



A-dec 500

INSTALLATION GUIDE



Contents

Start Here	2
Box 1: Chair, Footswitch and Floor Box	4
Box 2: Front Mount	11
Box 3: Delivery System	15
Box 4: Water Bottle and Manifold	19
Box 5: Support Link	24
Box 6: Support Arm	26
Box 7: Assistant's Instrumentation	31
Box 8: Support Center and Cuspidor	32
Box 9: Monitor Mount	36
Box 10: Dental Light	40
Final Steps	47
Regulatory Information	68



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



NOTE Information that is critical to a successful and safe installation is shaded like this note throughout the guide.

Introduction

This document contains installation instructions for the A-dec 500 System.

Figure 1. A-dec 500 System



Start Here

A specific install may not require all components described in this document. Before you begin:

- Take a minute to assess what modules are present.
- Note the installation sequence numbers on the outside of the shipping boxes (see Figure 2).
- If the system includes A-dec 300 or A-dec 400 modules, note that those modules ship in boxes that do not have sequence numbers printed on them. When those modules can be installed on the 500 system, they are identified in this installation guide.

Installation Sequence

Proper placement of the shipping boxes speeds the assembly process. Each box is numbered so that you can sequence the modules in the order of assembly. Table 1 lists and describes the contents of each numbered box. Each box contains a parts list with photographs, part numbers, and the part name for easy identification.

Table 1. Box Contents

Box Number	Module(s)
1	Chair, Floor Box
2	Front Mount Arm
Small Box 3 (Packed inside Box 2)	Front Monitor Mount
Large Box 3	Delivery System
4 (May be packed inside Box 2)	Water Bottle, Manifold
5	Support Link
6	Support Arm
7	Assistant's Instrumentation
8	Cuspidor
9	Support Side Monitor Mount
10	Dental Light

Figure 2. Numbers on Boxes Denote Install Sequence



(A) Box Number

To efficiently complete the install:

1. Unpack the first box (Chair).
2. Follow the directions to install all the parts in the box (unless otherwise directed).
3. Unpack the next box in the sequence. If your install does not require the next box, move to the next number present.
4. Continue the process until you've opened all the boxes.
5. Finish by leveling, adjusting, and programming the unit.

Site Readiness

Before starting:

- Check that the manual air and water shut-offs are installed.
- Purge debris from the air and water lines.
- Check with local building and code authorities about installation requirements. They differ from state to state and internationally.

Table 2 Recommended Tools

- | | |
|--|--|
| • 3/4", 5/16", 7/16", 15/16" open-end wrenches | • Snap ring tool |
| • SAE socket wrenches | • Needle nose and standard pliers |
| • Adjustable wrench | • Diagonal cutters |
| • Hex key set | • Wire strippers—small gauge wire |
| • Level | • Rotary hammer drill |
| • 3/4" drill bit | • 1/2" concrete drill bit |
| • 1/8" ball hex driver | • Umbilical snake |
| • Phillips and standard screwdrivers #1 and #2 | • Broom handle (for support center installation) |
| • Antistatic wrist strap | |



NOTE When removing modules from their packaging, watch for kits included for the doctor (solids collector screens, syringe tips, etc.). Set these kits aside during installation.

Box 1: Chair, Footswitch and Floor Box



NOTE Check the floor structure. If it is not at least 3 1/4" (82 mm) thick, contact a licensed contractor about reinforcing the floor.

Moving the Chair

1. Unpackage the chair, but do not remove the shipping straps (see Figure 4).
2. Use the seat frame (or chair lifter tools) to remove the chair from the pallet. Place the chair in position.



CAUTION Do not attempt to position the chair by pulling or pushing on the armrests.

3. Remove the shipping straps.
4. Plug-in the power cord and turn on the power to the chair.

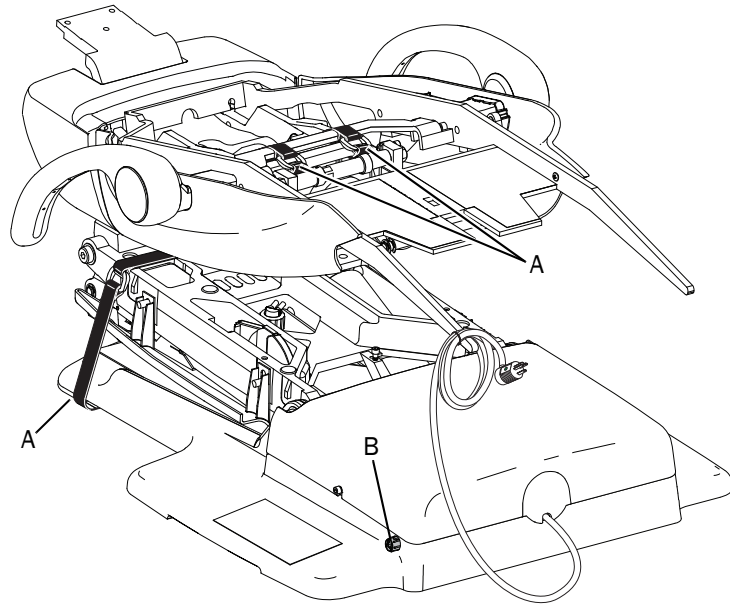


NOTE The power on/off button is located on the base plate of the chair. When the button is pressed in, the system has power. When the button is out, the system has no power (see Figure 4).

Figure 3. 511 Chair



Figure 4. Move the Chair From the Pallet



(A) Shipping Strap; (B) Power On/Off Button

Remove the Shipping Pin

To remove the shipping pin from the chair, you must raise the chair.

1. Use the three-tap feature to raise the chair:
 - (1) Tap the right side of the chair stop plate three times and continue to hold the plate on the third tap (see Figure 5).
 - (2) Keep holding until the chair base and back are both in the full up position.



NOTE Move the back of the chair down by tapping the stop plate three times, then holding on the third tap.

Once raised, you must install a touchpad or footswitch to lower the chair base.

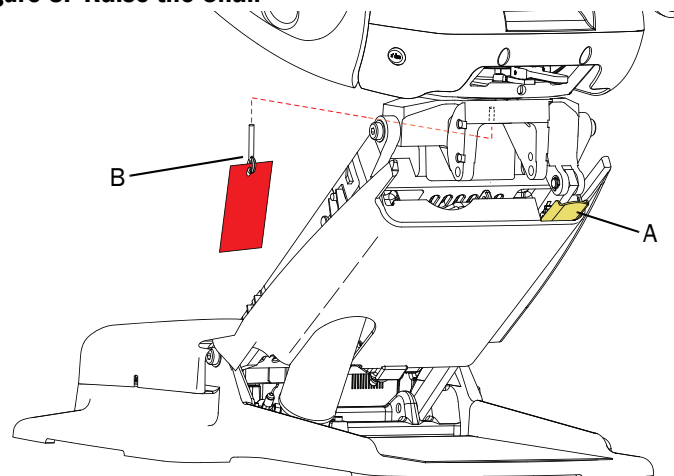
Installing the touchpad or the footswitch disables the three-tap feature.

- (3) Grasp the shipping pin and pull straight down (see Figure 6).



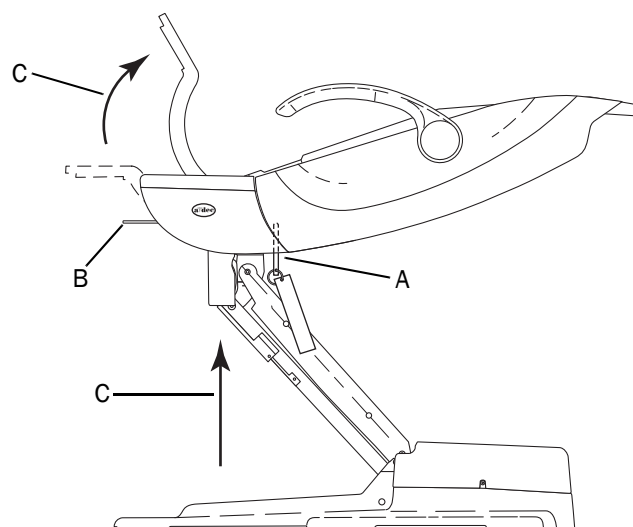
TIP You may need to release the swivel brake to remove the pin. To prevent the chair from swiveling, leave the shipping pin in place.

Figure 5. Raise the Chair



(A) Tap Chair Stop Plate Three Times and Hold; (B) Shipping Pin

Figure 6. Remove the Shipping Pin



(A) Shipping Pin; (B) Swivel Brake; (C) Chair in Base Up and Back Up Position

Anchor the Chair to the Floor



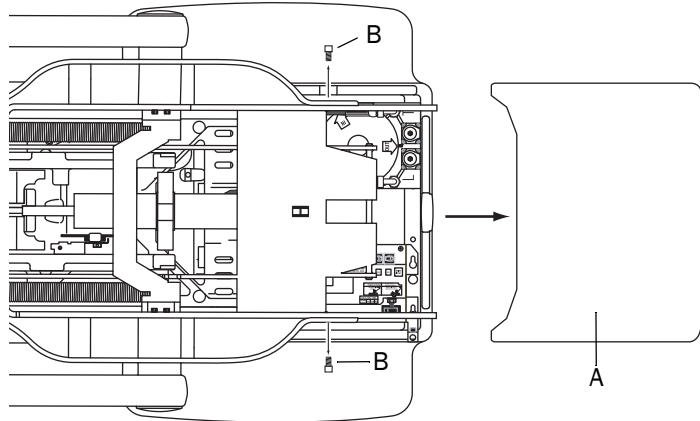
WARNING Anchoring the chair to the floor is required for mechanical stability. Failure to anchor the chair properly can result in damage, serious injury, or death.

1. Remove the pump cover (see Figure 7).
2. Loosen the swivel brake to rotate the seat frame of the chair to the left or right so that the chair anchoring hole is clearly accessible (see Figure 8).



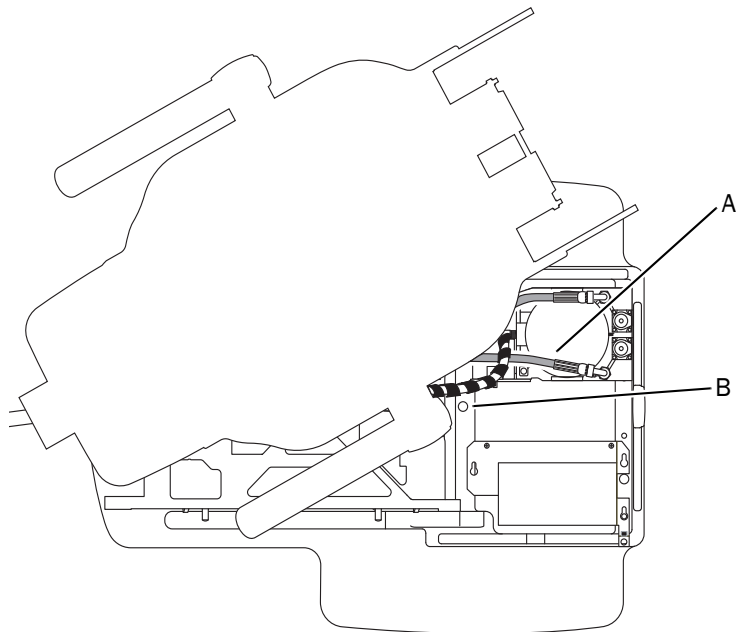
CAUTION Use care to avoid damaging the hydraulic line near the anchoring hole.

Figure 7. Remove the Pump Cover



(A) Pump Cover; (B) Cover Screw

Figure 8. Rotate the Chair to Expose the Anchoring Hole



(A) Hydraulic Line; (B) Anchoring Hole

3. Anchor the chair:

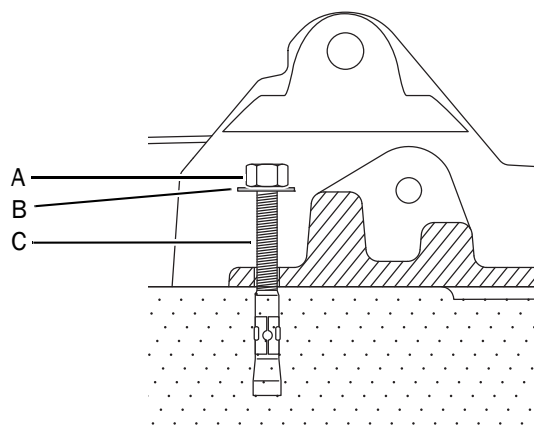
To Concrete:

- (1) Drill a 4" (101 mm) deep hole. Drill through the chair anchoring hole into the concrete. Use a rotary hammer drill.
- (2) Remove any debris.
- (3) Drive the anchor bolt into the hole until the bolt head seats against the chair base.
- (4) Tighten the bolt until it is tight against the washer and firmly holds the baseplate to the floor (see Figure 9).

To Wood:

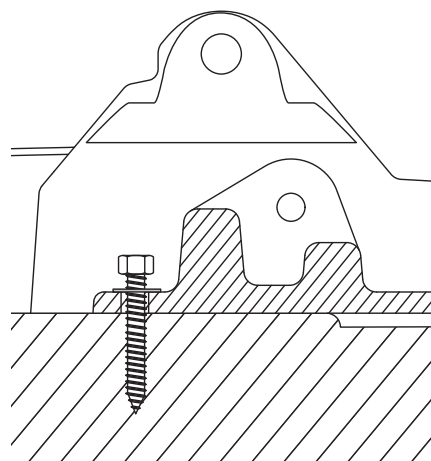
- (1) Drill a 2" (50 mm) deep hole. Use a 3/8" (9.5 mm) drill.
- (2) Remove any debris.
- (3) Place the washer on the anchor bolt and insert it into the hole.
- (4) Tighten the anchor bolt until it is tight against the washer and firmly holds the baseplate to the floor (see Figure 10).

Figure 9. Anchor Chair—Concrete Floor



(A) Bolt Head; (B) Washer; (C) Anchor Bolt

Figure 10. Anchor Chair—Wood Floor



Install the Footswitch



NOTE Depending on the configuration, the dental unit may not include a footswitch. If Box 1 does not contain a footswitch, proceed to the next step, *Install Back Support*, see page 9.

1. Turn off the power to 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. Route the footswitch cable underneath the chair lift arm and through the strain relief bracket (see Figure 12). Loosen the strain relief bracket screw to ease routing.



ATTENTION Circuit boards are sensitive to static electricity. Electrostatic Discharge (ESD) precautions are required when touching a circuit board or making connections to or from the circuit board. Circuit boards should be installed only by an electrician or qualified service person.

3. Connect the footswitch cable to the circuit board and tighten the strain relief screw.

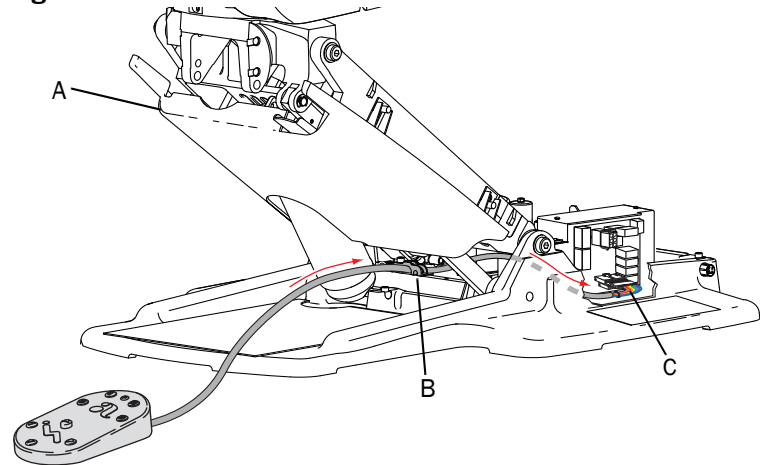


NOTE If the system includes a foot control (found in Box 4), do not tighten the strain relief screw until you install the foot control.

Figure 11. Footswitch



Figure 12. Route Footswitch Cable



(A) Chair Lift Arm; (B) Strain Relief Bracket; (C) Circuit Board Connection

Install Back Support

1. Remove the three mounting screws from the chair back support.
2. Attach the back support to the chair back with the mounting screws (see Figure 13).



TIP Start all three screws before tightening any of them.

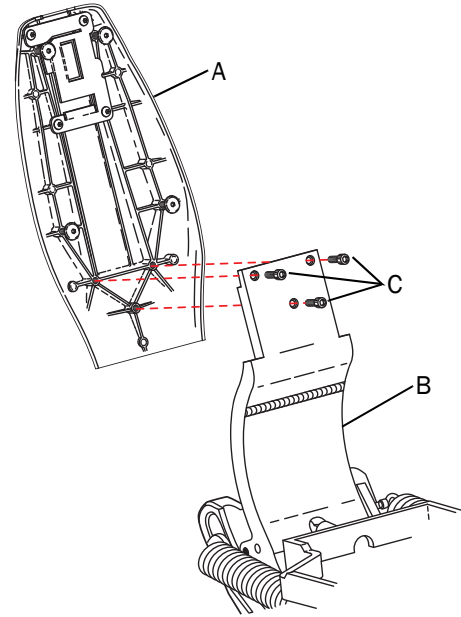
3. Tighten the mounting screws.



NOTE Tighten the screws firmly to prevent the chair back from becoming loose over time.

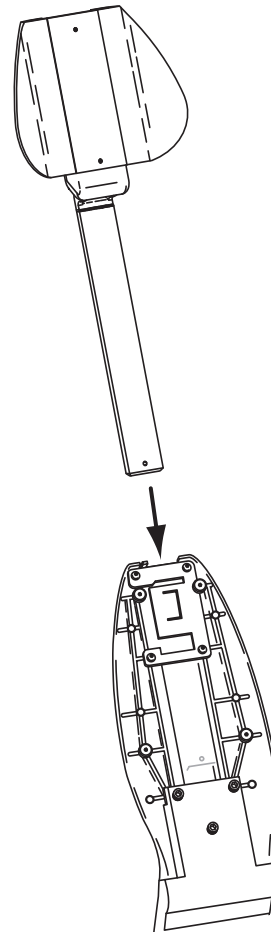
4. Put the headrest assembly on the chair (see Figure 14).

Figure 13. Install Back Support



(A) Back Support; (B) Chair Back; (C) Mounting Screws

Figure 14. Install Headrest in Chair



Install the Floor Box

Table 3 lists the floor box components and the boxes in which they are found.

Table 3. Floor Box Components

Assembly	Ship Box
Cuspidor Drain	8
Water Filter/Regulator	8
Gauge, Pre-regulator Assembly, and Air Filter/Regulator (come as one assembly)	2
Vacuum Drain	7
Moisture Separator	3
Water Shut-off	3
Air Shut-off	3

1. Raise the chair to full base up position and turn off the power to 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 floor box cover (see Figure 16).
3. Position the floor box over the utilities:
 - (1) Measure the external convolute to match the distance between the chair and the floor box frame.
 - (2) Cut off the excess convolute.
 - (3) Slide the umbilical clip into the floor box frame and lay the convolute tubing into the clip.
4. Secure the floor box to the floor. Use the four screws included in the box.

Next Steps

- If this is a chair-only installation, proceed to "Add Upholstery and Covers" on page 63.
- If you have other modules to install, proceed to the section corresponding to the next box number.

Figure 15. Floor Box

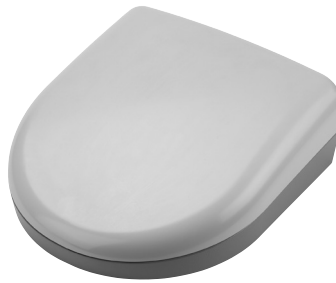
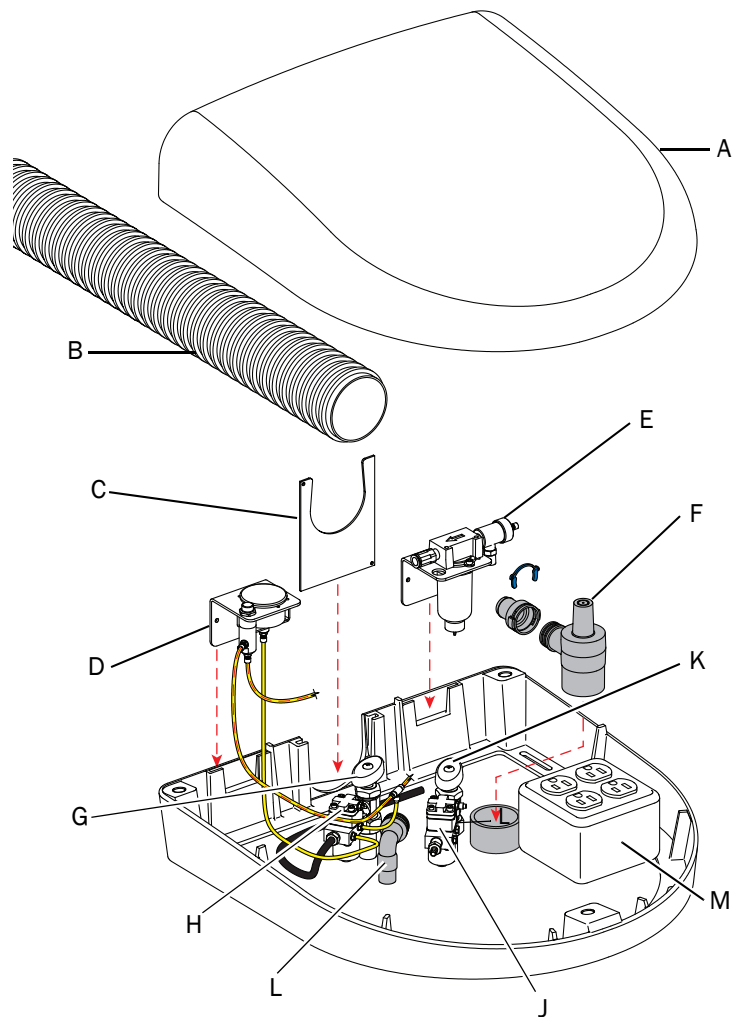


Figure 16. Install the Floor Box



(A) Floor Box Cover; (B) Convolute; (C) Clip; (D) Gauge and Pre-regulator Assembly; (E) Moisture Separator (Optional); (F) Cuspidor Drain; (G) Air Shut-off; (H) Air Filter/Regulator; (J) Water Filter/Regulator; (K) Water Shut-off; (L) Vacuum Drain; (M) Electrical Outlet

Box 2: Front Mount

Box 2 contains the front mount and front-mount arm.



TIP Box 2 can contain either a small Box 3 or Box 4.

