

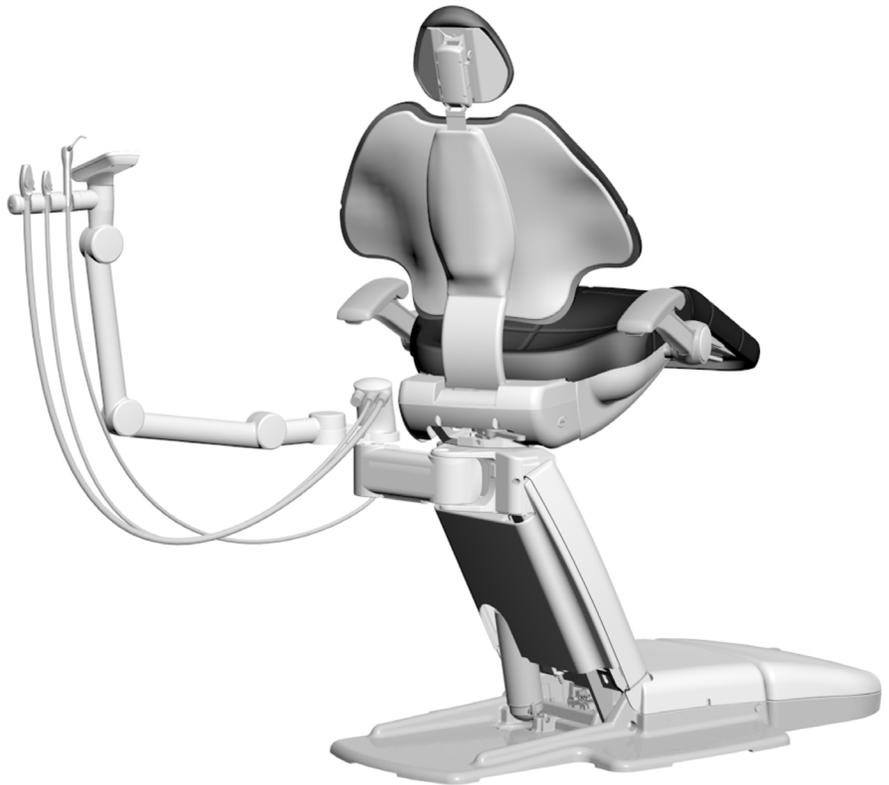


A-dec® 551sta/551 Assistant's Instrumentation

INSTALLATION GUIDE

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A-dec 551sta Assistant's Instrumentation
on an A-dec 511B Dental Chair

Product Models and Versions Covered in this Document*

Model	Versions	Description
551	A	Assistant's Instrumentation
551sta	n/a	Assistant's Instrumentation
311ft/511ft	n/a	Dental Chair
311	B	Dental Chair
411	A	Dental Chair
511	A/B	Dental Chair

*Some product models, versions, and options in this document may not be available in certain regions.

Before You Begin



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



WARNING Shock hazard. When you remove or replace the covers, take care not to damage any wiring or tubing. Verify that the covers are secure after you replace them.

Recommended Tools

- 3/4" socket and ratchet
- Level
- Rubber mallet
- Hex key set
- Diagonal cutters
- 3/4" combination wrenches (2)
- Wire stripper
- Sleeve pusher

Install on an A-dec 400 Support Link

If the support link has already been installed, start at "Install the Assistant's Instrumentation on an A-dec 400 Support Link" on page 5.

Install the Support Link

The procedure for installing the A-dec 400 Support Link (p/n 77.1256.00) is the same for installing on an A-dec 311ft/311, 411, or 511ft/511 chair.

Recommended Tools

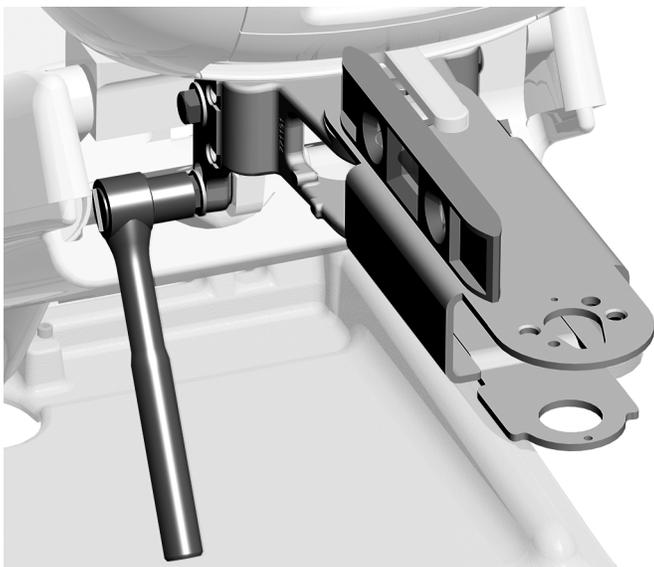
- 3/4" socket and ratchet
- Level

Task 1.



- 1** Get four bolts and washers from the kit.
- 2** Attach the support link to the chair with the four bolts and washers but only finger tighten the bolts.

Task 2.



- 1** Position the support link straight out from the chair.
- 2** Place a level on the support link.
- 3** Secure the support link, while keeping it as level as possible.

Install the Assistant's Instrumentation on an A-dec 400 Support Link

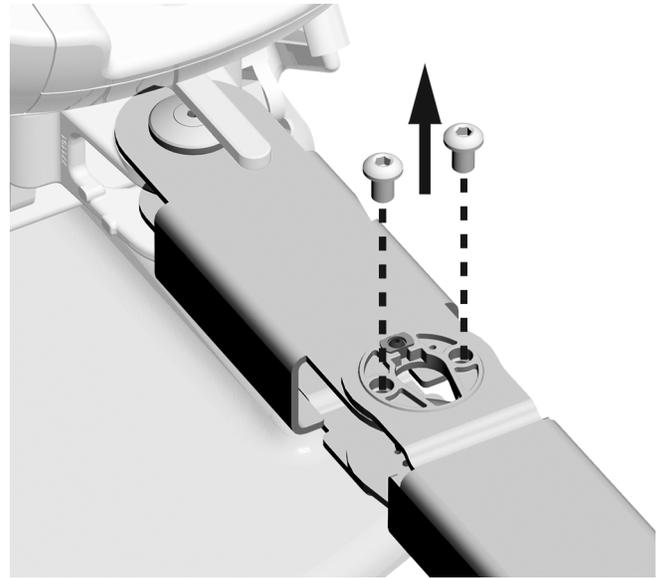
Recommended Tools

- 1/8" and 5/16" hex keys

Task 1.

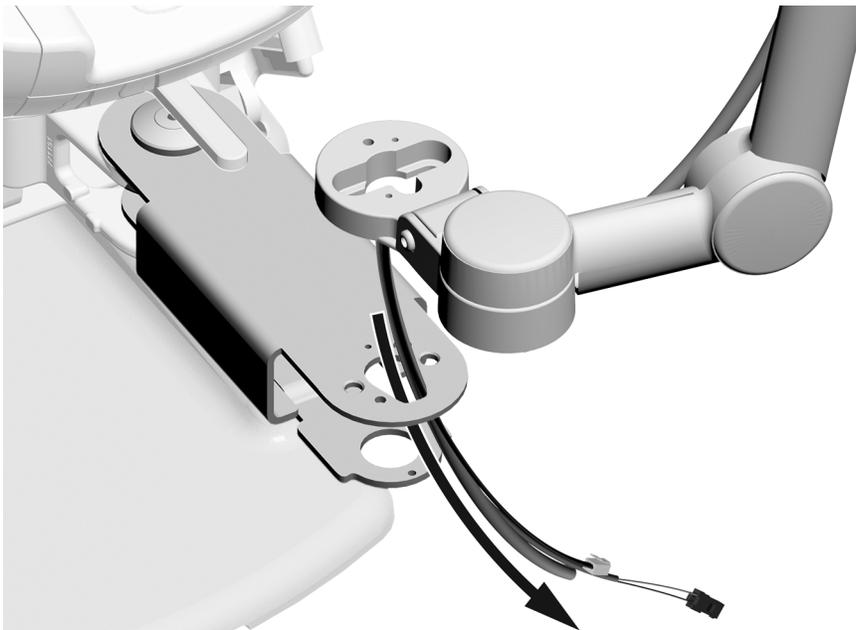


NOTE If the system includes an A-dec 461 support center, remove the bolts in the support link before routing the assistant's instrumentation.

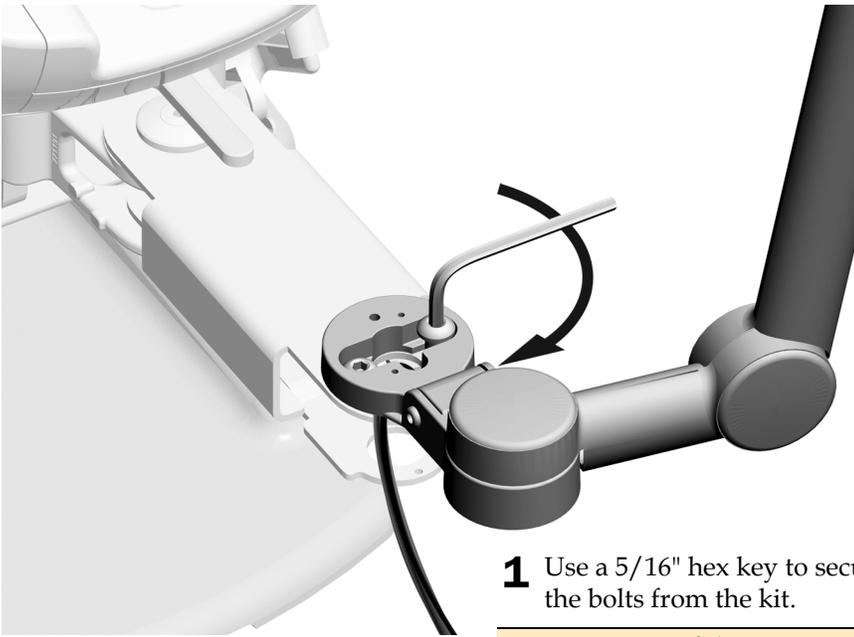


A-dec 411 with an A-dec 461 Support Center

- 1** Route the wires, data line, and tubing through the top of the support link.



Task 2.



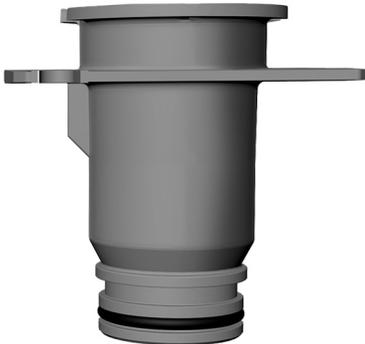
- 1 Use a 5/16" hex key to secure the assistant's instrumentation with the bolts from the kit.



NOTE If the system includes a support center, use the bolts removed from the support link in the previous task.

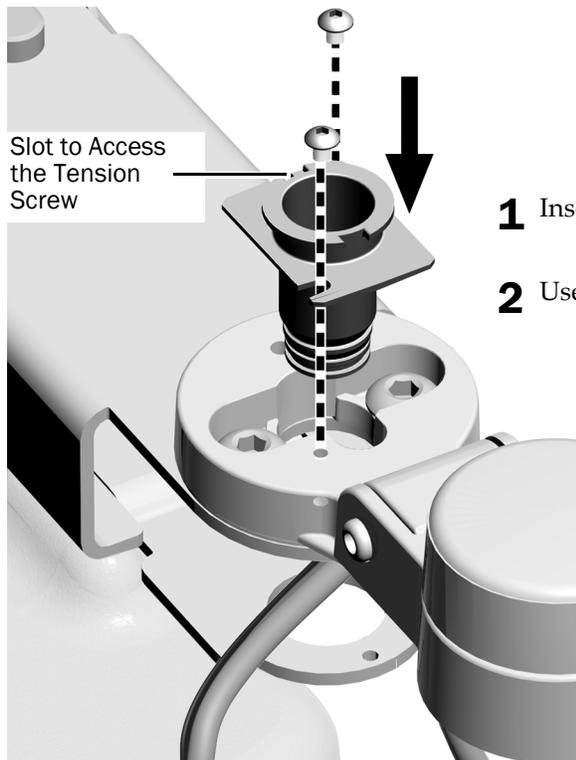
Task 3.

- 1 From the kit, get the vacuum pipe for the A-dec support link. It is the shorter of the two pipes that ship in the kit.



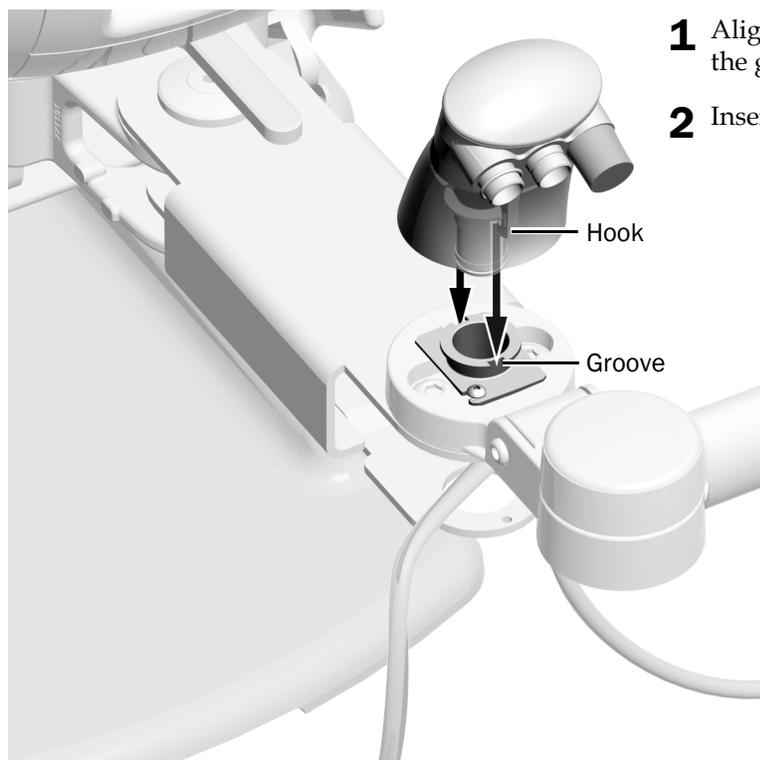
Vacuum Pipe Used with an A-dec 400 Support Link

Task 4.



- 1** Insert the vacuum pipe.
- 2** Use an 1/8" hex key to secure the pipe.

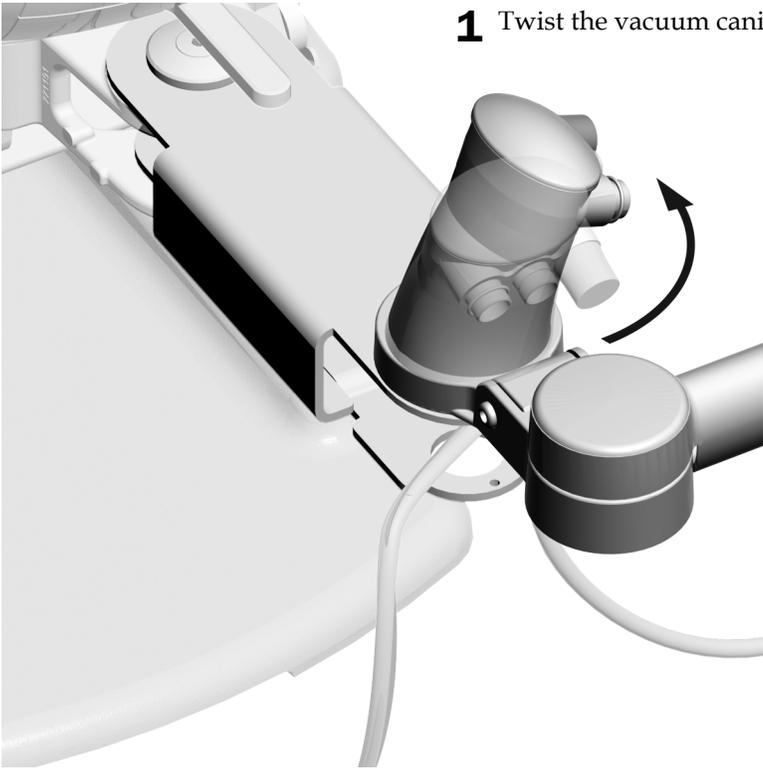
Task 5.



- 1** Align the hooks of the vacuum canister with the grooves in the vacuum pipe.
- 2** Insert the vacuum canister.

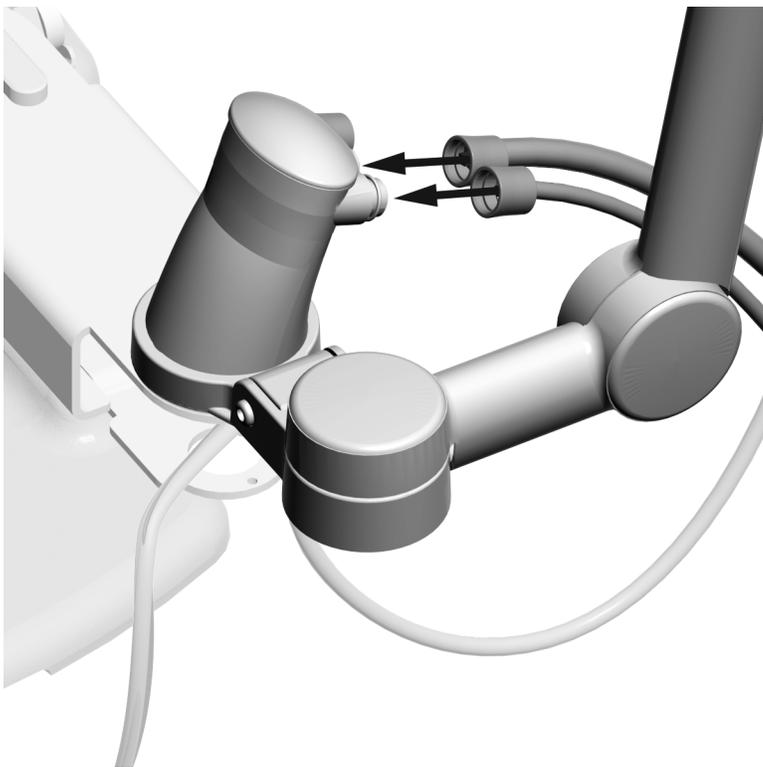
Task 6.

- 1** Twist the vacuum canister 1/4 turn counterclockwise.

