figure 21.

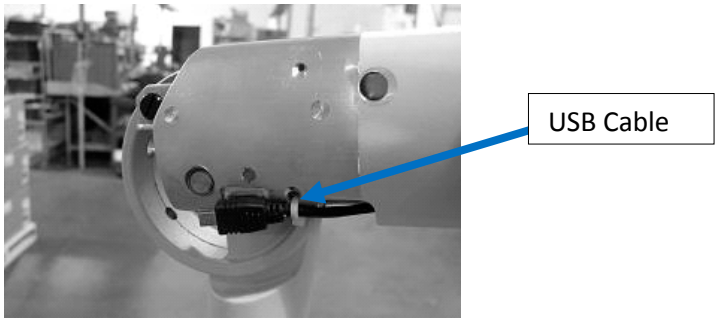


Figure 21: Location of the Cable Tie that holds the USB cable

3. Plug the USB cable into the Sensor Interface Cable as shown on Figure 22.

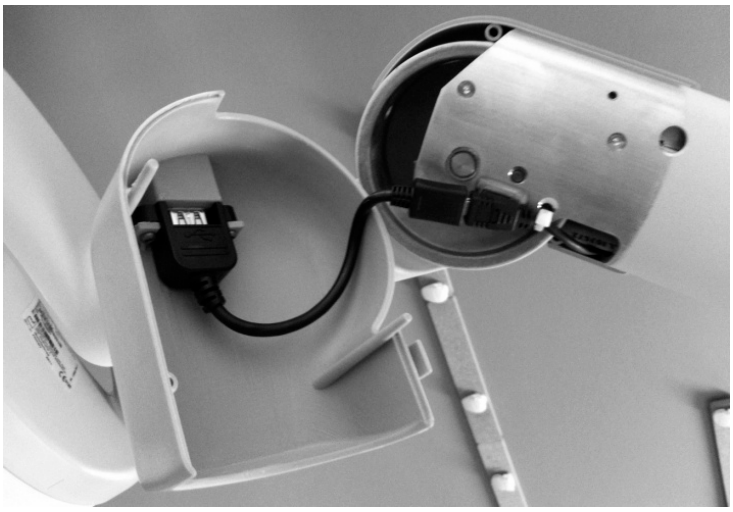


Figure 22: Installing the Sensor Interface Cable

4. Press the two matching covers together and secure with the 3 mm x 16 mm screw provided in the package (Figure 23). Use a 3 mm hex wrench to tighten.

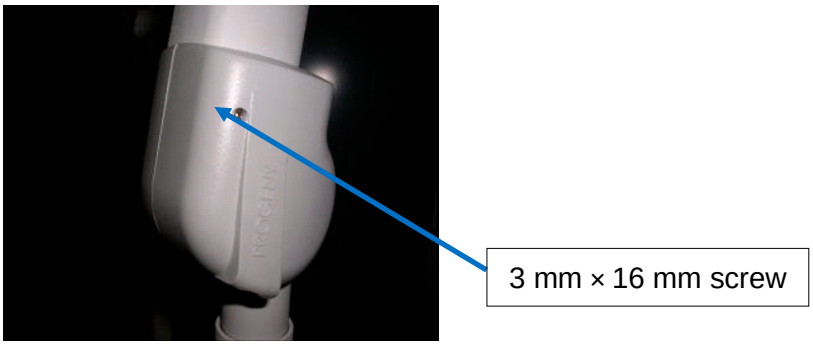


Figure 23: Installing the Matching Covers together

5. Plug the sensor connector into the Sensor Interface at the bottom of the Arm mount as shown on Figure 24.

Figure 24: Connecting the Sensor to the Sensor Interface

6. Place the sensor into the sensor holder as shown on Figure 25

Figure 25: Placing the Sensor into the Sensor Holder

Mobile Retrofit Kit

Introduction

The retrofit kit can be used to upgrade existing mobile intraoral systems made between July 2008 and October 2010. These mobile intraoral systems have USB cables already installed in the Articulated Arm and Vertical Column.

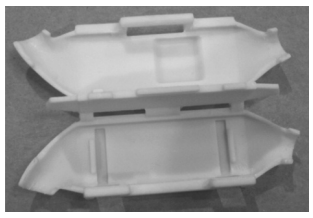
Note: The upgrade has to be accomplished after the mobile intraoral system is installed.

Connecting the Articulating Arm and Vertical Column Cables

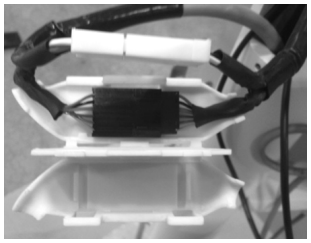
1. Connect the two Articulating Arm cables to the Vertical Column cables, as shown in Figure 26.