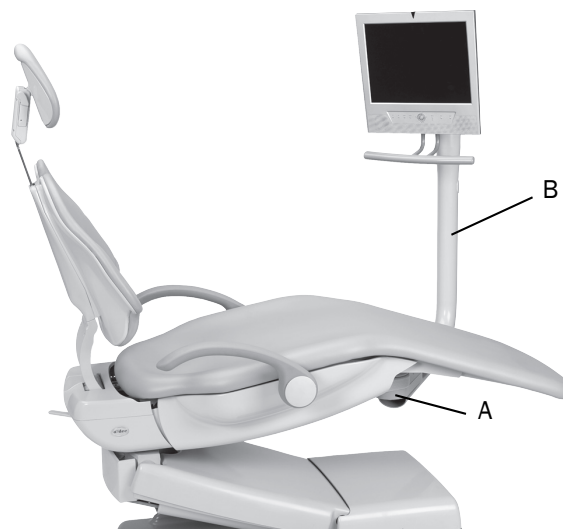
Depending on the system configuration, you may install some or all of the possible options, including:

- Small Box 3 – Front monitor mount
- Box 4 – Utility Box:
 - Chair manifold
 - Front-mount self-contained water bottle



NOTE You can mount the water bottle either on the front-mount arm or inside the support center. For instructions on installing the water bottle in the support center, see “Box 8: Support Center and Cuspidor” on page 32.

Figure 17. Front Mount and Front-Mount Arm



(A) Front Mount (Hidden); (B) Front-Mount Arm

Install the Front-Mount Arm

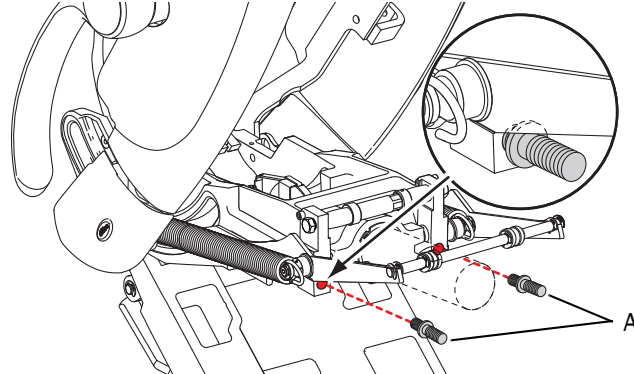
1. Position the chair base up and back down.



WARNING When raising and lowering the chair, keep your hands and fingers clear of moving parts.

2. Screw in the leveling bolts, leaving two threads exposed (see Figure 18).
3. Align the front mount and the arm (see Figure 19).
4. Hang the arm on the leveling cam.
5. Install the two flanged 3/4" nuts on the leveling bolts and finger-tighten (see Figure 20).
6. Add the rotation stop pins and bumpers, for a right or left installation (see Figure 21).
7. Tighten the 7/16" stabilizer bolts until they touch the chair casting.

Figure 18. Screw In Leveling Bolts



(A) Leveling Bolts (Leave Two Threads Exposed)

Figure 19. Align the Front Mount and Arm

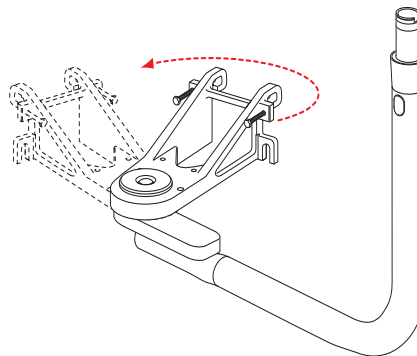
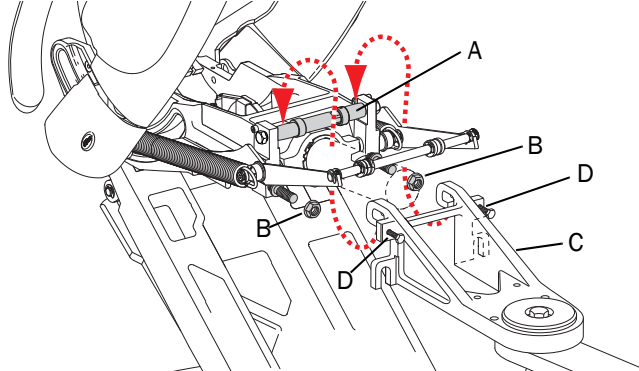
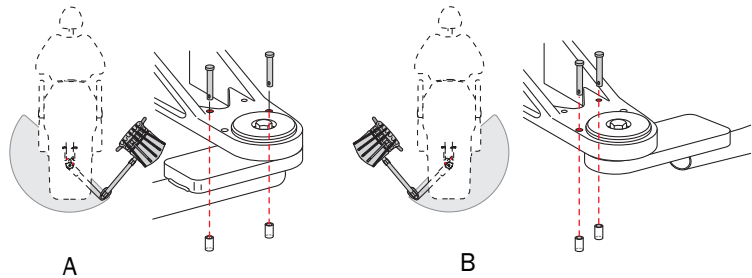


Figure 20. Hang Arm on Leveling Cam



(A) Leveling Cam; (B) 3/4" Flanged Nut; (C) Front Mount and Attached Front Mount Arm; (D) 7/16" Stabilizer Bolt

Figure 21. Add Rotation Stop Pins and Bumpers



(A) Rotate to Left; (B) Rotate to Right

Box 4: Front-Mount Water Bottle



NOTE Install only the front-mount water bottle from Box 4 at this time. The rest of the contents will be installed after large Box 3.

Install the Front-Mount Water Bottle

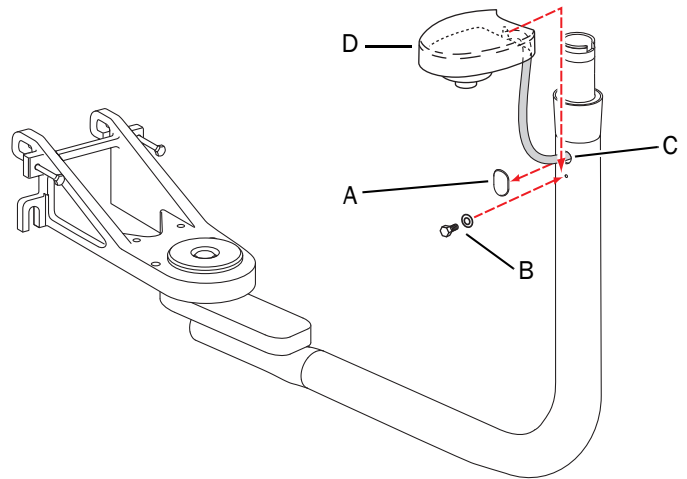
1. Carefully remove the hole plug from the front-mount arm by pulling on the bottom of the hole plug (see Figure 22).
2. Install the mounting screw, leaving some threads exposed.
3. Feed the tubing into the tubing hole and down the arm (see Figure 23).



TIP For easier threading through the arm, straighten out the tubing before routing.

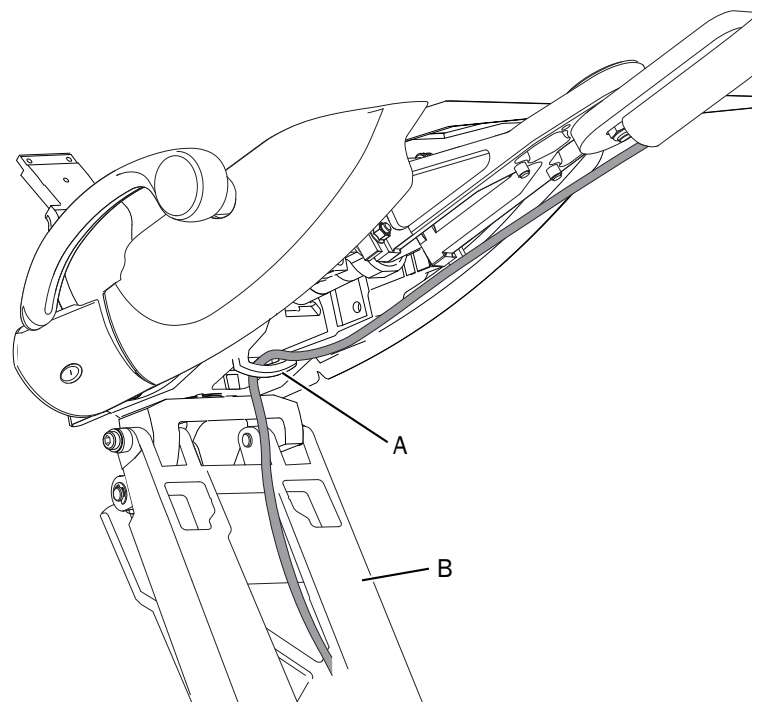
4. Mount the cap housing over the screw and tighten the mounting screw.

Figure 22. Remove the Hole Plug and Attach the Water Bottle Mounting Screw



(A) Hole Plug; (B) Mounting Screw; (C) Tubing Hole (D) Cap Housing

Figure 23. Route Tubing



(A) Loop; (B) Lift Arm

5. Route the tubing through the loop on the bottom of the upper structure and down the chair lift arm (see Figure 24).
6. Lube the O-ring on the receptacle with silicone grease and attach the water bottle.

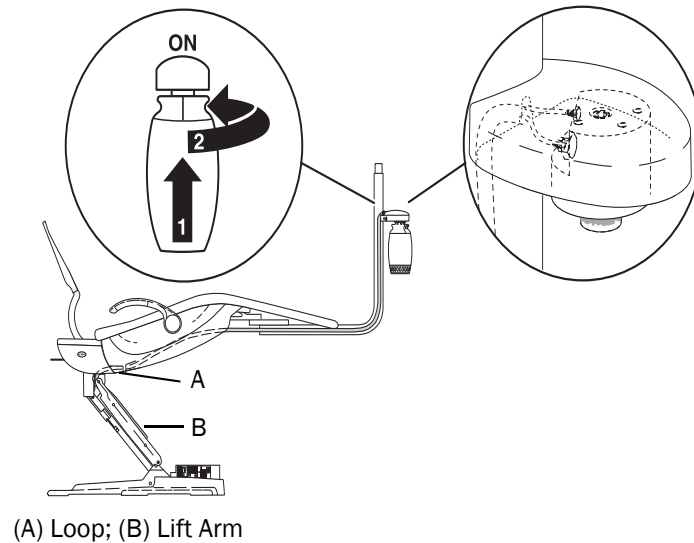


NOTE If the configuration does not include a front monitor mount, proceed to the section “Box 3: Delivery System” on page 15.



NOTE Encourage the dental team to perform a shock treatment on the dental unit waterlines, according to their standard office protocol, before using the system for the first time and after long periods of nonuse. Refer the team to the *Waterline Maintenance Guide* (p/n 85.0983.00) for further details.

Figure 24. Attach the Water Bottle



Small Box 3

Install the Front Monitor Mount

If the system includes a monitor mount that attaches to the front-mount arm, install the monitor mount now following the instructions included with the monitor mount.

Next Steps

- If you have other modules to install, proceed to the section corresponding to the next box number.
- If this is your last module, proceed to “Final Steps” on page 47.

Box 3: Delivery System

Large Box 3 contains the Traditional or Continental® delivery system (see Figure 25 and Figure 26).



READ THIS! If you are installing an A-dec 300 delivery system, do not use this procedure. Follow the instructions that ship with the delivery system.

Large Box 3 may also contain optional modules that install with the delivery system. Depending on the system configuration, you may install:

- Standard or large tray holder and tray (see Figure 27)
- Auxiliary holder



NOTE Large Box 3 also can contain an optional foot control. For installing sequence and instructions, see “Install the Foot Control” on page 22.

Install the Delivery System



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.

1. Lower the chair and turn off the power to the chair.

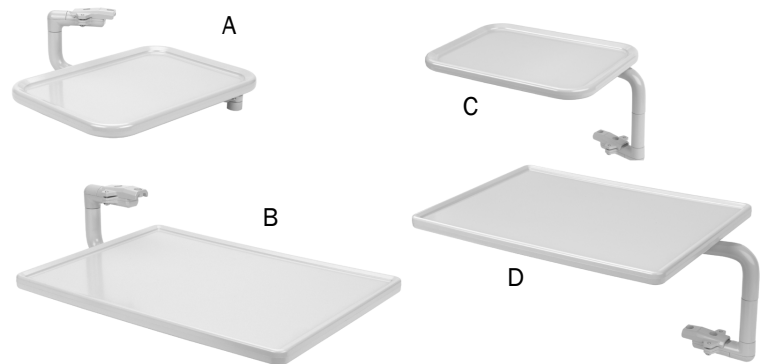
Figure 25. 532 Traditional Delivery System



Figure 26. 533 Continental Delivery System



Figure 27. 500 Delivery System Trays and Holders



(A) Continental Standard; (B) Continental Large;
(C) Traditional Standard; (D) Traditional Large

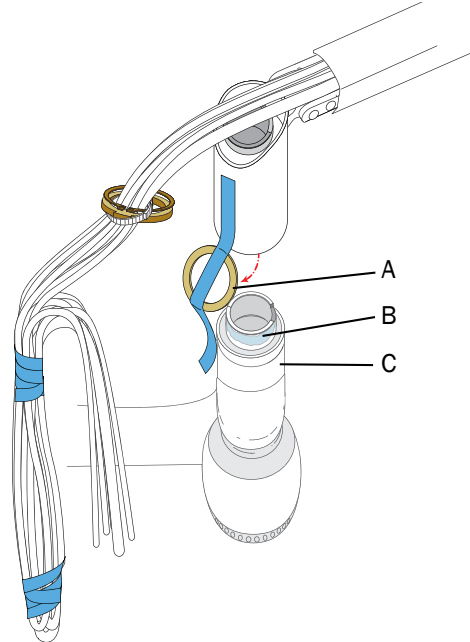
2. Use Lubriplate® to lube the post of the front-mount arm.
3. Add the thrust washer (taped to the bottom of the hub) to the post (see Figure 28).
4. Position the delivery system assembly on the mount arm (see Figure 29).
5. Route the tubing umbilical through the arm.



TIP For easier routing, leave on the tape protecting the ends of the tubing.

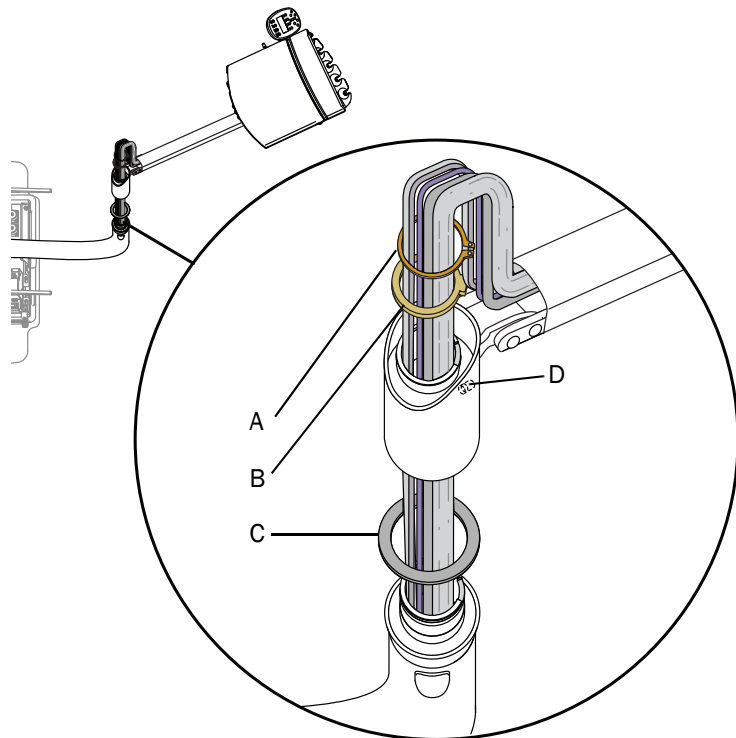
6. Install the pivot stop ring with the key of the stop ring in the notch of the arm.
7. Install the snap ring on top of the pivot stop ring to secure the delivery system assembly to the post.
8. Tighten the tension setscrew to adjust rotation tension on the flexarm. Do not overtighten (see Figure 29).

Figure 28. Add Thrust Washer to Post



(A) Thrust Washer; (B) Lube Post Here; (C) Post

Figure 29. Place Delivery System on Front Mount Arm



(A) Snap Ring; (B) Pivot Stop Ring; (C) Thrust Washer; (D) Tension Setscrew

9. Turn on the power to the chair and raise the base up and back up. Turn off the power to the chair.
10. Route the tubing umbilical under the shield, through the chair upper structure loop and down through the chair lift arm (see Figure 30).

Install the Tray Holder

You can mount the tray support arm on the left or right side of the delivery system. Position the tray holder above the Traditional delivery system and below the Continental delivery system.

1. Attach the tray support arm to the tray holder with three screws (see Figure 32 on this page, Figure 33 on page 18, Figure 34 on page 18, and Figure 35 on page 18).
2. Mount the tray holder assembly to the delivery system by sliding the tray support arm in place around the support screw in the bottom of the control head. Tighten the second screw in the assembly (see Figure 31).

Figure 30. Route Delivery System Tubing

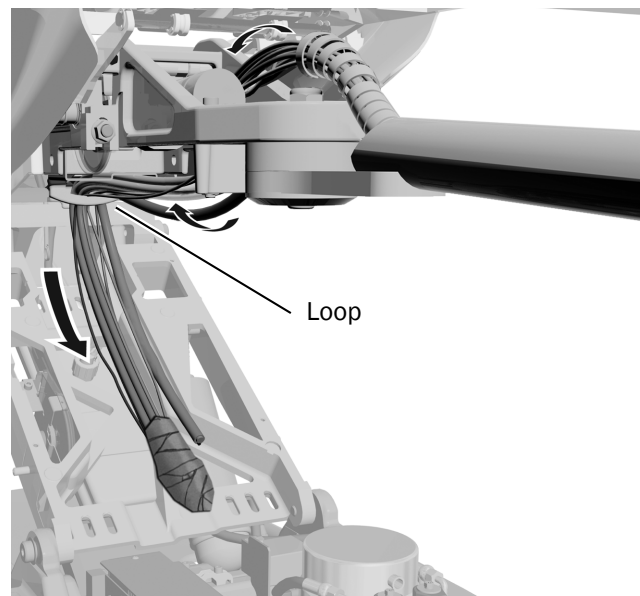
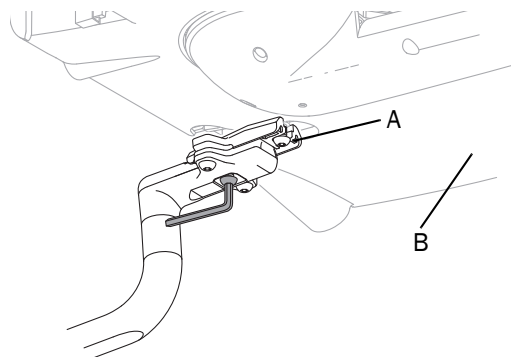
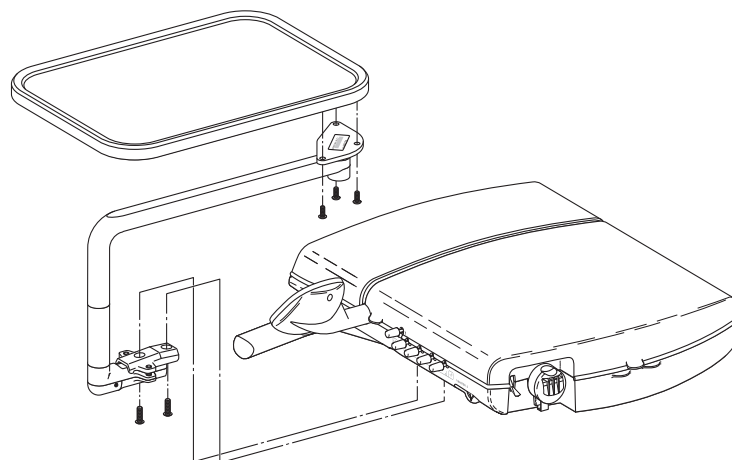


Figure 31. Slide Tray Support Arm in Place



(A) Support Screw; (B) Underside of Control Head

Figure 32. Install Traditional Standard Tray Holder



3. Adjust the tray arm friction using the hex head bolt (see Figure 36).

Next Steps Proceed to the section “Box 4: Water Bottle and Manifold” on page 19.

Figure 33. Install Traditional Large Tray Holder

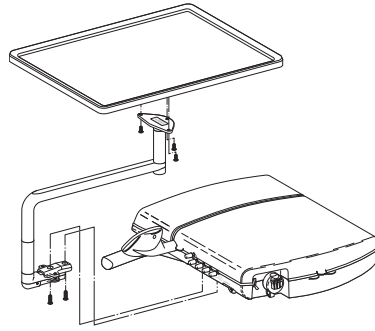


Figure 34. Install Continental Standard Tray Holder

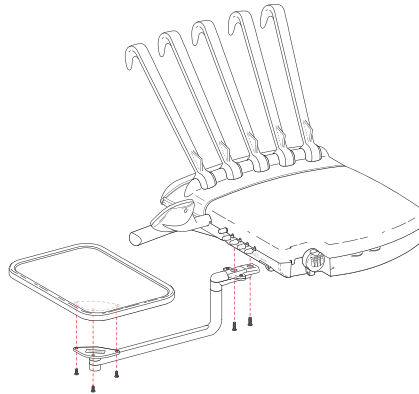


Figure 35. Install Continental Large Tray Holder

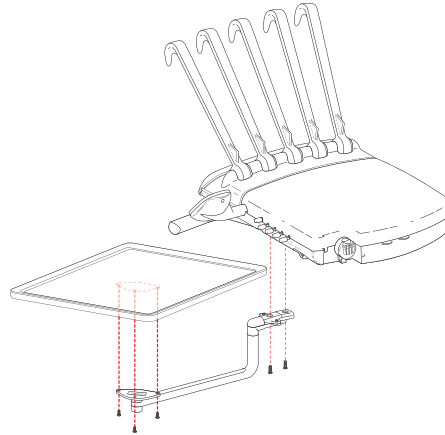
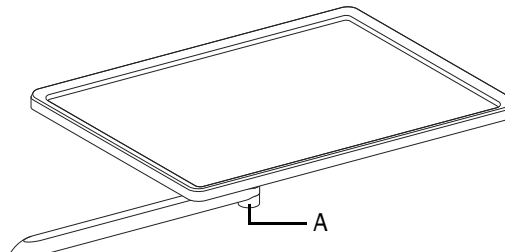


Figure 36. Adjust Tray Arm Friction



(A) Adjust Hex Head Bolt

Box 4: Water Bottle and Manifold

Box 4 contains the water bottle and the chair manifold.

