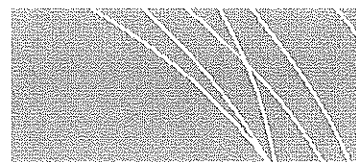




A-dec 2122/2132 Radius® System on A-dec 511 Dental Chair INSTALLATION GUIDE

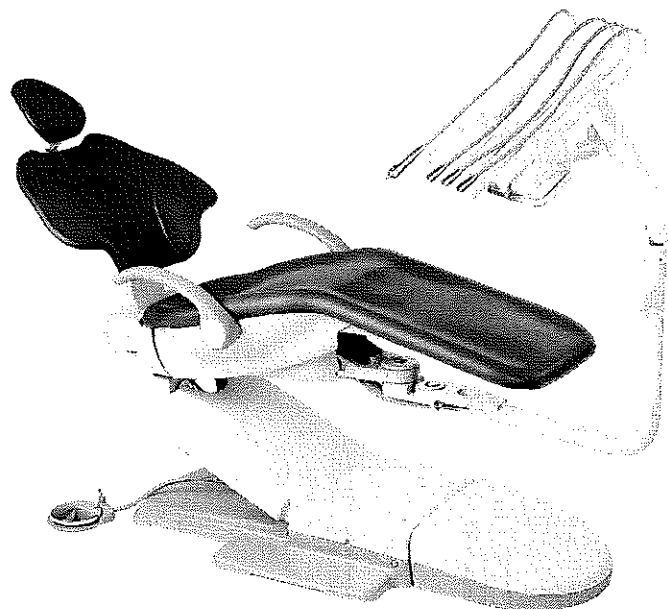


Introduction

This document contains instructions for installing an A-dec Radius delivery system on an A-dec Model 511 chair. This guide contains the following sections:

- Before You Begin
- Hardware Identification
- Recommended Tools
- Installation Steps

Figure 1. A-dec 511 Chair and 2132 Radius Delivery System



Before You Begin

Install the A-dec 511 Chair, using the instructions provided in the *A-dec 500 Installation Guide* (Box 1), beginning on page 1.



NOTE Some modules described in this guide may have been pre-installed at the factory.

Once you install the dental chair and the front mount, use the steps described in this document to complete the installation.

Recommended Tools

- Torpedo level
- 7/16" combo wrench
- 3/4" combo wrench (2 required)
- 15/16" socket and ratchet
- Hex key set
- Side cutter
- 1/4" nut driver

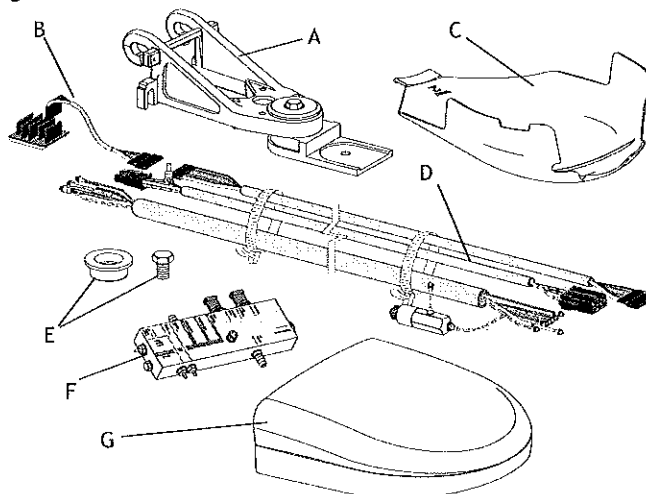
Installation Steps

Install the Chair Front Mount

1. Position the chair back fully down.
2. Install the leveling cam (if not already installed.)
3. Install the leveling bolts. See Figure 3. Tighten lightly, leaving two threads exposed.
4. Place the front mount on the leveling cam. See Figure 3.
5. Install nuts on the leveling bolts.
6. Rotate the adapter mount into the position shown in Figure 3. Use the 15/16" socket and ratchet.
7. Remove the hub adapter bolt and mounting hub from the adapter mount. See Figure 3.