Figure 26: Connecting the Articulating Arm and Vertical Column Cables

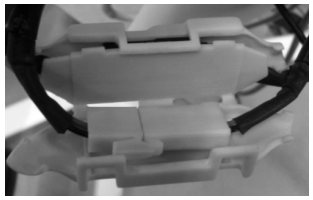
2. Install the Isolator following the steps shown on Figure 27. The purpose of the Isolator is to keep the connectors from pulling apart over time and provide additional insulation between the high voltage cables and the USB cable.



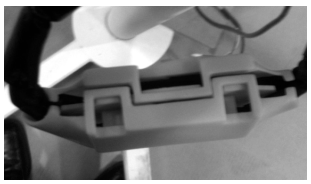
The Isolator is divided into two separate compartments



Place the black connector into the portion of the Isolator with an indentation



Close the compartment with the black connector. Place the white connector in the next compartment.



Close the second compartment

Figure 27: Installing the Isolator in the Vertical Column

3. Locate the USB cable originating from the Articulating Arm and connect it to the USB cable located in the Vertical Column, as shown on Figure 28.

   Note: Feed the excess USB cable into to the Vertical Column taking care not to damage or pinch the USB cable.

Figure 28: Connecting optional Integrated Sensor Cable

4. Once the connections are made and the Isolator is installed, dress the cables and push into the opening in the Vertical Column. Re-install the Access Plate as shown on Figure 29.

Figure 29: Re-installing the Access Plate to Vertical Column

Installing the Powered USB Hub

CAUTION!
Turn off the circuit breaker supplying power to the Intraoral unit or unplug the line cord.

1. Remove the cover from the Control Unit.
2. Disconnect mains wires from J4 on the Power Supply Board 30-08041 (Figure 30).

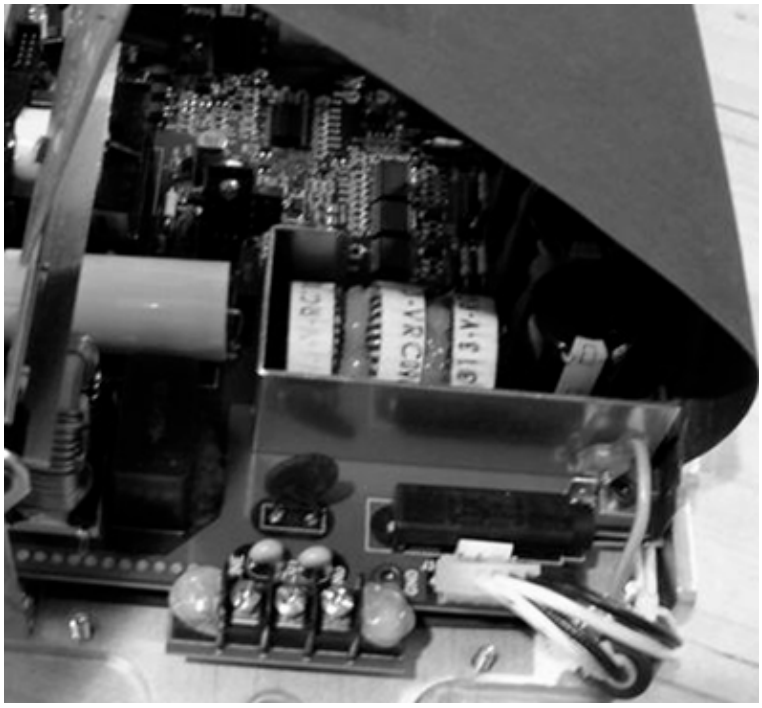


Figure 30: Disconnected Power Supply Cord

3. Use a 6 mm hex wrench to detach the Control Unit assembly from the Mounting Plate as shown Figure 31. Two bolts with two washers have to be unscrewed.