Box 4 may also contain optional modules that install with the floor box. Depending on the system configuration, you may install:

- Foot control
- Moisture separator



NOTE Depending on the configuration, Box 4 may be packaged with the front mount in Box 2. If your configuration requires a front-mount water bottle, refer to page 13.

Install the Moisture Separator (Optional)

Use the installation guide included in the moisture separator kit (see Figure 37).

Install the Chair Manifold

The chair manifold is the central connection point for air and water tubing.

1. Place the chair manifold locator pin (located on the back side of the manifold) in the hole on the chair lift arm (see Figure 38).
2. Secure the manifold to the lift arm with the mounting screw located in the chair manifold kit.

Figure 37. Install the Moisture Separator (Optional)

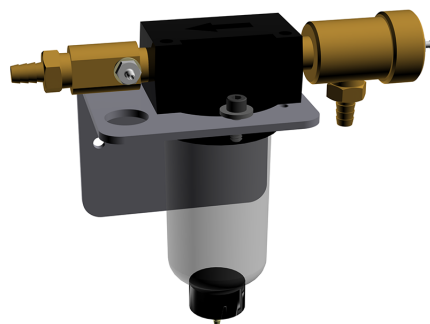
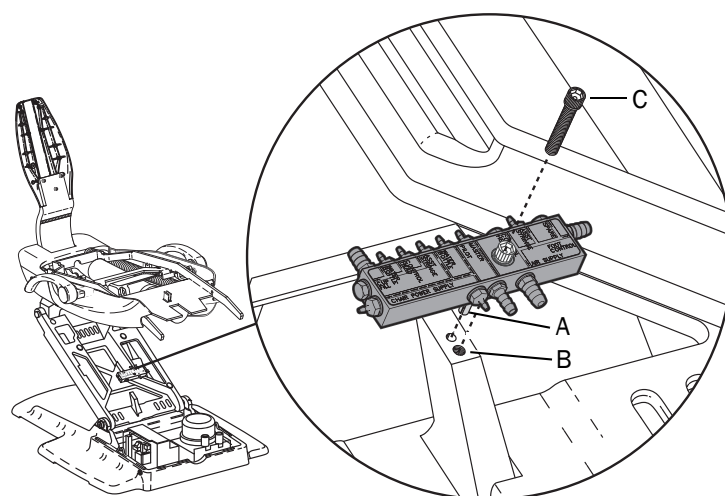


Figure 38. Install the Chair Manifold



(A) Manifold Locator Pin; (B) Mounting Screw Hole;
(C) Mounting Screw

Secure the Tubing and Cables

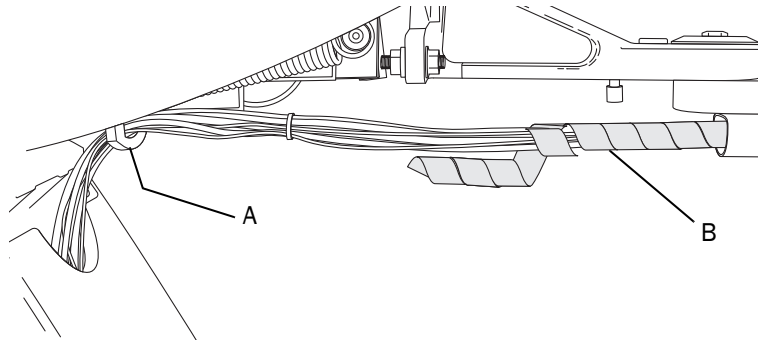
1. Route the tubing and cables through the upper part of the chair.
2. Install the umbilical wrap around the tubing and cables exiting from the front mount arm (see Figure 39).



NOTE If you are installing other equipment (such as the monitor), install the umbilical wrap as a last step. However, if you cut tubing to remove excess length, note that adding the umbilical wrap and bail changes the required tubing lengths.

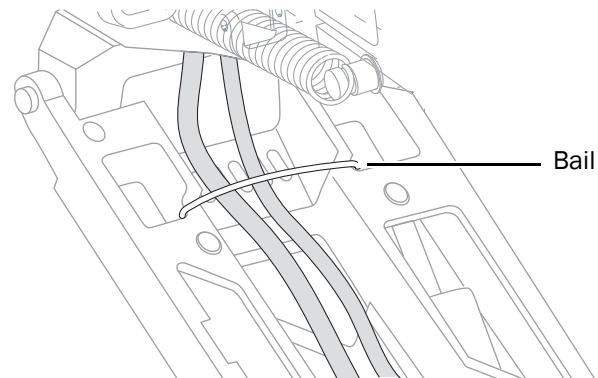
3. Attach the bail to the lift arm casting to retain all the tubing and cables. Pressing the center of the bail makes it easier to install (see Figure 40).

Figure 39. Wrap the Tubing and Cables



(A) Loop; (B) Umbilical Wrap

Figure 40. Secure Tubing and Cables With Bail



Plumb the Water Bottle

1. Trim the blue water and yellow air tubing to the correct length.



NOTE Ensure all tubing cuts are square for proper fit.



TIP Press the black release ring to remove a red plug from the manifold.

2. Attach the blue water tubing to the manifold and secure with the black tubing sleeve. Refer to the labels on the manifold for correct connections (see Figure 41).
3. Attach the yellow air tubing to the manifold.

Plumb the Delivery System

1. Connect the air and water tubing to the manifold. The installed modules from the chair manifold determine which barbs or plugs are removed or replaced. Refer to the labels on the manifold for correct connections (see Figure 41).
2. Route the power cable under the manifold and connect to the black 24 VAC isolated lead from the power supply.
3. Route the delivery system data line under the manifold and connect the line to the chair circuit board. Coil the excess data line (see Figure 42).
4. Connect the pilot air from the manifold to the chair power supply.

Figure 41. Connect Air and Water Tubing to the Manifold

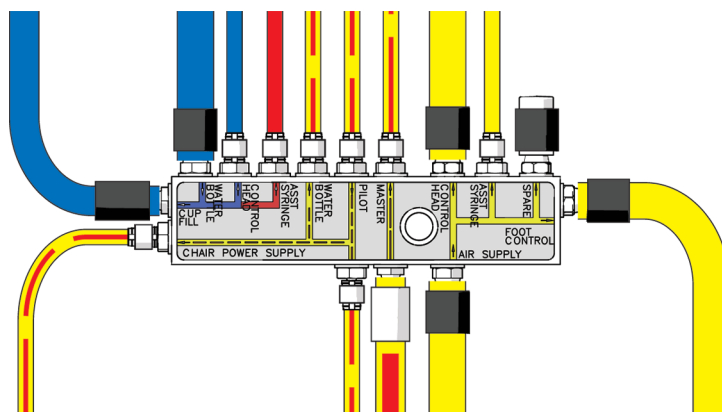
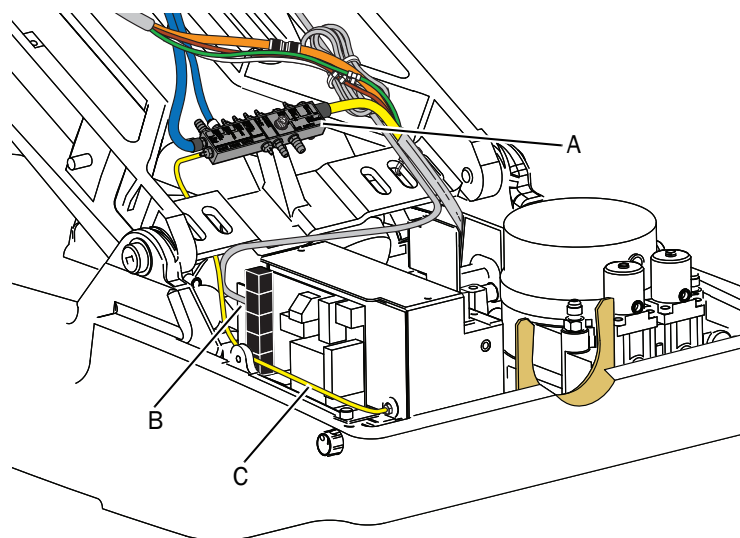


Figure 42. Route Power Cable and Data Line



(A) Manifold; (B) Data Line; (C) Pilot Air to Power Supply Air/Electric Switch

Install the Foot Control



NOTE The foot control is only used with a delivery system.



READ THIS! If you are installing a lever foot control, follow the installation instructions that shipped with the foot control instead of the following section.

1. Route the foot control tubing under the lift arm toward the pump motor side.
2. Connect the tubing to the delivery system tubing and the manifold (see Figure 44).
3. Place the strain relief bracket over the tubing and tighten the bracket screw.



NOTE For proper positioning, ensure the ridges on the foot control tubing face up to match the grooves in the strain relief.

4. Secure the foot control tubing to the lift arm with a cable tie.

Plumb the Floor Box

1. Route the remaining delivery system tubing through the convolute to the floor box (see Figure 45).
2. Purge the manual shut-off valves of debris.

Figure 43. Install the Foot Control

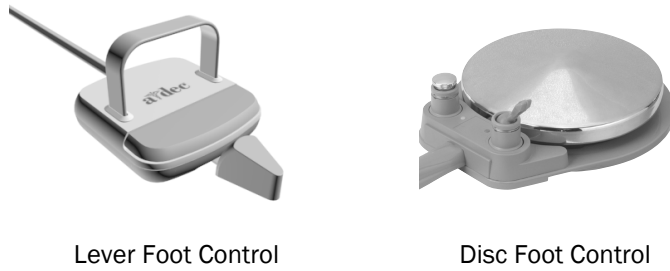
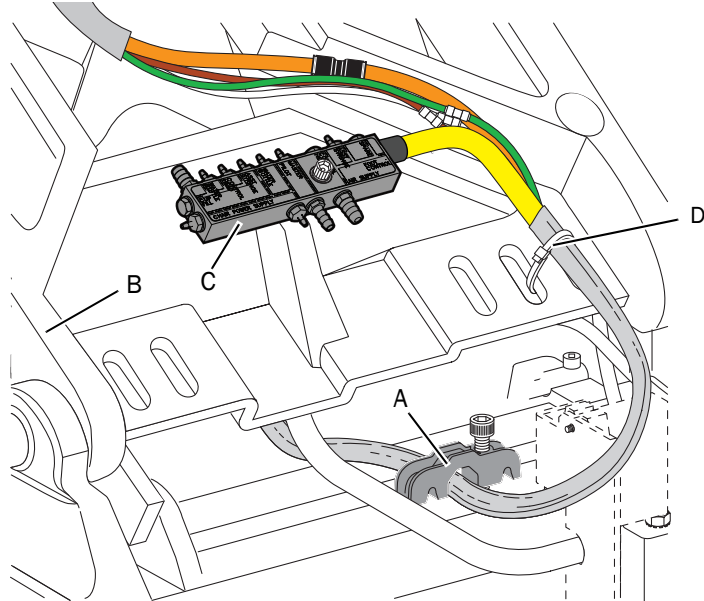
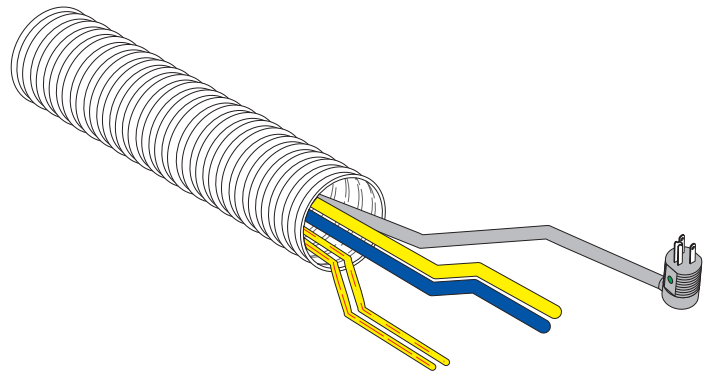


Figure 44. Route the Foot Control Tubing



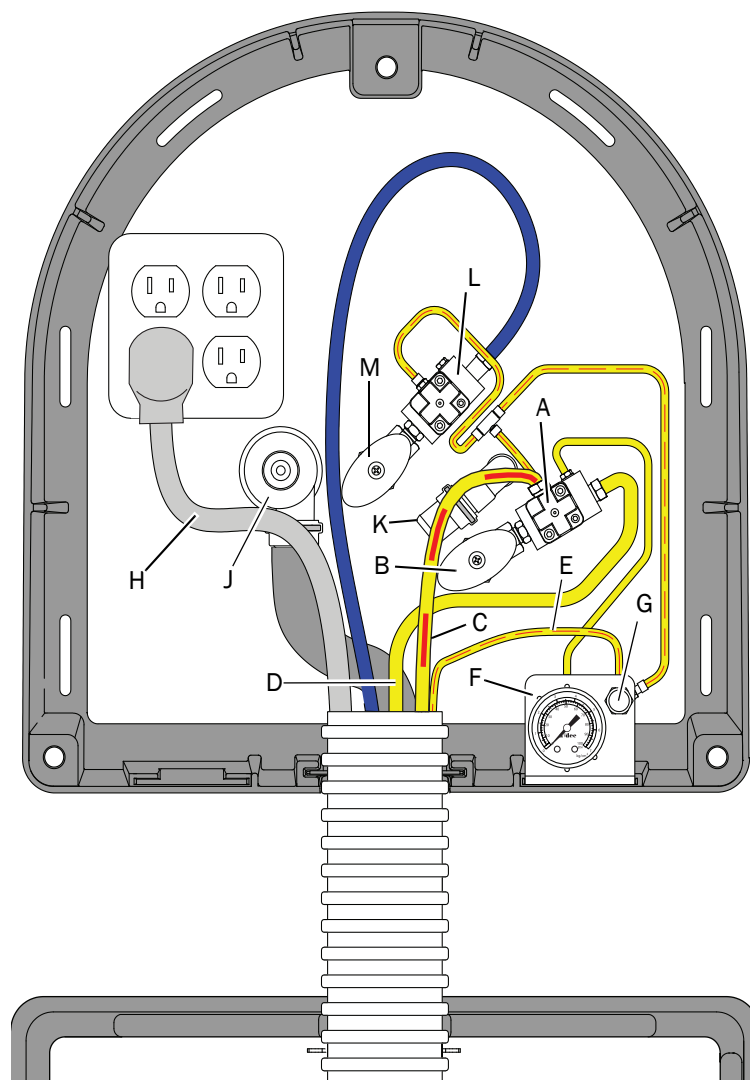
(A) Strain Relief Bracket; (B) Chair Lift Arm; (C) Manifold; (D) Secure With Cable Tie

Figure 45. Route the Tubing Through the Convolute to the Floor Box



3. Connect the air filter/regulator to the manual air shut-off valve (see Figure 46).
4. Trim the master air and supply air tubing and connect to the air filter/regulator in the floor box.
5. Trim the pilot air. 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. Fully open the manual water shut-off valve.
9. Plug in the chair power cord.
10. Raise the chair back.

Figure 46. Plumb the Floor Box



(A) Air Filter/Regulator; (B) Manual Air Shut-Off Valve; (C) Master Air; (D) Supply Air; (E) Pilot Air; (F) Air Pressure Gauge; (G) Pre-regulator; (H) Chair Power Cord; (J) Gravity Drain; (K) Vacuum Source; (L) Water Filter/Regulator; (M) Manual Water Shut-Off

Box 5: Support Link

Box 5 contains the support link that mounts the support arm for the A-dec 561 Support Center, A-dec 551 Assistant's Instrumentation, and support-side dental light to the chair.



READ THIS! If the system includes an A-dec 461 Support Center or an A-dec 351 Assistant's Instrumentation, do not use this procedure. Those modules use a different support link. Follow the installation instructions that ship with the support center or assistant's instrumentation.



NOTE Mounting screws for the support arm are included in Box 5, but are not used until installing Box 6 or Box 7, depending on your configuration.



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.

1. Position the chair in the base up and back up position, and turn off the power to the chair.
2. If a delivery system is installed, ensure the master toggle is off to exhaust the air.
3. Remove the stop plate cover.
4. Install the leveling bar to the chair swivel with the two dowel pins (see Figure 48).
5. Slide the support link onto the chair and attach it with the top two mounting bolts and washers. Do not tighten (see Figure 49).

Figure 47. Support Link

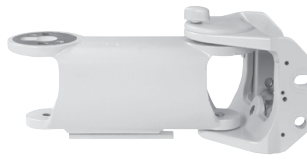
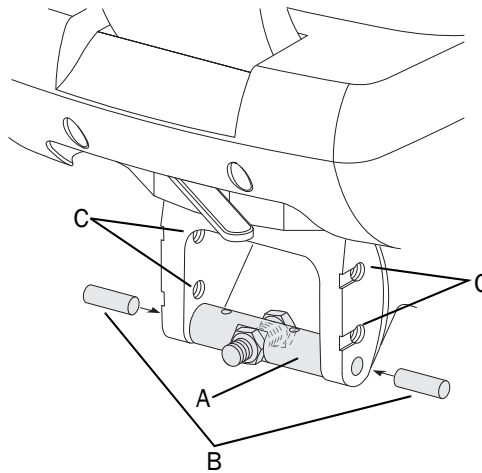
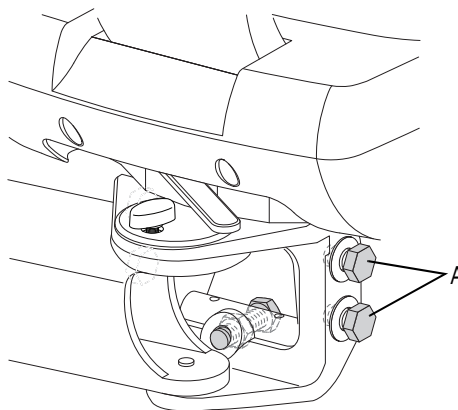


Figure 48. Install Leveling Bar



(A) Leveling Bar; (B) Dowel Pin; (C) Mounting Bolt Hole

Figure 49. Mount Support Link



(A) Mounting Bolt and Washer

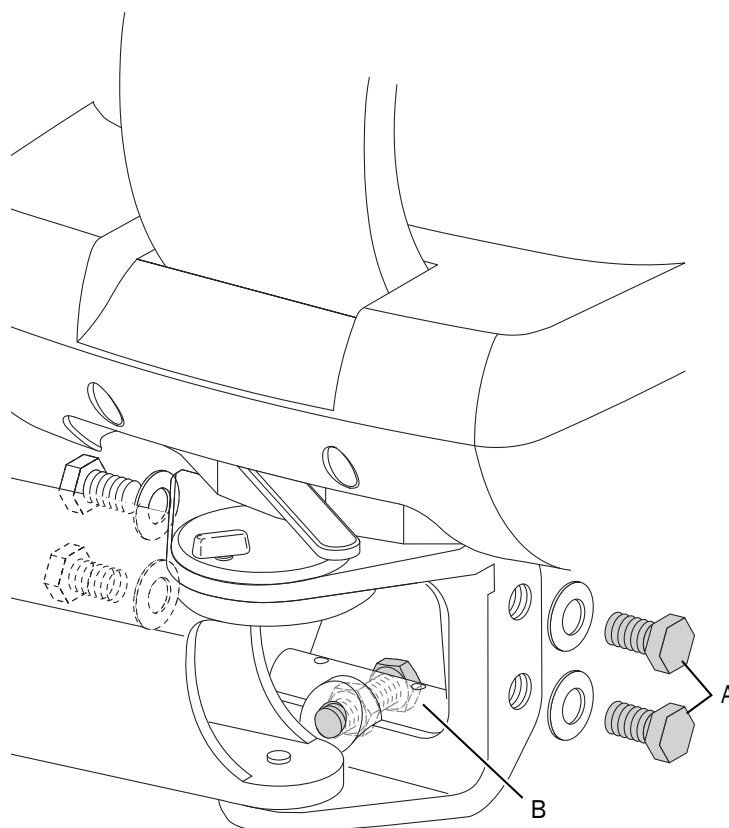
6. Screw the leveling bolt into the leveling bar, leaving one to two threads exposed.
7. Install the bottom two mounting bolts and washers to the support link.



TIP Cover the chair baseplate with the foam packing sheet from Box 1 to protect the baseplate during the install.

8. Level the support link:
 - (1) Loosen the mounting bolts on both sides (see Figure 50).
 - (2) Loosen the locking nut.
 - (3) Place a level on the link.
 - (4) Adjust the hex bolt to level the support link.
 - (5) Tighten the locking nut.
 - (6) Tighten the mounting bolts to secure.

Figure 50. Rough Level



(A) Mounting Bolt; (B) Hex Bolt and Locking Nut

Box 6: Support Arm

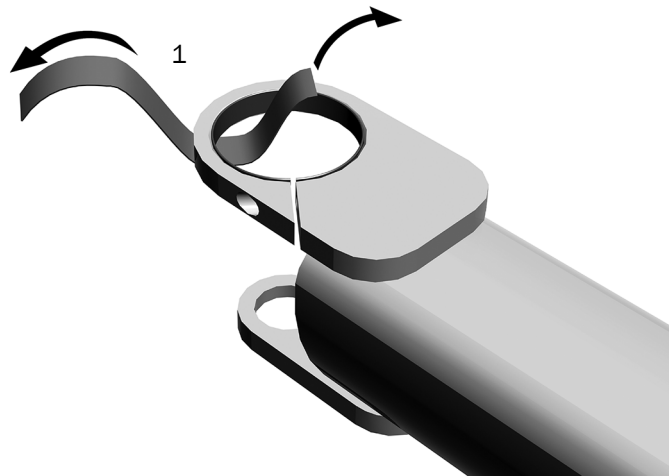
Box 6 contains the support arm, to which the support center, cuspidor, dental light, and support side monitor mount are installed. Depending on the system configuration, you may install some or all of these items.