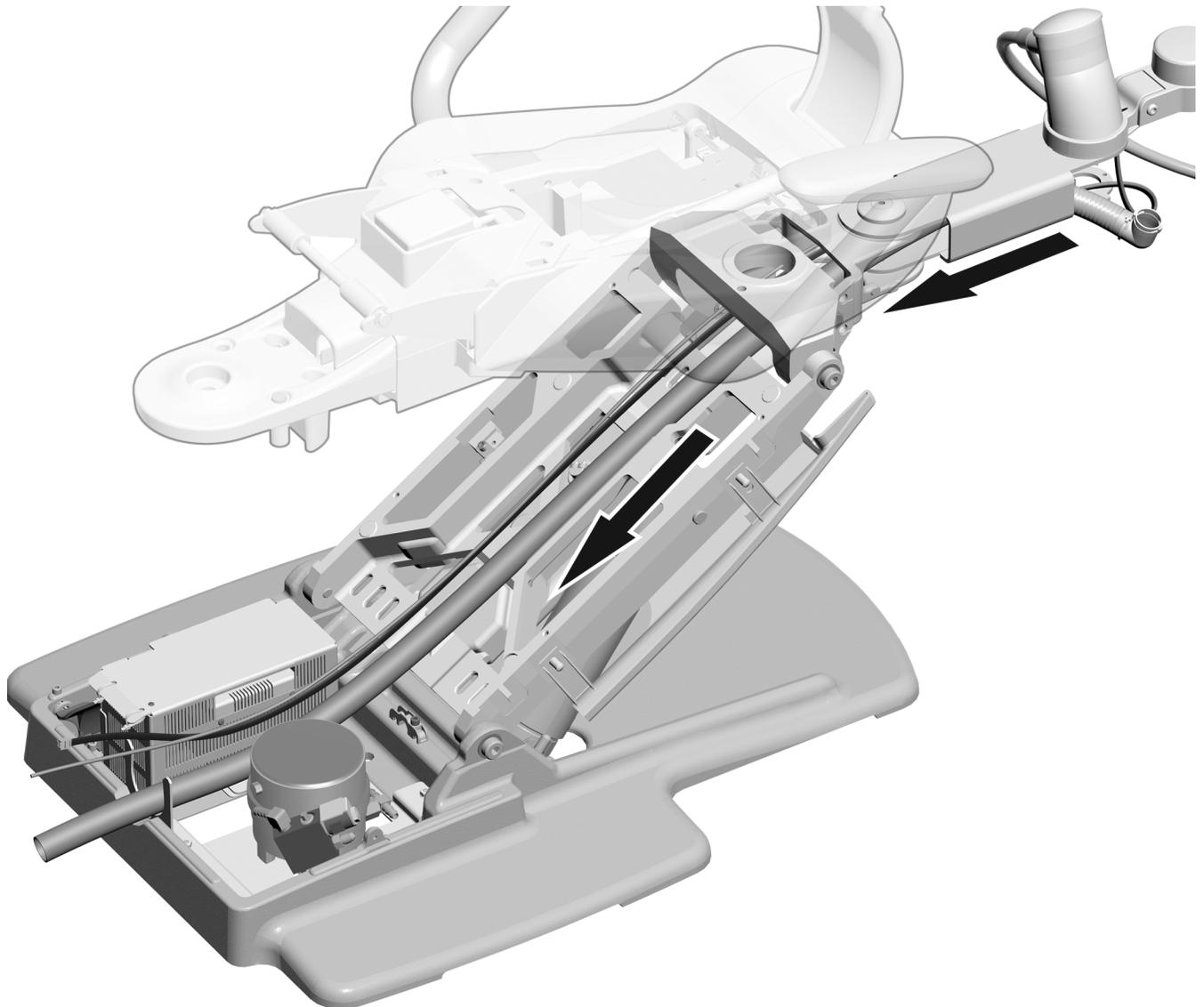


Task 7.

- 1** Connect the HVE and saliva ejector tubing to the vacuum canister.

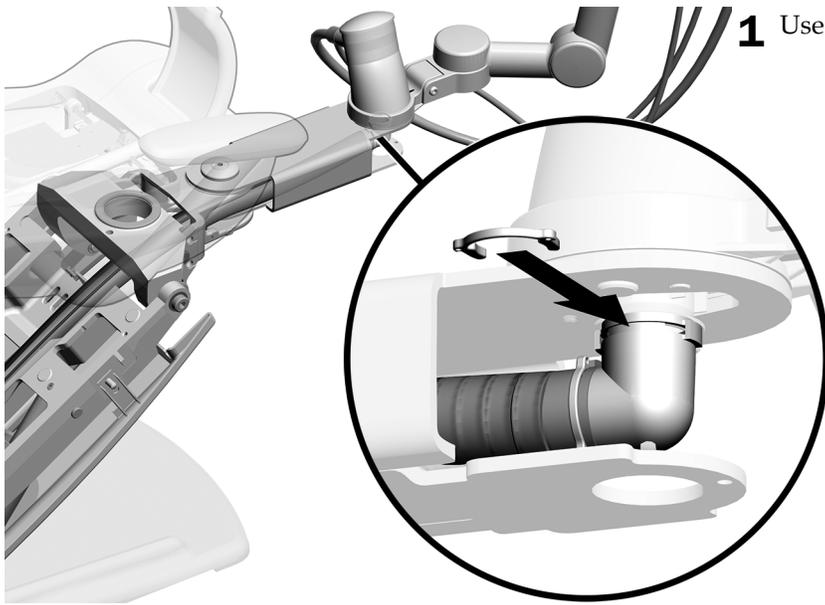


Task 8.



- 1** Route the vacuum line, tubing, wires, and data line through the support link then down the lift arm. Be sure to go through the link and not underneath it.
- 2** Keep the wires and data line on the side of the support link and arm toward the power supply. Do not cross the tubing.

Task 9.



1 Use a Dürr clip to connect the vacuum line.



Actual Size of
Dürr Clip

Next Step See "Connect the Electrical Wires and Data Line" on page 23.

Install on an A-dec 500 Support Link

The installation procedure is the same for all A-dec 500 dental chairs.

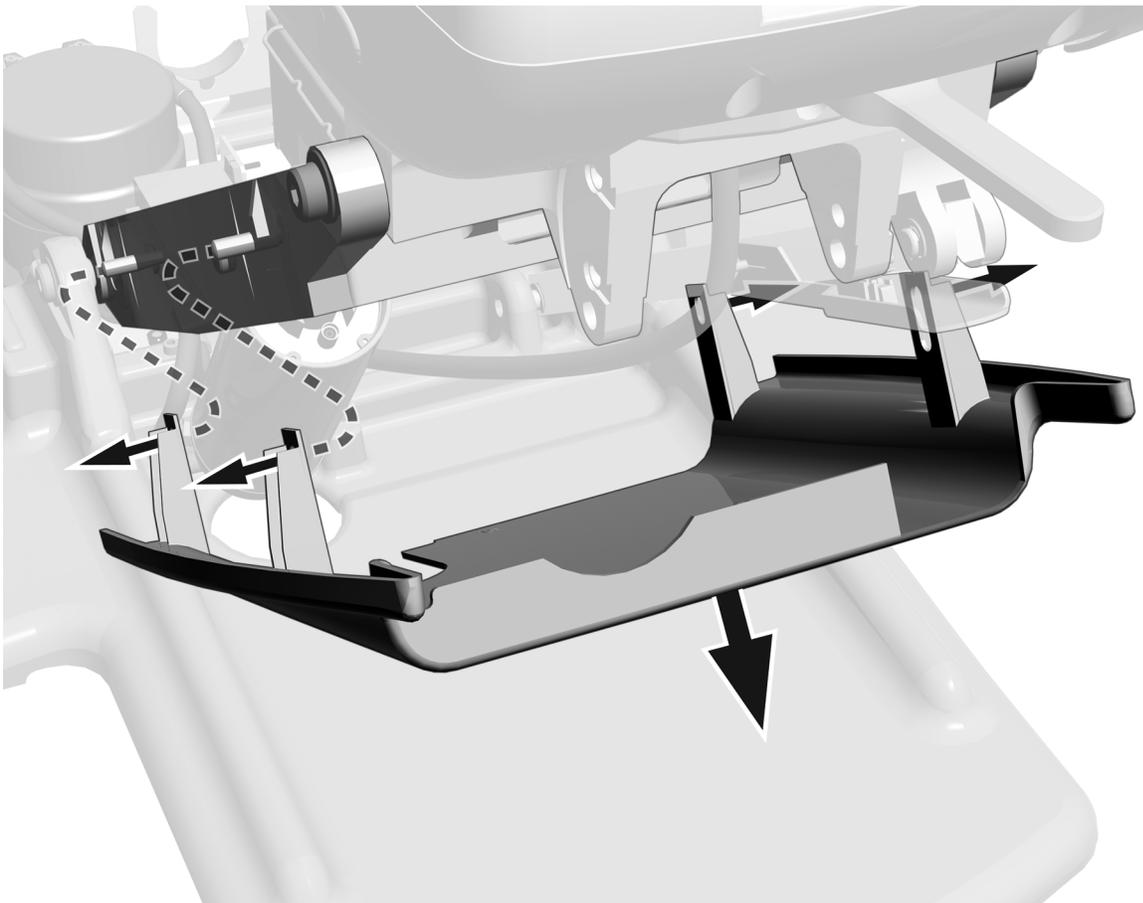
Install and Level the Support Link

Recommended Tools

- Rubber mallet
- 3/4" combination wrenches (2)
- 3/4" socket and ratchet
- Level

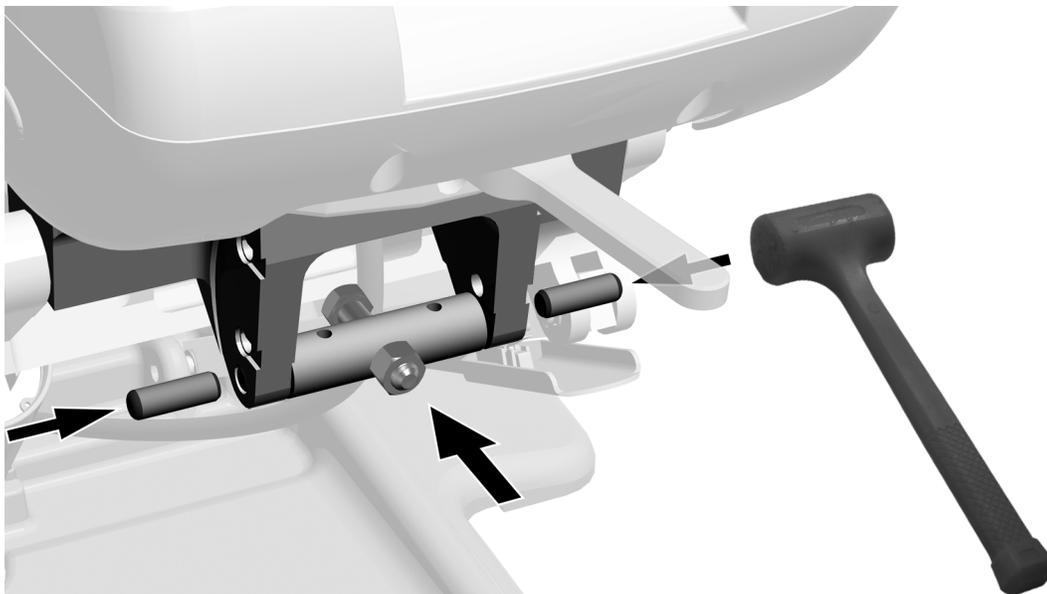
Task 1.

- 1** Pull out the sides of the stop plate to remove it.



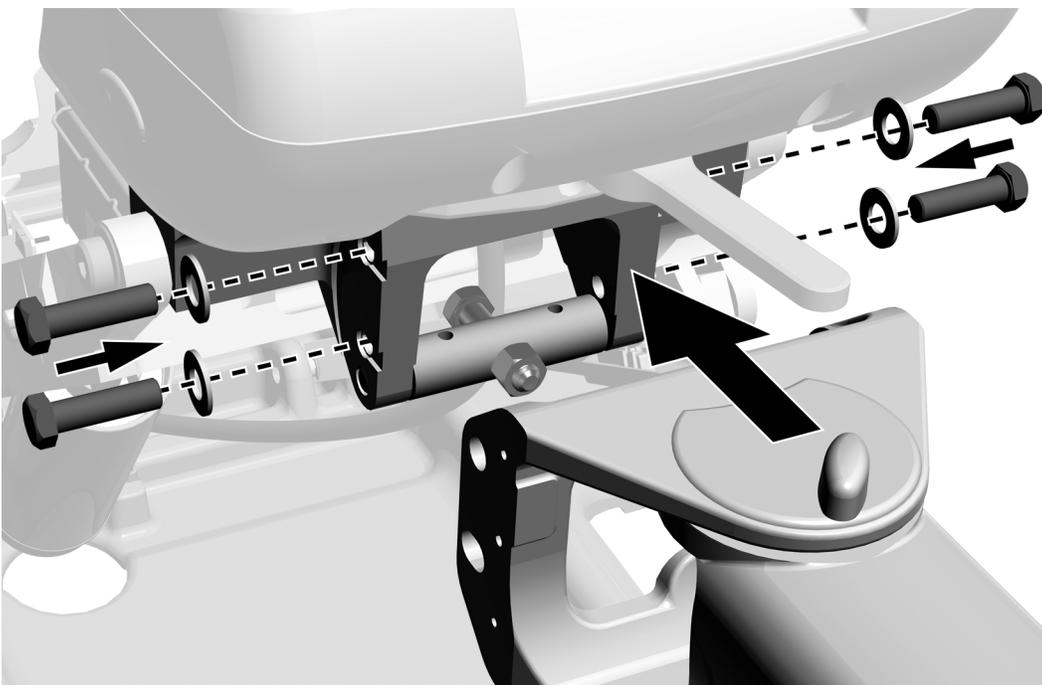
Task 2.

- 1 Place the leveling bar in the support link with the head of the bolt toward the chair.
- 2 Use a rubber mallet to insert the two dowels to secure the leveling bar.

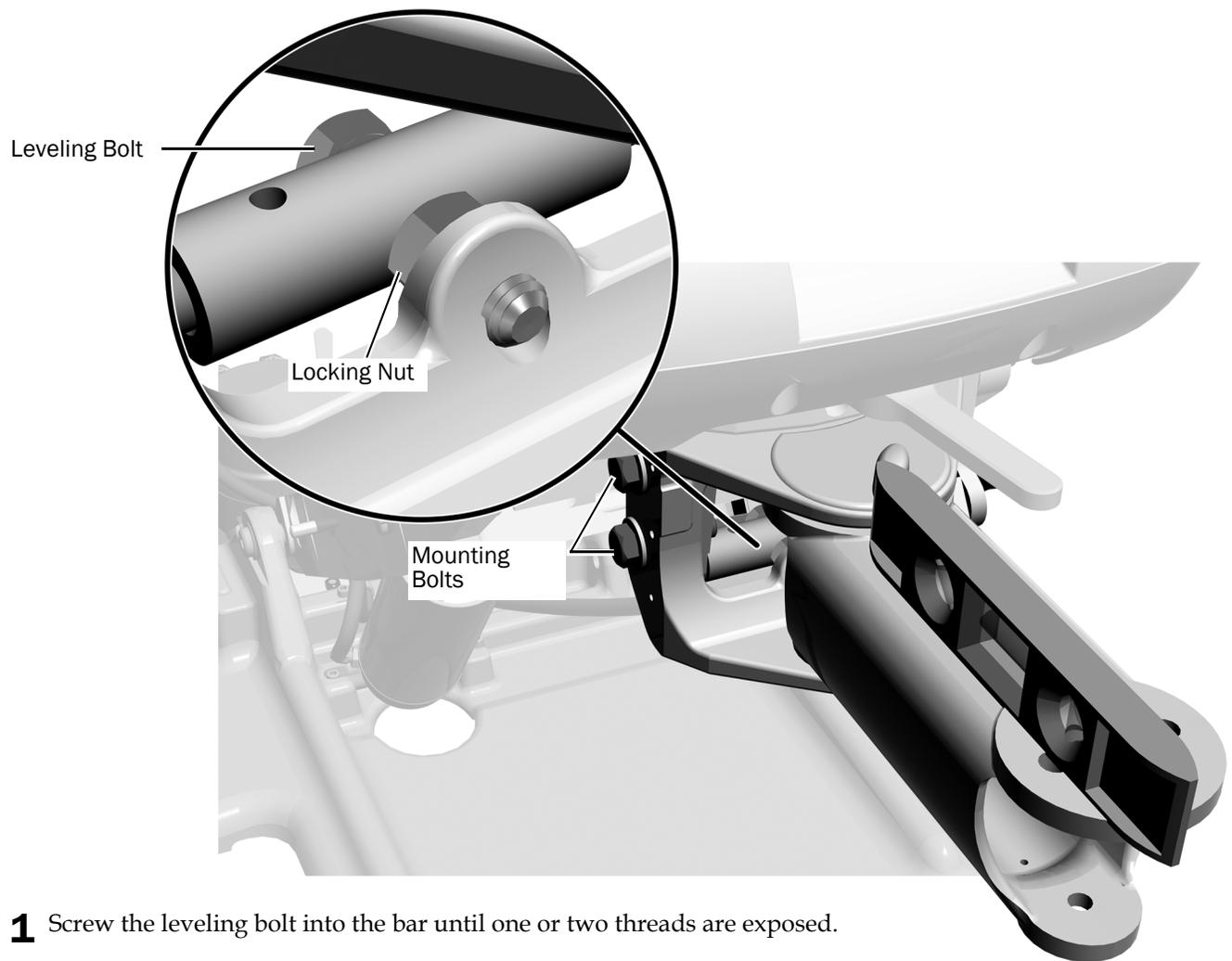


Task 3.

- 1 Get four bolts and washers from the kit.
- 2 Loosely attach the support link to the chair with the four bolts and washers. You will tighten the bolts later after you level the link.



Task 4.



- 1** Screw the leveling bolt into the bar until one or two threads are exposed.
- 2** Place a level on the support link.
- 3** Adjust the leveling bolt until the link is level.
- 4** Use a 3/4" combination wrench to hold the leveling bolt and tighten the locking nut with another 3/4" combination wrench.
- 5** Tighten the mounting bolts.

Install the Assistant's Instrumentation on an A-dec 500 Support Link

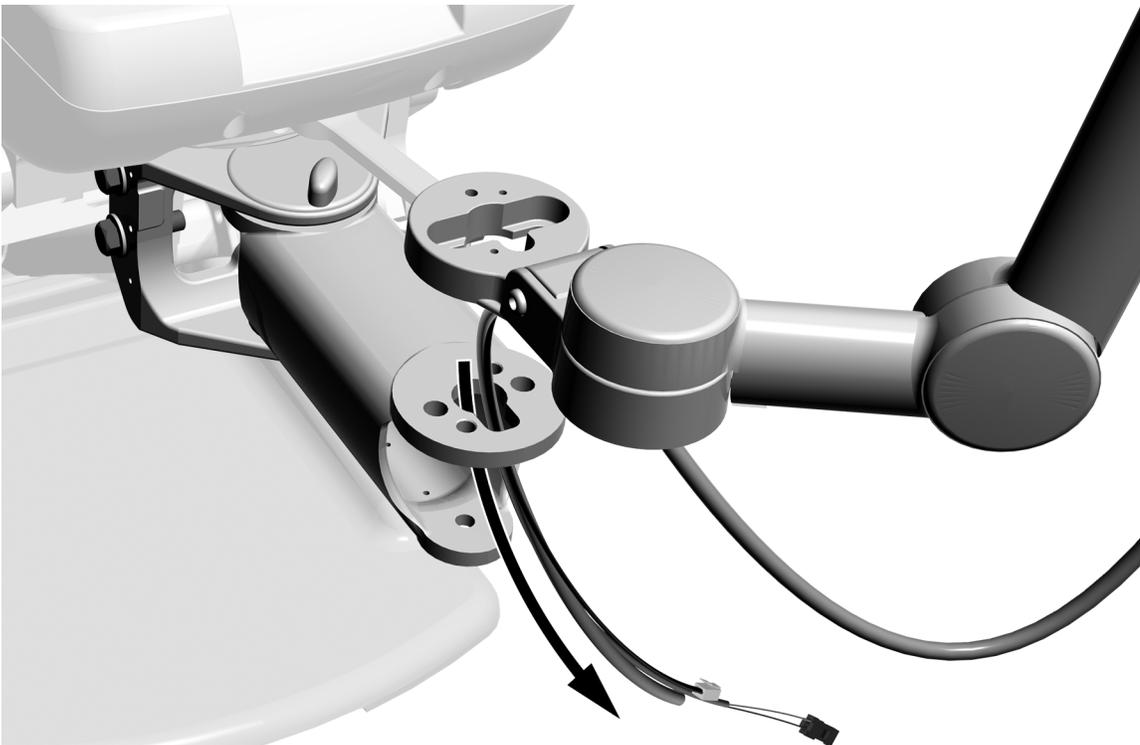
The procedure for installing the assistant's instrumentation is the same whether the system has a support link only or a support link and support arm.