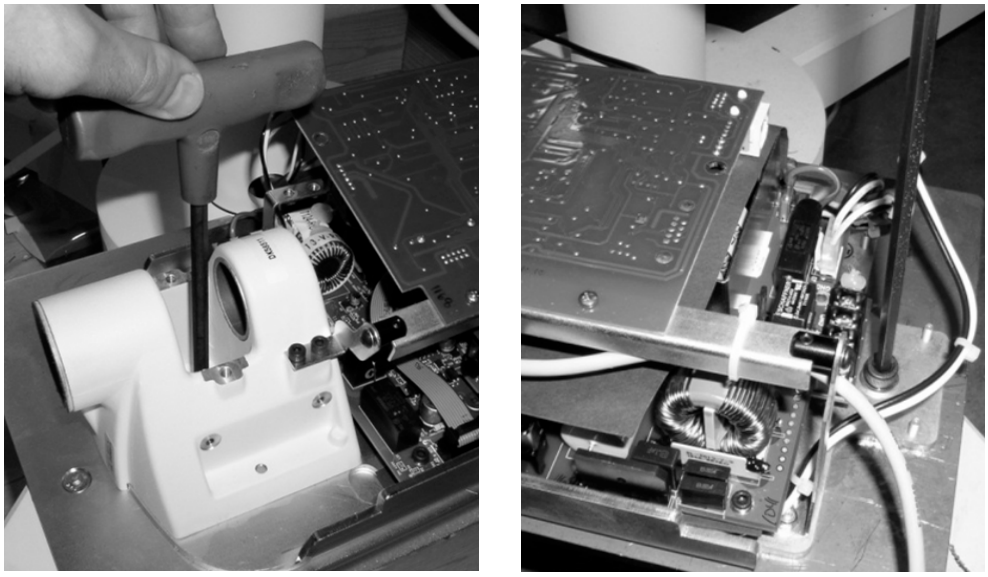


Figure 31: Detaching the Control Unit assembly from the Mounting Plate

4. Replace the Mounting Plate, Control (30-M0049) with the provided one by using a 4 mm hex wrench unscrewing the 4 Flat Head Socket Cap Screws as shown on Figure 32.

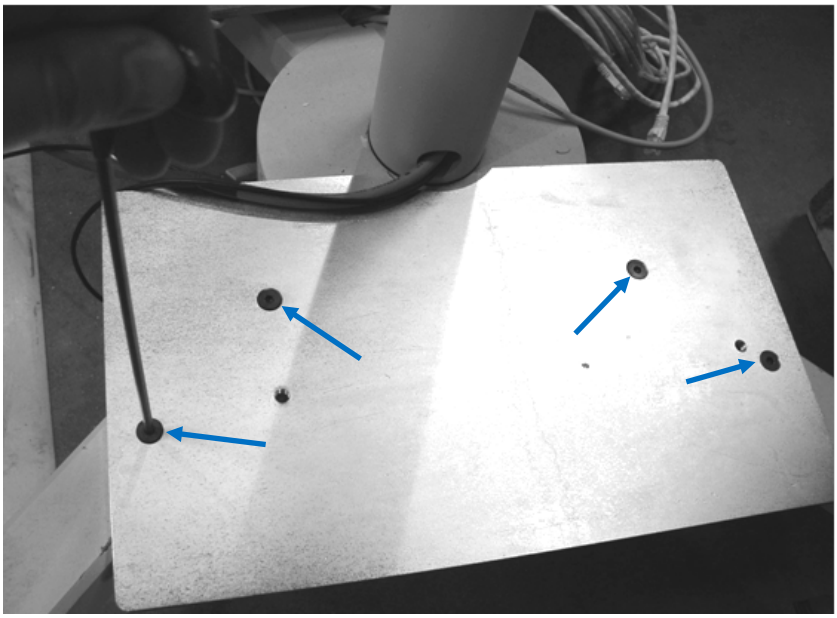


Figure 32: Replacing of the Mounting Plate

5. Use a 6 mm hex wrench to attach the Control Unit assembly back to the Mounting Plate as shown Figure 33. Two bolts with two washers have to be replaced and screwed to the Mounting Plate (Figure 31).

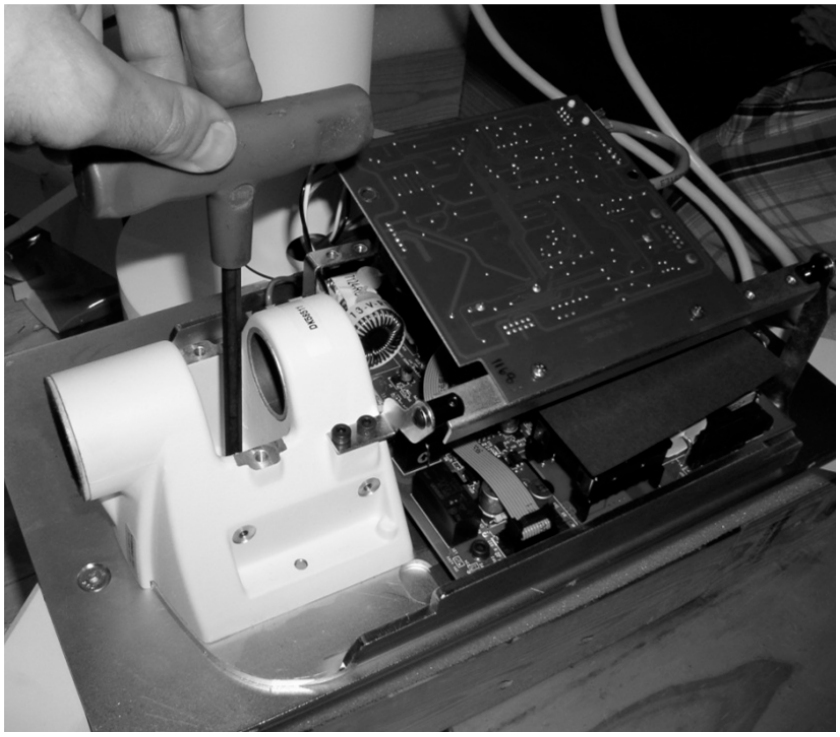


Figure 33: Attached Control Unit Assembly

6. Mount the Power Switch assembly to the Mounting Plate and attach the short power cable to J3 on the Power Supply Board 30-08041 (Figure 34).