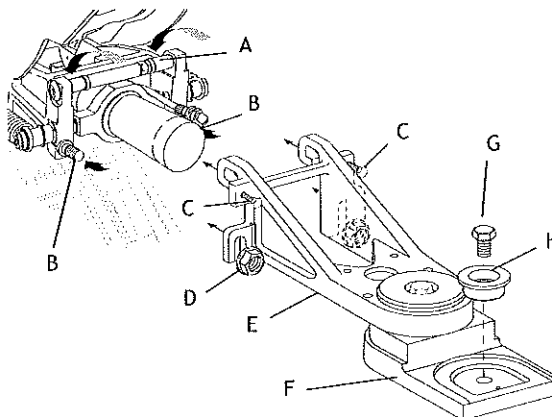
Hardware Identification

Figure 2. Kit Contents



(A) Front Mount and Adapter Mount (assembled);
 (B) Y Adapter; (C) Umbilical Cover; (D) Umbilical Adapter;
 (E) Adapter Mounting Hardware; (F) Air/Water Manifold;
 (G) Floor Box

Figure 3. Install the Chair Front Mount



A) Leveling Cam; (B) Leveling Bolt; (C) Mount Stabilizing Bolt; (D) Leveling Mount Nut; (E) Front Mount; (F) Adapter Mount; (G) Hub Adapter Bolt; (H) Mounting Hub

Assemble the Radius Unit



TIP For an easier assembly, complete these steps prior to removing the Radius unit from the packaging.

1. Align the unit mount arm hub with the flexarm knuckle and firmly press the arms together. See Figure 4. It may be necessary to loosen the retaining setscrew in the mount arm.
2. Remove the tape securing the two setscrews in the unit mount arm. Tighten the retaining setscrew. See Figure 5.
3. Position the shipping strap located in the control head ship carton around the unit. Do not remove the strap until the unit installation is complete.

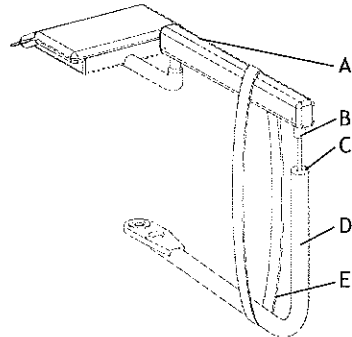
Install the Radius Unit on the Chair



NOTE Use only the mounting hub and hub adapter bolt to secure Radius arm to adapter mount. Disregard the mounting kit hardware for installing the Radius arm to a 1040 chair (P/N 35.1678.00).

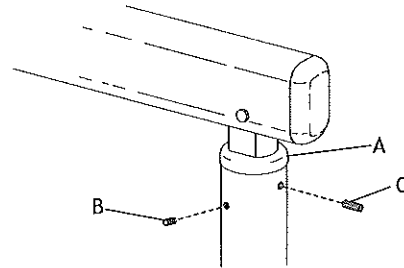
1. Lift the Radius unit from its packaging.
2. Place the mounting hub in the Radius arm opening.
3. Align the Radius arm on the adapter mount.
4. Install the hub adapter bolt and tighten securely. See Figure 6.

Figure 4. Assemble the Radius Unit; Secure with Strap



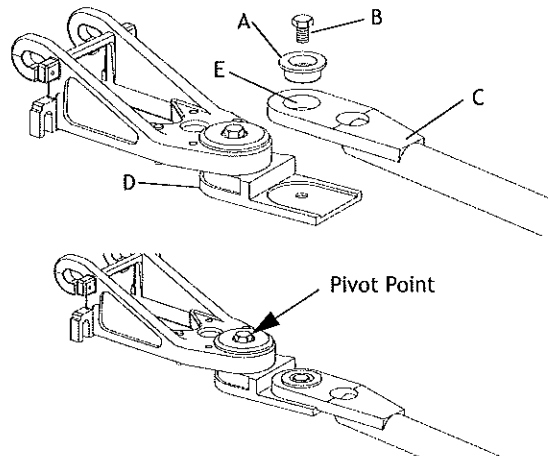
(A) Flexarm; (B) Flexarm Knuckle; (C) Arm Hub; (D) Unit Mount Arm; (E) Shipping Strap

Figure 5. Tighten Setscrews



(A) Arm Hub; (B) Tension Setscrew; (C) Retaining Setscrew

Figure 6. Install Radius Unit on the Chair



(A) Mounting Hub; (B) Hub Adapter Bolt; (C) Radius Arm; (D) Adapter Mount; (E) Radius Arm Opening

Install Rotation Stops

Install the rotation stop pins and bumpers from the ship kit. Add the rotation stop pins and bumpers, according to whether the rotation is right or left. See Figure 7.