Recommended Tools

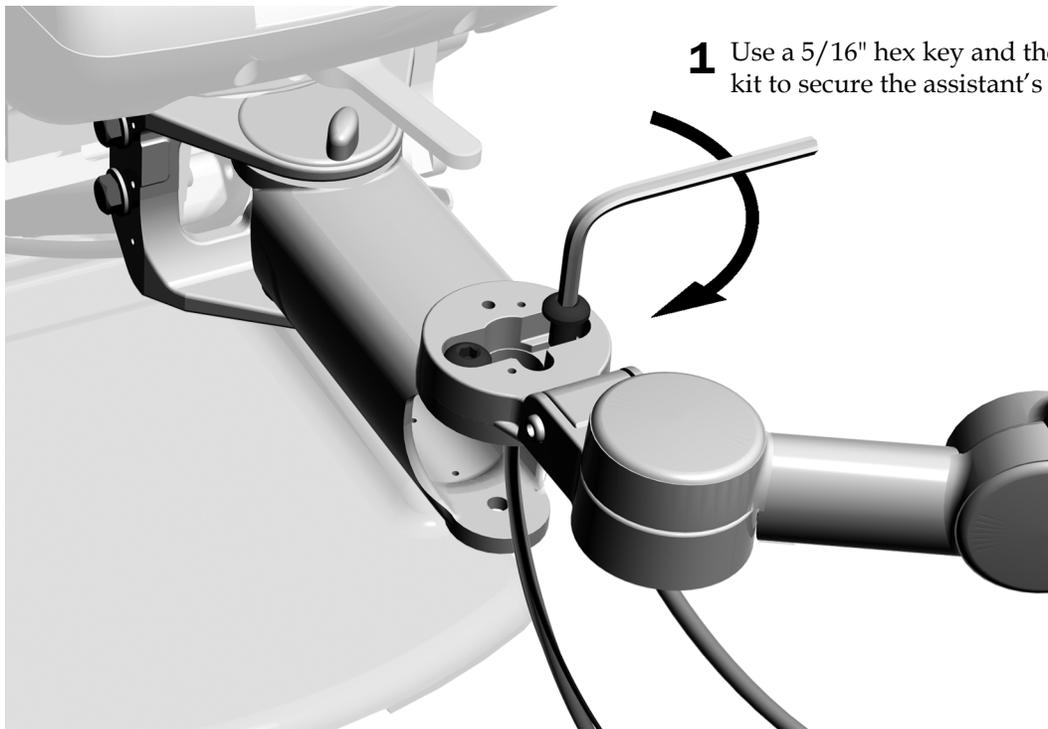
- 1/8" and 5/16" hex keys

Task 1.

- 1 Route the wires, data line, and tubing through the top of the support link.



Task 2.



- 1** Use a 5/16" hex key and the black bolts from the kit to secure the assistant's instrumentation.

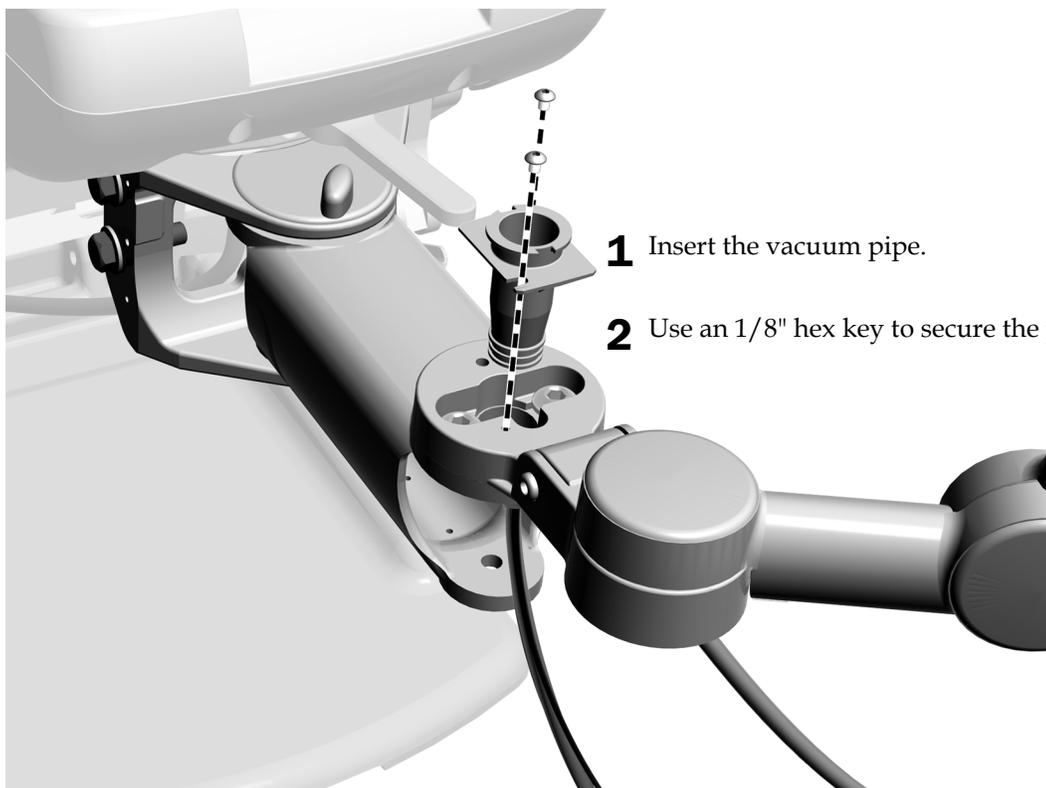
Task 3.

- 1** Get the vacuum pipe for the A-dec 500 support link. It is the longer of the two pipes that ship in the kit.



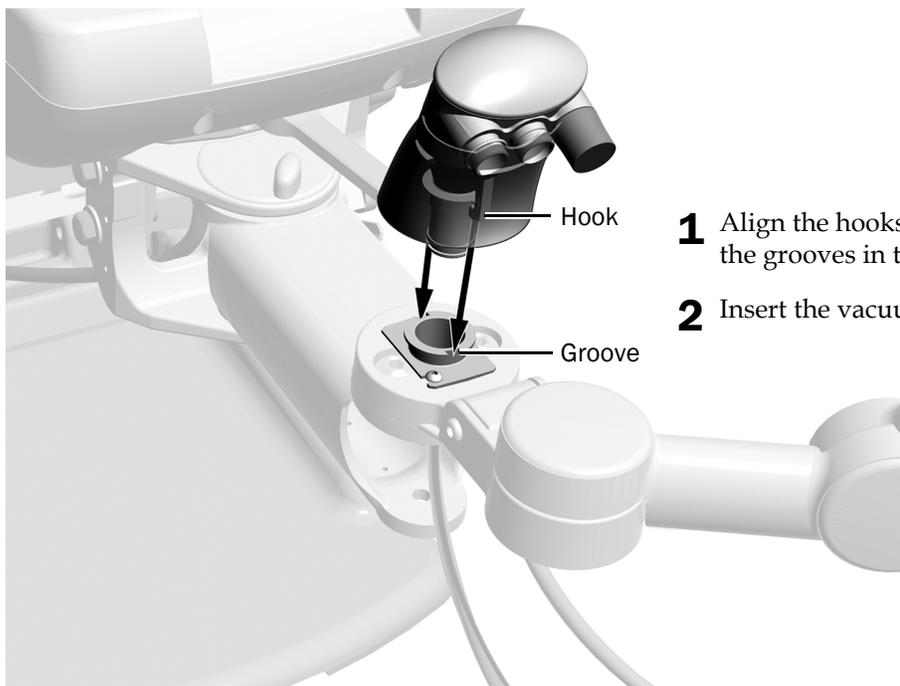
Vacuum Pipe Used with an A-dec 500 Support Link

Task 4.



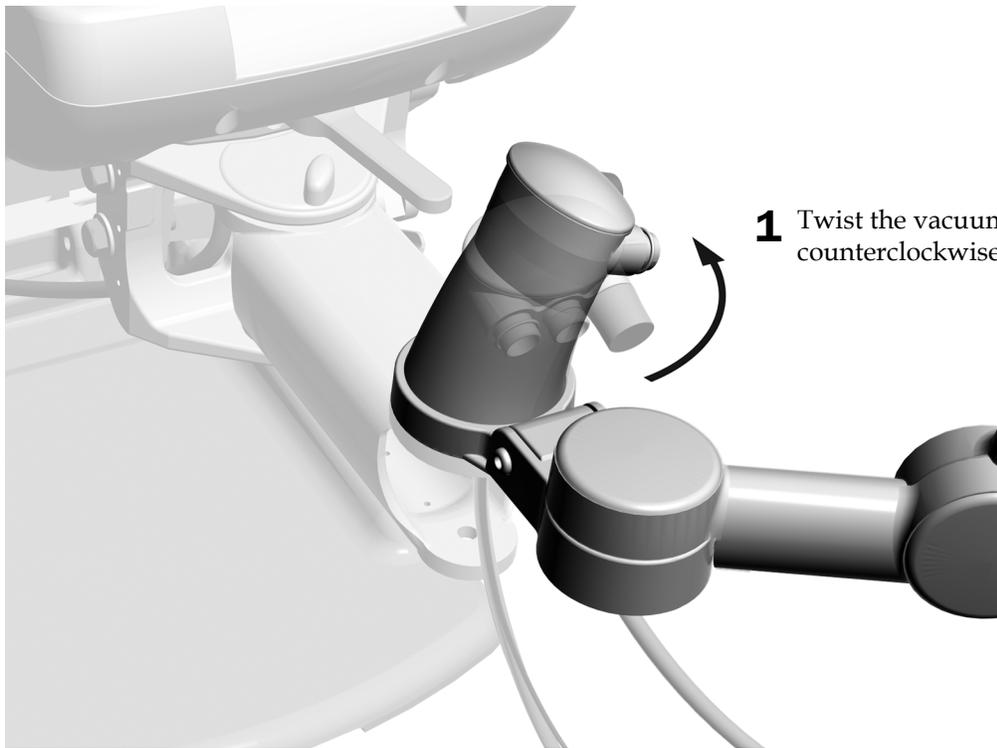
- 1** Insert the vacuum pipe.
- 2** Use an 1/8" hex key to secure the pipe.

Task 5.



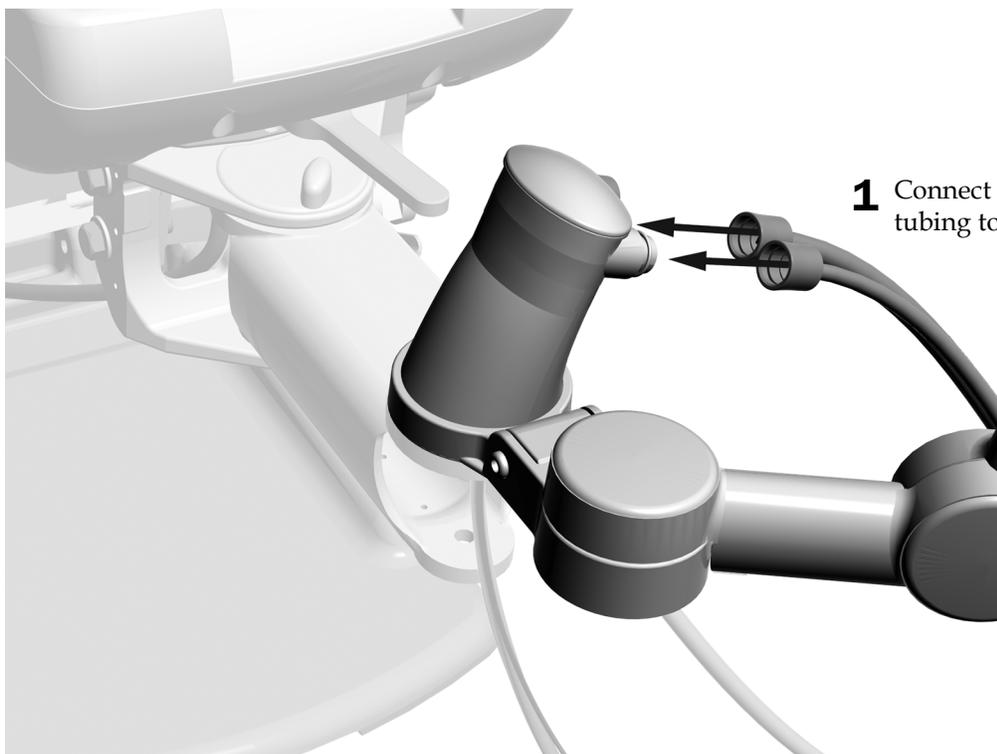
- 1** Align the hooks of the vacuum canister with the grooves in the vacuum pipe.
- 2** Insert the vacuum canister.

Task 6.



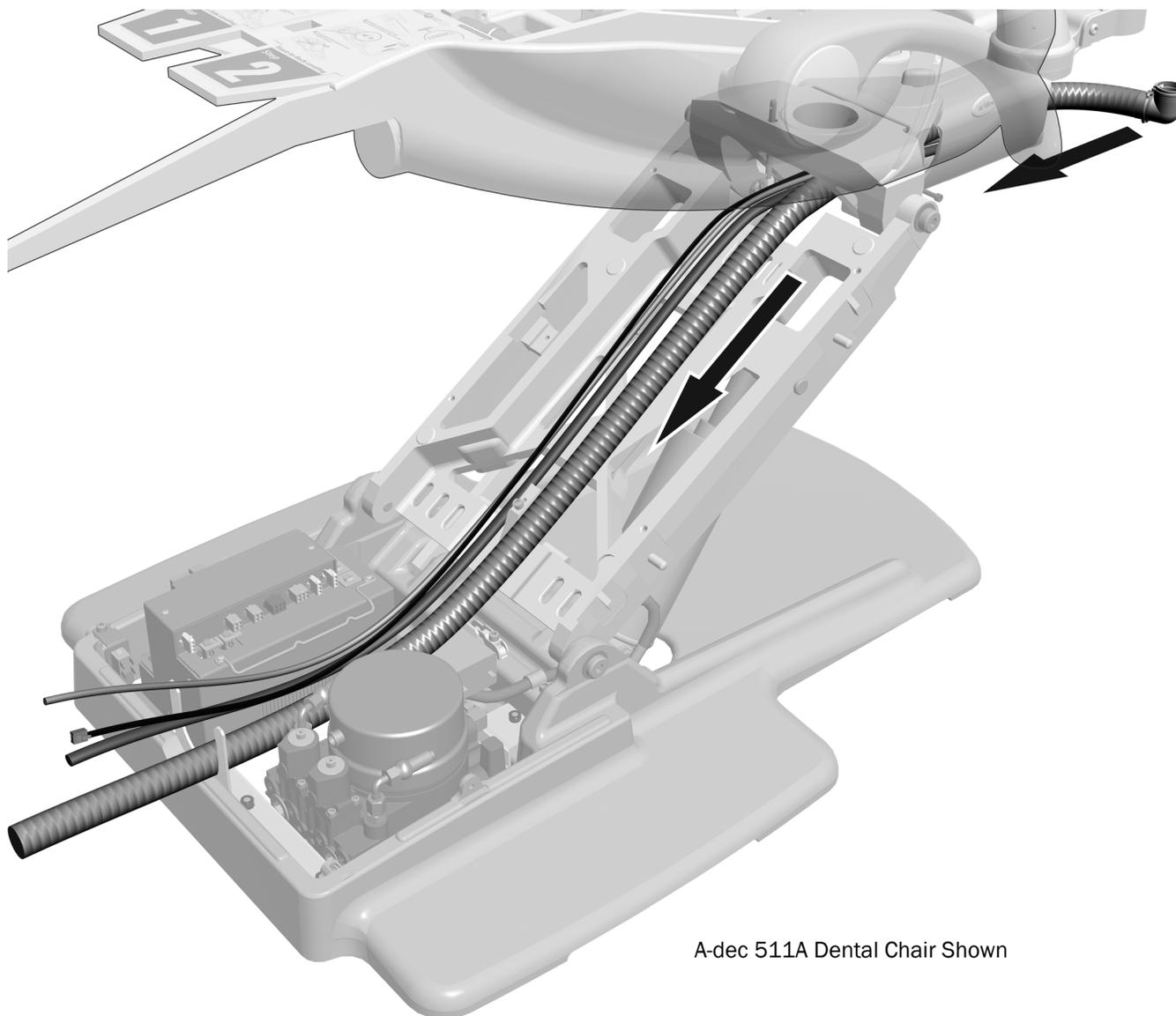
1 Twist the vacuum canister 1/4 turn counterclockwise.

Task 7.



1 Connect the HVE and saliva ejector tubing to the vacuum canister.

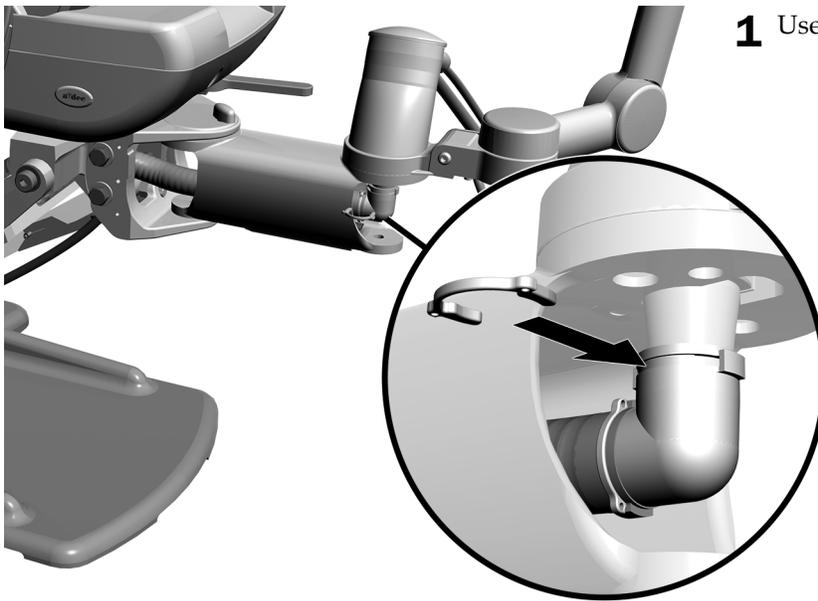
Task 8.



A-dec 511A Dental Chair Shown

- 1** Route the vacuum line, tubing, wires, and data line through the support link then down the lift arm. Be sure to go through the link and not underneath it.
- 2** Keep the wires and data line on the side of the support link and arm toward the power supply. Do not cross the tubing.

Task 9.



1 Use a Dürr clip to connect the vacuum line.



Actual Size of
Dürr Clip

Next Step See the section for the system's configuration:

- If the system does not include a support arm, see "Install the Stop Switch Plate on a System with an A-dec 500 Support Link with Assistant's Instrumentation Only" on page 20.
- If the system includes a support arm, see "Connect the Electrical Wires and Data Line" on page 23.