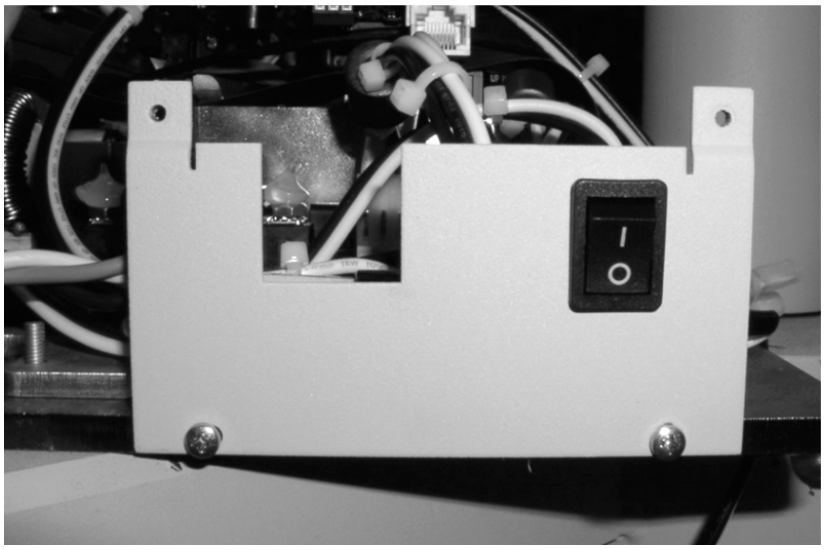


Figure 34: Mounting the Power Switch Assembly

7. Use a 6 mm nut driver to attach the Plastic Standoffs to the Casting as shown on Figure 35.

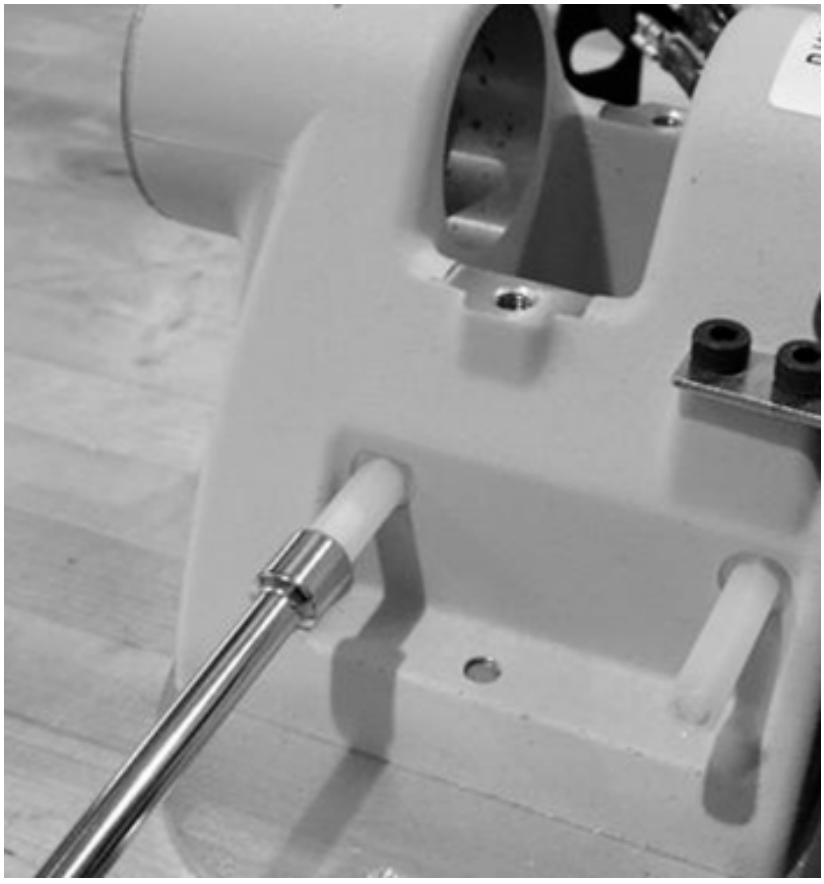


Figure 35: Attaching the Plastic Standoffs to the Casting

8. Use the 2.5 mm hex wrench to attach the USB Hub (part #30-08155) to the plastic standoffs with two screws as shown on Figure 36.