Install the Floor Box

You can install the floor box flush-mounted or non-flush-mounted to the chair.

1. Raise the chair base to full up position and power OFF the chair.



DANGER Failure to turn off the power before you begin this procedure can lead to electrical shock.



WARNING Failure to turn off the power before you begin this procedure can lead to product damage and result in serious injury or death.

2. Remove the umbilical hole cover from the pump cover.
3. Position the floor box over the utilities:

For a flush-mount floor box:

1. Trim a small piece of convolute off the outer convolute tubing. See Figure 8.
2. Slide the umbilical clip into the floor box frame and lay the convolute tubing into the clip.

Figure 7. Install Stops for Left- or Right-Hand Operation

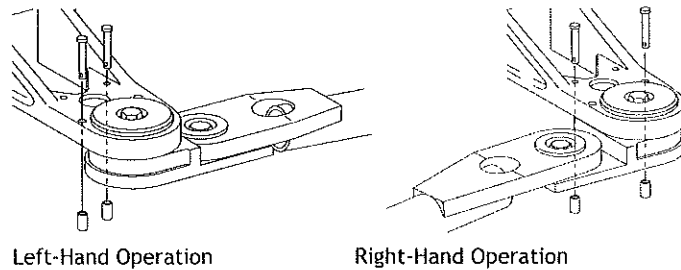
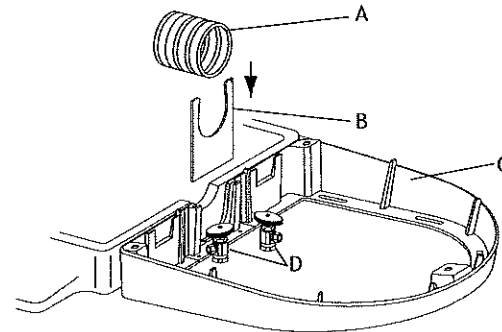


Figure 8. Install Flush-Mount Floor Box

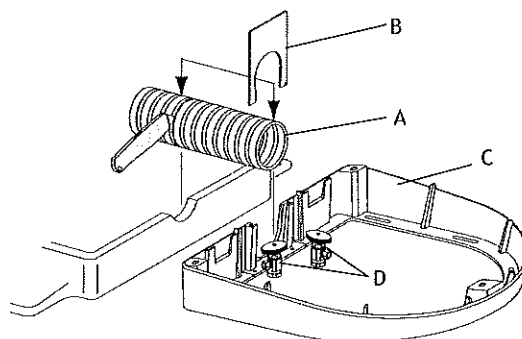


(A) Convolute Tubing; (B) Umbilical Clip; (C) Floor Box; (D) Stubs

For a non-flush-mount floor box:

1. Measure the external convolute to match the distance between the chair and the floor box frame. See Figure 9.
2. Cut off excess convolute.
3. Insert the convolute tubing into the frame and place the umbilical clip over the tubing.
4. Secure the floor box to the floor using the four screws.

Figure 9. Install Non-Flush-Mount Floor Box



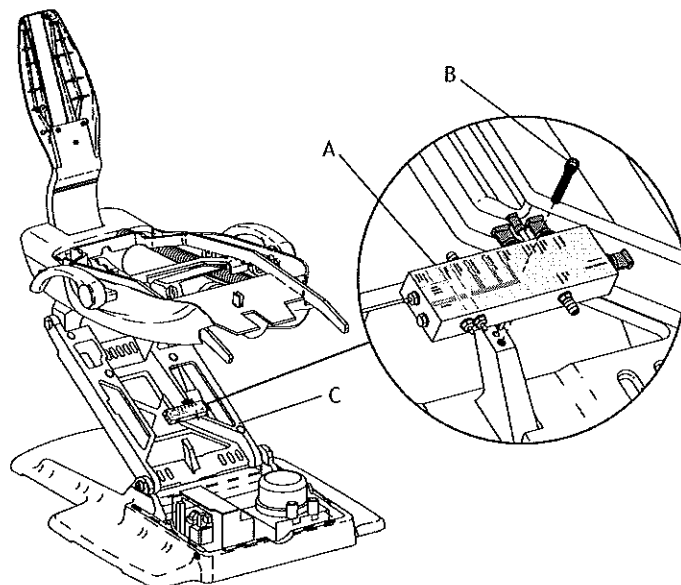
(A) Convolute Tubing; (B) Umbilical Clip; (C) Floor Box; (D) Stubs

Install the Chair Air/Water Manifold

The chair air/water manifold is the central connection point for air and water tubing. The installed modules from the chair air/water manifold determine what barbs or plugs to remove or replace. For your configuration, refer to Appendix A, page 11.