Install the Stop Switch Plate on a System with an A-dec 500 Support Link with Assistant's Instrumentation Only

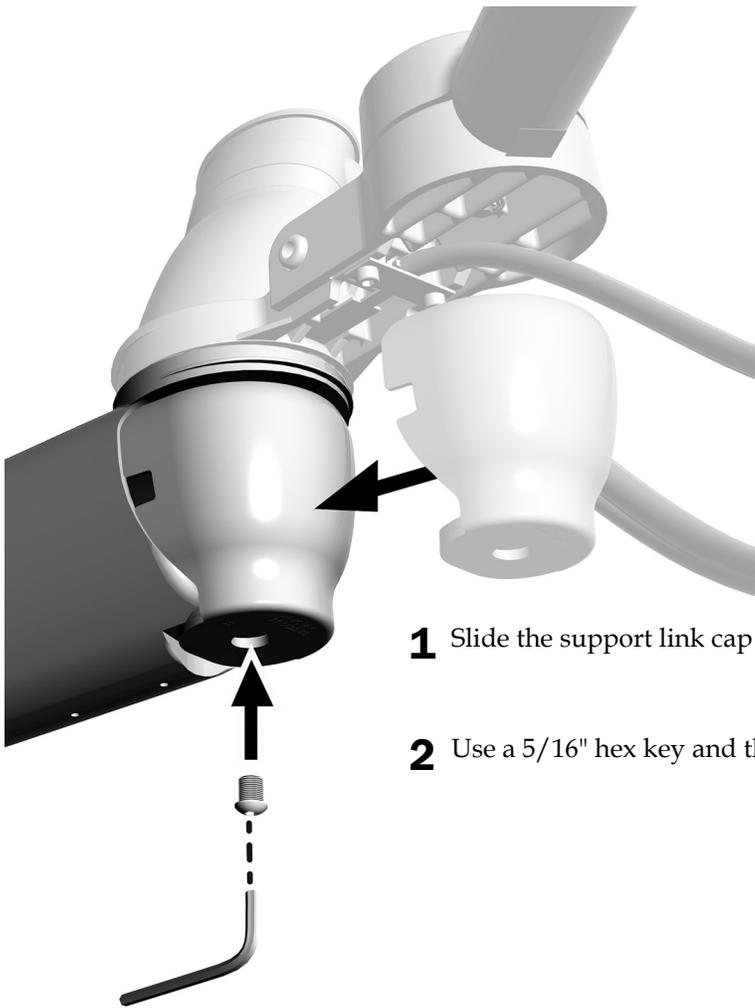


READ THIS! The steps in this section are for systems with an A-dec 500 support link and assistant's instrumentation that do not include a support arm (used with the support center and dental light). If the system includes a support arm, see the information that ships with the arm for instructions on installing the stop switch plate.

Recommended Tools

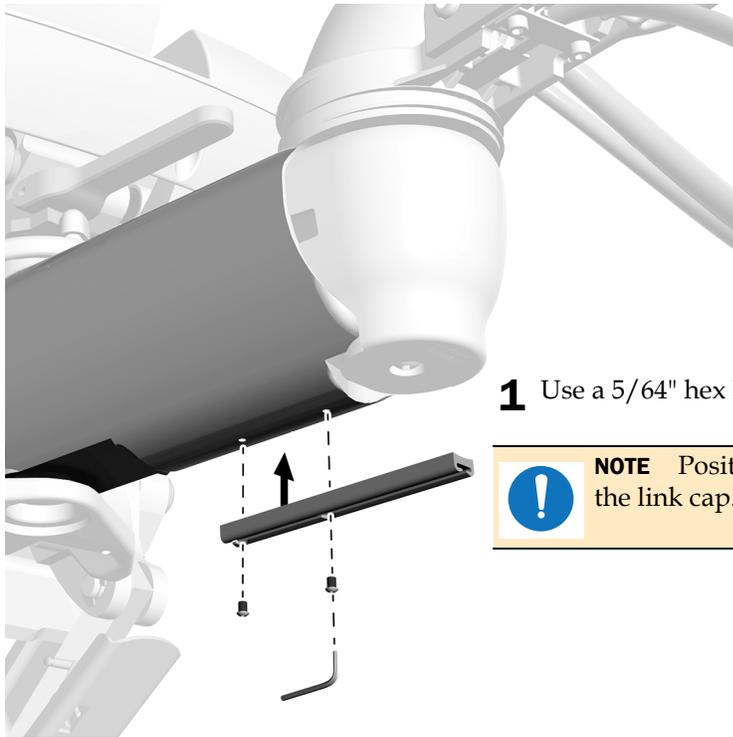
- 5/64", 5/32", and 5/16" hex keys

Task 1.



- 1** Slide the support link cap onto the end of the link.
- 2** Use a 5/16" hex key and the screw to secure the cap.

Task 2.

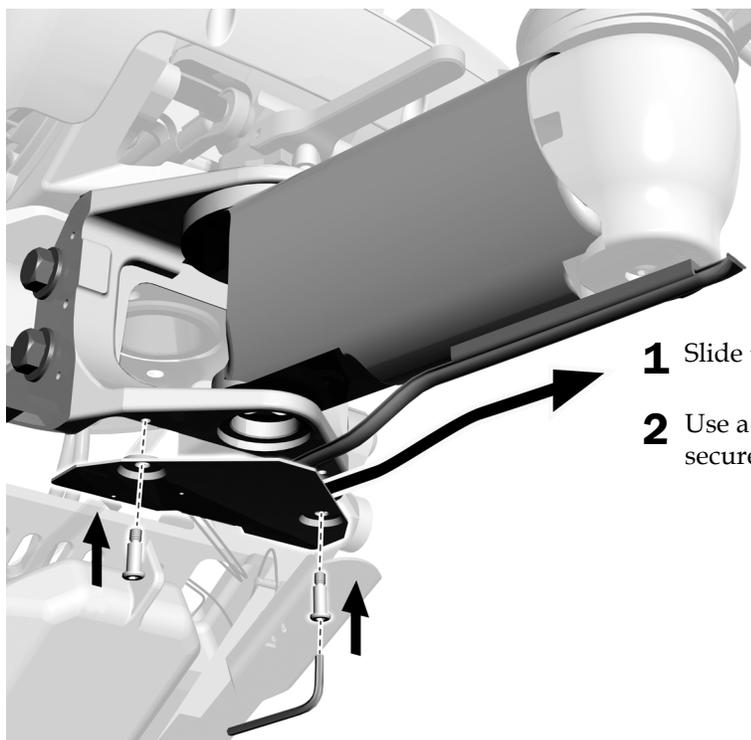


- 1 Use a 5/64" hex key to attach the tubing guide to the support link.



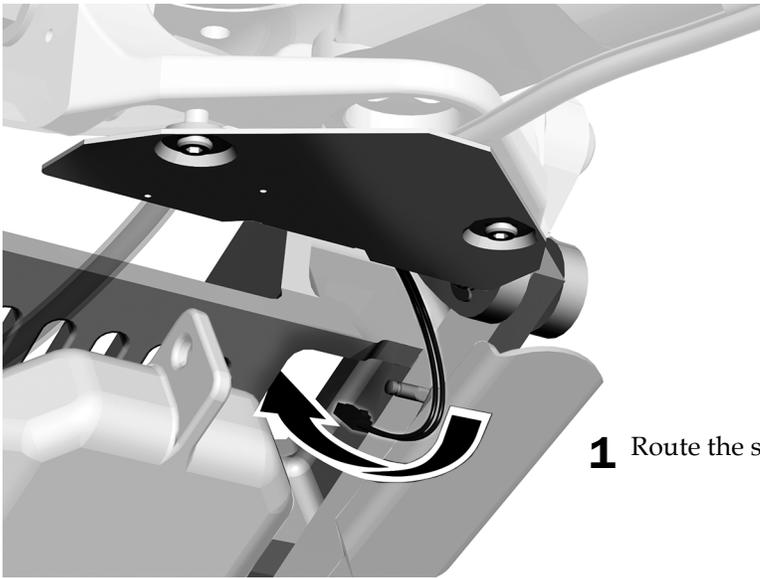
NOTE Position the guide so that it covers the screw securing the link cap.

Task 3.



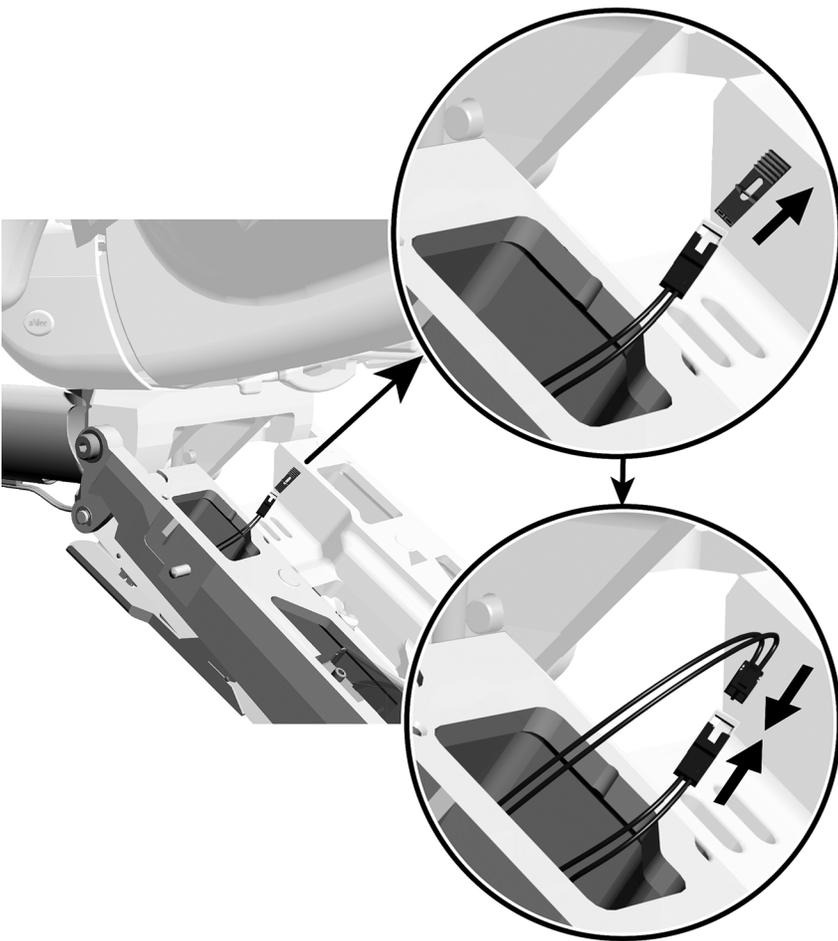
- 1 Slide the tubing into the guide.
- 2 Use a 5/32" hex key and two shoulder bolts to secure the stop switch plate.

Task 4.



1 Route the stop switch wires to the front of the lift arm.

Task 5.



1 Remove the jumper from the lift arm stop switch.

2 Connect the stop switches.

Connect the Electrical Wires and Data Line



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.



WARNING Shock hazard. When you remove or replace the covers, take care not to damage any wiring or tubing. Verify that the covers are secure after you replace them.



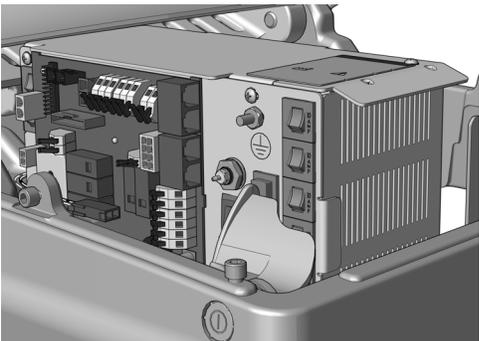
WARNING Failure to turn off or disconnect the power before you begin this procedure can lead to product damage and result in serious injury or death.

1. Turn off the power to the system.

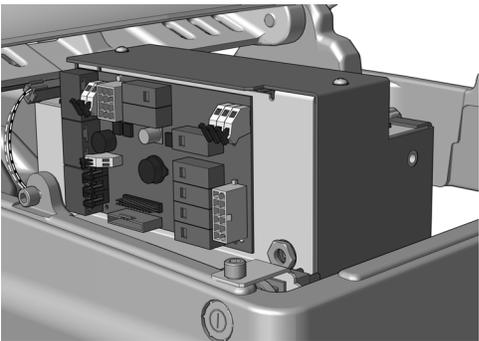
Complete the following section according to which power supply the system includes.



Connect the Wires and Data Line to an A-dec Universal Power Supply Manufactured After June 2023 24



Connect the Wires and Data Line to A-dec 311/411 Power Supplies Manufactured Before June 2023 27



Connect the Wires and Data Line to an A-dec 511 Power Supply Manufactured Before June 2023 31

Connect the Wires and Data Line to an A-dec Universal Power Supply Manufactured After June 2023

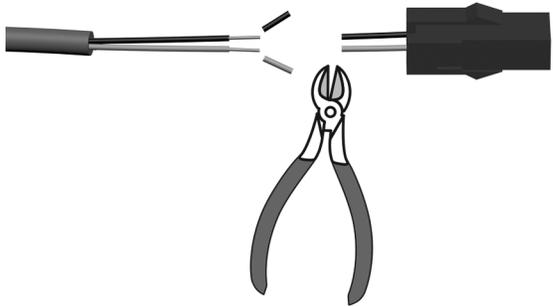
Recommended Tools

- Diagonal cutters
- Wire stripper
- 3/8" combination wrench

Task 1.



CAUTION To prevent damaging stranded core conductors by the unintended removal of outer strands, use a wire stripper that is properly sized for stranded core conductors.



1 Cut off the connector.

2 Strip back the wires 3/8" (10 mm). The stranded wires are 22 AWG (0.326 mm²).

Complete the instructions for the system's configuration.

Connect an A-dec 551sta to an A-dec Universal Power Supply Manufactured After June 2023	25
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Connect an A-dec 551sta to an A-dec Universal Power Supply Manufactured After June 2023

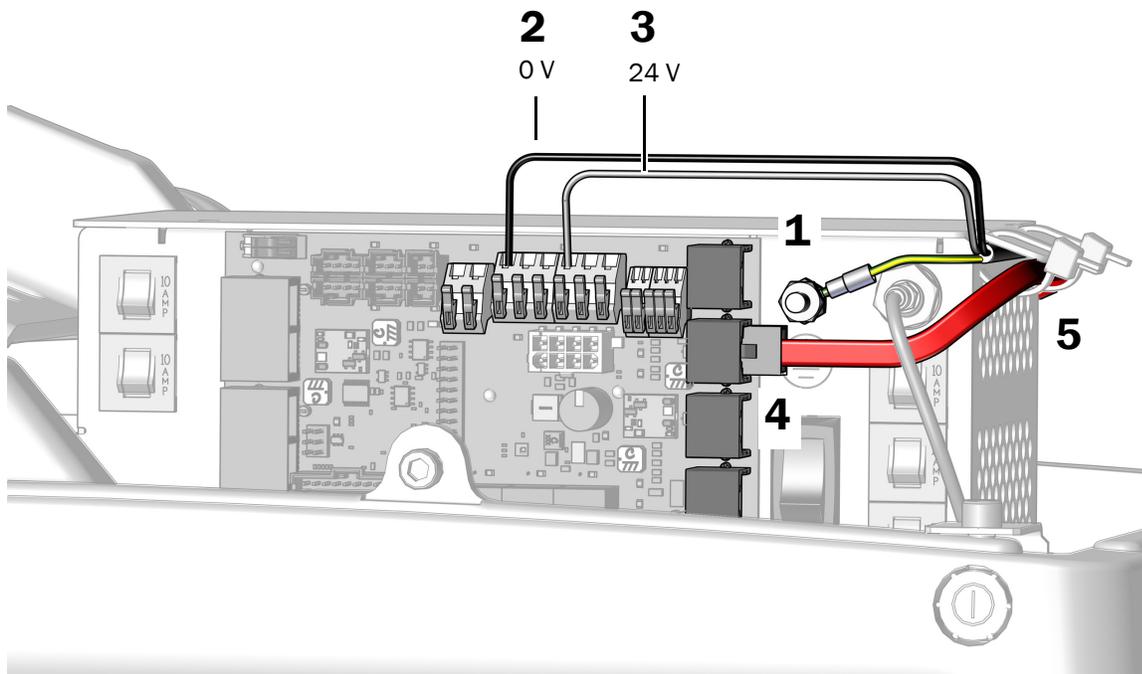
Task 1.

1. Connect the green/yellow ground wire from the assistant's instrumentation cable to the ground terminal on the power supply housing.
2. Connect the black wire from the assistant's instrumentation cable to the 0 V wire connector.
3. Connect the gray wire from the assistant's instrumentation cable to the 24 V wire connector.



NOTE If needed, you can connect more than one wire to a single terminal.

4. Plug the red DCS2 data line into a port toward the toe of the chair.
5. After all of the electrical connections have been made for the assistant's instrumentation, secure the wires and red DCS2 data line under the lip on the power supply.



Next Step See "Connect the Tubing and Utilities" on page 34.

Connect an A-dec 551 to an A-dec Universal Power Supply Manufactured After June 2023

1. Connect the green/ yellow ground wire from the assistant's instrumentation cable to the ground terminal on the power supply housing.
2. Connect the black wire from the assistant's instrumentation cable to the 0 V wire connector.
3. Connect the gray wire from the assistant's instrumentation cable to the 24 V wire connector.

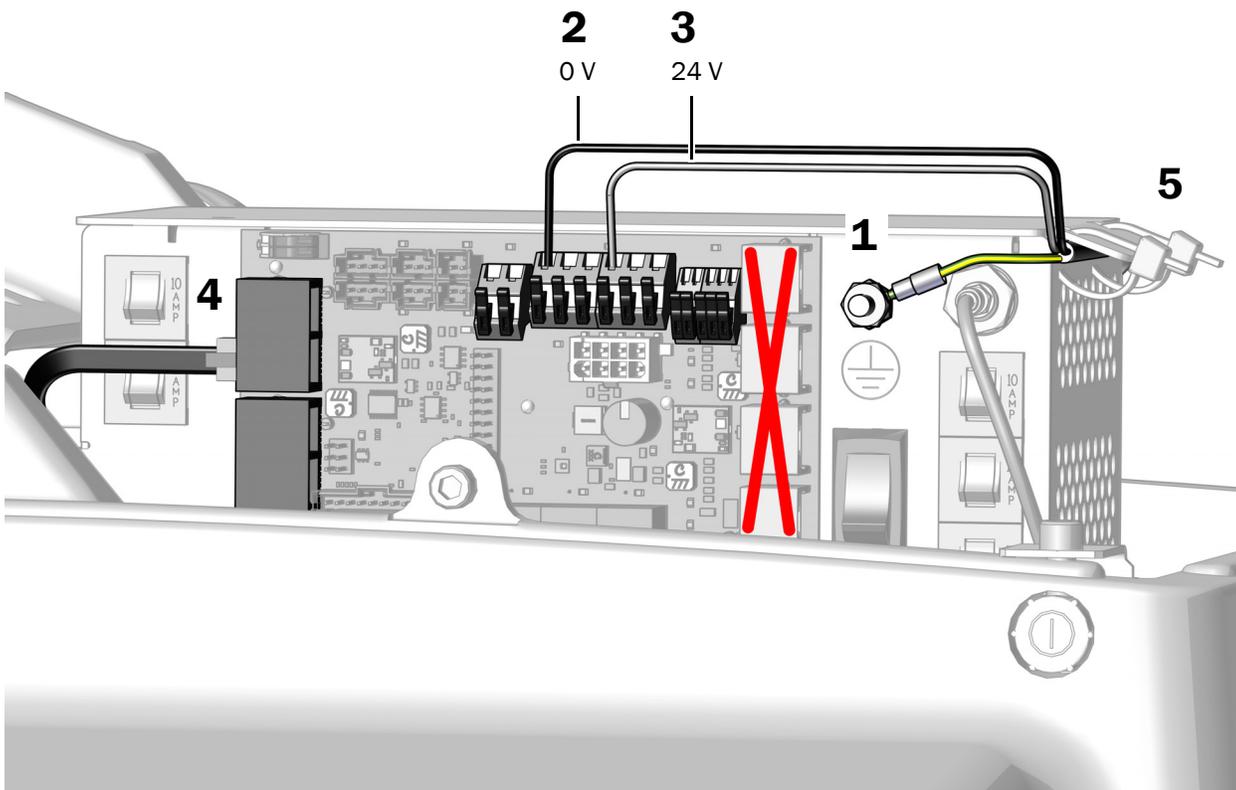


NOTE If needed, you can connect more than one wire to a single terminal.



CAUTION Plugging the black DCS1 data line into a DCS2 port can damage the product.