Figure 36: Attaching the USB Hub

9. Attach the cables to J1, J2, and J3 on the Power Supply Board 30-08041.
10. With power still OFF, connect mains wires from J4 on the Power Supply Board 30-08041.

Connecting the Vertical Column Cables to the Control Unit

1. Attach the black connector from the Vertical Column to point J4 of the Power Supply Control Board 30-08043, as shown in Figure 37.

   Note: The plug must be properly oriented. Be sure that the latch on the connector aligns with the latch on the PCB connector.

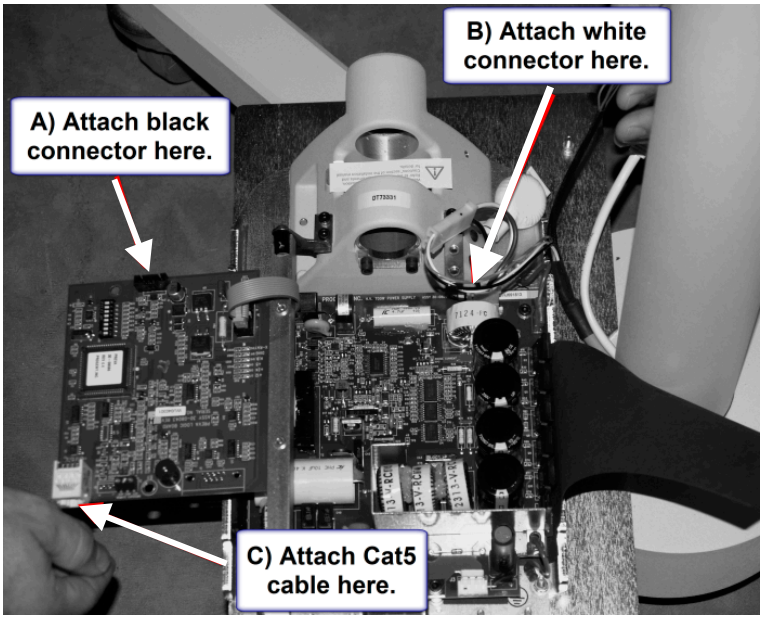


Figure 37: Connecting the Vertical Column Cables to the Control Unit

2. Attach the white connector from the Vertical Column to point J1 on the Power Supply Board 30-08041, as shown in Figure 37.

   Note: The plug must be properly oriented. Be sure that the latch on the connector aligns with the latch on the PCB connector.

3. Attach the CAT5 connector from the Vertical Column to point J1 on the Power Supply Control Board 30-08043, as shown in Figure 37.

Connecting the Vertical Column Cables to the Powered USB Hub

1. Locate the free end of the USB cable originating from the Vertical Column. If it is secured with a cable tie, carefully cut the cable tie.
2. Plug the USB cable from the Vertical Column into the Powered USB Hub at J1 (see Figure 38).
3. Attach the outbound 5 m USB cable into the Powered USB Hub at J3 (see Figure 38).