1. Remove the mounting screw from the chair lift arm. See Figure 10.
2. Place the chair air/water manifold locator pin in the hole on the chair lift arm.
3. Secure the manifold with the mounting screw.

Figure 10. Install Chair Air/Water Manifold



(A) Chair Air/Water Manifold; (B) Mounting Screw; (C) Chair Lift Arm

Install the Foot Control

1. Loosen the strain relief screw. See Figure 11.
2. Route the tubing through the strain relief and secure with cable tie.



CAUTION When removing or replacing covers, take care not to damage any wiring or tubing. Verify that the covers are secure after replacing them.

3. Detach the short length of 5/16" foot control tubing from the umbilical adapter.
4. Connect the adapter to the foot control tubing.
5. Connect the tubing to the manifold. See Figure 11.

Install Optional Modules

Use the instructions included in the *A-dec 500 Installation Guide* (Box 1) to install the Assistant's arm and/or the cuspidor.

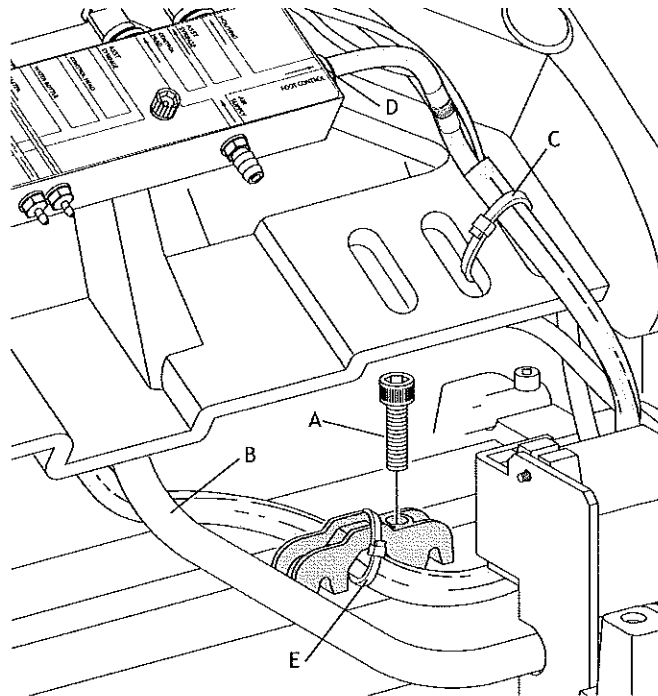


NOTE Plumbing layout is dependent on the combination of options ordered. Refer to Appendix A on page 11 for specific instructions or see the Flow Diagram that came with the system.

Plumb the Delivery System

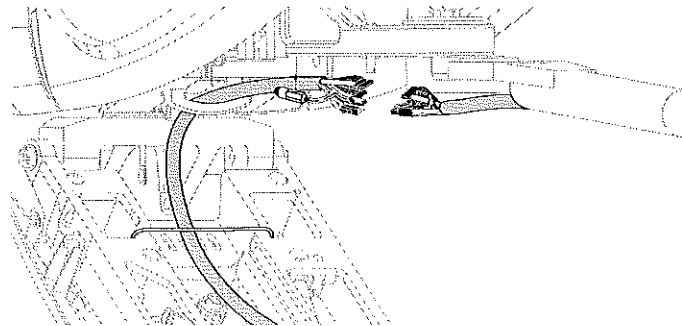
1. Connect the unit umbilical to the umbilical adapter. Refer to the Flow Diagram found in the floor box cover. See Figure 12.
2. Route the umbilical through the chair. See Figure 12.