4. Plug the black DCS1 data line into any DCS1 data port, located on the chair side of the chair circuit board.
5. When all modules have been connected to the power supply, secure the wires under the lip on the power supply.



Next Step See "Connect the Tubing and Utilities" on page 34.

Connect the Wires and Data Line to A-dec 311/411 Power Supplies Manufactured Before June 2023

Recommended Tools

- Diagonal cutters
- Wire stripper
- 3/8" combination wrench

Complete the instructions for the system's configuration.

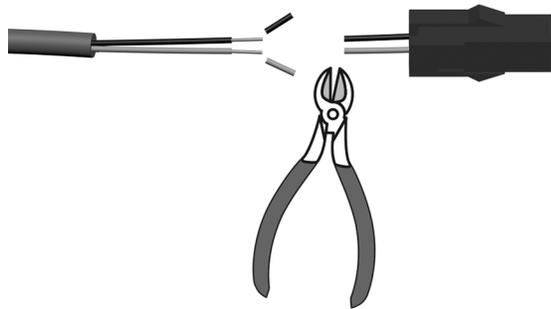
Connect an A-dec 551sta to an A-dec 311/411 Power Supply Manufactured Before June 2023	27
Connect an A-dec 551 to an A-dec 311/411 Power Supply Manufactured Before June 2023	30

Connect an A-dec 551sta to an A-dec 311/411 Power Supply Manufactured Before June 2023

Task 1.



CAUTION To prevent damaging stranded core conductors by the unintended removal of outer strands, use a wire stripper that is properly sized for stranded core conductors.

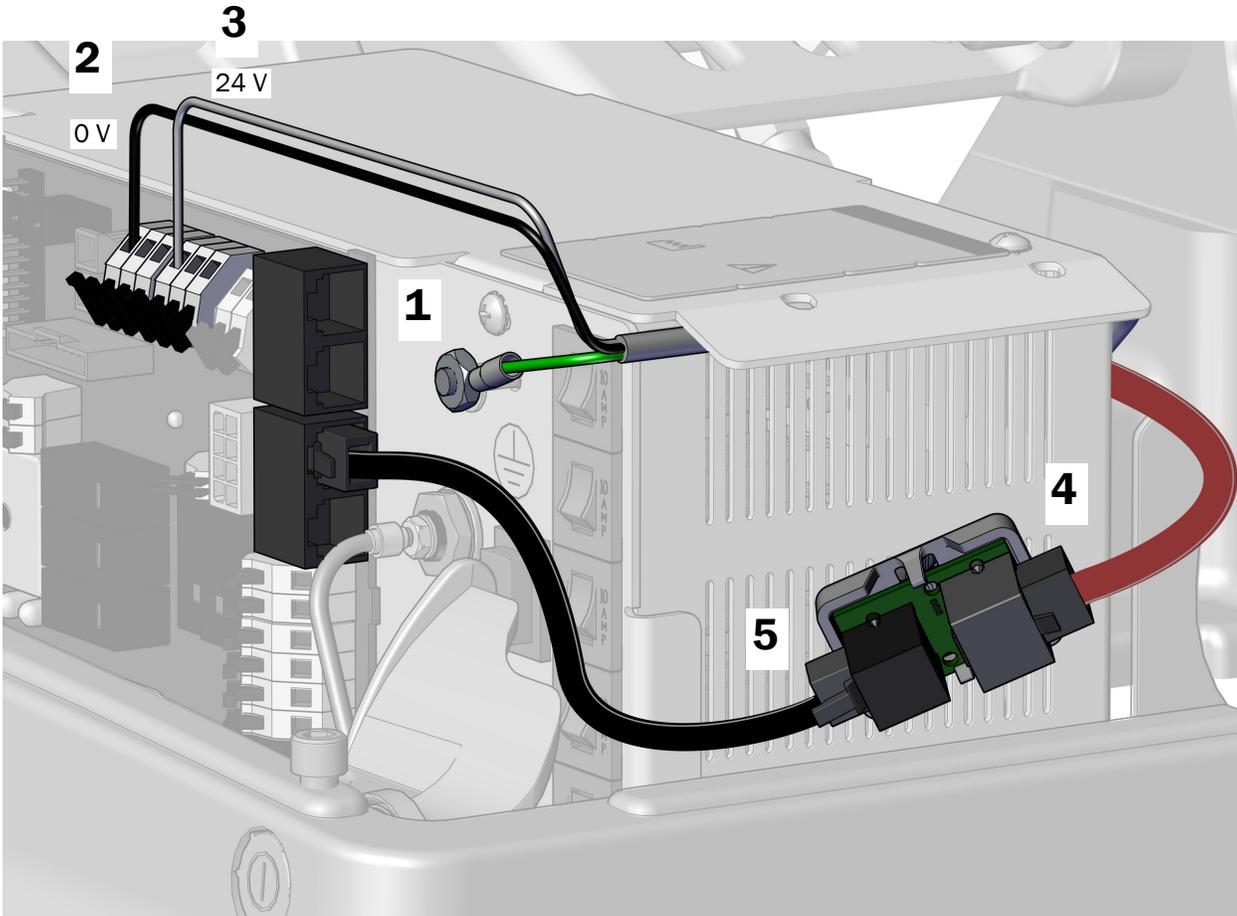


1 Cut off the connector.

2 Strip back the wires 3/8" (10 mm). The stranded wires are 22 AWG (0.326 mm²).

Task 2.

1. Connect the green/ yellow ground wire from the assistant's instrumentation cable to the ground terminal on the power supply housing.
2. Connect the black wire from the assistant's instrumentation cable to the 0 V wire connector.
3. Connect the gray wire from the assistant's instrumentation cable to the 24 V wire connector.
4. With the gray port on the translator board positioned to the back of the power supply, connect the red DCS2 data line to the gray port.
5. Connect the black DCS1 data line from the translator board's black port to any data port on the power supply.



Task 3.

1. Peel off the protective paper from the translator board.



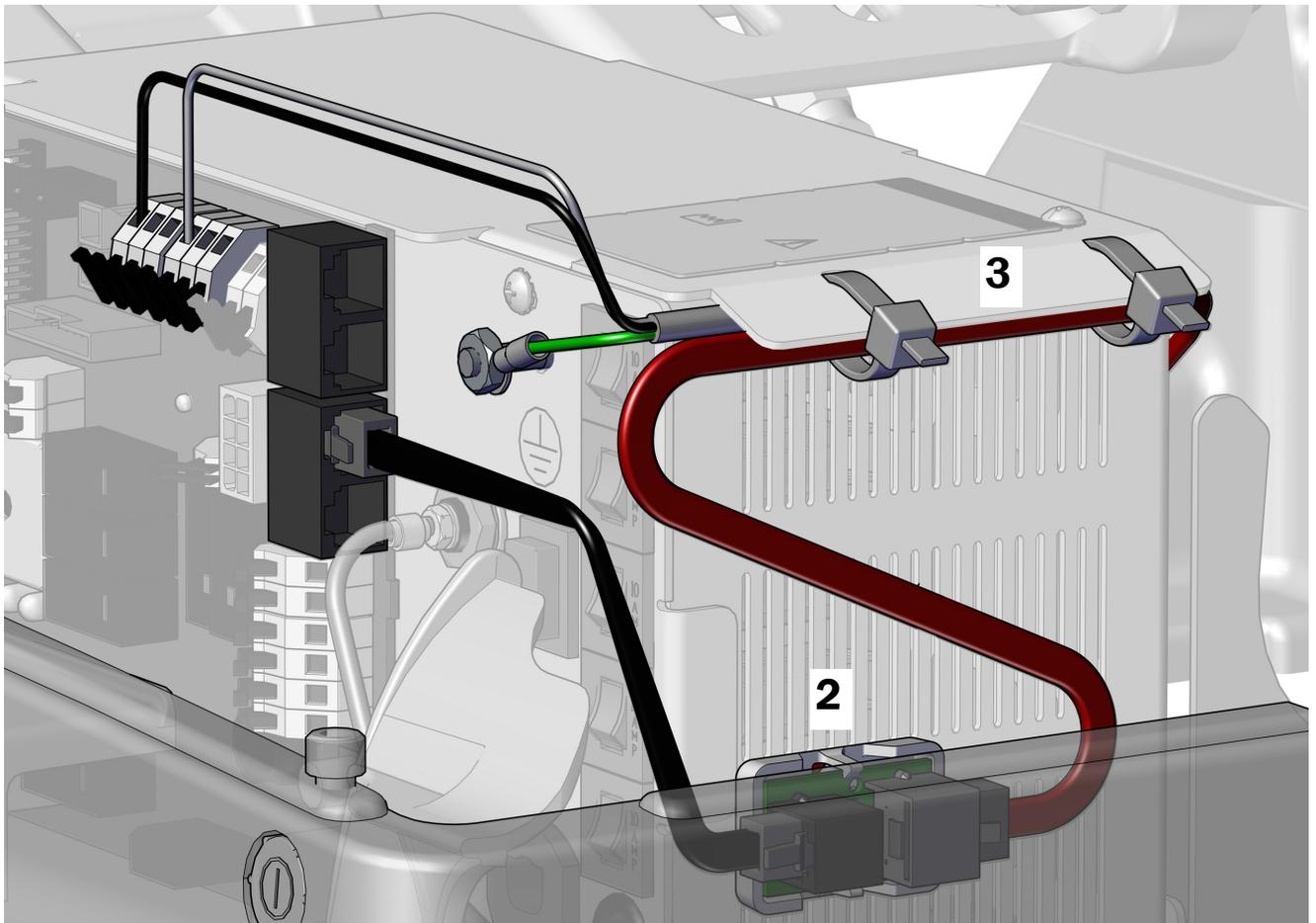
CAUTION The translator board must be attached in this position to prevent damage or interference with other equipment.

2. Attach the translator board to the side of the power supply toward the toe of the chair. Align it with the stub and the bottom of the middle vents.



NOTE If there is already an adaptor board for an LED light attached to the power supply, stack the translator board below it.

3. When all modules have been connected to the power supply, secure the wires under the lip on the power supply.



Connect an A-dec 551 to an A-dec 311/411 Power Supply Manufactured Before June 2023

Recommended Tools

- Diagonal cutters

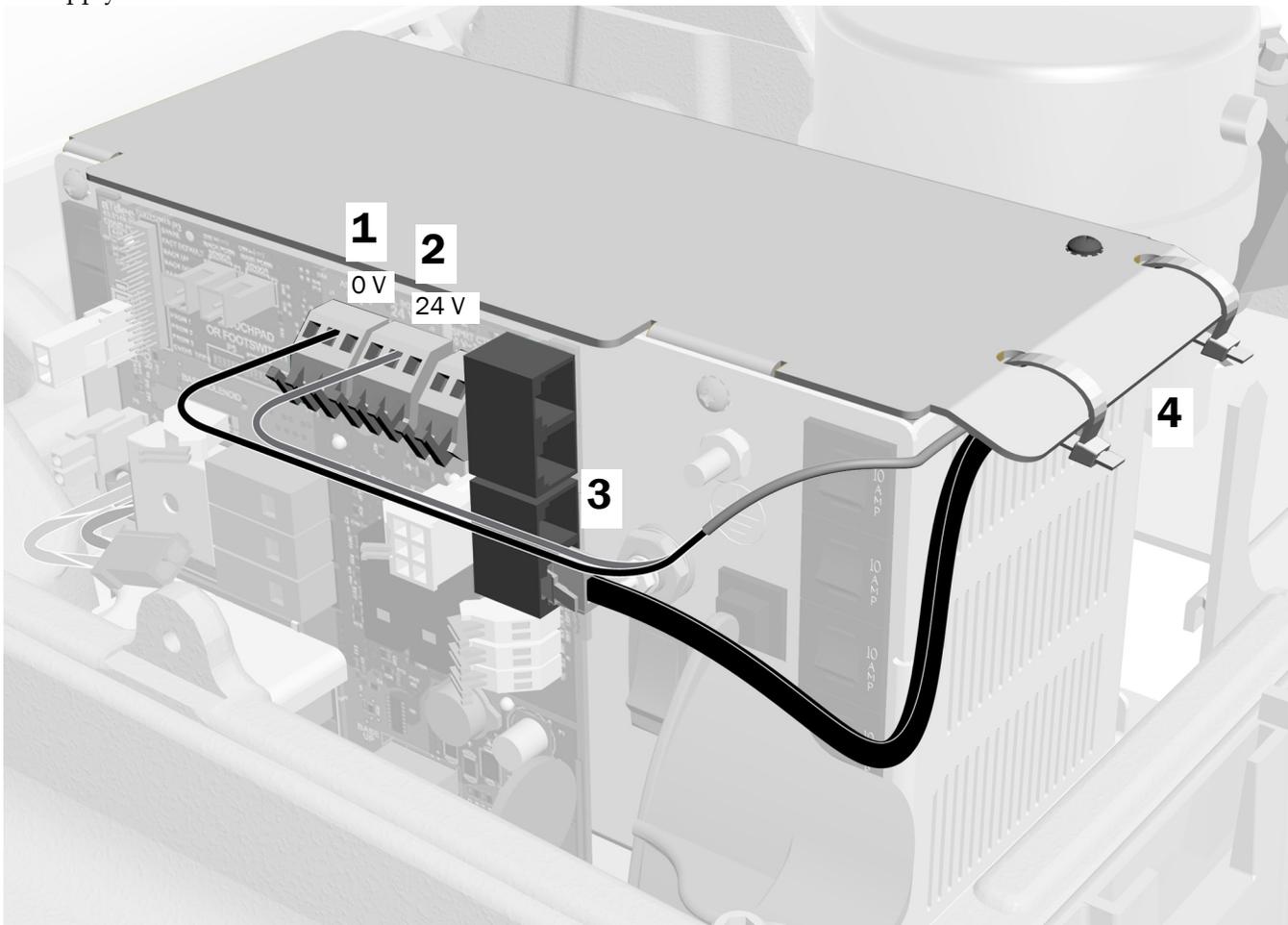
Task 1.

1. Connect the black wire from the assistant's instrumentation cable to the 0 V wire connector.
2. Connect the gray wire from the assistant's instrumentation cable to the 24 V wire connector.



NOTE If needed, you can connect more than one wire to a single terminal.

3. Plug the black DCS1 data line into any data port.
4. When all modules have been connected to the power supply, secure the wires under the lip on the power supply.



Next Step See "Connect the Tubing and Utilities" on page 34.

Connect the Wires and Data Line to an A-dec 511 Power Supply Manufactured Before June 2023

Complete the instructions for the system's configuration.

Connect the A-dec 551sta Wires and Data Line to an A-dec 511 Power Supply Manufactured Before June 2023 31

Connect the A-dec 551 Wires and Data Line to an A-dec 511 Power Supply Manufactured Before June 2023 . . . 33

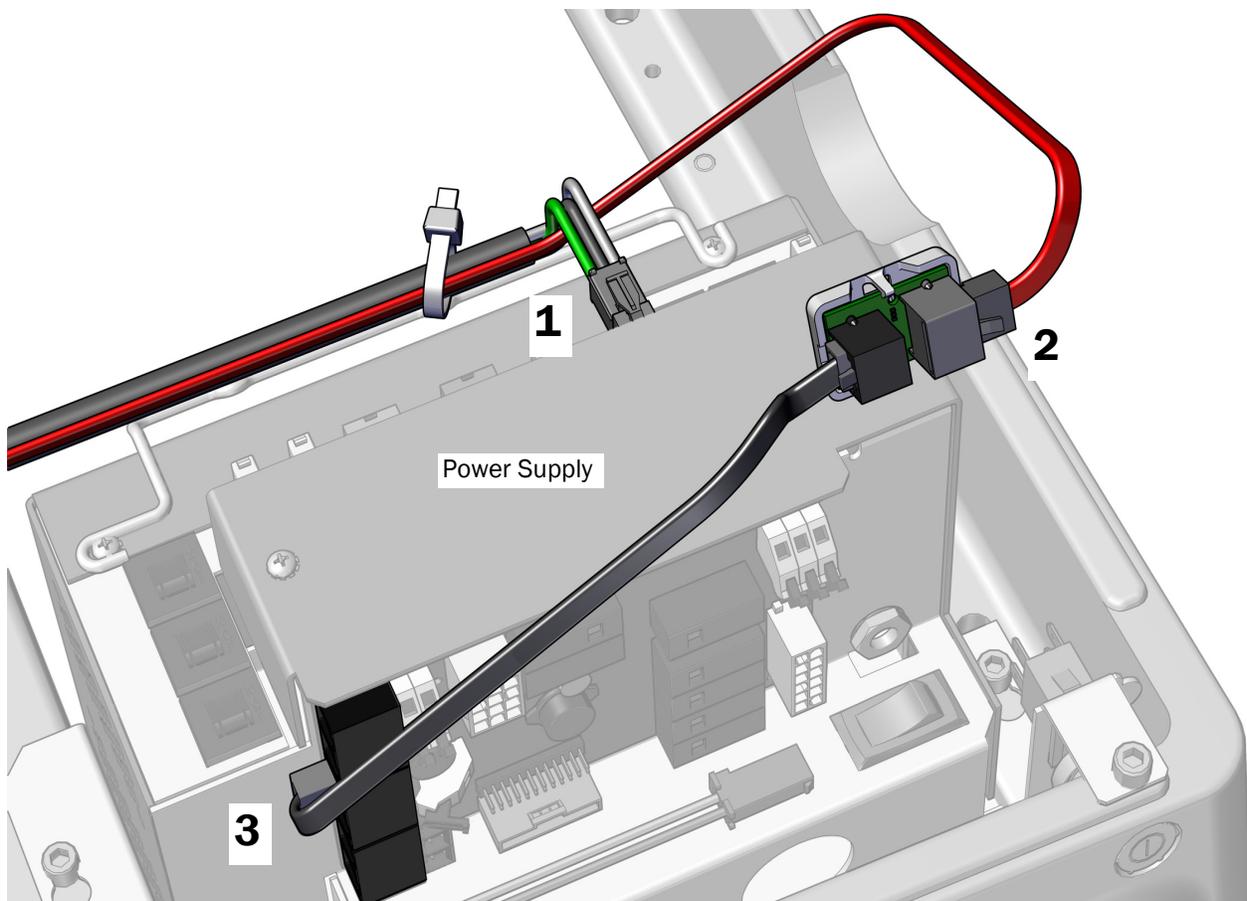
Connect the A-dec 551sta Wires and Data Line to an A-dec 511 Power Supply Manufactured Before June 2023

Recommended Tools

- Diagonal cutters

Task 1.

1. Plug in the power connector.
2. Position the translator board with the gray DCS2 port toward the toe of the chair and connect the red DCS2 data line to the gray port.
3. Connect the black DCS1 data line from the black port on the translator board to the port on the power supply.



Task 2.