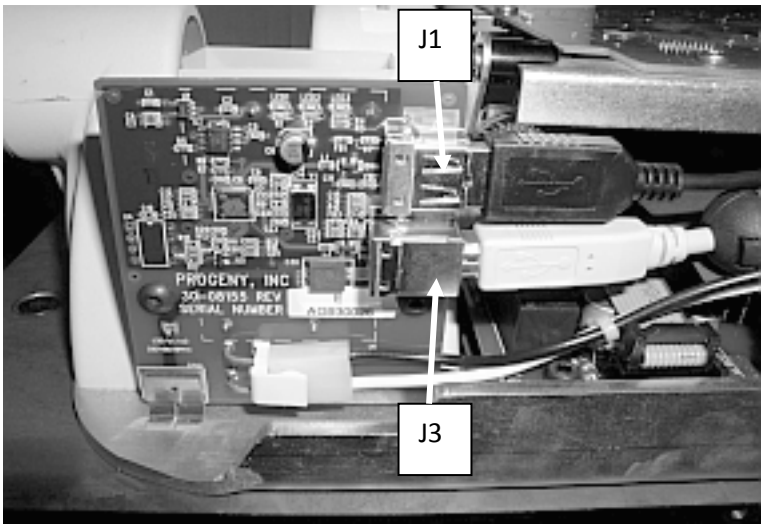


Figure 38: Connecting the Vertical Column Cables to the Powered USB Hub

4. Dress the Power and the outbound 5 m USB cables with cable ties as shown on Figure 40 and Figure 39.

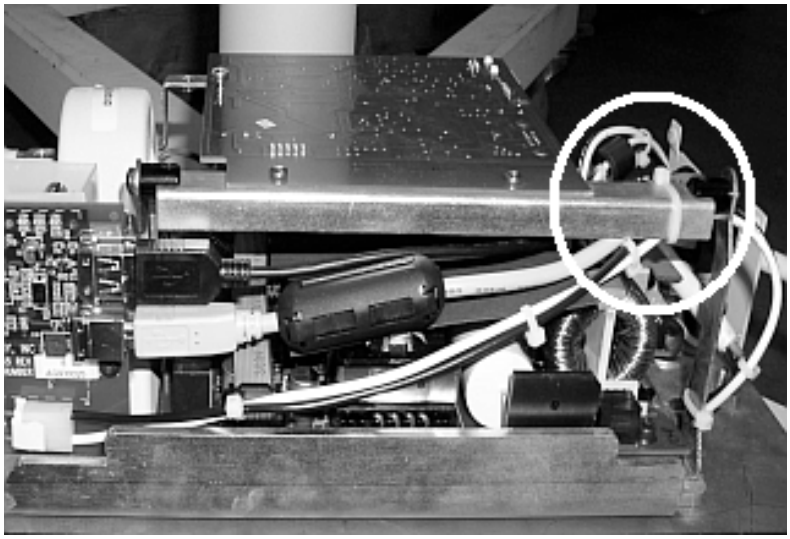


Figure 39: Dressing of the outbound 5 m USB cable

5. Pass the outbound 5 m USB cable together with the power cable through the Strain Relief as indicated on Figure 40.

   Note: Do not tighten the Strain Relief lock clamp.

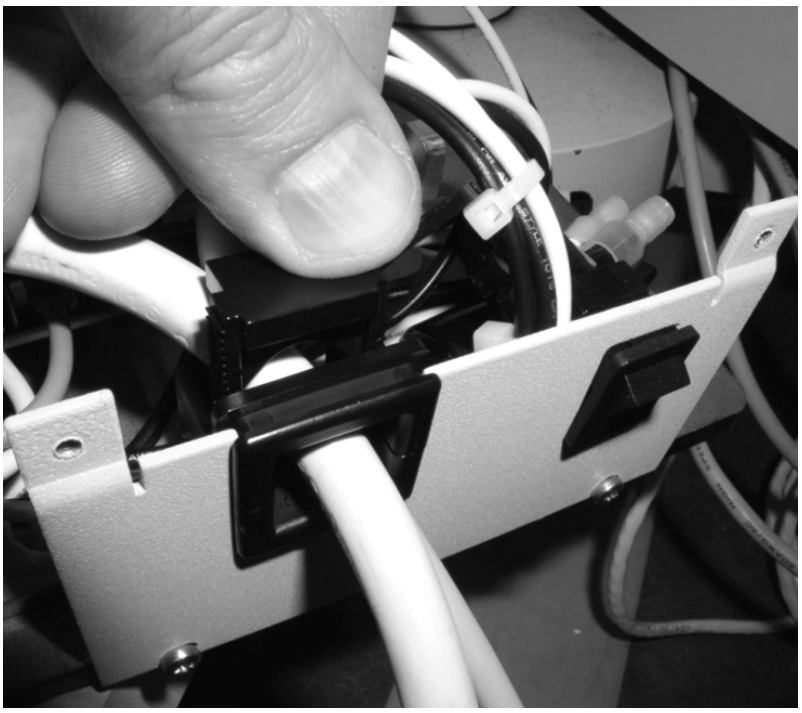


Figure 40: Placing the Power Cable and the outbound 5 m USB cable in the Strain Relief

6. Dress the power cable with cable ties as it is shown on Figure 41.

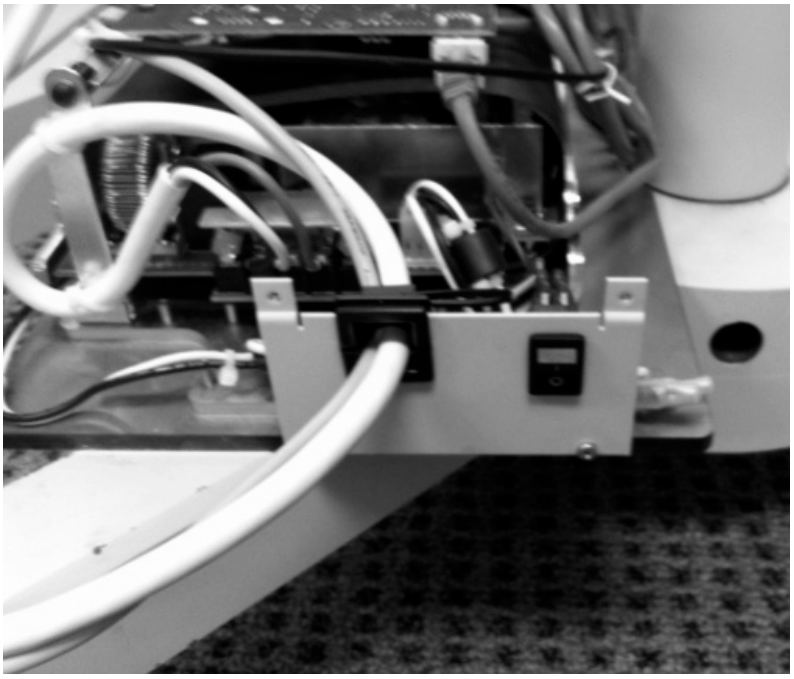


Figure 41: Power Cable Dressing

7. Press the Strain Relief lock clamp until neither of the two cables could pulled out thru the Strain Relief (Figure 42).