Figure 11. Install the Foot Control



(A) Strain Relief Screw; (B) Foot Control Tubing; (C) Cable Tie; (D) Foot Control Tubing-Manifold Connection; (E) Strain Relief Cable Tie

Figure 12. Connect the Unit Umbilical to the Adapter



- Loosely cable tie the umbilical to the strain relief. See Figure 13.



CAUTION When removing or replacing covers, take care not to damage any wiring or tubing. Verify that the covers are secure after replacing them.

- Connect the foot control tubing to the foot control.
- Connect the delivery system tubing to the chair air/water manifold. Use the manifold labels for positioning. Figure 14 shows the configuration for a Radius delivery system only. For other configurations, see Appendix A on page 11.



DANGER Depending on options, some tubing and manifold connections are not used. Refer to the Flow Diagram that came with the system or see Appendix A on page 11. Install plugs in the manifold as necessary.



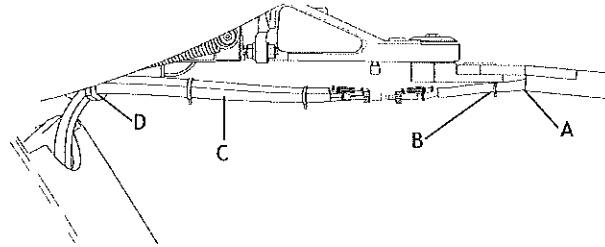
NOTE For water bottle installation, please see the instructions included with the Radius unit.

- Connect the footswitch wiring harness and the umbilical adapter touchpad wiring harness to the Y-adapter circuit board.
- Peel the covering from the Y-adapter circuit board sticker, and adhere the circuit board to the rear of the power supply chassis. See Figure 15.
- Connect the Y-adapter circuit board to the chair circuit board. See Figure 15.

Plumb the Floor Box

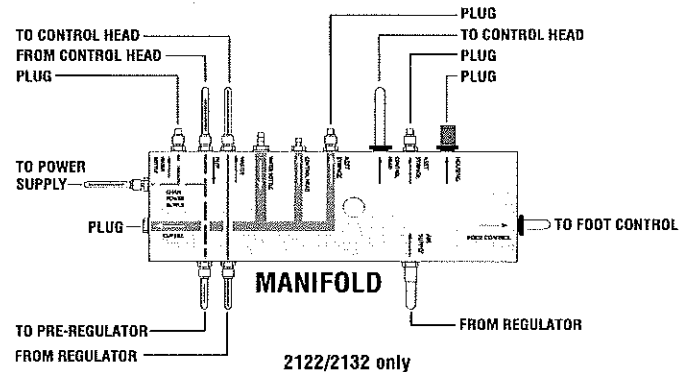
- Route the air/water manifold tubing through the convolute to the floor box.

Figure 13. Route the Umbilical Through the Chair



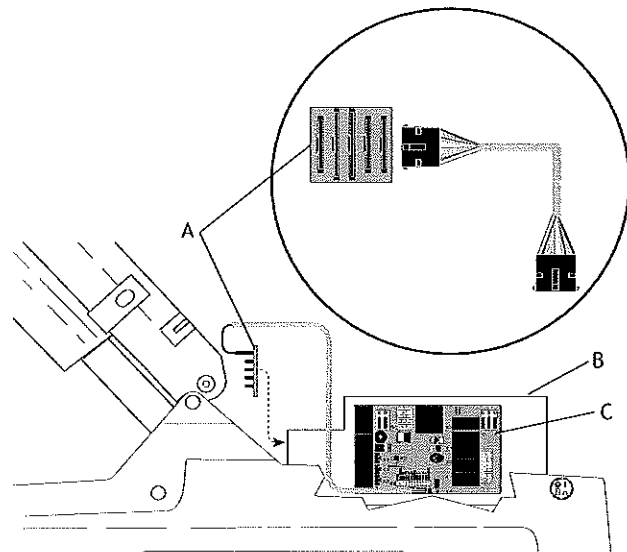
(A) Radius Umbilical; (B) Cable Tie; (C) Umbilical Adapter; (D) Umbilical Router

Figure 14. Connect Delivery System Tubing to Air/Water Manifold (Delivery System Only Configuration)