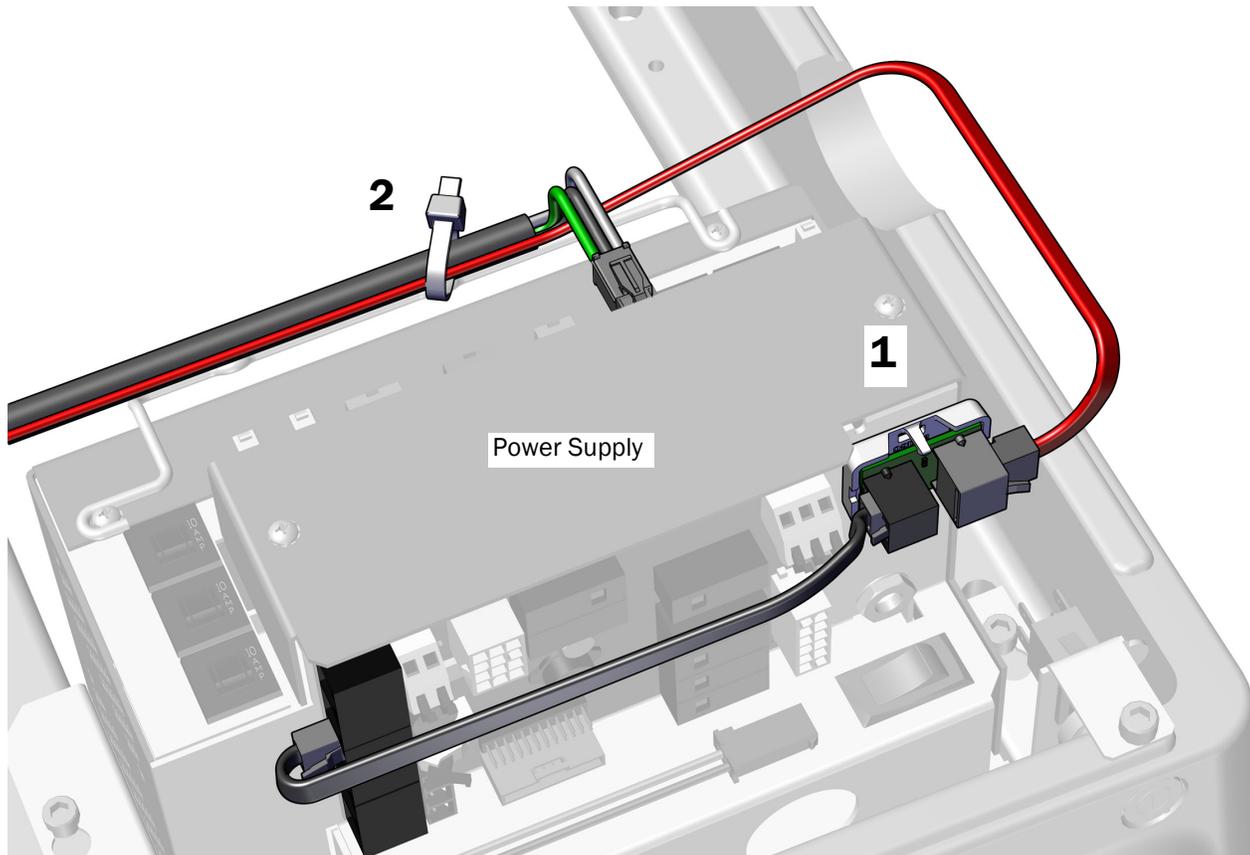
CAUTION Do not attach the translator board to the top of the power supply chassis. The pump cover will not fit.

1. Peel off the protective paper from the translator board. Attach the translator board to the front of the power supply in the upper right corner.



NOTE If there is already an adaptor board for an LED light attached to the power supply, stack the translator board below it.

2. Secure the wiring to the bail with cable ties.



Next Step See "Connect the Tubing and Utilities" on page 34.

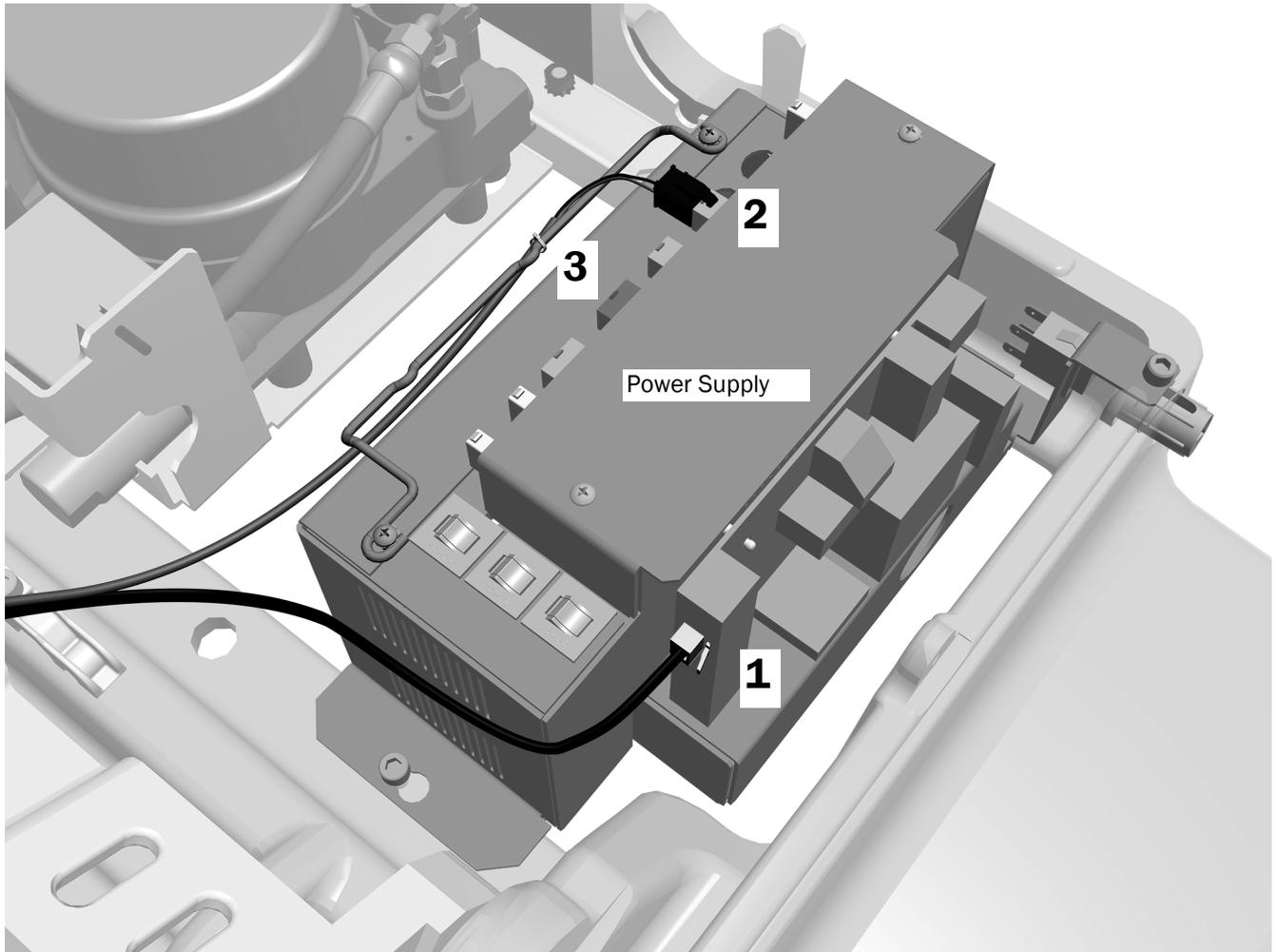
Connect the A-dec 551 Wires and Data Line to an A-dec 551 Power Supply Manufactured Before June 2023

Recommended Tools

- Diagonal cutters

Task 1.

1. Plug the black data line into any data port.
2. Plug the power connector into the socket on the back side of the power supply.
3. Secure the power cable to the bail with a cable tie.



Next Step See "Connect the Tubing and Utilities" on page 34.

Connect the Tubing and Utilities



CAUTION To avoid damaging or disconnecting wires and tubing, don't connect anything until all of the system's modules are installed.

Recommended Tools

- Diagonal cutters
- Sleeve pusher

Complete the connections for the system's configuration.

For A-dec 311/411 Dental Chair Systems

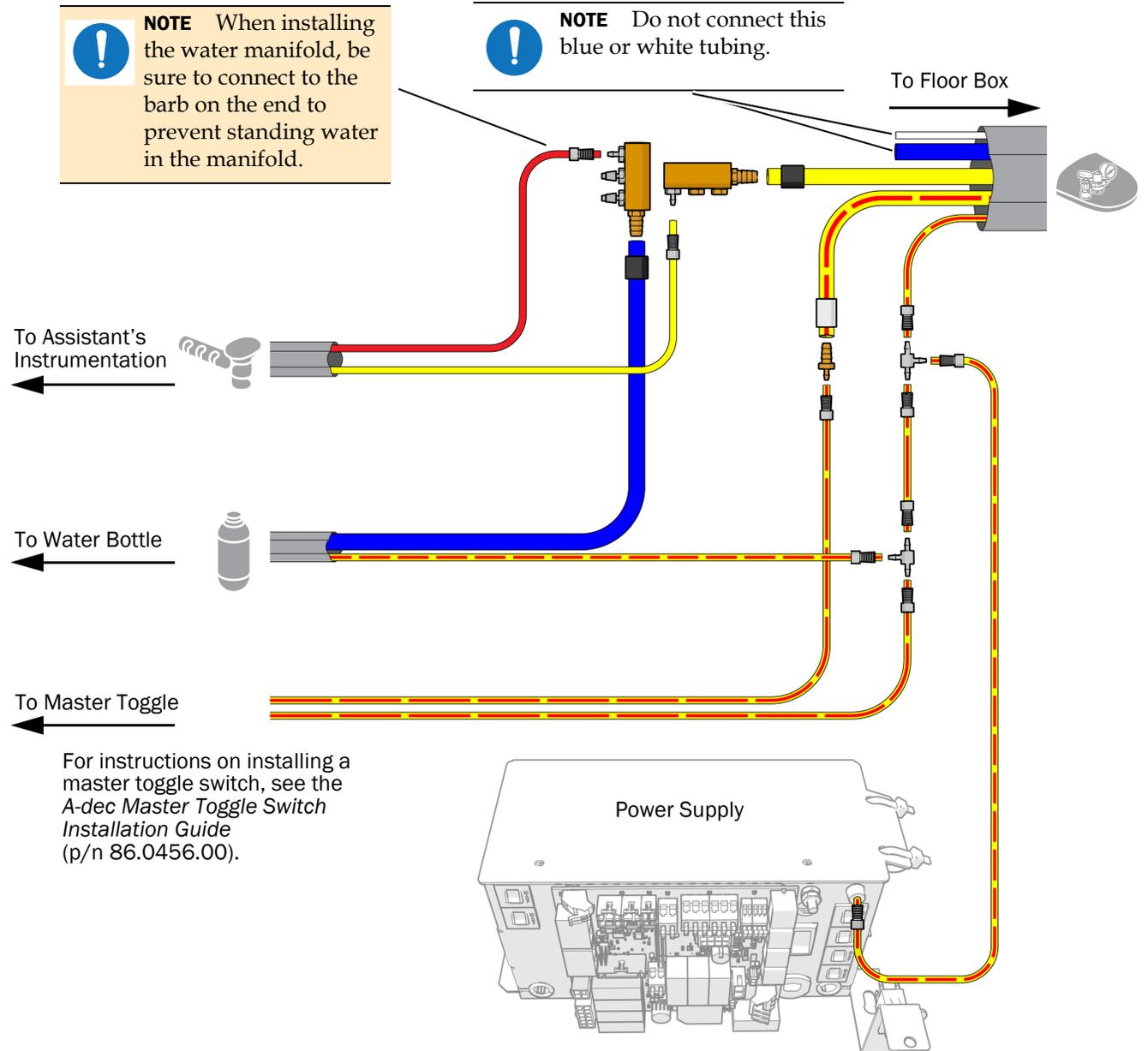
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Connect the Tubing on an A-dec 311fit/311/411 with A-dec 300/300 Pro Delivery System . . .	37
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For A-dec 511 Dental Chair Systems

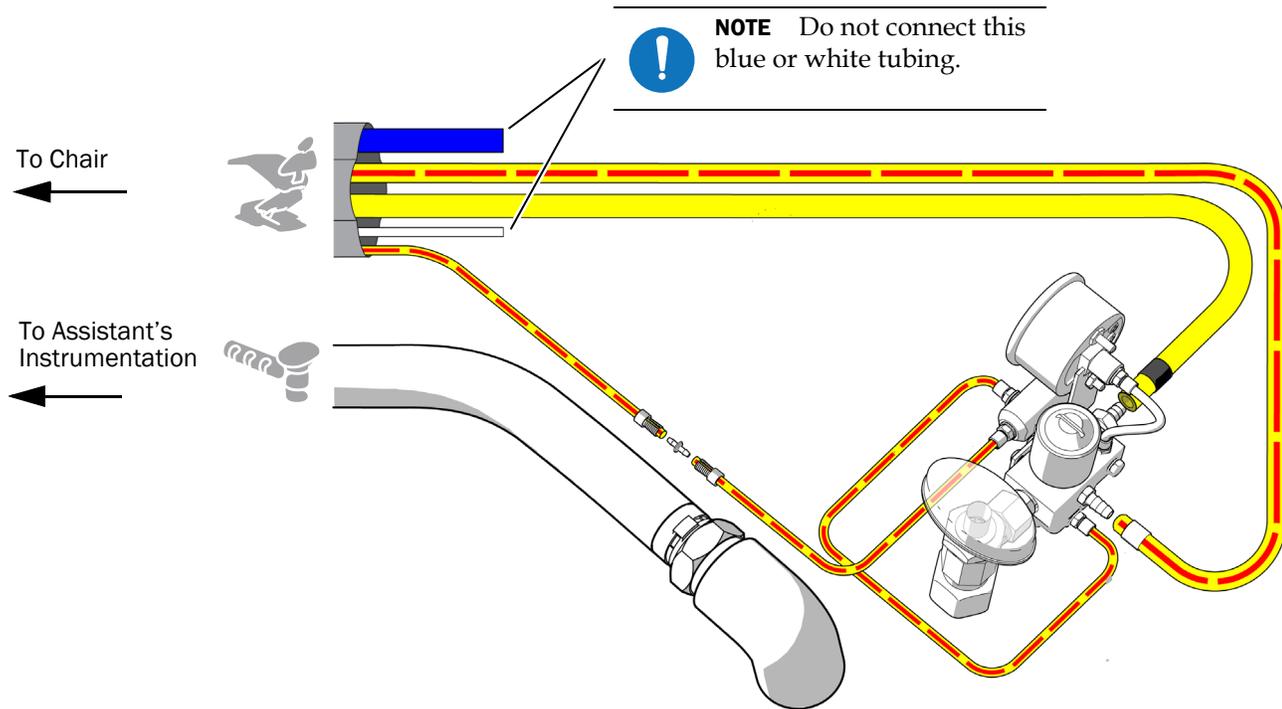
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Connect the Tubing on an A-dec 311fit/311/411 with Assistant's Instrumentation Only

Use this diagram if the system does not include any other modules except an assistant's instrumentation.



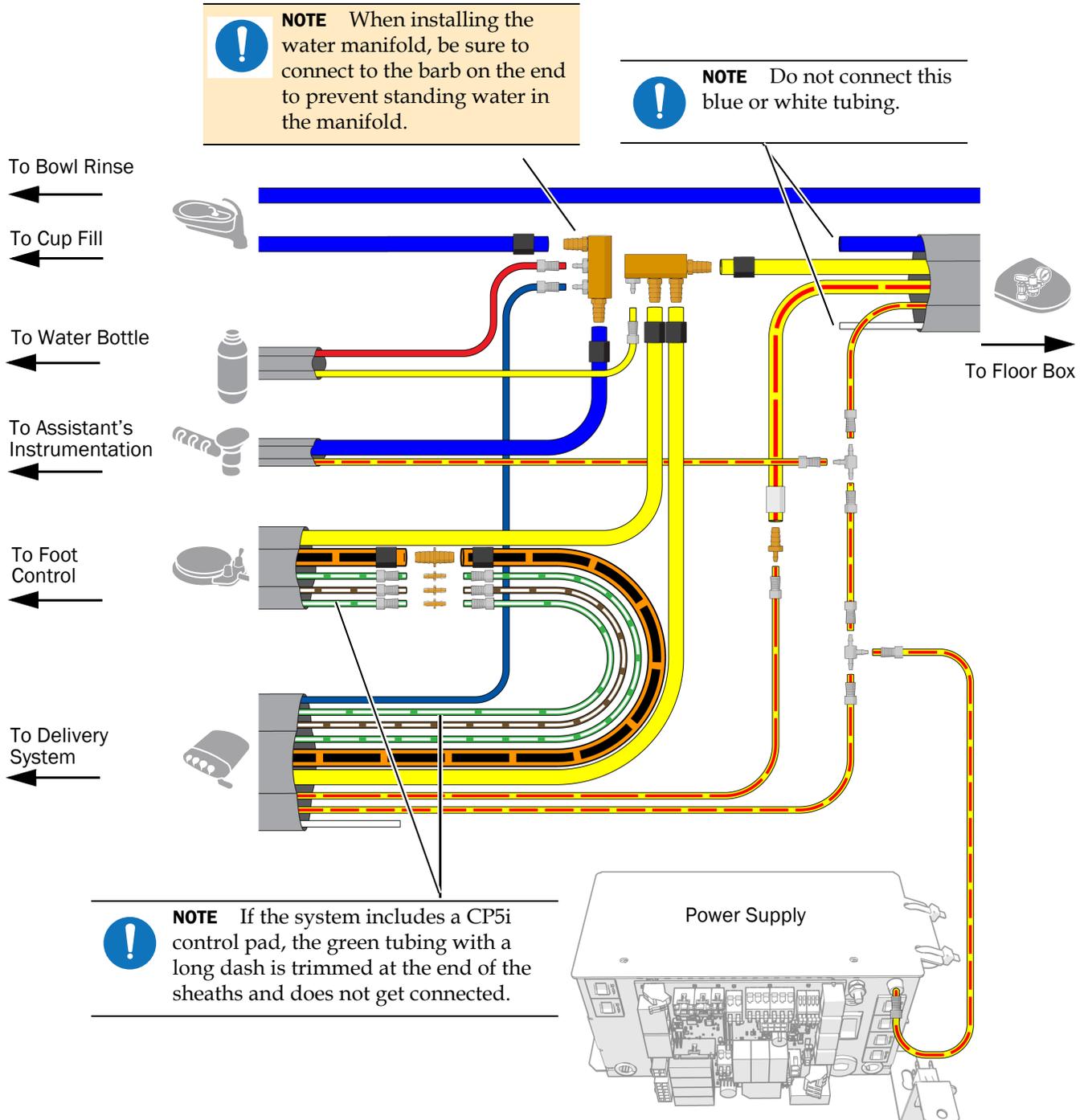
Connect the Utilities on an A-dec 311ft/311/411 with Assistant's Instrumentation Only



Next Step See "Prepare the System" on page 45.

Connect the Tubing on an A-dec 311ft/311/411 with A-dec 300/300 Pro Delivery System

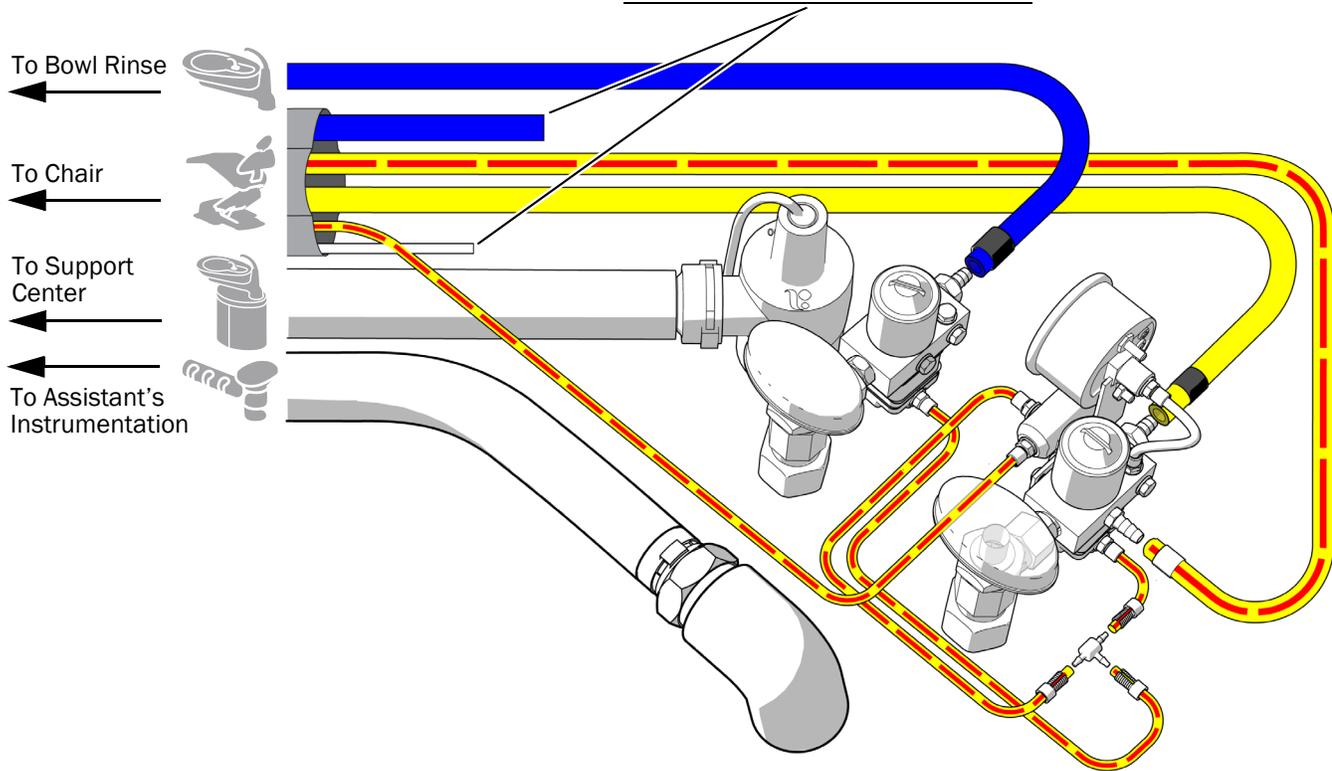
- Strip and remove 3 feet (1 m) of the sheath from around the water bottle tubing, and then connect the tubing according to the flow diagram.