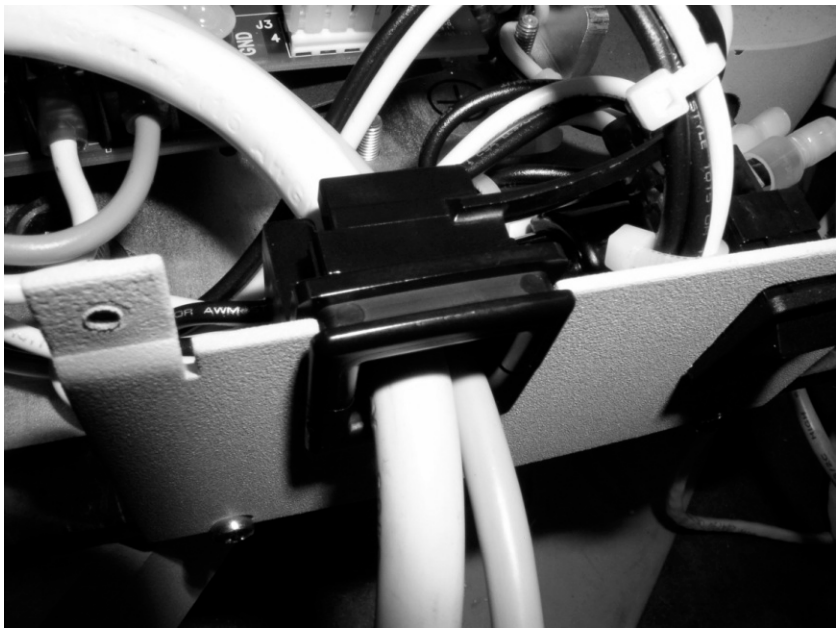


Figure 42: Outbound Cables Installed

8. Attach the other end of the outbound 5 m USB cable to an available High-Speed USB port on the Computer.

Installing the Cover of the Control Unit

1. Place, and attach, the Cover over the Control Unit as shown on Figure 43.

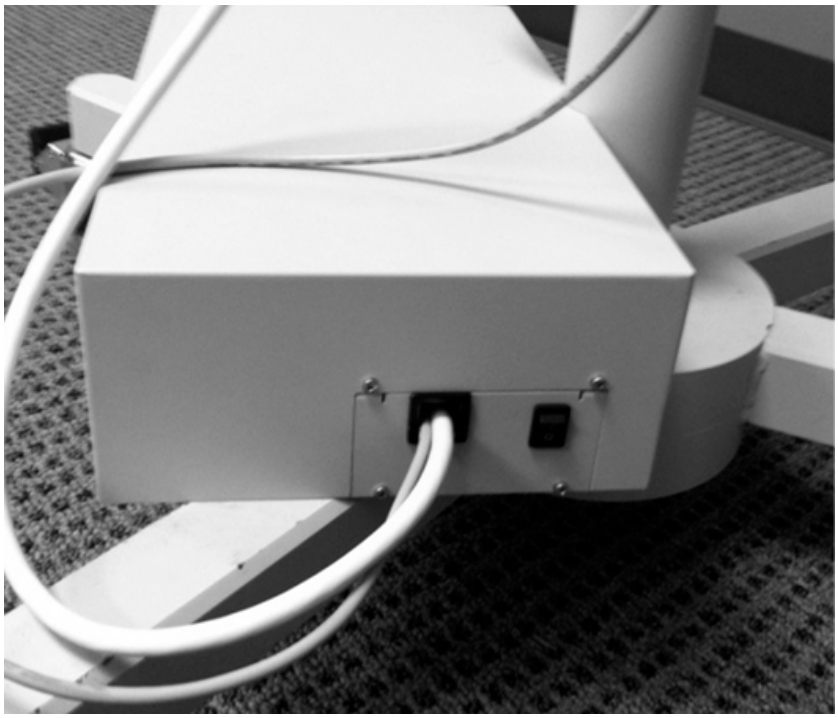


Figure 43: Installing the Cover of the Control Unit

Installing the Optional Integrated Sensor

1. Attach the sensor holder to the Articulating Arm by peeling off the tab and exposing the sticky tape as shown on Figure 44.