Refer to Appendix A for Other Configurations

Figure 15. Adhere Y-Adapter Circuit Board to Power Supply Chassis



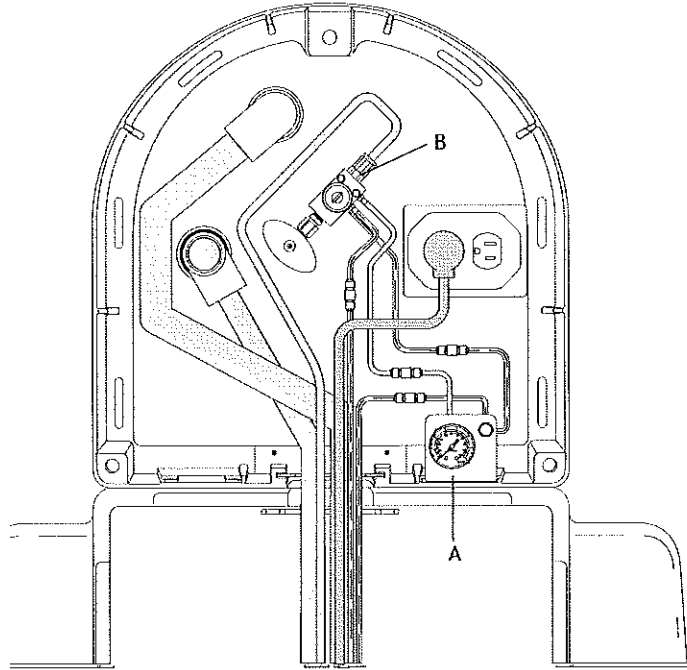
(A) Y-Adapter; (B) Power Supply Chassis; (C) Chair Circuit Board

2. Purge the manual shutoff valves of debris.
3. Attach the air/filter regulator to the manual air shut-off valve. See Figure 16.
4. Trim the master air and supply air tubing and connect both to the air/filter regulator in the floor box. Leave enough length for servicing and future use.
5. Trim the pilot air, and install the gauge and pre-regulator assembly.
6. Place the gauge and pre-regulator assembly in the mounting slot of the floor box frame.
7. Fully open the manual air shut-off valve.
8. Plug in the chair power cord.
9. Raise the chair back.



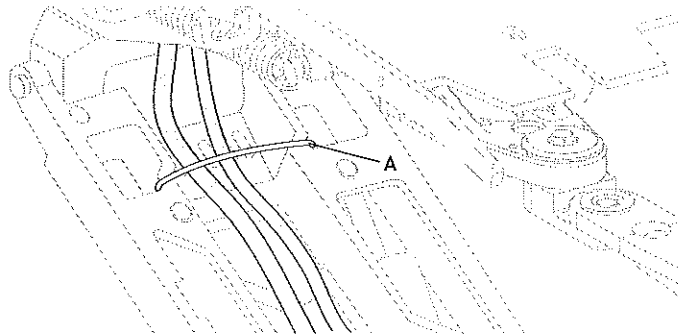
TIP A metal spring clip is included in the floor box. Save this clip until the end of the installation and use it to retain the cords and tubing inside the chair lift arm. See Figure 17.

Figure 16. Plumb the Floor Box



(A) Gauge and Pre-Regulator Assembly; (B) Air/Filter Regulator (Water Regulator not shown.)

Figure 17. Use Metal Clip to Retain Cords and Tubing



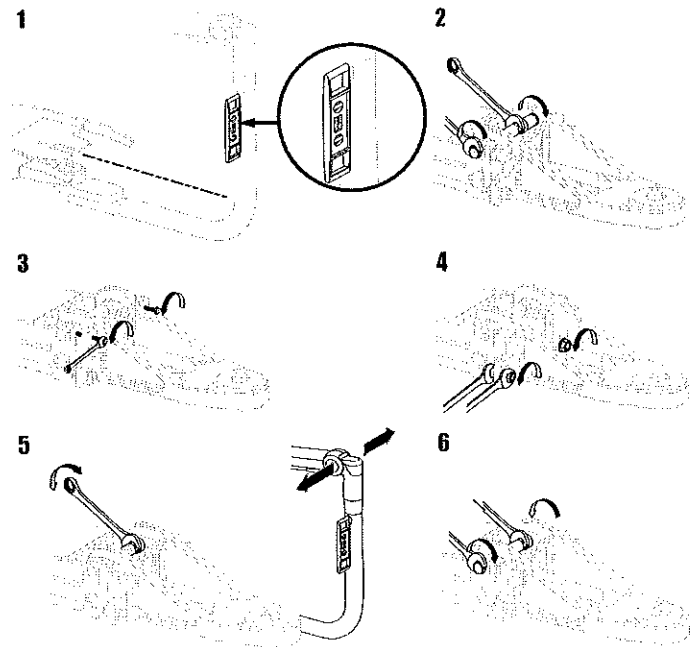
(A) Metal Clip

Final Leveling and Adjustments

Level the unit side-to-side:

1. Center the arm and place level on side of arm. See Figure 18.
2. Hold the leveling cam in place and loosen both left and right cam bolts.
3. Loosen left and right stabilizing bolts.
4. Hold leveling bolt in place and loosen both left and right nuts.
5. Rotate cam for side-to-side leveling.
6. Hold cam in place and tighten both right and left cam bolts.

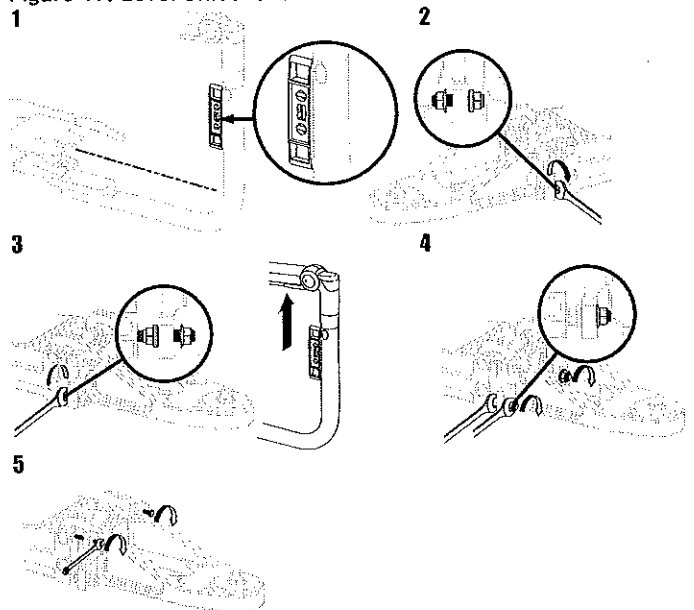
Figure 18. Level the Unit Side-to-Side



Level the unit front-to-back:

1. Center arm and place level toward center of chair. See Figure 19.
2. Turn the left and right bolt until flush against chair casting.
3. Adjust the left and right bolts to level front-to-back.
4. Hold bolts in place and tighten both right and left nuts to secure mount.
5. Finger tighten both right and left bolts to stabilize mount.

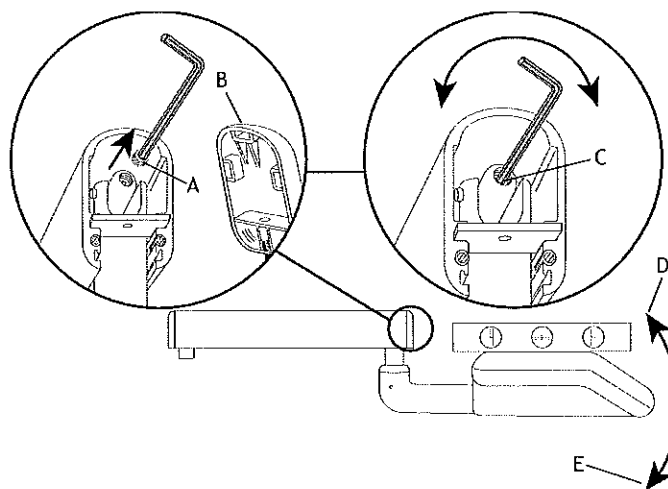
Figure 19. Level Unit Front-to-Back



Level the Radius Control Head

1. Place the control head in the most commonly-used position.
2. Place a level on the control head cover. See Figure 20.
3. Unscrew the arm endcap and remove.
4. Remove the locking screw. Use a hex key.
5. Adjust the control head level. Use the hex key:
 - Tighten the adjustment screw to move the end up
 - Loosen the adjustment screw to move the end down
6. Once the control head is level, replace the locking screw and arm endcap.