1. Remove the tape securing the bearing sleeve to the support arm (see Figure 52).

Figure 51. Support Arm

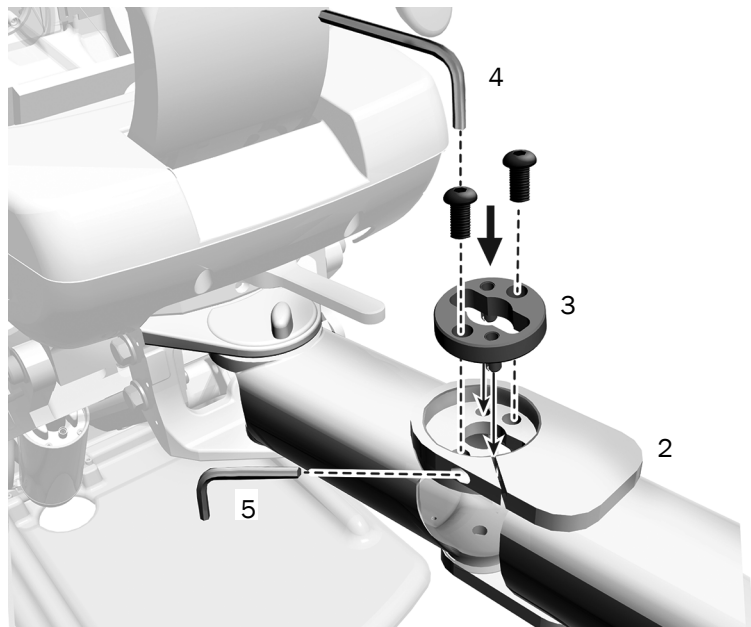


Figure 52. Remove Tape Securing the Bearing Sleeve

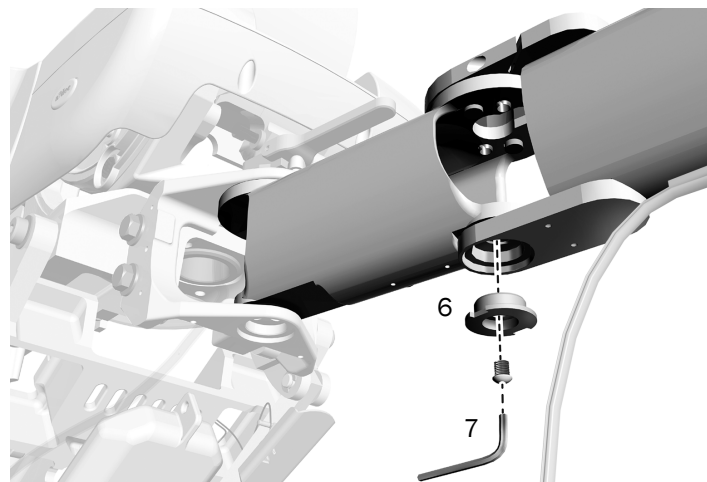


2. Place the support arm in position with the support link (see Figure 53).
3. Insert the bearing.
4. Use a 5/16" hex key to secure the bearing to the support link.
5. Use a 3/16" hex key to tighten the friction adjustment until the arm moves smoothly but does not swing freely.

Figure 53. Mount Support Arm on Support Link



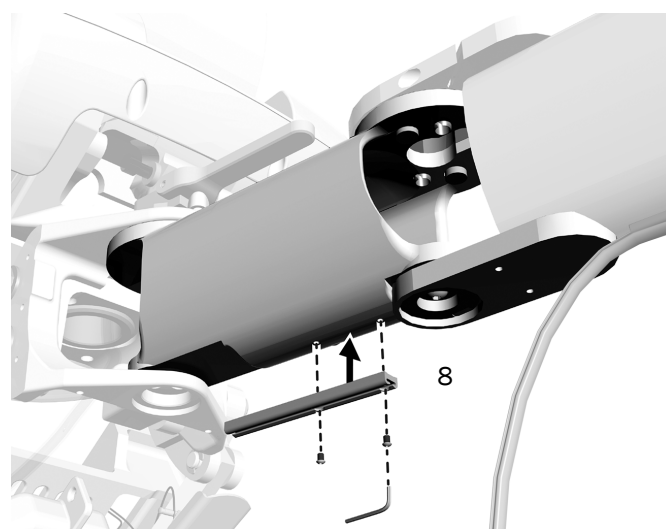
6. Insert the bearing in the bottom of the arm (see Figure 54).
7. Use a 5/16" hex key to secure the bearing with the brass bolt from the kit.

Figure 54. Install Lower Bearing

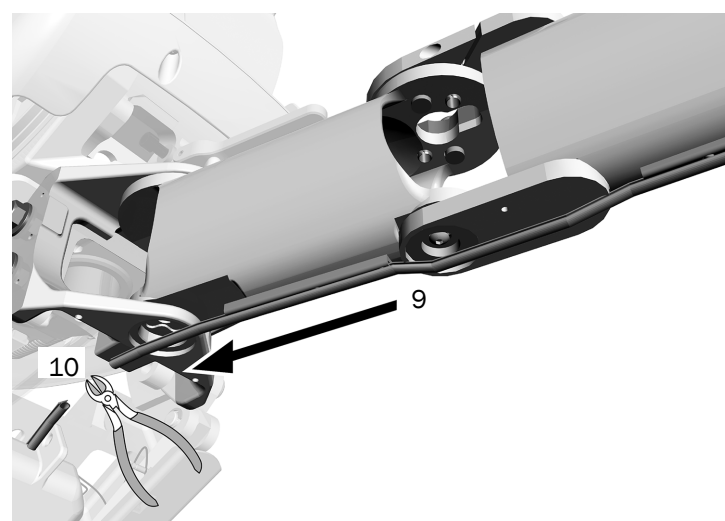
8. Use a 5/64" hex key to attach the tubing guide to the support link (see Figure 55).



NOTE Position the guide so that it is completely on the link and does not cover the screw securing the support arm.

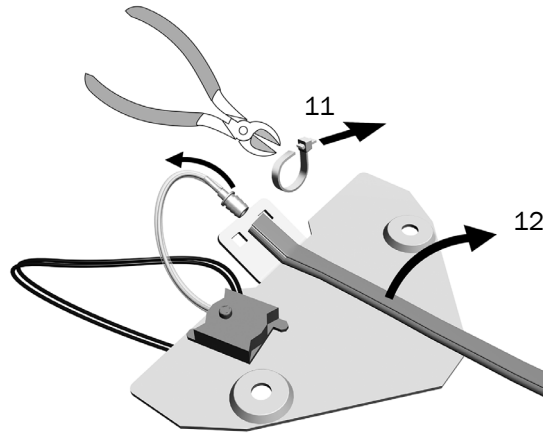
Figure 55. Install Tubing Guide

9. Slide the tubing into the guide (see Figure 56).
10. Cut the tubing where it reaches the end of the support link.

Figure 56. Install Tubing into the Guide

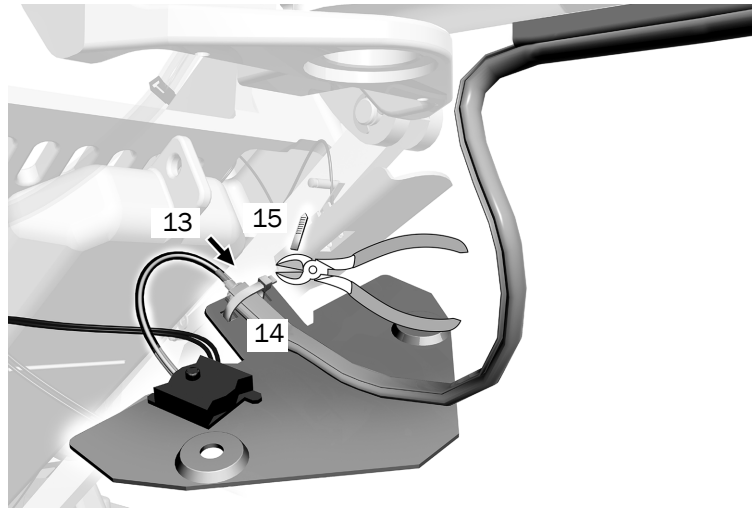
- 11. Cut the cable tie securing the tubing to the support link stop switch plate (see Figure 57).
- 12. Remove the tubing.

Figure 57. Cut the Cable Tie



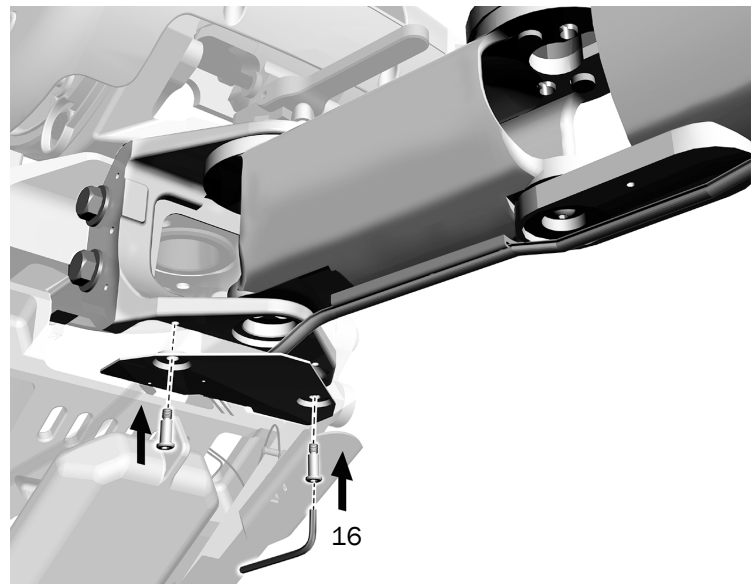
- 13. Insert the stop switch barb into the tubing (see Figure 58).
- 14. Use a cable tie to secure the tubing to the stop switch plate. Make sure the ridges on the tubing are face up.
- 15. Trim the excess cable tie.

Figure 58. Insert the Stop Switch Barb



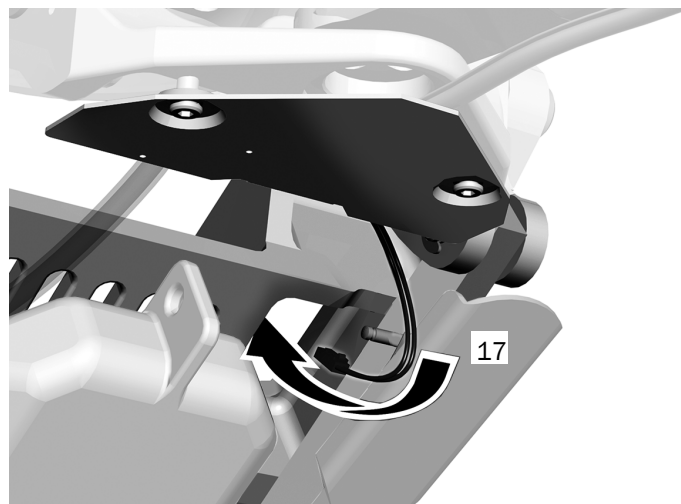
- 16. Use a 5/32" hex key and two shoulder bolts to secure the stop switch plate (see Figure 59).

Figure 59. Secure the Stop Switch Plate



17. Route the stop switch wires to the front of the lift arm (see Figure 60).

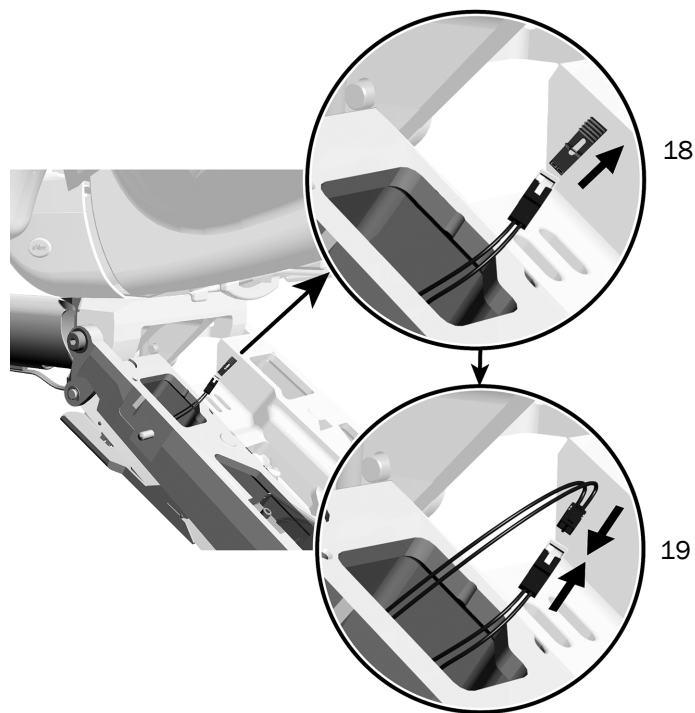
Figure 60. Route the Stop Switch Wires to the Front



18. Remove the jumper from the lift arm stop switch (see Figure 61).

Figure 61. Connecting the Stop Switches

19. Connect the stop switches.

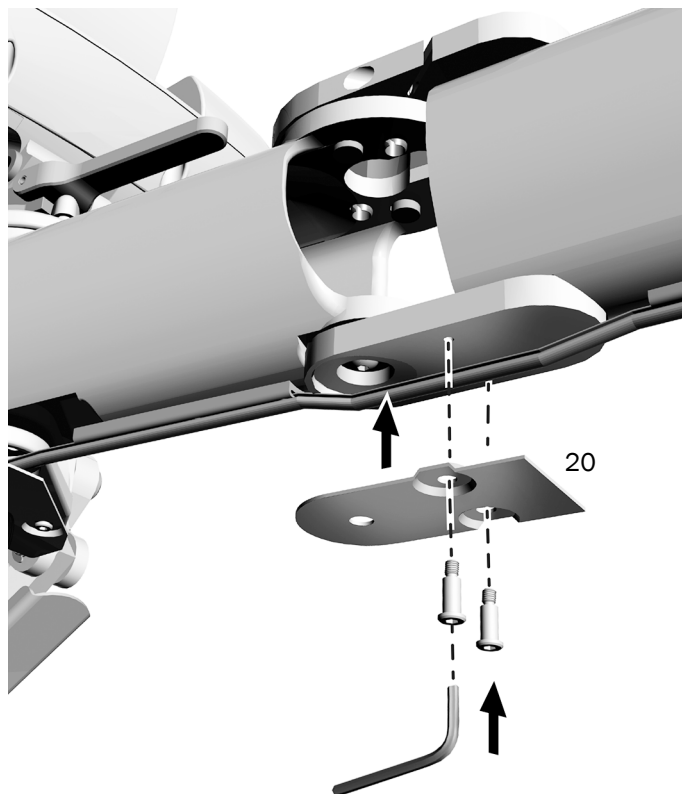


20. Use a 5/32" hex key and two shoulder bolts to secure the actuator plate. The ridges on the plate face up (see Figure 62).

Next Steps Proceed to the section "Box 7: Assistant's Instrumentation" on page 31.

If you are not installing an assistant's instrumentation arm, proceed to "Box 8: Support Center and Cuspidor" on page 32.

Figure 62. Secure the Actuator Plate



Box 7: Assistant's Instrumentation

Box 7 contains the A-dec 551 Assistant's Instrumentation, which you can install as a stand-alone module or with additional side support modules. A stand-alone module requires only a support link (Box 5). The assistant's instrumentation with additional support side modules requires a support link and a support arm (Box 6).



NOTE If the system includes an A-dec 351 Assistant's Instrumentation package, the shipping box will not be labeled with a large number. It will include the necessary support link.

Install the assistant's instrumentation by following the instructions included with the assistant's instrumentation kit.

Install a Master Toggle

If you install an assistant's arm without a delivery system, you must install a master toggle in the floor box. Follow the instructions included in the master toggle kit.

Box 8: Support Center and Cuspidor

Box 8 contains the support center and cuspidor.



READ THIS! If the system includes an A-dec 461 Support Center, the shipping box will not be labeled with a large number. If you are installing a 461 Support Center, do not use this procedure. Follow the instructions that ship with the support center.



NOTE If installing a cuspidor without a delivery system or assistant's instrumentation, you must install a master toggle in the floor box. For installation, refer to the instructions in the master toggle kit.

If installing a support center without a cuspidor (assembly p/n 77.0379.00), follow the instructions included with the support center.

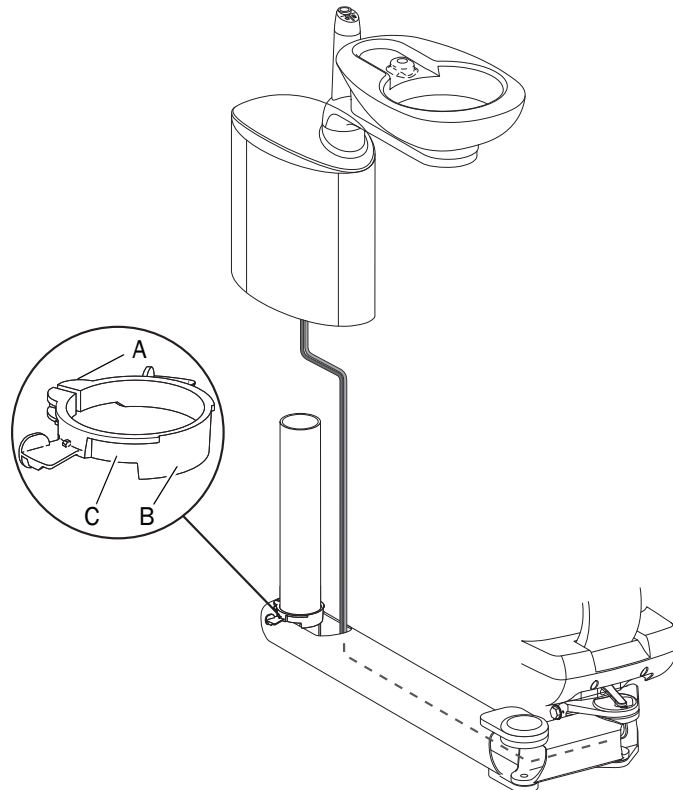
To install the support center and cuspidor to the support arm:

1. Loosen the rotation stop screw to slide the rotation stop over the post.
2. Install the rotation stop on the support arm post with the tab oriented over the opening in the arm. The tab should fit inside the arm opening.
3. Tighten the rotation stop screw.

Figure 63. Support Center and Cuspidor (Without Assistant's Instrumentation)



Figure 64. Install Cuspidor to Support Arm



(A) Rotation Stop Screw; (B) Tab; (C) Rotation Stop

4. Remove the side covers from the support center.
5. If installing a light or monitor to a support center, knock-out the mounting hole. Lay the support center on its side and use a broom handle to firmly tap the support center cover from the bottom of the support center.



CAUTION Ensure you remove the center of the mounting hole by firmly tapping on the underside of the cover. Do not knock out the mounting hole from the top of the support center. Doing so may crack the curved support center top cover.

6. Position the support center and cuspidor over the post (see Figure 64, page 32).
7. Route the tubing into the arm and slide the support center down until the hooks on the bottom of the center engage the rotation stop.



NOTE Once assembled, align the support center and the support arm to properly engage the rotation stop.

Install the Self-Contained Water Bottle to the Support Center

You can install the self-contained water bottle in the support center or on the front mount. For information on a front mount location, refer to “Install the Front-Mount Water Bottle” on page 13.



NOTE If installing an accessory cupfill water bottle (p/n 14.0464.02), refer to the installation instructions in the kit.

To install on the support center:

1. Remove the water bottle receptacle from the cap and discard the cap (see Figure 67).

Figure 65. Remove Support Center Side Covers

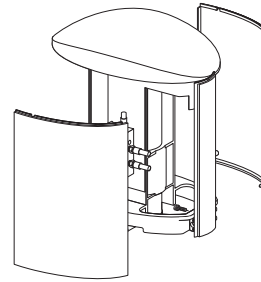


Figure 66. Knock Out Mounting Hole In Support Center Cover (Light or Monitor Install Only)

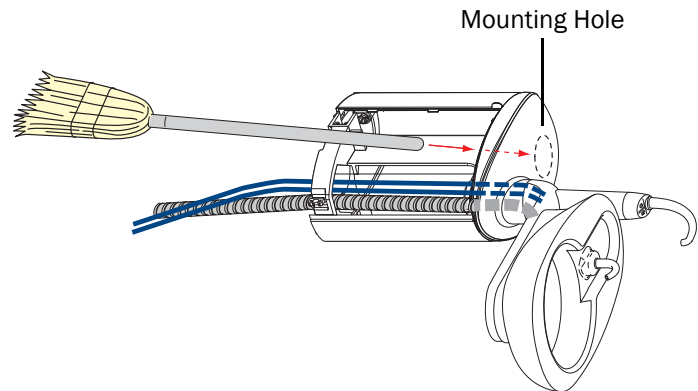
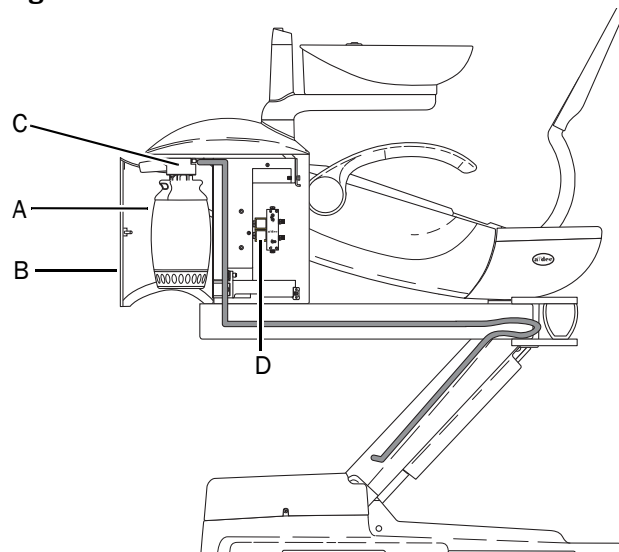


Figure 67. Install and Plumb Water Bottle



(A) Water Bottle; (B) Water Bottle Cover; (C) Receptacle; (D) Cuspidor Water Manifold

2. Plumb the water bottle:

- (1) Feed the tubing bundle through the hole in the support center frame, on the water manifold side.
 - (2) Route the tubing through the arm and support link, then down the chair lift arm.
 - (3) Connect the tubing to the chair manifold.
3. Attach the water bottle receptacle to the support center frame using two screws.
 4. Following the A-dec ICX[®] waterline treatment tablet instructions, place an ICX tablet (p/n 90.1065.00) in the water bottle.



WARNING Avoid touching the A-dec ICX[®] waterline treatment tablet with unprotected skin. For more details, please refer to the instructions for use provided with the ICX tablets (p/n 86.0613.00).

5. Fill the bottle with water.
6. Put A-dec silicone lubricant on the receptacle O-ring.



CAUTION Use only A-dec silicone lubricant or the O-ring may be damaged.

7. Install the water bottle into the receptacle.

Plumb the Cuspidor

1. Route the cuspidor tubing down the motor pump side of the chair lift arm and under the chair manifold (see Figure 68).
2. Remove the cupfill plug from the manifold and replace it with a barb and washer (see Figure 69).
3. Trim and attach the cupfill (blue) tubing to the cupfill barb (see Figure 69). Secure with the black tubing sleeve.



NOTE To avoid kinking, route the tubing below the manifold.