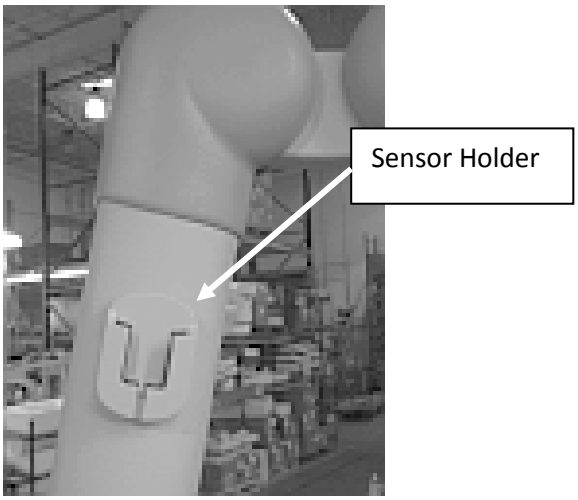


Figure 44: Attaching the Sensor Holder to the Articulating Arm

2. Remove the end caps (closest to the tube head) from the Articulating Arm by pulling them apart as shown on Figure 45.

Figure 45: Removing the End Caps

3. Locate the USB cable on the tube head end of the Articulating Arm – see Figure 46.

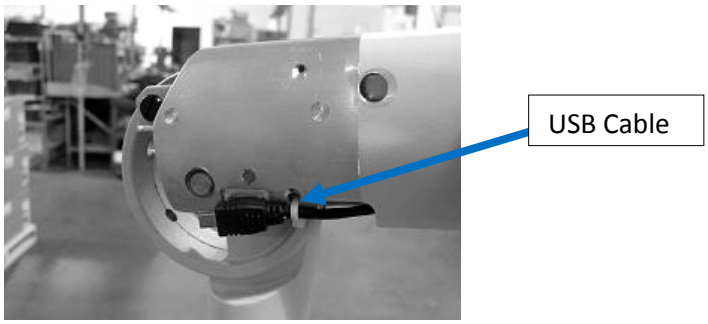


Figure 46: Location of the Cable Tie that holds the USB cable

4. Plug the USB cable into the Sensor Interface Cable as shown on Figure 47.

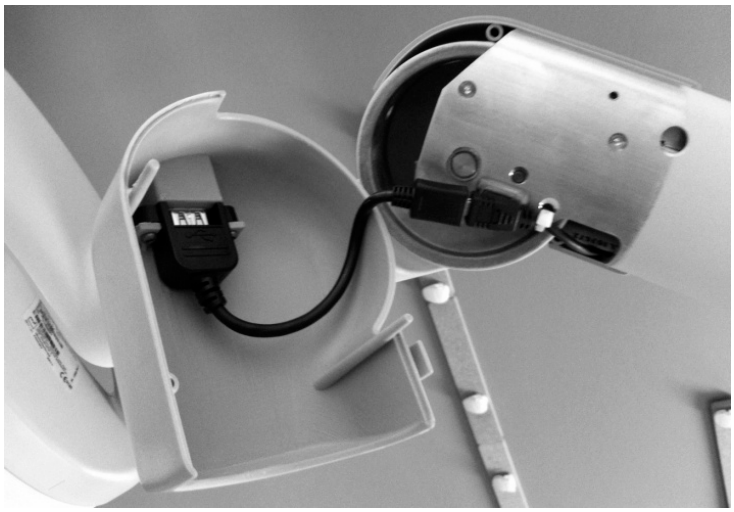


Figure 47: Installing the Sensor Interface Cable

5. Press the two matching covers together and secure with the 3 mm x 16 mm screw provided in the package (Figure 48). Use a 3 mm hex wrench to tighten.

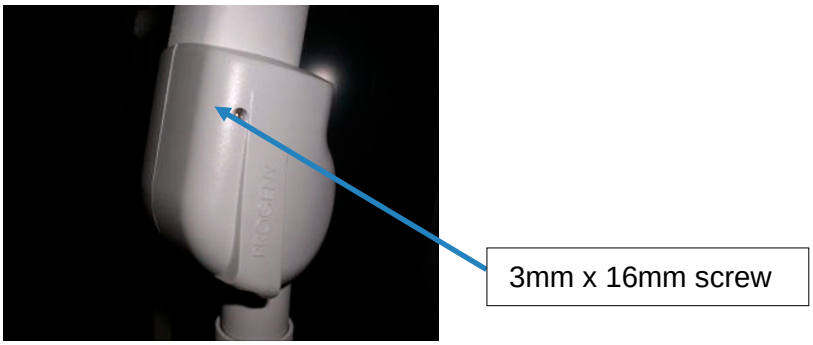


Figure 48: Installing the Matching Covers together

6. Plug the sensor connector into the Sensor Interface at the bottom of the Arm mount as shown on Figure 49.

Figure 49: Connecting the Sensor to the Sensor Interface

7. Place the sensor into the sensor holder as shown on Figure 50

Figure 50: Placing the Sensor into the Sensor Holder