Connect the Utilities on an A-dec 311ft/311/411 with Multiple Modules



NOTE Do not connect this blue or white tubing.

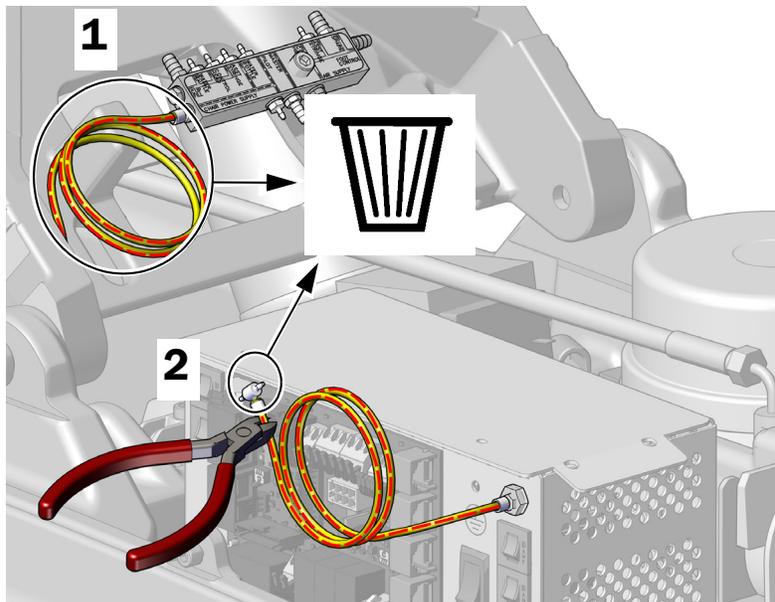


Next Step See "Prepare the System" on page 45.

Connect the Tubing on an A-dec 511ft/511 with Assistant's Instrumentation Only

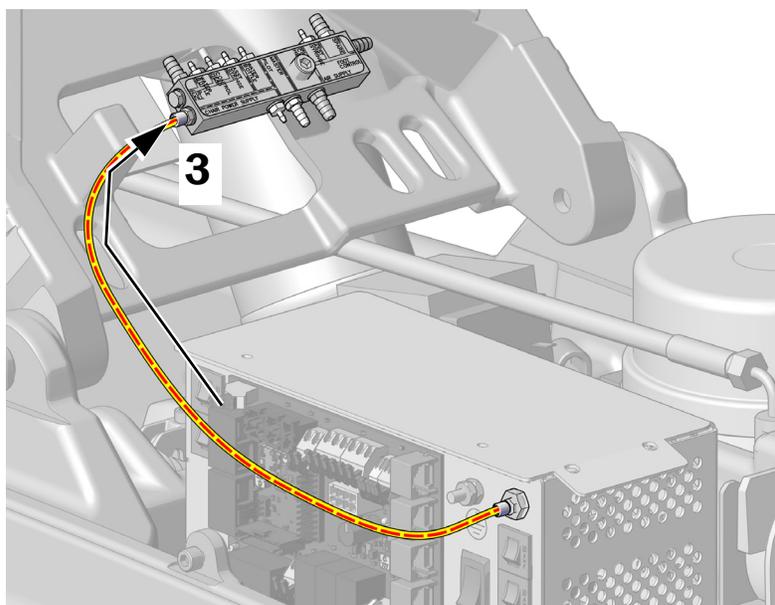
Recommended Tools

- Diagonal cutters
- Sleeve pusher



1 Remove and discard the air tubing from the manifold.

2 Remove and discard the tee from the air tubing connected to the power supply.



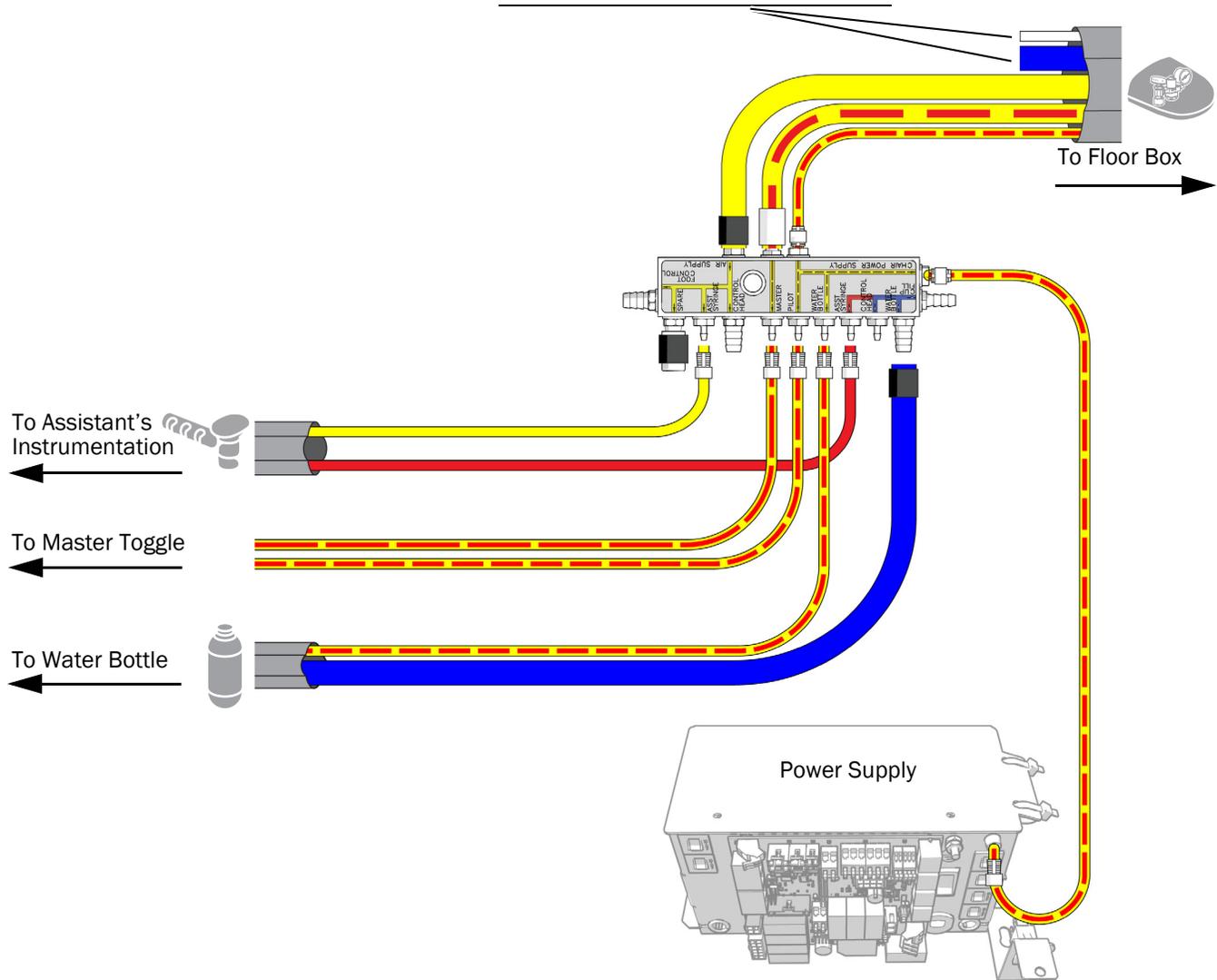
3 Use a sleeve and sleeve pusher to connect the tubing from the power supply to the manifold.

4 Strip and remove 3 feet (914 mm) of the sheath from around the water bottle tubing.

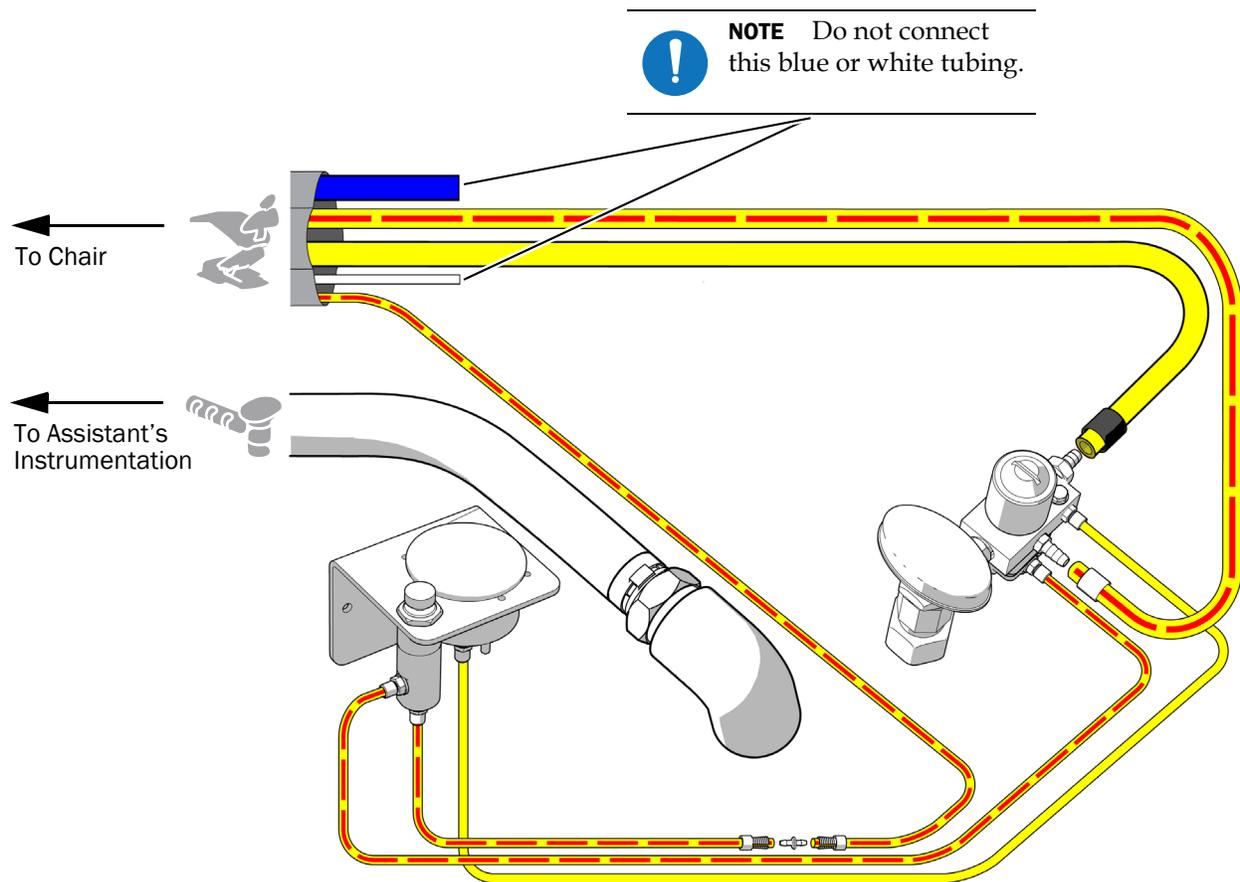
5 Connect tubing for all modules according to the flow diagram on the following page.

Use this diagram if the system does not include any other modules than assistant's instrumentation.

NOTE Do not connect this blue or white tubing.



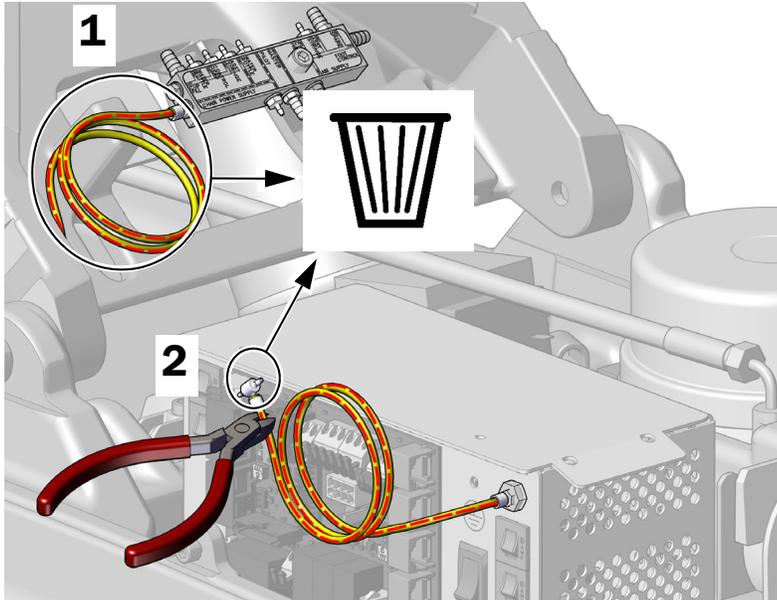
Connect the Utilities on an A-dec 511ft/511 with Assistant's Instrumentation Only



Connect the Tubing on an A-dec 511ft/511 with an A-dec 500 Delivery System

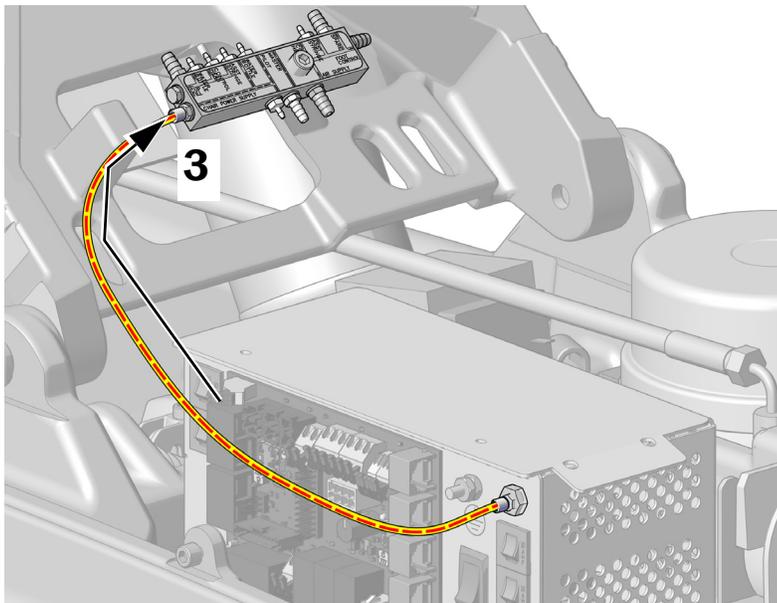
Recommended Tools

- Diagonal cutters
- Sleeve pusher



1 Remove and discard the air tubing from the manifold.

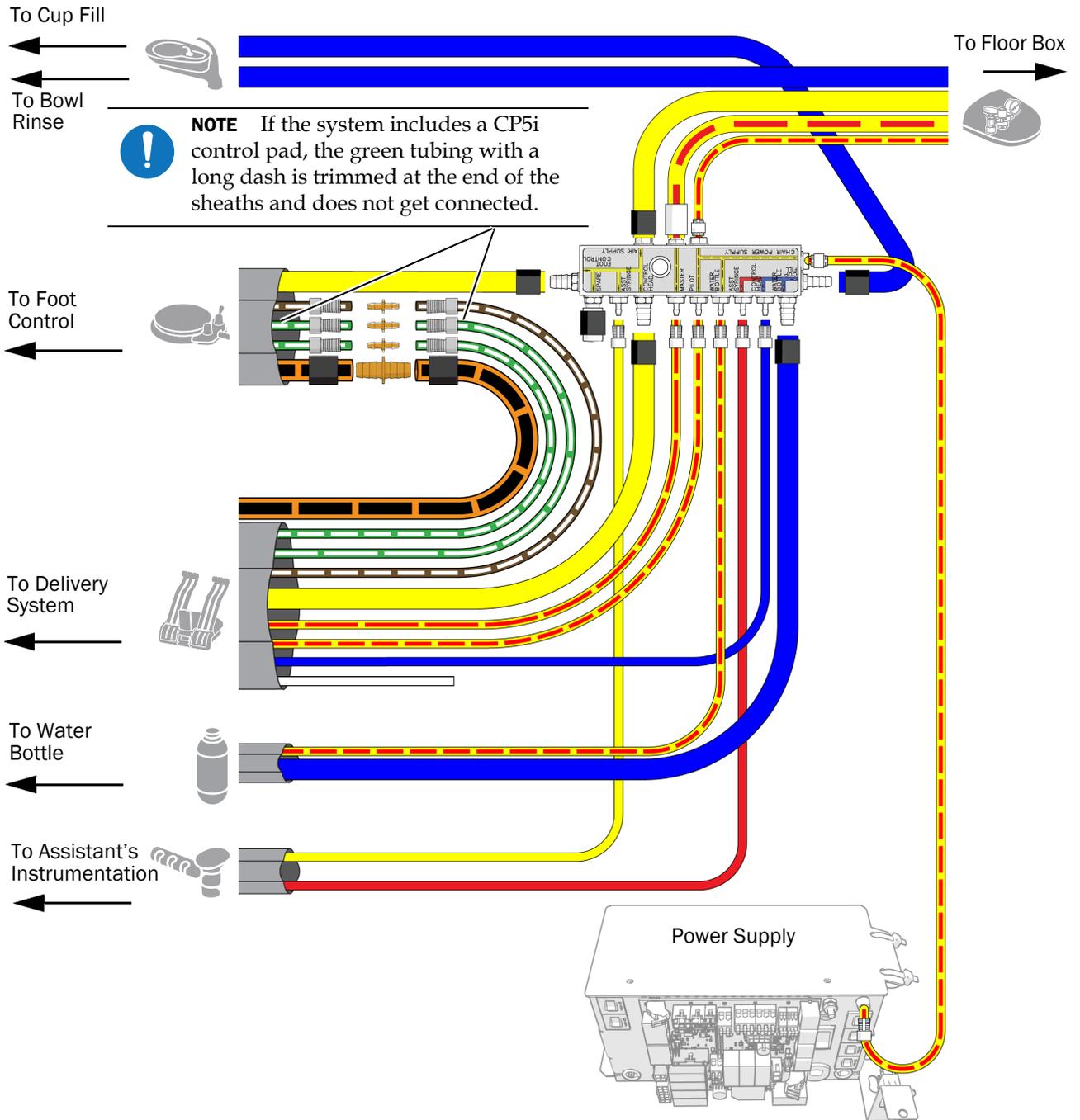
2 Remove and discard the tee from the air tubing connected to the power supply.