Figure 20. Level the Radius Control Head



(A) Locking Screw; (B) End Cap; (C) Adjustment Screw; (D) Tighten to Move Up; (E) Loosen to Move Down

Test Chair and Attach Covers

To test the chair installation, use the instructions in the relevant section of the *A-dec 500 Installation Guide*. Attach the covers.



CAUTION When removing or replacing covers, take care not to damage any wiring or tubing. Verify that the covers are secure after replacing them.

Appendix A

Plumbing Layouts

This section covers specific plumbing layouts for a Radius unit installed with:

- 2122/2132 Radius unit only. See Figure 21
- 551 Assistant's arm only. See Figure 22
- 561 Cuspidor only. See Figure 23
- 551 Assistant's arm and 561 Cuspidor. See Figure 24



NOTE Depending on options, some tubing and manifold connections are not used. Refer to the figures on this page or the Flow Diagram that came with your system. Install plugs in the manifold as necessary.

Figure 21. Connect Delivery System Tubing to Air/Water Manifold (Delivery System Only Configuration)

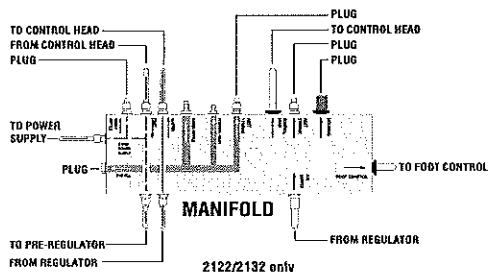


Figure 22. Connect 551 Assistant's Arm to Air/Water Manifold

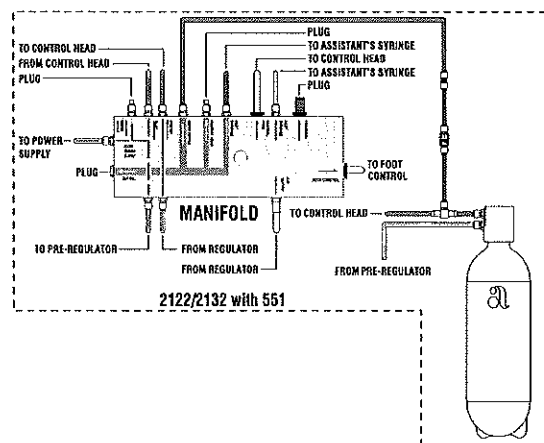


Figure 23. Connect 561 Cuspidor to Air/Water Manifold

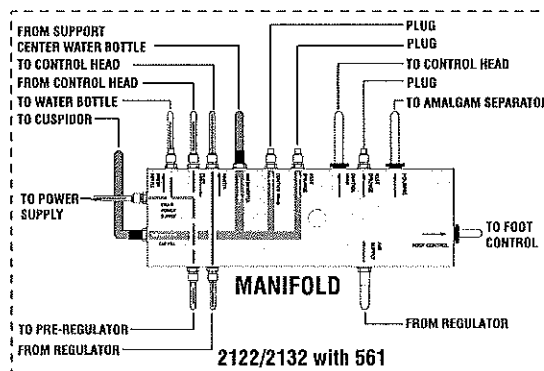
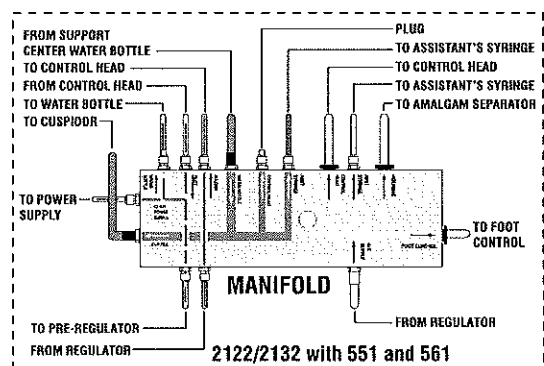


Figure 24. Connect 551 Assistant's Arm and 561 Cuspidor to Air/Water Manifold



Regulatory Information

Regulatory information is provided with A-dec equipment as mandated by agency requirements. This information is delivered in the equipment's *Instructions for Use* or the separate *Regulatory Information and Specifications* document. If you need this information, please go to the Document Library at www.a-dec.com.

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