Figure 68. Plumb the Cuspidor

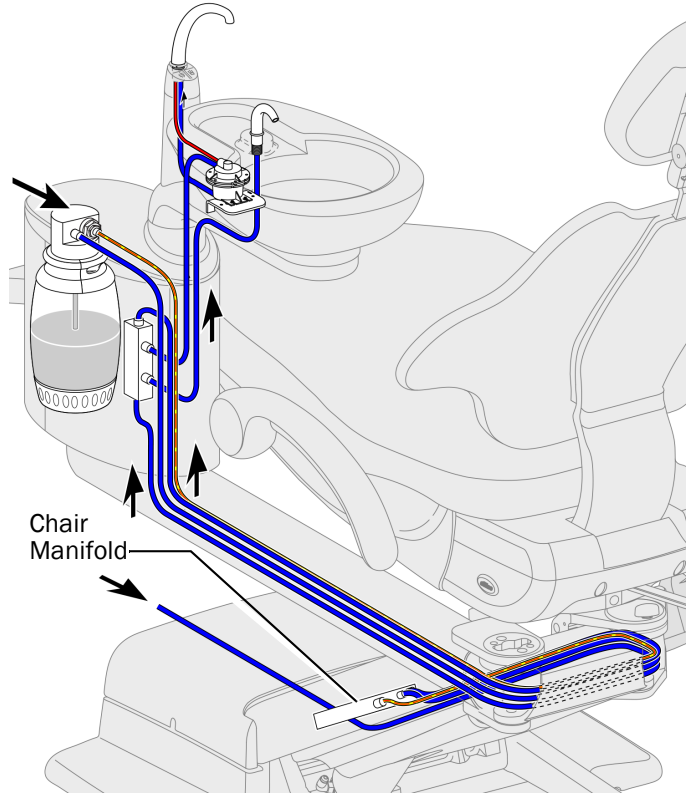
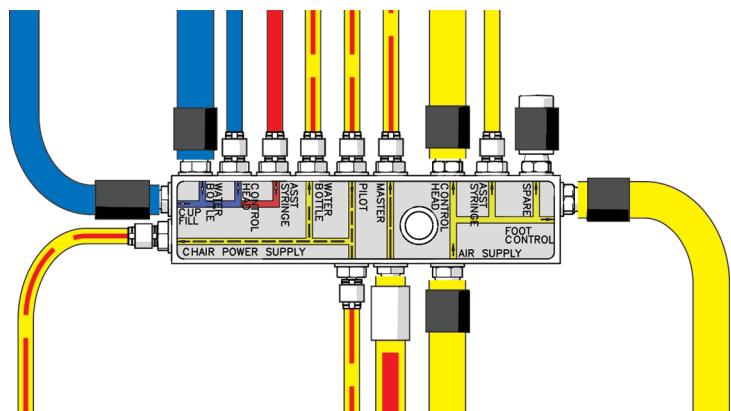


Figure 69. Attach Tubing to the Manifold



4. Connect the power cable to the chair power supply and the data line to the chair circuit board.
5. Route the cuspidor gravity drain and the bowl rinse tubing through the convolute to the floor box.
6. Connect the bowl rinse tubing to the water filter/regulator and hook up the water filter/regulator to the water shutoff valve (see Figure 70).
7. Lube the cuspidor spout O-rings with silicone and install them on the cuspidor.



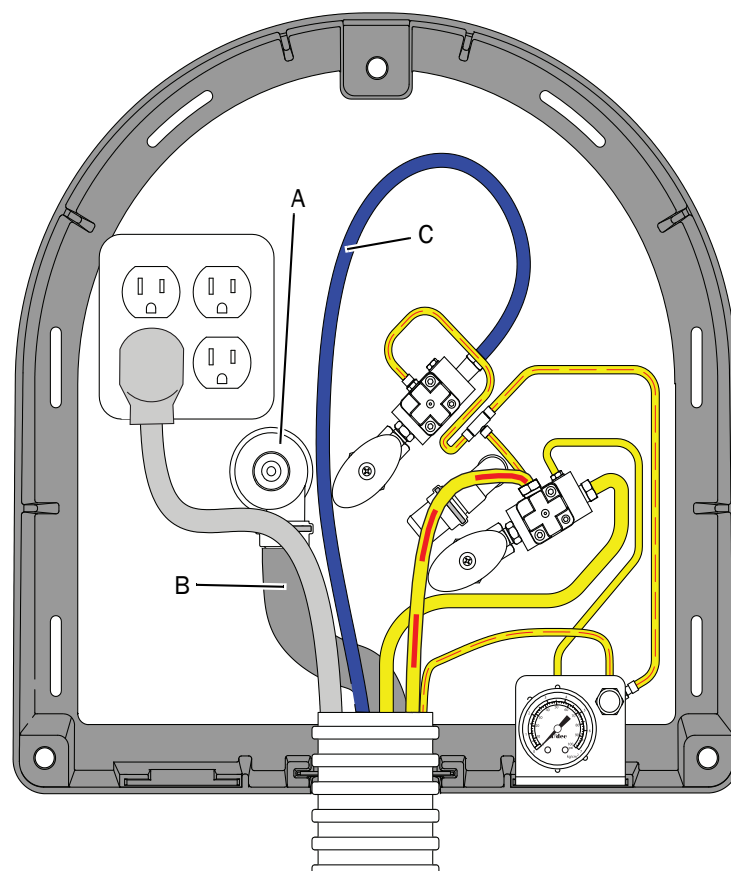
NOTE The cupfill spout does not rotate. Align it in the cuspidor.

8. Place the bowl screen in the cuspidor bowl drain.

Next Steps

- If you have other modules to install, proceed to the section corresponding to the next box number.
- If this is your last module, proceed to “Final Steps” on page 47.

Figure 70. Attach Tubing in Floor Box



(A) Gravity Drain Adaptor; (B) Cuspidor Gravity Drain Tubing;
(C) Cuspidor Bowl Rinse Tubing

Box 9: Monitor Mount



IMPORTANT If you are installing a support-side dental light, do not use this procedure to install the monitor mount. Instead, see “Install the Support-Side Monitor Mount” on page 41 in the section “Box 10: Dental Light”.

Box 9 contains the mount for the support side monitor.

Install the Monitor Mount

1. Install the extender post and monitor-mount arm:
 - (1) Insert the extender post (tapered end first) into the support center post, rotating the post until it drops into place.
 - (2) Slide the trim ring over the extender post and down until it fits into the top of the support center.
 - (3) Insert the rotation stop into the extender post. Orient the stop with the thick side down (see Figure 72).
 - (4) Install the monitor-mount arm onto the extender post.
2. Route the monitor cables:
 - (1) Remove the support arm end cap (see Figure 73).
 - (2) Route the monitor cables and video cable through the posts and the chair lift arm. Leave approximately 18" (457 mm) of cable hanging free on the monitor end of the monitor mount arm.



NOTE A-dec does not supply the video cable.

Figure 71. Monitor Mount



(A) Monitor Mount Arm; (B) Extender Post

Figure 72. Install Monitor Mount Post

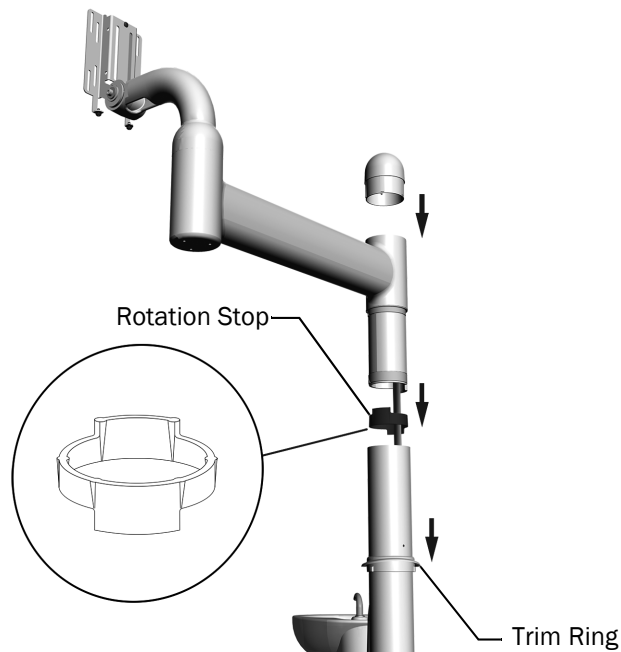
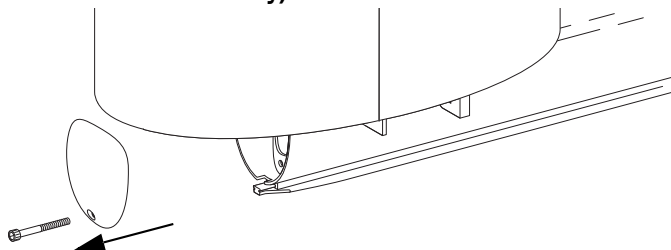


Figure 73. Remove Support Arm End Cap (Support Center Installs Only)



- (3) Connect the cables to the appropriate video source. Connect the monitor power cable to the chair power supply.



NOTE If the system includes an intraoral camera, route the camera video cable from the delivery system umbilical up to the monitor.

Attach the VESA Adaptor to the Monitor



NOTE If the mounting holes on the monitor are recessed, you need to install an adaptor on the monitor before attaching the monitor to the VESA bracket on the mount arm.

1. Attach the adaptor to the monitor using the screws provided with the monitor (see Figure 74).

Attach the Monitor to the Mount Arm

1. Attach the monitor (or adaptor if installed) to the VESA bracket on the mount arm (see Figure 75).
2. Plug in the video and power cables.

Install the Monitor Mount Handle

1. Use a 5/32" hex key to loosen the screws until the screw tips are flush with the handle (see Figure 76).

Figure 74. Attach the VESA Adaptor to the Monitor

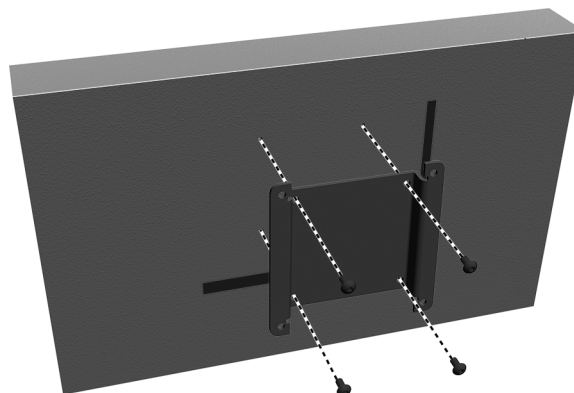


Figure 75. Install the Monitor on the Mount Arm

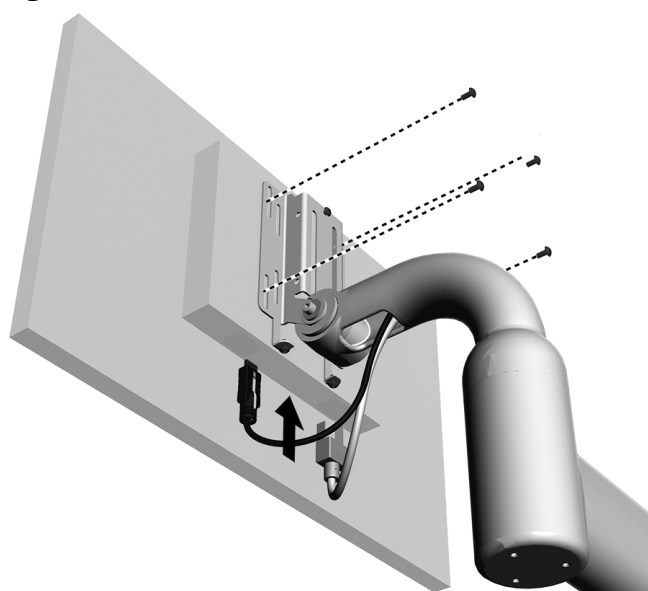
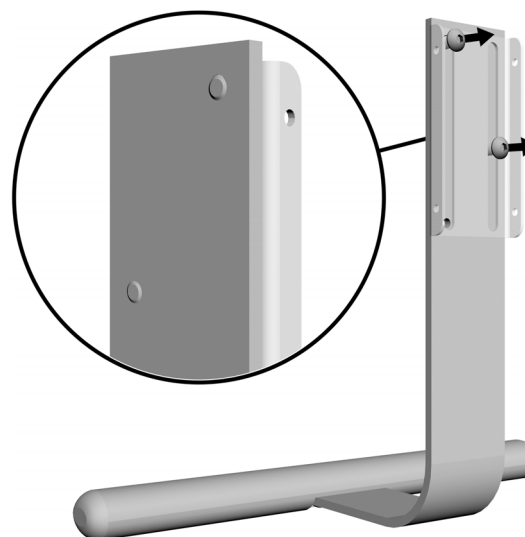
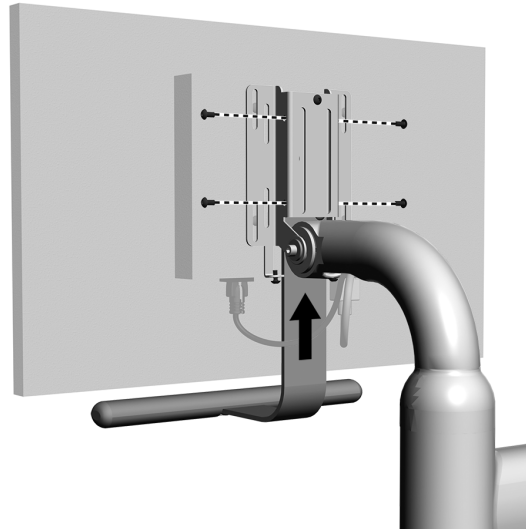


Figure 76. Install the Monitor Mount Handle



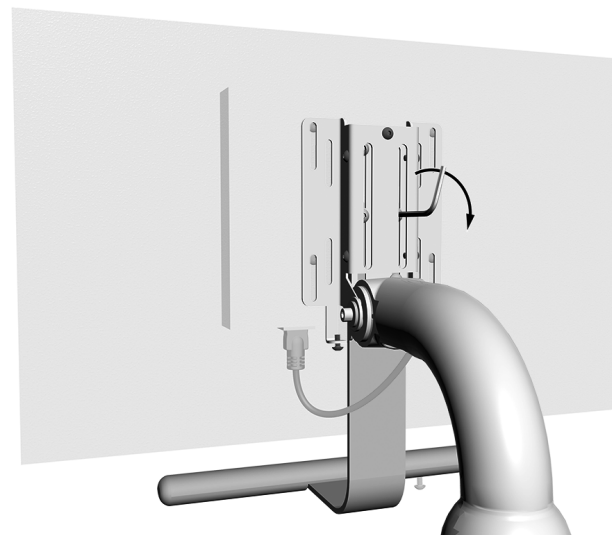
2. Tilt the monitor up, if necessary (see Figure 77).
3. Slide the handle up into the VESA bracket.
4. Use a 1/8" hex key to secure the handle bracket to the VESA bracket.

Figure 77. Install the Monitor Mount Handle



5. Adjust the handle position to the user's preference (see Figure 78).
6. Use a 5/32" hex key to secure the handle.

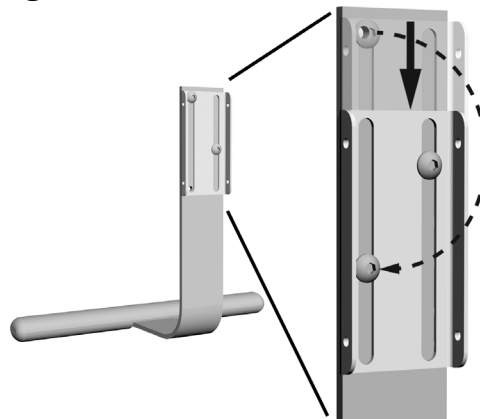
Figure 78. Adjust the Handle Position





NOTE To position the handle closer to the monitor, move the bracket lower on the handle. Use a 5/32" hex key to move the top screw to the lower position on the handle (see Figure 79).

Figure 79. Move Handle Closer to the Monitor



Install the Back Cover

1. Tilt the monitor down as far as you can (see Figure 80).
2. Place the cover over the bracket.
3. Use a 1/8" hex key to install the top screw.
4. Tilt the monitor up.
5. Use a 1/8" hex key to install the two screws in the bottom of the cover.

Figure 80. Install the Back Cover

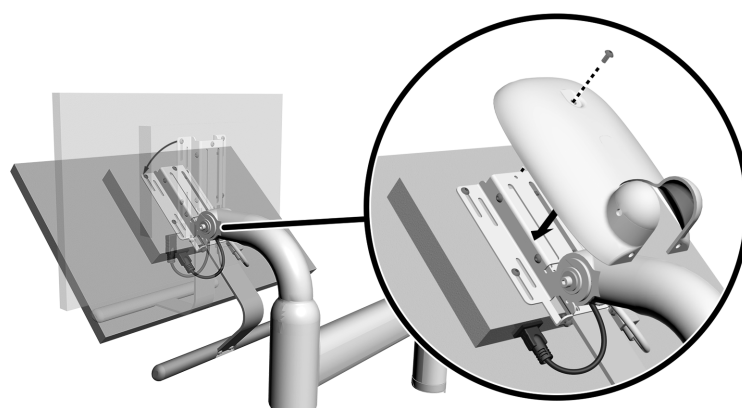
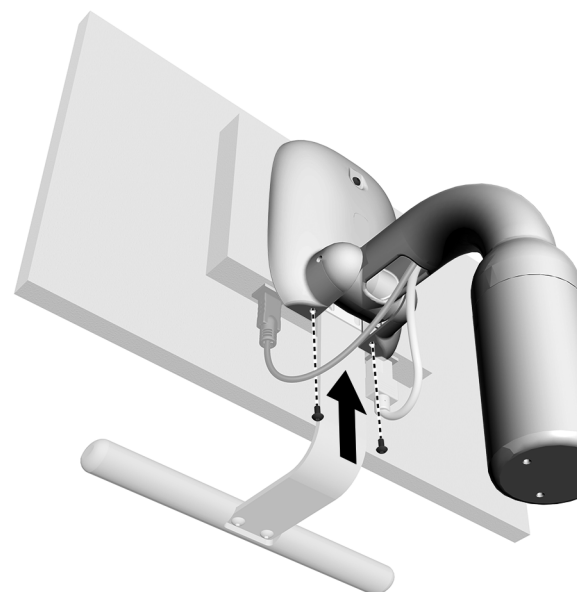


Figure 81. Secure the Back Cover



- Next Steps**
- Proceed to "Final Steps" on page 47.

Box 10: Dental Light

Box 10 contains the dental light. The dental light can be installed in three configurations:

- install on a support arm without a support center
- install on a support arm with a support center
- install on a support arm with a support center that includes a monitor mount

These procedures explain how to install a quartz-halogen dental light.



IMPORTANT If you are installing an LED dental light, follow the instructions in the installation guide that came with the LED dental light.

The following procedures assume that the support center, if included, has been installed.

Install the Light Post

This procedure applies to all configurations.



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.

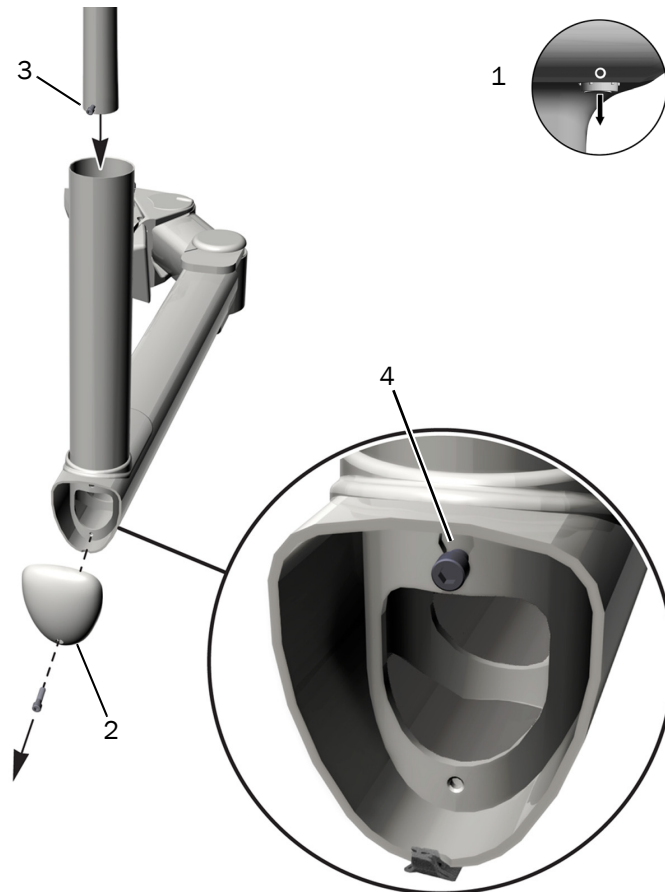
1. Turn off the power to the system.
2. Remove the end cap in the support arm (see Figure 83).
3. Insert the light post so the end with the screw is toward the floor.
4. Insert the head of the screw through the keyhole.

Figure 82. Dental Light



Dental Light Shown With Optional Cuspidor and Monitor Mount

Figure 83. Install Light Post on Support Arm



5. Push the top of the post away from the end of the arm (see Figure 84).
6. Firmly tighten the screw at the base of the post.

Next Steps

- If you do not need to install a monitor mount, proceed to “Install the Stabilization Ring” on page 42.
- If you need to install a support side monitor mount, continue with “Install the Support-Side Monitor Mount”.

Install the Support-Side Monitor Mount

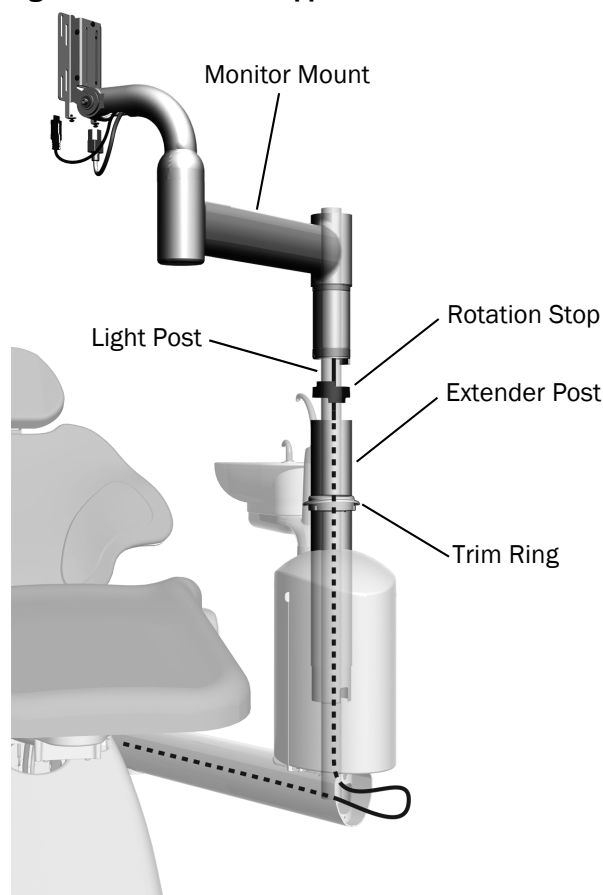
The support-side monitor mount must be installed before the dental light can be installed. The monitor mount is packaged in Box 9.