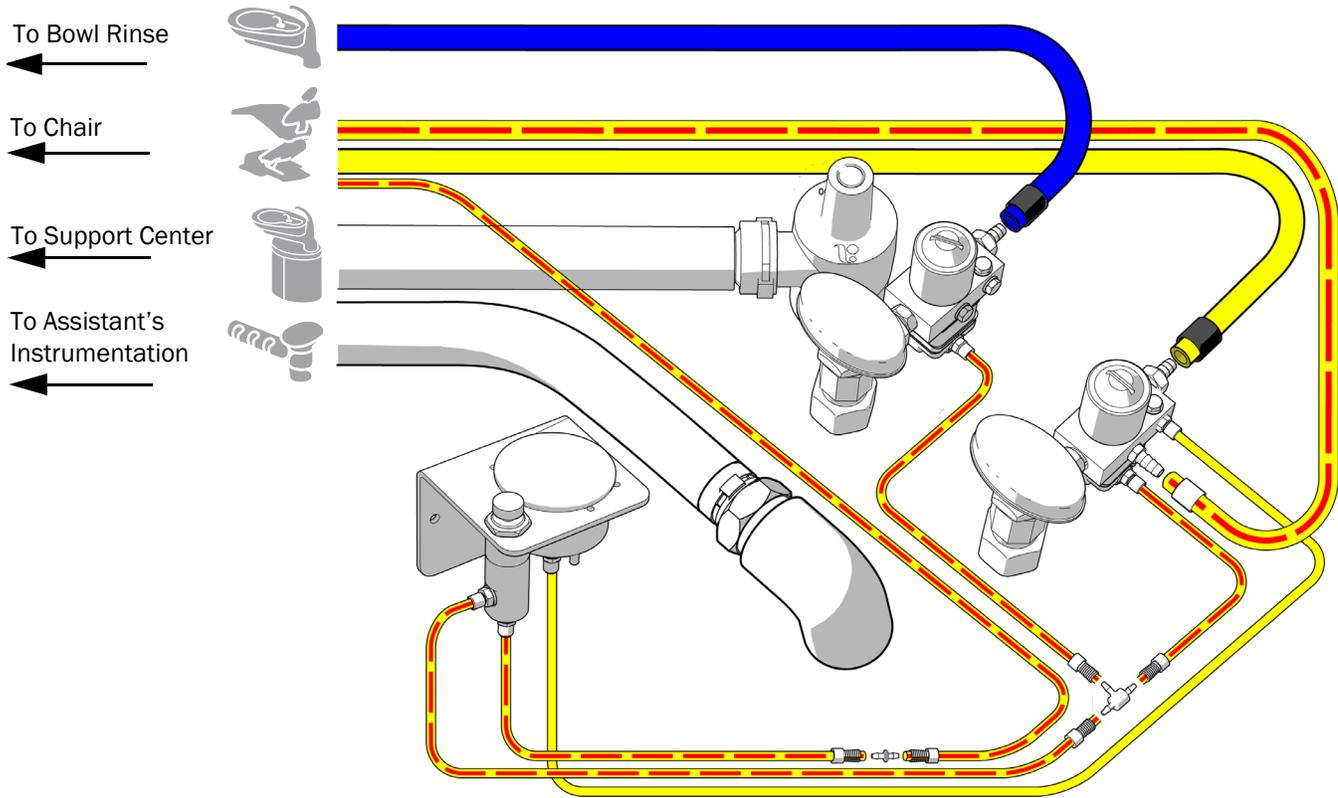
3 Use a sleeve and sleeve pusher to connect the tubing from the power supply to the manifold.

4 Strip and remove 3 feet (914 mm) of the sheath from around the water bottle tubing.

5 Connect tubing for all modules according to the flow diagram on the following page.



Connect the Utilities on an A-dec 511ft/511 with Multiple Modules



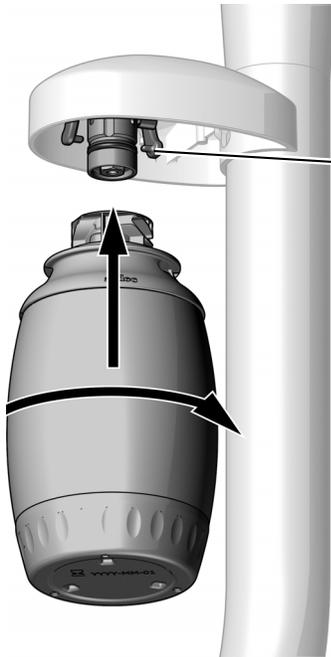
Next Step See "Prepare the System" on page 45.

Prepare the System

Install the Water Bottle



IMPORTANT A-dec recommends that the dental team perform a shock treatment on the dental unit waterlines before they use the system for the first time, and establish an ongoing waterline maintenance program. For more information, see the *Waterline Maintenance Guide* (p/n 85.0983.00) and *A-dec Self-Contained Water System Instructions For Use* (p/n 86.0609.00).



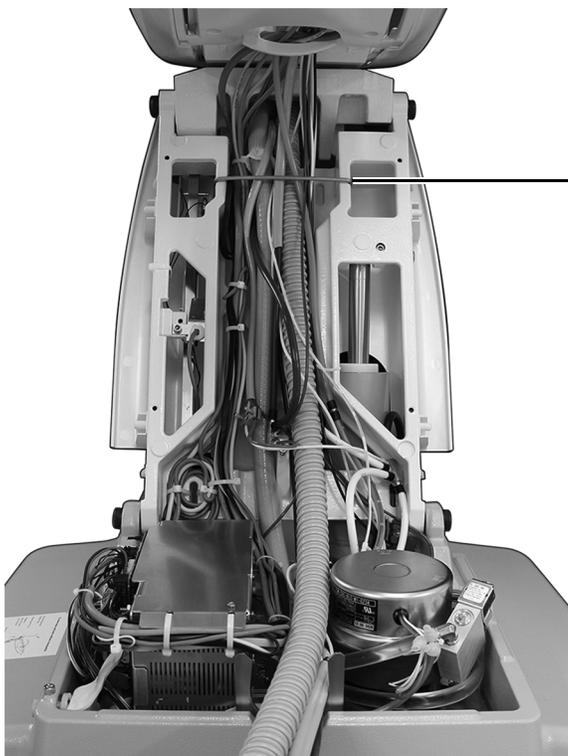
- 1** Apply A-dec silicone lubricant on the receptacle O-ring.
- 2** Push the water bottle up onto the water bottle receptacle and turn it to the right.

Water Bottle on a Round Rigid Arm Shown

Secure the Wires and Tubing

Recommended Tool

- Diagonal cutters



- 1** Install the bail. It ships in the floor box kit.



Bail

- 2** Use cable ties to group the tubing and wiring for a neat appearance.



CAUTION Do not secure the tubing to the lift arm. The tubing needs to move freely when the chair moves.

A-dec 311 Dental Chair Shown

Customize Touch Control Settings



NOTE Touch control symbols and icons are proprietary to A-dec, Inc.

See the section for the type of control interface on your system:

CP5 Control Pad



For touchscreen and control pad use, see the *A-dec DS7/CP5i/CP5 Touch Controls Instructions for Use* (p/n 86.0857.00) at a-dec.com/touchscreen-manual.



For configuring connectivity features, see the *A-dec+™ Software Platform Instructions for Use* (p/n 86.1030.00) at a-dec.com/connectivity-manual.



Standard Touchpad

There are no delivery system controls to set up or customize with a standard touchpad.

Test the System

After you have completed the installation, use the following checklist to test the system; then follow up with the customer.

Assistant's Instrumentation

- Vacuum/suction is set to the following specifications:
 - **Wet vacuum** - 10 ± 2 inches of Hg (34 ± 7 kPa), 9 SCFM (255 sl/min) minimum
 - **Dry/semi-dry vacuum** - 4.5 ± 1 inches of Hg (16 ± 3.5 kPa), 12 SCFM (340 sl/min) minimum
- Air and water syringe buttons operate smoothly.
- Valves on HVE and saliva ejector move freely.

Utilities

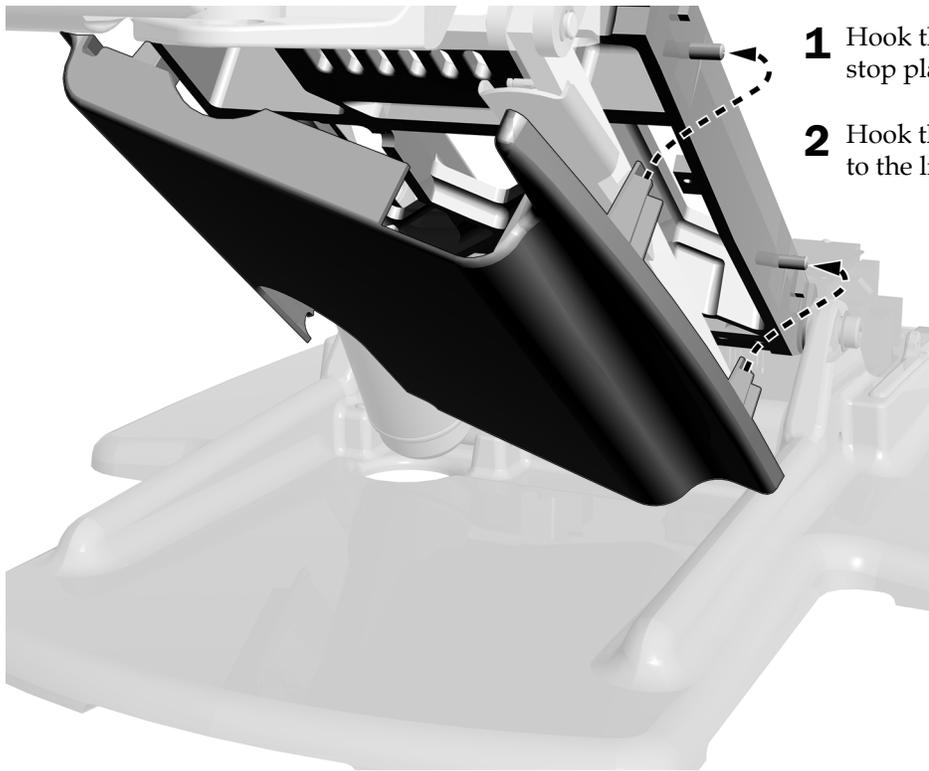
- If the system includes a floor box, it is free of air and water leaks.
- Tubing and connections are not kinked and are free of air and water leaks.
- Excess tubing and wires are coiled and stored away from moving parts.

Install the Covers



WARNING Shock hazard. When you remove or replace the covers, take care not to damage any wiring or tubing. Verify that the covers are secure after you replace them.

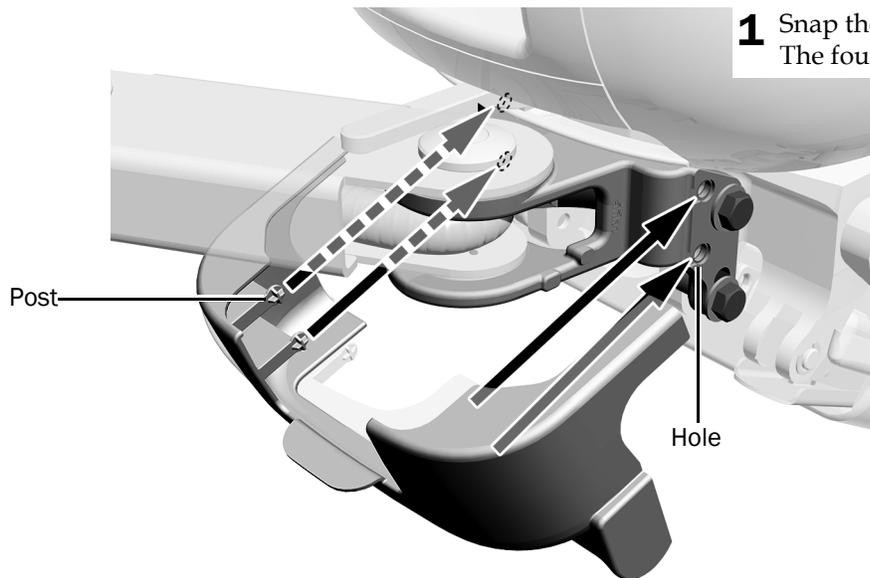
Install the Stop Plate



- 1** Hook the slots on one side of the stop plate to the posts on the lift arm.
- 2** Hook the other side of the stop plate to the lift arm.

Install the Mount Cover

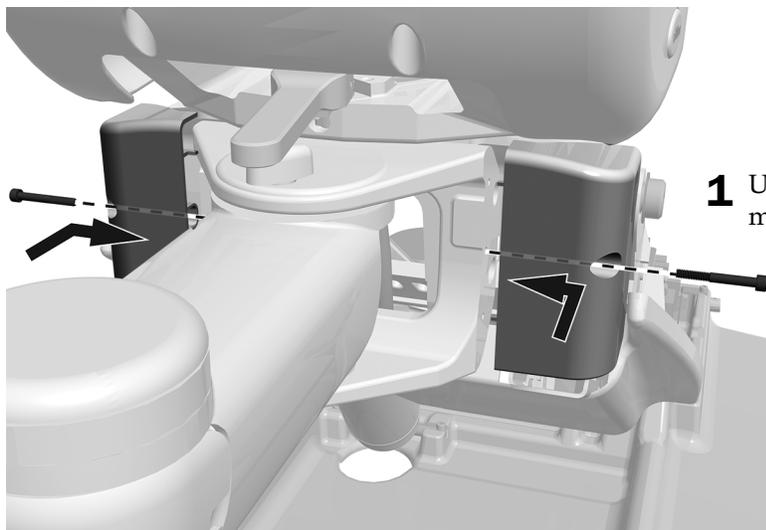
Mounted with an A-dec 400 Support Link



Mounted with an A-dec 500 Support Link

Recommended Tool

- 5/32" hex key

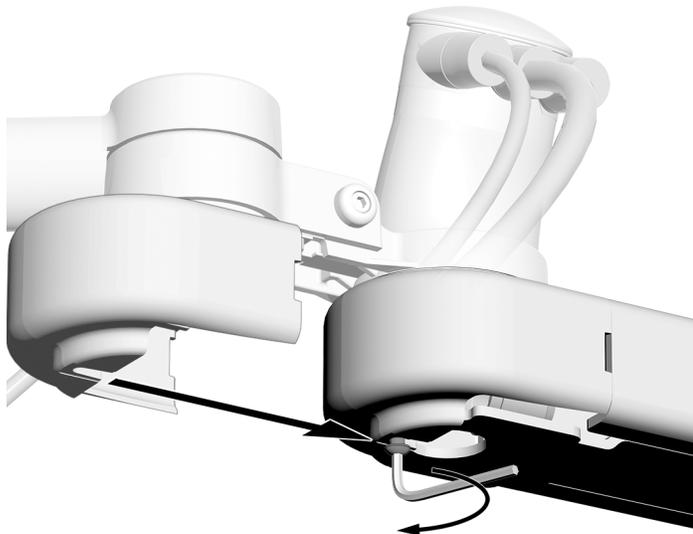


Install the Cap on an A-dec 400 Support Link (Optional)

Install this if the system does not include a support arm.

Recommended Tool

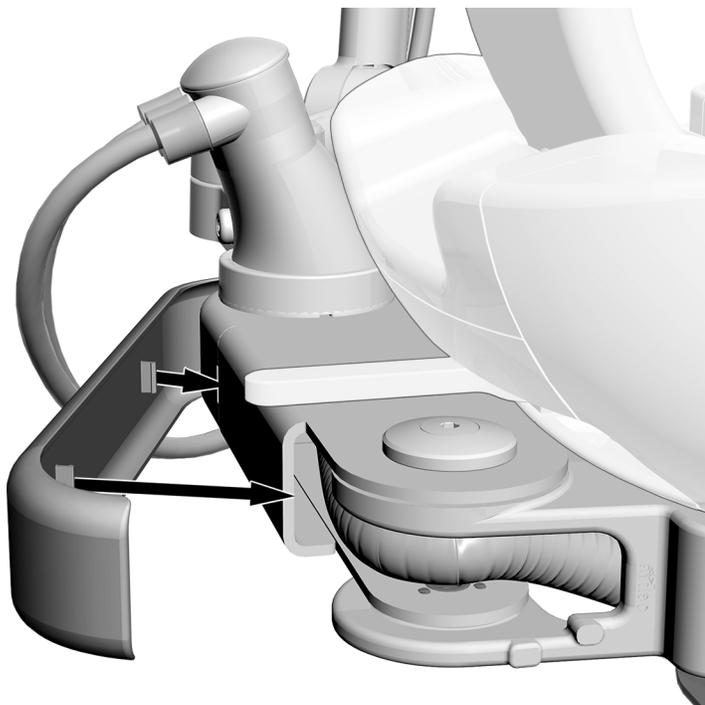
- 5/32" hex key



- 1** At the end of the support link, use a 5/32" hex key to partially install the screw.
- 2** Slide the support link cap onto the end of the link. The screw goes into the slot in the cap.
- 3** Tighten the screw to secure the cap.

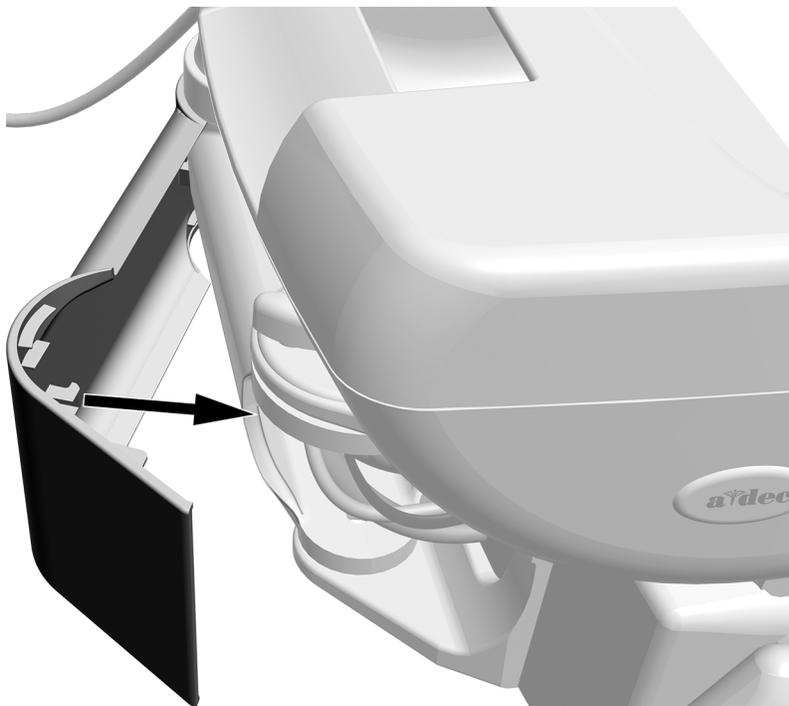
Install the Support Link Cover

Mounted on an A-dec 400 Support Link



- 1** Snap the support link cover into place.

Mounted with an A-dec 500 Support Link



- 1** Position the cover with the larger square end over where the support link attaches to the chair.
- 2** Snap the support link cover into place.

Regulatory Information and Warranty

For required regulatory information and the A-dec warranty, see the *Regulatory Information, Specifications, and Warranty* document (p/n 86.0221.00) available in the Resource Center at www.a-dec.com.



For quick access to this document online, scan, tap, or click this QR code, which points to a-dec.com/regulatory-guide.

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A-dec Headquarters

2601 Crestview Drive
Newberg, OR 97132 USA
Tel: 1.800.547.1883 Within USA/CAN
Tel: +1.503.538.7478 Outside USA/CAN
www.a-dec.com

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