1. Insert the extender post (tapered end first) into the support center post, rotating the post until it drops into place (see Figure 85).
2. Insert the rotation stop into the extender post. Orient the stop with the thick side down.
3. Install the trim ring over the extender post.
4. Install the monitor mount on the extender post.
5. Route the monitor cables (video and power) through the monitor mount and down to the support arm, running the cables between the extender post and the light post.
6. Route the monitor cables through the support arm and down the chair lift arm to the floor box. Leave approximately 18" (457 mm) of cable hanging free on the monitor end of the monitor mount arm.
7. Connect the video cable to the appropriate video source and connect the monitor power cable to the mains supply.

Figure 84. Secure Light Post



Figure 85. Install the Support Side Monitor Mount





NOTE If the system includes an intraoral camera, route the camera video cable from the delivery system umbilical up to the monitor.

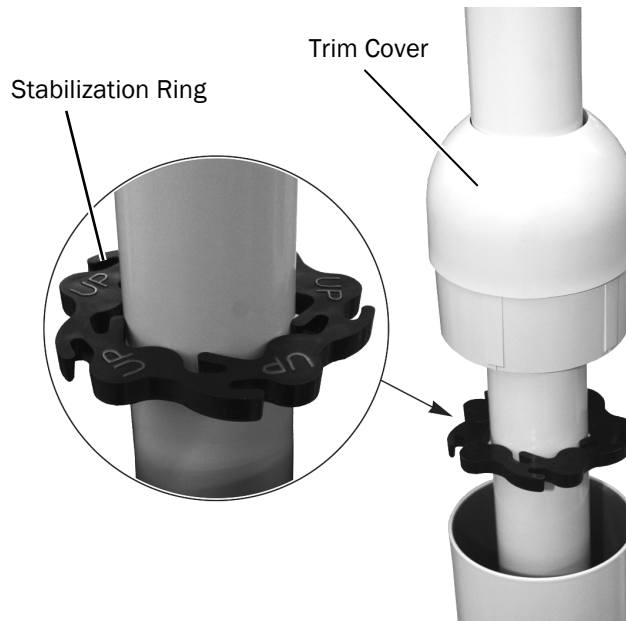
Install the Stabilization Ring

1. Install the stabilization ring with the words **UP** facing up (see Figure 86 and Figure 87).
2. If the system includes a support center, install the trim ring in the top of the support center (see Figure 86).



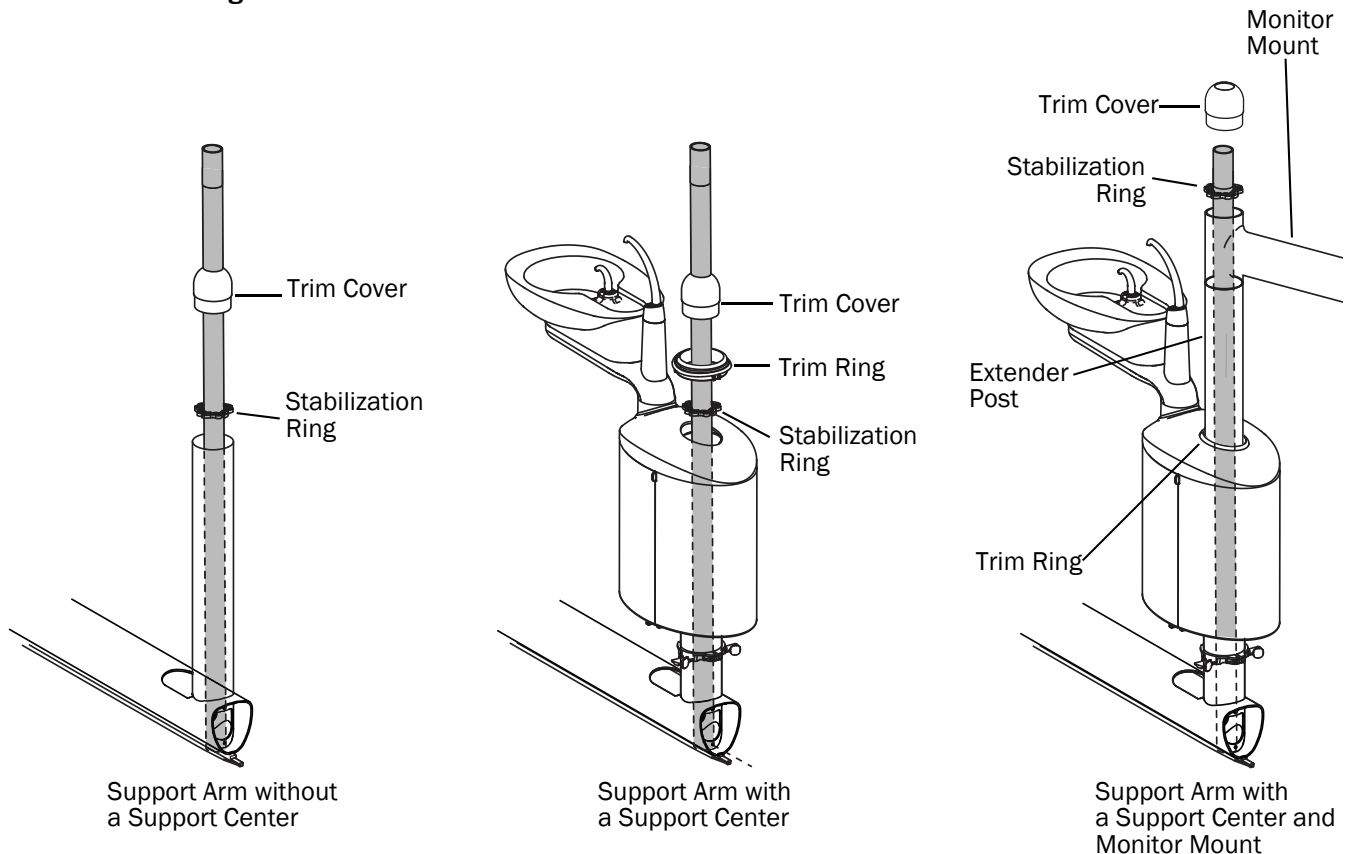
TIP Use a standard screwdriver to help work the trim ring into place.

Figure 87. Install the Stabilization Ring



3. Install the trim cover.

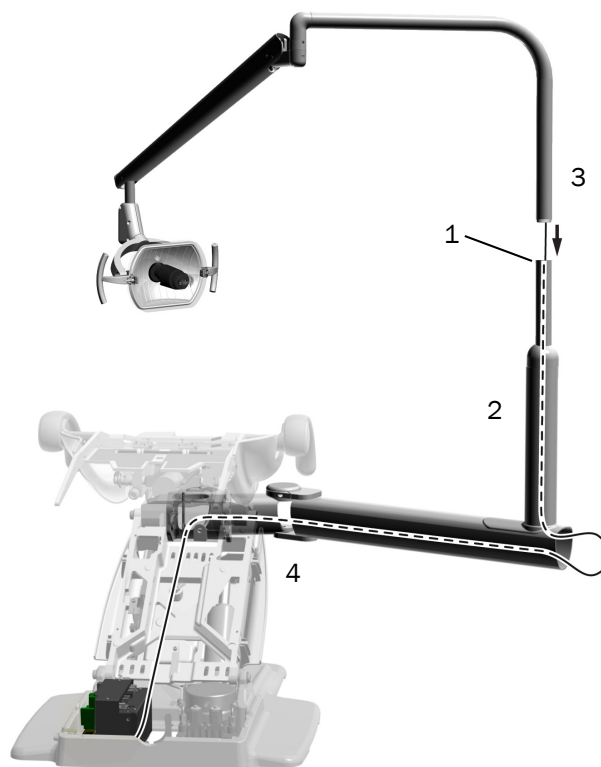
Figure 86. Location of the Stabilization Ring, Trim Ring and Trim Cover



Route the Light Cable

1. Apply lubricant (from the kit) to the inside of the support arm post (see Figure 88).
2. Route the light cable through the post.
3. Insert the light into the post.
4. Route the light cable through the support arm and down the lift arm to the power supply.

Figure 88. Routing the Light Cable



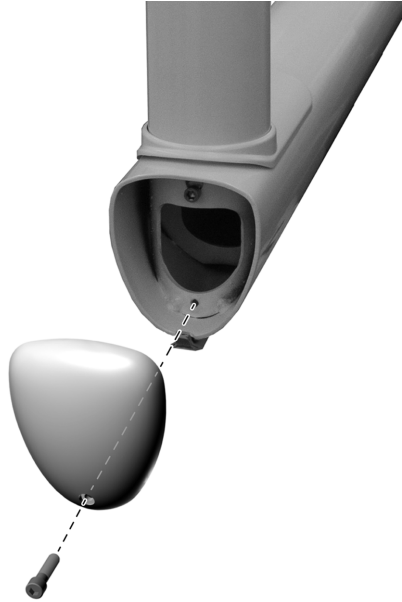
5. Insert the stop switch tubing into the notch in the support arm (see Figure 89).

Figure 89. Install the Stop Switch Tubing



6. Attach the end cap to the support arm (see Figure 90).

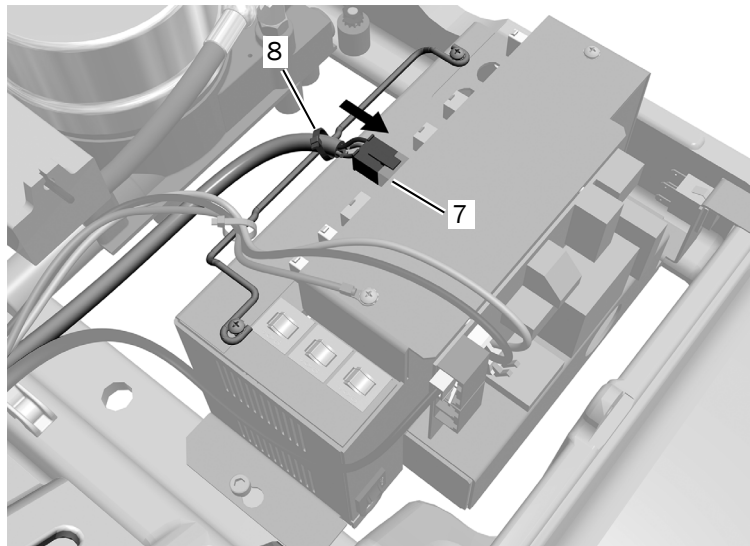
Figure 90. Attach the End Cap



ATTENTION Circuit boards are sensitive to static electricity. Electrostatic Discharge (ESD) precautions are required when touching a circuit board or making connections to or from the circuit board. Circuit boards should be installed only by an electrician or qualified service person.

7. Connect the cable to the red connector on the power supply (see Figure 91).
8. Secure the cable to the bail using a cable tie.

Figure 91. Connect Dental Light Cable to Power Supply



Adjust the Dental Light Flexarm Counterbalance

1. Remove the end cap (see Figure 92).
2. Remove the three screws that secure the cover.
3. Remove the cover.
4. Adjust the nut on the end of the spring. If the dental light drifts up, turn the nut counterclockwise. If the dental light drifts down, turn the nut clockwise.
5. Set the cover back onto the flexarm (but do not reattach it yet). Check for drift.
6. Repeat steps 4 and 5 until drift is eliminated.



NOTE An optional travel stop limit kit (p/n 90.1044.00) can be installed to limit the upward and downward motion of the flexarm.

7. Reinstall the screws that secure the cover.

Adjust the Horizontal Rotation Tension

1. Use a hex key to make horizontal rotation adjustments, beginning with the top screw on both sides of the switch housing (see Figure 93).
2. If the light head moves too easily, or tends to drift out of position, increase the tension by turning the screws right.

Adjust the Diagonal Rotation Tension

For diagonal axis rotation, adjust the screws at the bottom of the switch housing (see Figure 94).

1. If the light head moves too easily, or tends to drift out of position, increase the tension by turning the screw right.
2. If the light head is difficult to move, loosen the tension by turning the screw left.
3. To eliminate all movement in the diagonal axis, tighten the adjustment screw until it is tight.

Figure 92. Adjust Flexarm Counterbalance

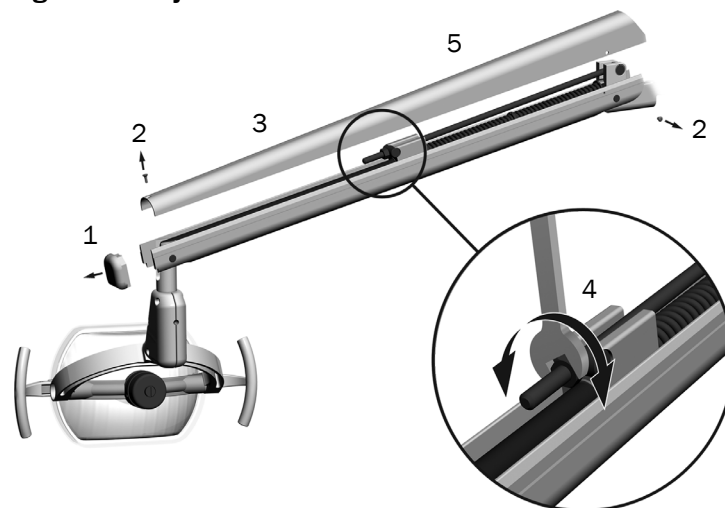


Figure 93. Horizontal Rotation Tension Adjustment

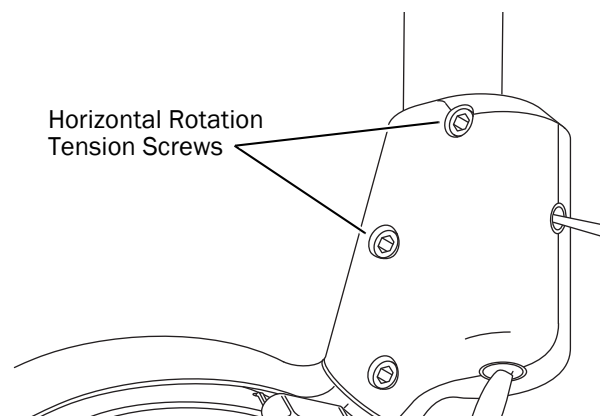
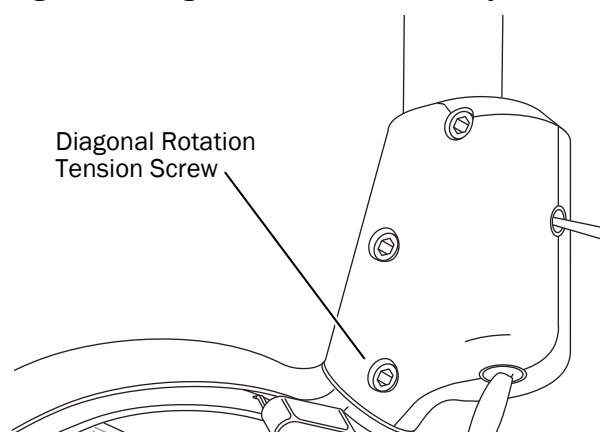


Figure 94. Diagonal Rotation Tension Adjustment



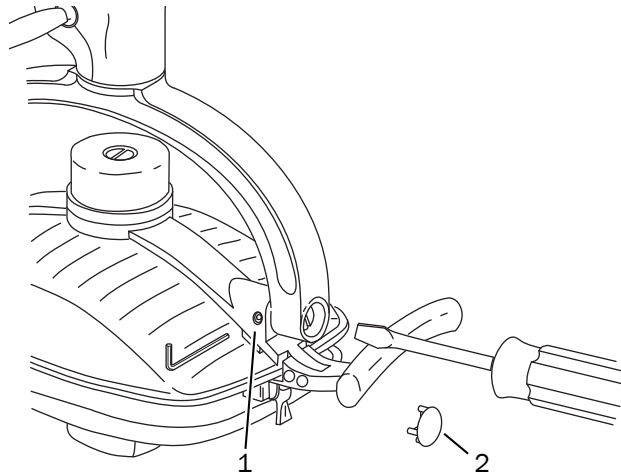
Adjust the Vertical Rotation Tension

1. Loosen the setscrew (see Figure 95).
2. Remove the light yoke plug.
3. Use a large flat-blade screwdriver to turn the adjustment screw under the light yoke plug.
4. If the light head moves too easily, or tends to drift out of position, increase the tension by turning the screw right.
5. If the light head is difficult to move, loosen the tension by turning the screw left.
6. When the desired tension is achieved, re-tighten the setscrew and reinstall the light yoke plug.



NOTE Make the adjustment to only one side of the light head.

Figure 95. Vertical Rotation Adjustment



Install the Monitor on the Monitor Mount

If you installed a monitor mount as part of the dental light installation, you should now install the monitor. To install the monitor, continue with “Attach the VESA Adaptor to the Monitor” on page 37.

Final Steps

Now that you have installed all the modules, it's time to complete the final steps before you leave the dental office. Leveling and adjusting the modules are as important as the correct assembly and installation of the product. Correct leveling allows the doctor and office staff to fully use the dental unit as intended.

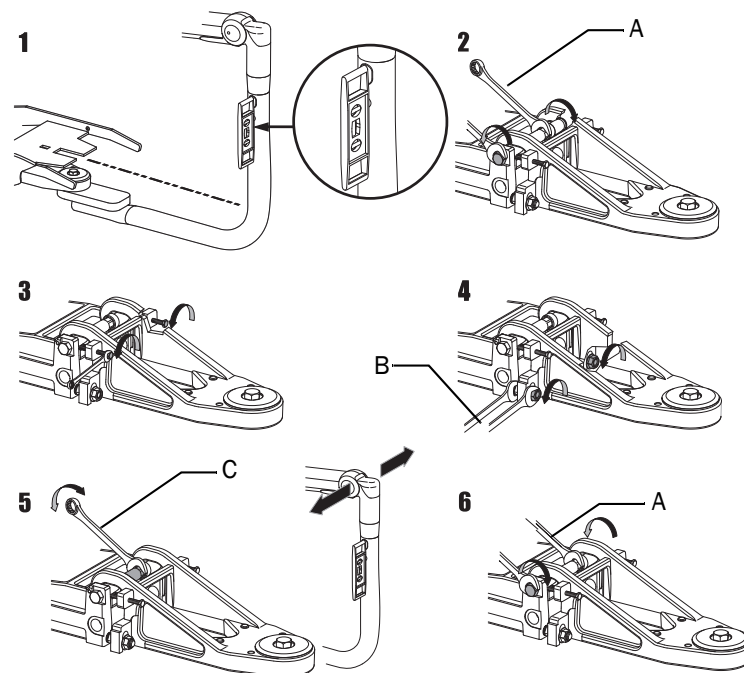
Leveling

Begin final leveling at the front mount arm, then move to the modules installed on each side, working your way up.

Level the Front Mount Arm

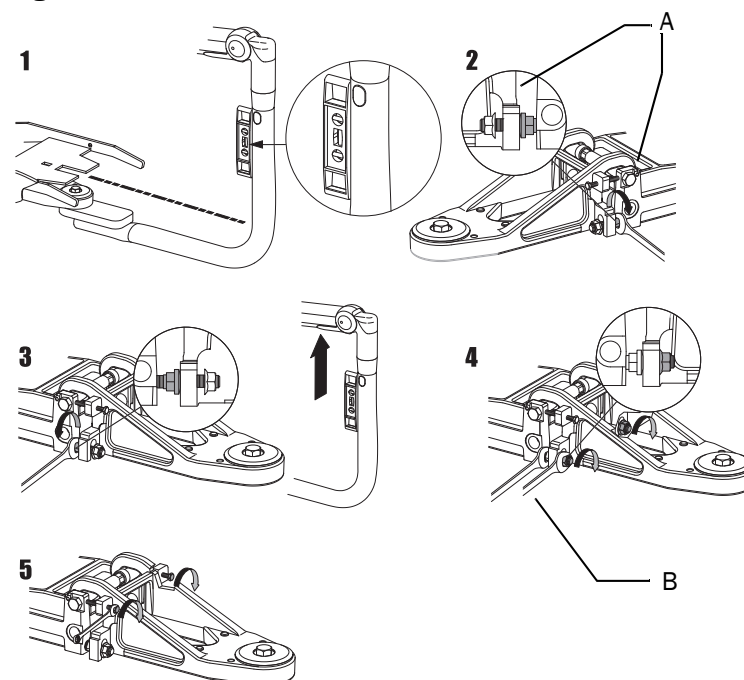
- Level side-to-side (see Figure 96):
 - Center arm and place level on side of arm.
 - Use a 3/4" open-end wrench to hold cam in place and loosen left and right cam bolts.
 - Loosen both left and right 7/16" stabilizer bolts.
 - Hold the front-to-back leveling bolts in place and loosen the 3/4" left and right flange nuts.
 - Use a 3/4" open-end wrench to rotate cam for side-to-side leveling.
 - Hold cam in place and tighten left and right cam bolts.
- Level front-to-back (see Figure 97):
 - Center arm and place level toward center of the rigid arm.
 - Loosen the left and right nuts.
 - Alternately adjust the left and right leveling bolts for front-to-back leveling.
 - Hold the leveling bolts in place and tighten both left and right nuts to secure mount.
 - Tighten both left and right 7/16" stabilizing bolts.

Figure 96. Level Side-To-Side



(A) Hold Cam in Place; (B) Hold Bolt in Place; (C) Rotate

Figure 97. Level Front-To-Back



(A) Chair Casting; (B) Hold Bolt in Place

Level the Delivery System

1. Level front-to-back:

- (1) Turn unit on and lower delivery system. Center the delivery system to align with chair and flexarm (see Figure 98).
- (2) Raise delivery system cover and place level on control head casting.
- (3) Tighten or loosen adjustment screw for front-to-back leveling.

2. Level side-to-side:

- (1) With the delivery system down, raise delivery system cover and place level on delivery system casting (see Figure 99).
- (2) Alternately tighten or loosen the two leveling screws for side-to-side leveling.
- (3) Once the delivery system is level, tighten both screws.

Figure 98. Level Delivery System Front-To-Back

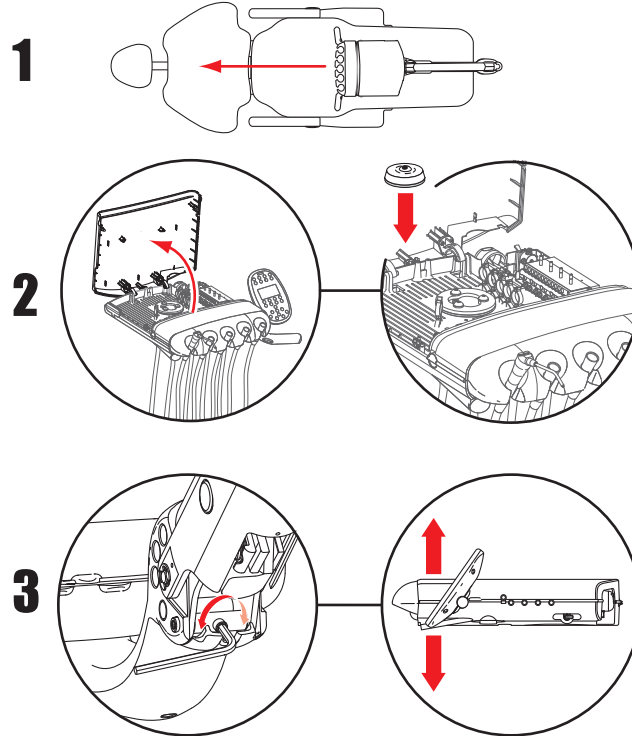
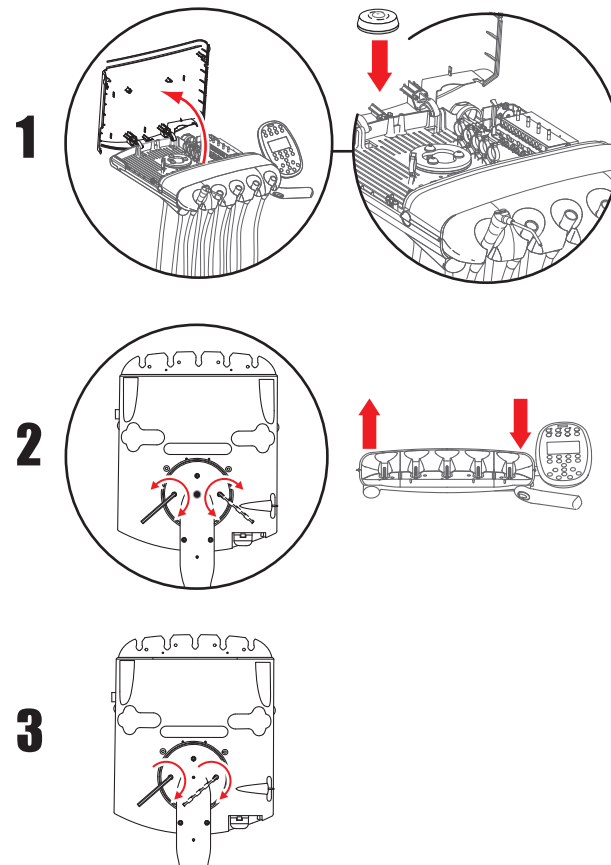


Figure 99. Level Delivery System Side-To-Side



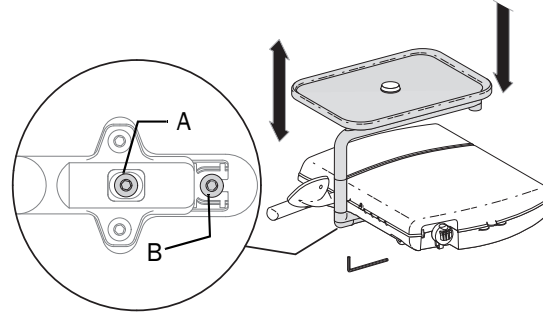
Level the Delivery System Tray

1. Use the adjustment screw to level side-to-side (see Figure 101).
2. Use the adjustment screws to level front-to-back (see Figure 102).

Level the Support Link

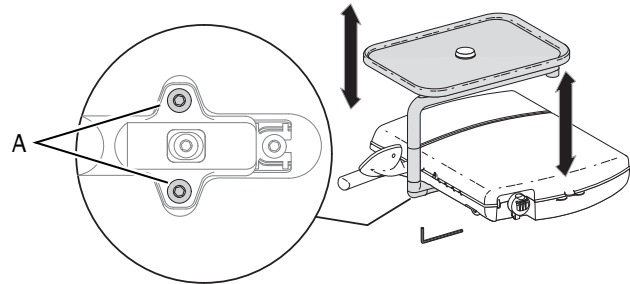
1. With the safety plate removed from the lift arm, loosen all four mounting bolts on both sides of the support link (see Figure 100).
2. Loosen the locking nut.
3. Place a level on the support arm.
4. Adjust the hex bolt to level side support.
5. Tighten the locking nut.
6. Tighten all four mounting bolts to secure the mount and replace the safety plate on the lift arm.

Figure 101. Side-To-Side Tray Level



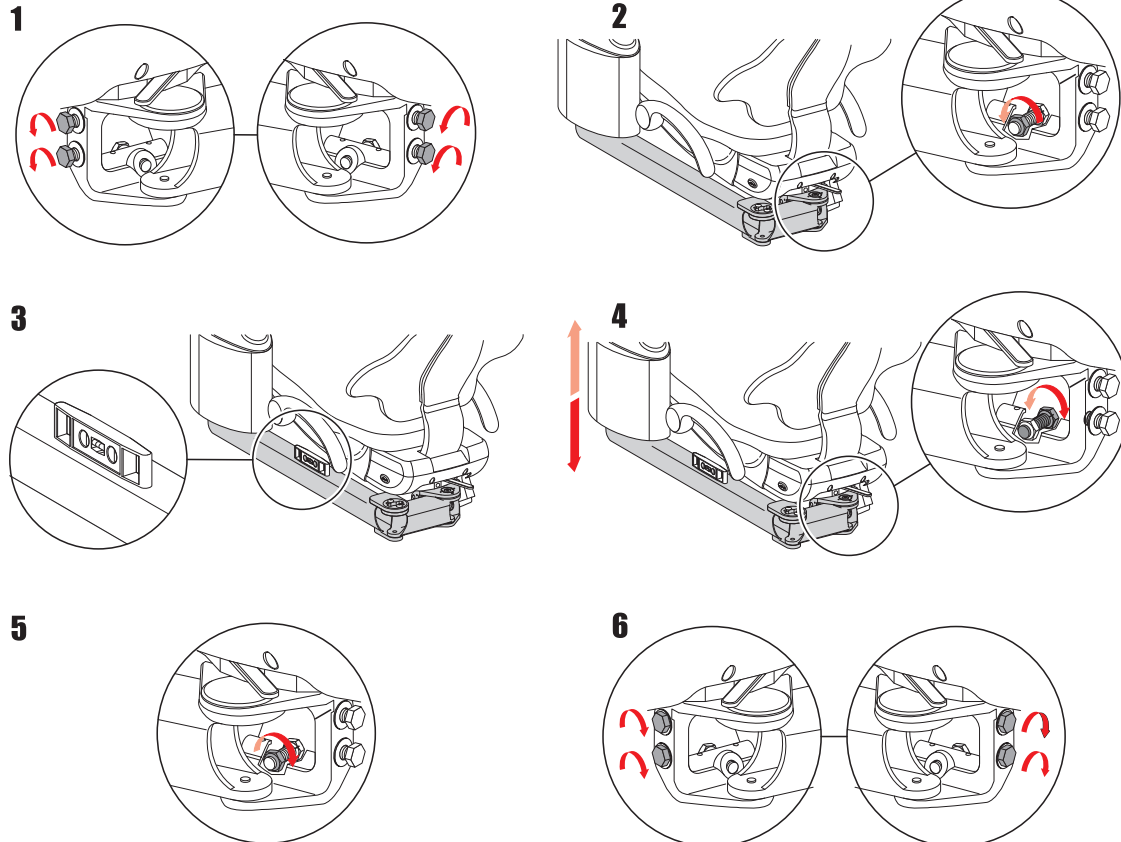
(A) Leveling Screw; (B) Mounting Screw-DO NOT ADJUST

Figure 102. Front-To-Back Tray Level



(A) Leveling Screw

Figure 100. Level Support Link



Position and Level the Monitor

1. Loosen the monitor mounting bracket screws.
2. Place a level on the monitor. Position the monitor to a level position.
3. Tighten the screws.

Adjustments

Once you install the delivery system, you can adjust:

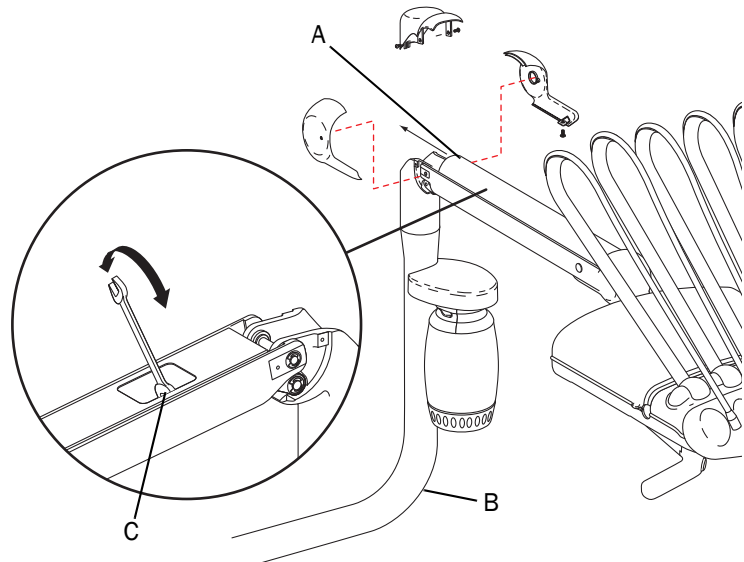
- Support-side tray holder tension
- Flexarm counterbalance
- Handpiece controls
 - Water coolant
 - Air coolant
 - Drive air flow

Adjust the Flexarm Counterbalance

Adjust the flexarm counterbalance if the control head drifts when the master switch is turned off.

1. Load the control head for normal use. Attach handpieces and place a tray with instruments on the tray holder.
2. Move the control head to the lowest position.
3. Turn the master toggle off. Check whether the control head drifts up or down.
4. If the control head drifts, lower the control head and remove the covers from the rigid arm and the flexarm (see Figure 103).
5. Use a 7/16" wrench to adjust the spring tension:
 - Loosen the nut if the arm drifts up.
 - Tighten the nut if the arm drifts down.
6. Recheck the adjustment.

Figure 103. Flexarm Adjustment



(A) Flexarm; (B) Rigid Arm; (C) Adjustment Screw

Handpiece Control Adjustments

Water Coolant Flow

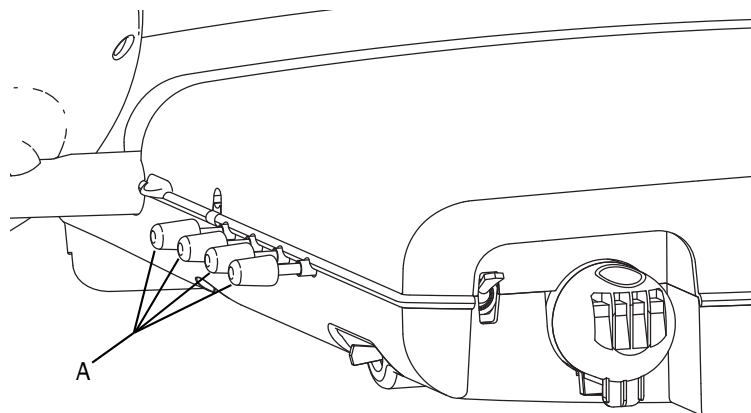
The water coolant flow controls adjust the water flow to each handpiece. Use the adjustment key or a hex key to complete the adjustment (see Figure 104):

1. Close the drive air (see Figure 106 on page 53), air coolant (see Figure 105 on page 52), and water coolant (see Figure 104) flow metering valves.
2. Lift the handpiece from the holder.
3. Locate the water coolant flow controls.
4. Insert an adjustment key or hex key into the water coolant flow control for the handpiece being adjusted.
5. Turn the water coolant on for the selected handpiece.
6. Press the foot control to activate the handpiece.
7. Adjust the water coolant flow to fit the user's needs.
 - Turn the adjustment key to the right to decrease flow.
 - Turn the adjustment key to the left to increase flow.



NOTE Typically, one of the handpiece positions is dry. A-dec customizes the handpiece configuration at the time of order.

Figure 104. Water Coolant Flow Adjustment Positions



(A) Water Coolant Flow Controls Related to Handpiece Positions

Air Coolant Flow

The air coolant flow control adjusts the air coolant flow to all handpieces. Use the adjustment key or a 1/8" hex key to complete the adjustment (see Figure 105):

1. Lift the handpiece from the holder.
2. Locate the air coolant control.
3. If the deluxe touchpad is installed, use it to verify air coolant is on.
4. Insert an adjustment key, or hex key into the air coolant flow control.



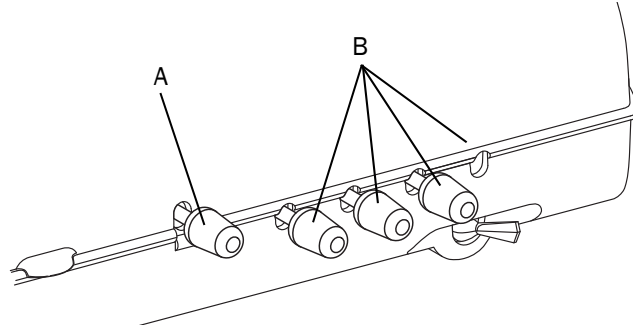
NOTE Do not turn the drive air or air coolant adjustment keys too far out. The stem may come completely out of the control block.

5. Press the foot control to activate the handpiece.
6. Adjust the air coolant flow until the misted water coolant meets the users needs.
 - Turn the control to the right to decrease flow.
 - Turn the control to the left to increase flow.



NOTE Adjusting the air coolant for one handpiece sets it for all of the positions.

Figure 105. Adjust Air Coolant Flow



(A) Air Coolant Flow Control; (B) Water Coolant Flow Controls (Configuration Reflects Three Wet and One Dry Handpiece)

Touchpad Controls

The A-dec 500 system may include a standard or deluxe touchpad. The standard touchpad controls chair, cuspidor, and dental light functions. The deluxe touchpad adds controls for handpieces, electric motors, and several other options (see Figure 107).



NOTE Touchpad symbols are proprietary to A-dec Inc.

Status Icon

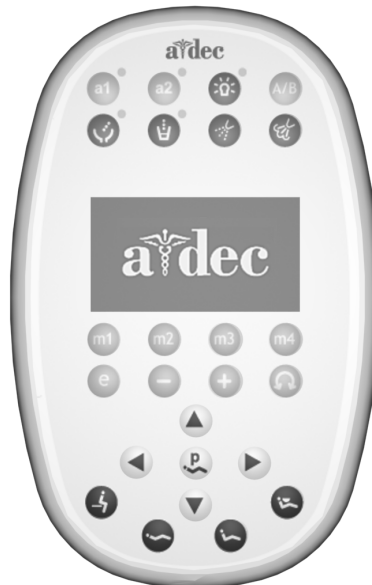
The A-dec logo on the deluxe touchpad indicates the system status:

- Solid blue – normal operation and power is on (see Figure 108).
- Blinking – chair stop plate or cuspidor limit switch is active. The icon returns to solid blue once you remove any obstructions.
- Double blink – jumper is on the factory default position on the chair circuit board. The icon returns to solid blue once the jumper is removed.

Figure 107. Standard and Deluxe Touchpads

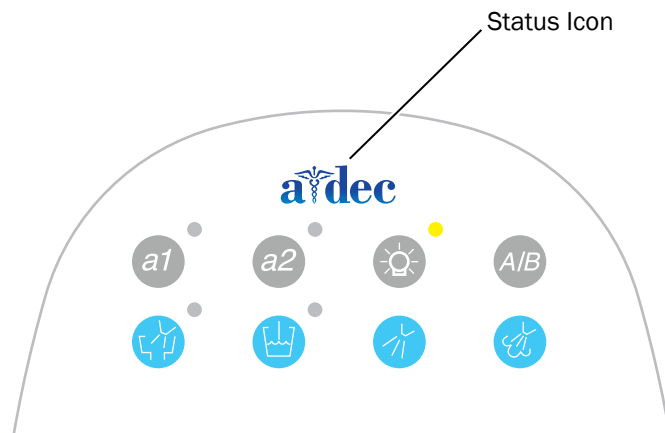


Standard Touchpad



Deluxe Touchpad

Figure 108. Status Icon



Chair Positioning

Your touchpad provides manual and programmed controls for A-dec chair positioning. The direction arrows on the touchpad allow you to manually move the chair base and back up or down (see Table 4).

Four programmable chair buttons, which can be easily customized, automatically move the chair into a factory preset position (see Table 5).

Program Chair Preset Position



NOTE To stop the chair at any point, push any chair position button on the footswitch or touchpad.



NOTE Please follow standard patient care precautions when using the chair preset position functions.

To program chair preset positions Entry/Exit, Treatment 1, and Treatment 2:

1. Use the manual controls to adjust the chair position as desired (see Figure 109).
2. Press and release the Program button (or). One beep indicates programming mode.
3. Press the chair position button you wish to reset (for example, press or for Entry/Exit). Three beeps indicates the new setting is programmed into memory.

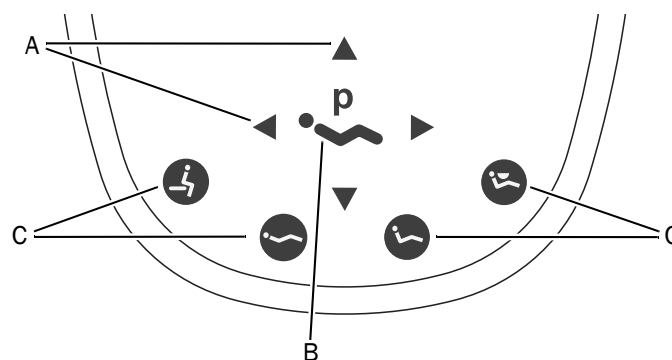
Table 4. Manual Chair Buttons

Icon	Action
	Back down
	Base down
	Back up
	Base up

Table 5. Programmable Chair Buttons / Factory Presets

Button	Position Description
	Entry/Exit: Automatically positions chair for entry/exit and turns off dental light.
	Treatment 1: Automatically positions the chair base and back down and turns on the dental light.
	Treatment 2: Automatically positions the chair base and back and turns on the dental light.
	X-ray/Rinse: Automatically toggles between the X-ray/Rinse and the current chair positions. The dental light turns off when the chair is positioned for X-ray/Rinse and turns on when it returns to its last position.



Figure 109. Touchpad Chair Position Buttons



(A) Manual Chair Buttons; (B) Program Button; (C) Programmable Chair Preset Buttons

Customize the X-Ray/Rinse Button

The X-ray/Rinse button functions either as x-ray/rinse or as another preset position (Treatment 3). To change the function of the X-ray/Rinse button:

1. Press and hold the Program button and  or  simultaneously for three seconds.
 - One beep indicates the button has been configured as Treatment 3.
 - Three beeps indicates that X-ray/Rinse button has been configured as the x-ray/rinse function (toggles between the X-ray/Rinse and the previous position).
2. Program the preset position. See “Program Chair Preset Position” on page 55.



TIP If the X-ray/Rinse button is changed to a preset position, it operates the same as the Treatment buttons 1 and 2.

Cuspidor Functions

Table 6 describes the Cupfill and Bowl Rinse buttons.

Customize Cupfill and Bowl Rinse





To program the cupfill and bowl rinse timing:

1. Press and release the Program button or, at the cuspidor, press and hold both the Cupfill and Bowl Rinse buttons located near the spout. One beep indicates the programming mode is ready.
2. Press and hold the Cupfill or Bowl Rinse button for the desired amount of time.
3. Release the button. Three beeps confirm the setting.




NOTE If the standard touchpad is installed, you can also use the auxiliary buttons to control the cupfill and bowl rinse functions. See “Auxiliary Control Buttons” on page 62 for information.


Table 6. Cupfill and Bowl Rinse Buttons

Button	Description
 	<p>Cupfill Button: Controls water flow from the cuspidor into a cup.</p> <ul style="list-style-type: none"> • Press the Cupfill button for a timed operation. The factory preset is a 2.5 second fill. • Press and hold the Cupfill button for manual operation.
 	<p>Bowl Rinse Button: Provides rinse water for the cuspidor bowl.</p> <ul style="list-style-type: none"> • Press the Bowl Rinse button for a timed operation. The factory preset is a 30 second rinse. • Press and hold the Bowl Rinse button for manual operation. • Press the Bowl Rinse button twice in less than two seconds for the operation to change to continuous rinse mode. Press the button once to end the continuous rinse mode.

Dental Light





You can turn the dental light on or off from either the touchpad or the dental light. The Dental Light button on the touchpad allows you to change intensity settings.

Halogen Dental Light: Press  to toggle between high and composite or medium and composite. When the dental light is in composite mode, the indicator light blinks (see Figure 110).

LED Dental Light: Press and release  to choose the desired intensity mode. When the light is in cure-safe mode, the indicator light blinks (see Figure 110).

To turn off the dental light, hold down .

Dental Light Auto On/Off Feature

The dental light has an auto on/off feature. When you use a programmed chair position, the dental light turns on when the chair back reaches operating position. Press Entry/Exit ( or ) or X-ray/Rinse ( or ) and the dental light automatically turns off.



TIP If X-ray/Rinse button is changed to a preset position, the dental light auto feature operates the same as the Treatment buttons 1 and 2.

To activate/deactivate:




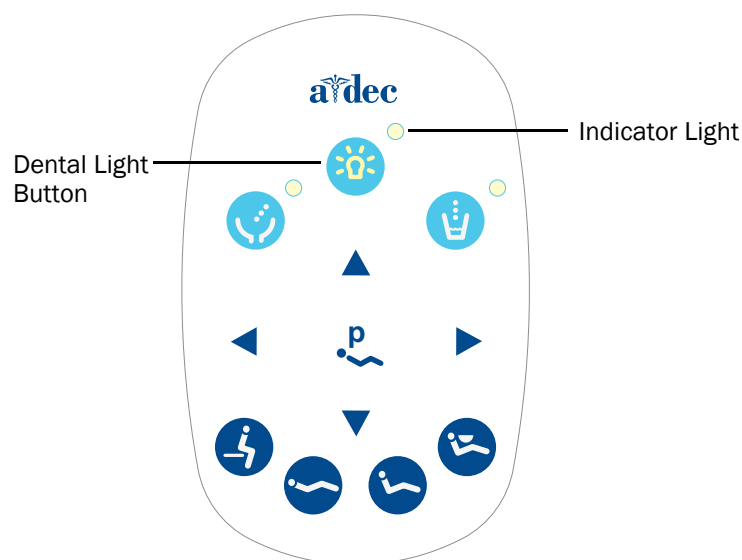
- Press and hold  and the Program button ( or ) simultaneously for three seconds. One beep confirms the dental light auto feature is off. Three beeps confirm that the dental light auto feature is on.

Figure 110. Dental Light Mode



A/B Button


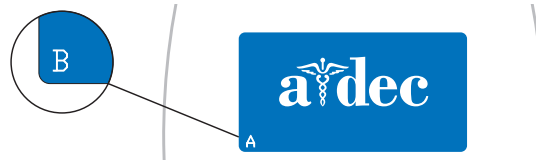
Deluxe touchpads include an A/B button () that offers you two separate sets of programmable settings. The currently active set is indicated by the A or B in the touchpad display (see Figure 111).

Figure 111. A/B Selection



Electric Handpiece Settings (Deluxe Touchpad Only)

Standard Mode Programming

Activate the electric motor by lifting the handpiece from the holder. The settings displayed on the touchpad screen are the ones last used for that handpiece position. The electric motor allows you to choose a precise preset speed. Table 7 lists the factory presets for electric motors.

The deluxe touchpad allows you to program four Memory buttons with your specific RPM setting. With the A and B button, you can program two settings for each Memory button, for a total of 8 customized settings per handpiece (the endodontics mode offers an additional 8 memory settings).





Table 7. Electric Motor Speed / Air and Water Coolant Presets (Standard Mode)

Memory Setting	Preset Speed	Air Coolant	Water Coolant
m1	2,000 RPM	On	On
m2	10,000 RPM	On	On
m3	20,000 RPM	On	On
m4	36,000 RPM	On	On



NOTE If two operators use the delivery system, be sure to select the correct operator set (A or B) before changing any memory settings. The currently active set is indicated by the A or B in the touchpad screen (see Figure 111).

To program the handpiece setting (see Figure 112):

1. Press the Minus (-) and Plus (+) buttons to adjust the RPM. The RPM values are displayed in the touchpad screen (see Figure 112).
2. If desired, press  or  to change water and air coolant settings.
3. To place the setting into memory, press  or . One beep sounds.
4. Choose the desired memory setting by pressing m1, m2, m3, or m4. Three beeps confirm the setting.

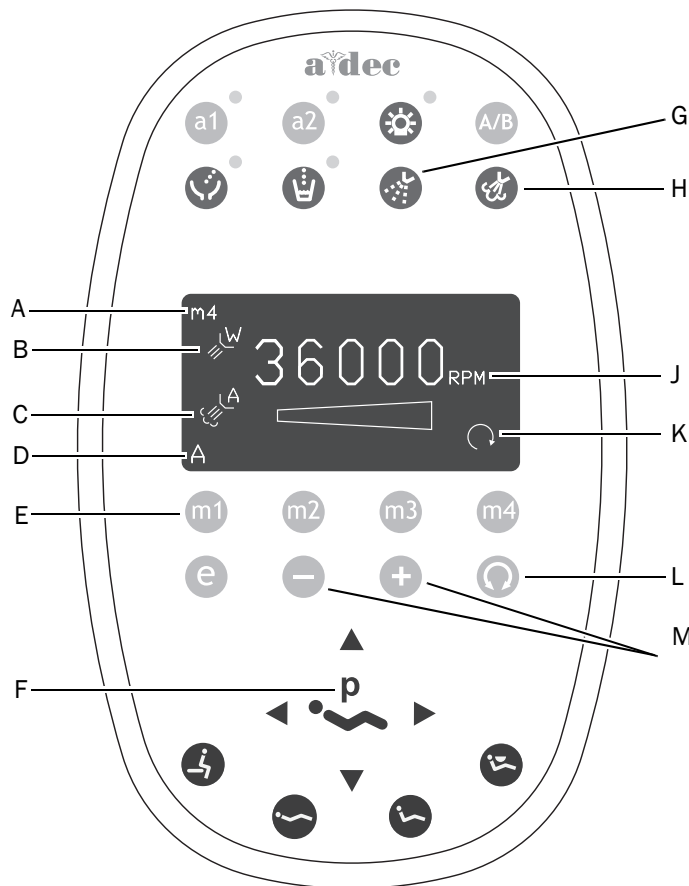
Forward/Reverse Button

The Forward/Reverse button (see Figure 112) changes the electric motor's direction. The system defaults to the forward position when you return the motor to the holder or turn off the system. In reverse mode, the screen icon flashes continuously.



NOTE You can also use the foot control to easily switch between forward and reverse. When the motor has stopped, tap the accessory (chip/air) button to change the direction.

Figure 112. Standard Mode Buttons and Settings



Item	Description	Item	Description
A	Memory Setting Indicator	G	Water Coolant Button
B	Water Coolant Indicator	H	Air Coolant Button
C	Air Coolant Indicator	J	Speed Limit Setting
D	A/B Operator Indicator	K	Forward/Reverse Indicator
E	Memory Buttons (m1 - m4)	L	Forward/Reverse Toggle Button
F	Program Button	M	Adjustment Buttons

Endodontics Mode Programming

The Endodontics mode allows you to change a number of settings based on the specific file and desired handpiece behavior. Icons in the touchpad window reflect the settings (see Figure 113).



NOTE For more information regarding speed limit and torque limit for a specific file, consult the file manufacturer.

To program the endodontics memory settings:



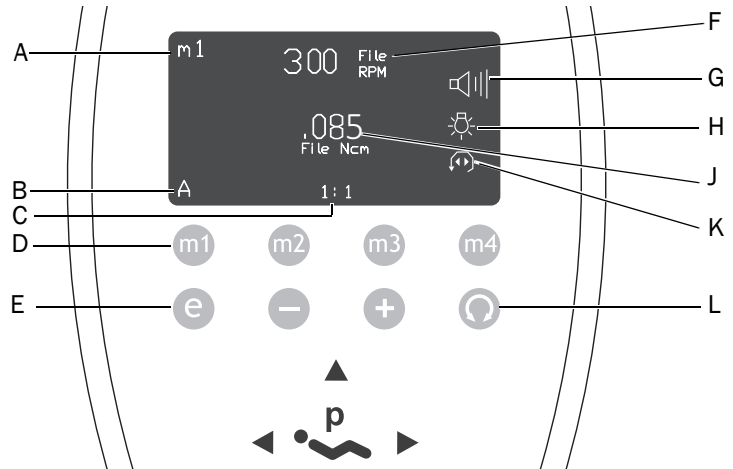
1. Lift the handpiece from the holder.
2. If the touchpad screen does not display endodontics mode, press **e** or **E**.
3. To change settings in endodontics mode, press the Plus (+) or Minus (-) buttons. You see a white reverse video box on the touchpad screen.
4. To move from setting to setting on the touchpad screen, press the chair positioning buttons.
5. To change the setting, press the Minus (-) and Plus (+) buttons.
6. To set the speed limit, torque limit, and ratio into memory, press  or , then the Memory button you want to set. Three beeps confirm the setting (m1 through m4).












Figure 113. Endodontics Mode Buttons and Settings



Item	Description	Item	Description
A	Memory Setting Indicator	G	Warning Beep Indicator
B	A/B Operator Indicator	H	Endodontics Light Indicator
C	Attachment Ratio Setting	J	File Torque Limit/Unit Indicator
D	Memory Buttons (m1 - m4)	K	Forward/Reverse and Torque Mode Indicator
E	Endodontics Mode Toggle Button	L	Forward/Reverse Toggle Button
F	File Speed Setting		

Table 8 defines the touchpad screen icons for the endodontics mode.

Table 8. Endodontics Mode Settings

Icon	Setting	Description
	Speed	Setpoint for file speed limit. For more information, consult the file manufacturer.
	Torque	Setpoint for file torque limit. For more information, consult the file manufacturer.
	Torque Units	Toggles between N-cm (Newton centimeters) and gcm (Gram centimeters). Adjusting this setting for one handpiece changes it for all handpiece settings. Note: 1 N-cm=102 g-cm
	Ratio	Sets the handpiece ratio. For more information, consult your handpiece manufacturer.
	Air Coolant	On/Off—when active, supplies air coolant to the handpiece.
	Water Coolant	On/Off—when active, supplies water coolant to the handpiece.
	Light Source	Enables/Disables endodontics handpiece light source.
	Auto Modes	Adjusting this setting for one handpiece changes it for all handpiece settings. The auto mode indicator displays inside of the forward/reverse indicator.
	Auto Stop	When the file reaches the torque limit, the motor shuts off.
	Auto Reverse	When the file reaches the torque limit, the motor stops and reverses direction.
	Auto Forward	When the file reaches the torque limit, the motor stops, reverses direction 3 turns, then changes back to forward again. Note: If the file is stuck, this cycle repeats three times before the motor stops.
	Beeper	On/Off—when active, warning beep sounds when you approach torque limit and double beeps when the file auto-reverses. Adjusting this setting for one handpiece changes it for all handpiece positions.

Other Handpiece Setting Choices

Additional system choices are available. Consult your dealer to globally change to any of these setting options:

- **Auto-Off Delay** – The amount of time the handpiece remains lit when idle. The default is 5 seconds. Stepping on the foot control refreshes the delay and the lamp relights. The light stays on as long as you depress the foot control.
- **Light Source Auto On/Off** – When active, the handpiece light automatically turns on when you lift the handpiece from the holder. Default in standard mode is on; in endodontics mode is off.
- **Voltage** – Depending on your brightness preference and the bulb manufacturer’s usage guidelines, the voltage setting adjustment for each handpiece light source.

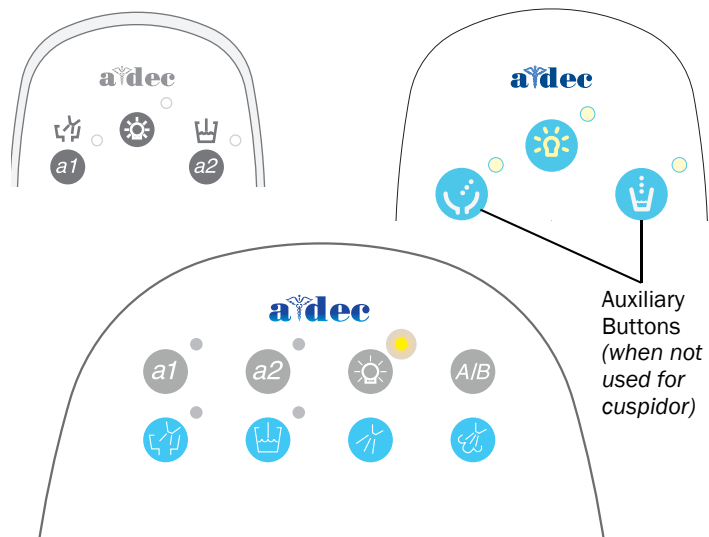
Auxiliary Control Buttons

If your system includes an A-dec relay module, you can use the touchpad to activate two auxiliary devices. On deluxe and standard touchpads, use the *a1* and *a2* buttons to activate these devices (see Figure 114). For systems with a white standard touchpad, the Cupfill and Bowl Rinse buttons serve as the auxiliary controls (see note on page 56).

Touchpad Help Messages

Help messages are displayed on the deluxe touchpad screen to provide information about why an operation is disabled. For information on help messages, refer to the *Regulatory Information, Specifications and Warranty* document (p/n 86.0221.00) located in the Document Library at www.a-dec.com.

Figure 114. A1 / A2 Buttons



Add Upholstery and Covers



TIP Before you install the covers and upholstery, test the unit functions and any settings for each module installed.

Chair and Floor Box Covers

1. Raise the chair to full base up.
2. Attach the stop plate cover on the lift arm casting pins (see Figure 115).
3. Snap the chair back cover into place if there is no support system mounted to the chair.
4. Attach the lift arm cover by snapping it onto the casting tab.
5. Attach the pump cover using the two screws.
6. Snap the floor box cover into place.

Front-Mount Covers

1. Attach the post cover using two screws (see Figure 116).
2. Reattach the knuckle covers on the flexarm.
3. Reinstall the top cover on the flexarm.
4. Slide the chair underside cover into the bracket (see Figure 117).
5. Snap the cover into place on the chair upper structure.

Figure 115. Attach Lift Arm and Floor Box Cover

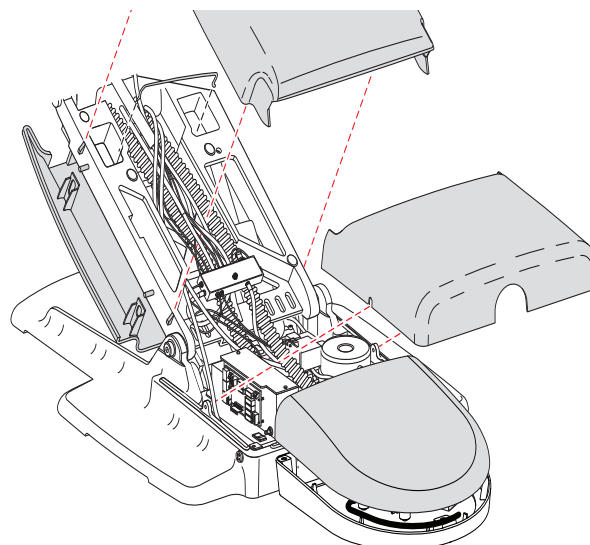
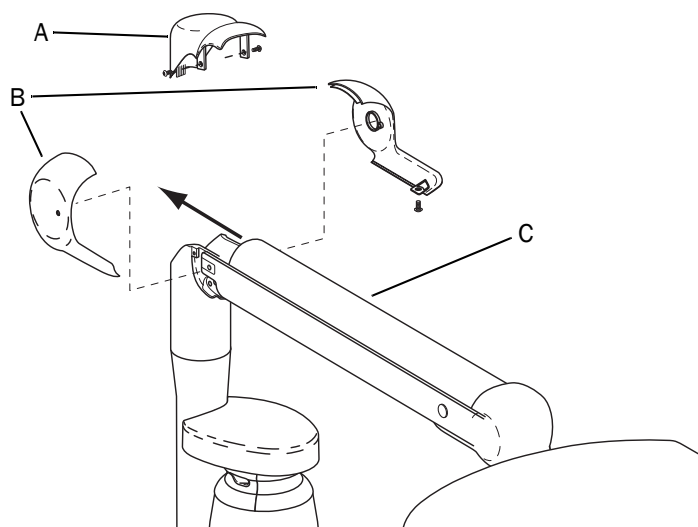
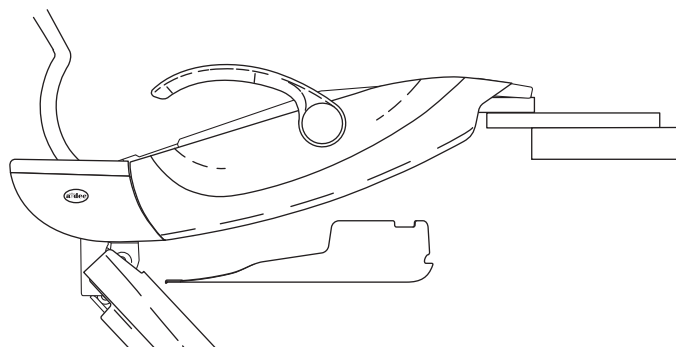


Figure 116. Attach Post Cover



(A) Post Cover; (B) Knuckle Covers; (C) Flexarm top cover

Figure 117. Install Underside Cover



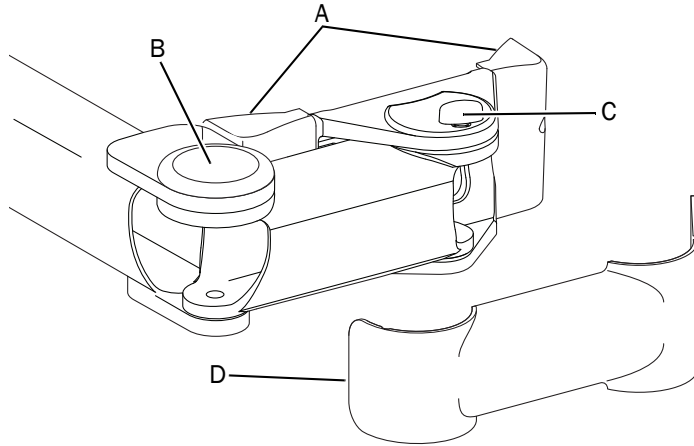
Monitor Arm Cover

If a monitor was installed on the support side and a light was not being added to the system, attach the monitor arm cover.

Support System Covers

1. Attach the support link covers (A) with the screws provided (see Figure 118).
2. Tighten the support link bearing (B) cover.
3. Tighten the locking knob (C) with the support link in a right angle position to the chair.
4. Install the support link cover (D).
5. If not already installed, attach the support arm end cap, with the limit switch tubing end inserted through the notch in the support arm.
6. Snap on the support center cover. If installing a support link with assistant's instrumentation, attach the two support link end caps.

Figure 118. Install Support Link Covers



(A) Left and Right Support Link Covers; (B) Bearing Cover; (C) Locking Knob; (D) Support Link Cover

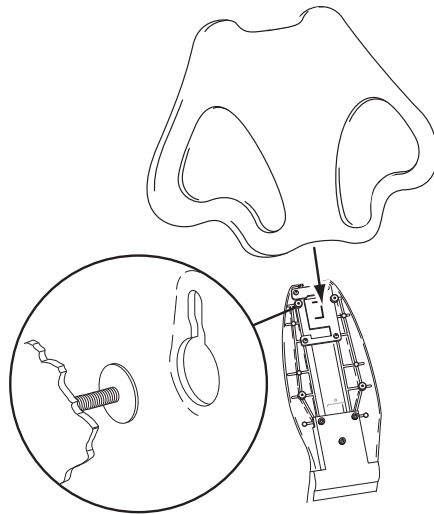
Back Upholstery

Place the chair in the back up and base up position. To attach the back upholstery, place the key holes on the cushion over the large fastener heads then push down until it snaps into position (see Figure 119).



NOTE Do not loosen the large-head fasteners.

Figure 119. Attach Back Upholstery



Headrest Upholstery



NOTE The screws and O-rings in the headrest plate prevent the plate from sliding off and releasing the spring-loaded headrest tension mechanism. If you remove the screws and O-rings, take care not to allow the white friction plate to slide off.

1. Rotate the headrest plate so both screw holes are accessible.
2. Position the headrest cushion so the stand-offs are accessible through the headrest plate.
3. Install the top screw first and do not tighten.
4. Install the bottom screw.
5. Tighten both screws completely.

Seat Upholstery



WARNING Remove seat upholstery before servicing the chair. Do not rely on the seat upholstery clip to retain the chair frame when lifting the seat for inspection underneath.

1. To attach the upholstery, place the two hooks on the back end of the seat upholstery under the chair carriage.
2. Push the upholstery down until it snaps into place.
3. Push down on the toeboard end until the lock is through the seat frame.
4. Insert the clip into the lock.

Figure 120. Attach the Headrest Upholstery

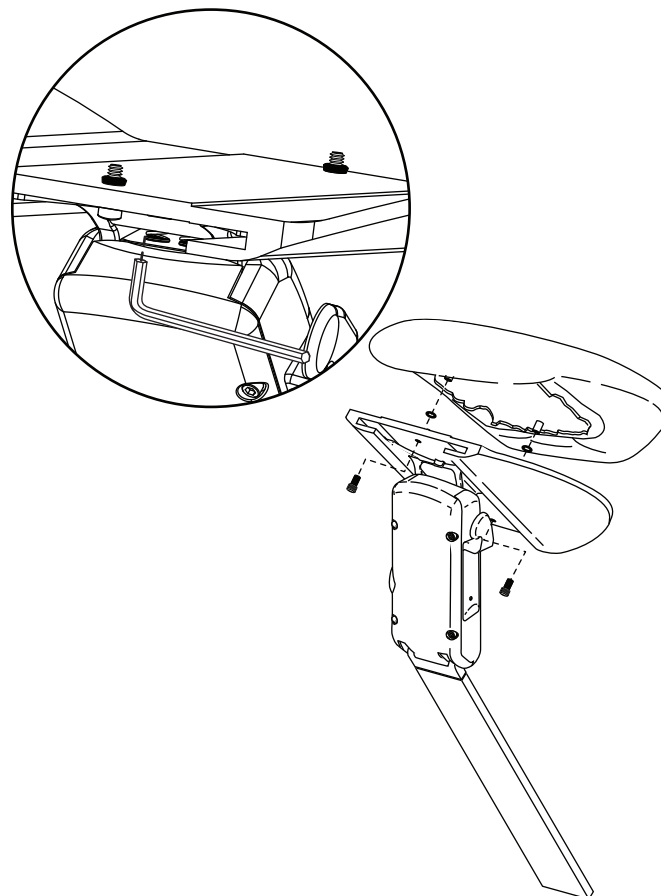
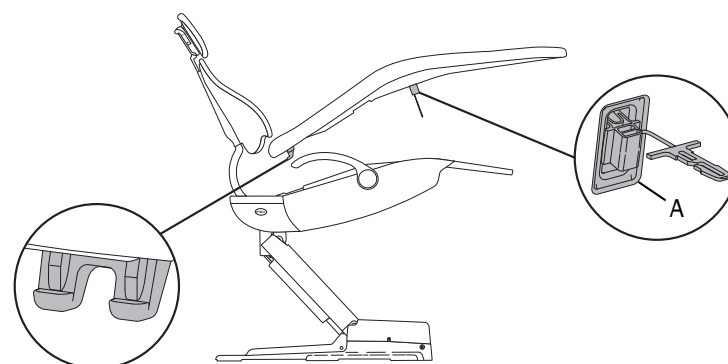


Figure 121. Attach Seat Upholstery



(A) Clip


Regulatory Information

Regulatory information mandated by agency requirements is provided in the *Regulatory Information, Specifications, and Warranty* document (p/n 86.0221.00), which is available in the Document Library at www.a-dec.com.

Product Models and Versions Covered in this Document

Models	Versions	Description
511	A	Dental Chair
532, 533	A	Delivery System
561	A	Cuspidor
571	A	Dental Light
581	A	Monitor Mount

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