

## A-dec 541 Delivery System and 545 Assistant's Instrumentation

### Before You Begin

The instructions are the same for installing both the A-dec 541 Delivery System and the 545 Assistant's Instrumentation.

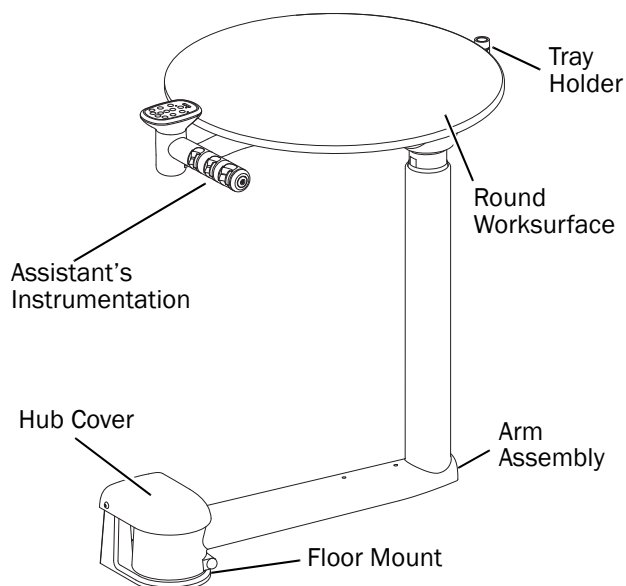
Before starting the installation:

- Check with local building and code authorities about installation requirements specific to your location.
- Check that a manual air shut-off valve is installed.
- Use the mini-templates provided in the *A-dec Inspire® Dental Furniture Pre-Installation Guide* (p/n 86.0528.00) and the *A-dec Preference Collection® Dental Furniture Pre-Installation Guide* (p/n 86.0142.00), available in the Document Library at [www.a-dec.com](http://www.a-dec.com) to install the utilities.

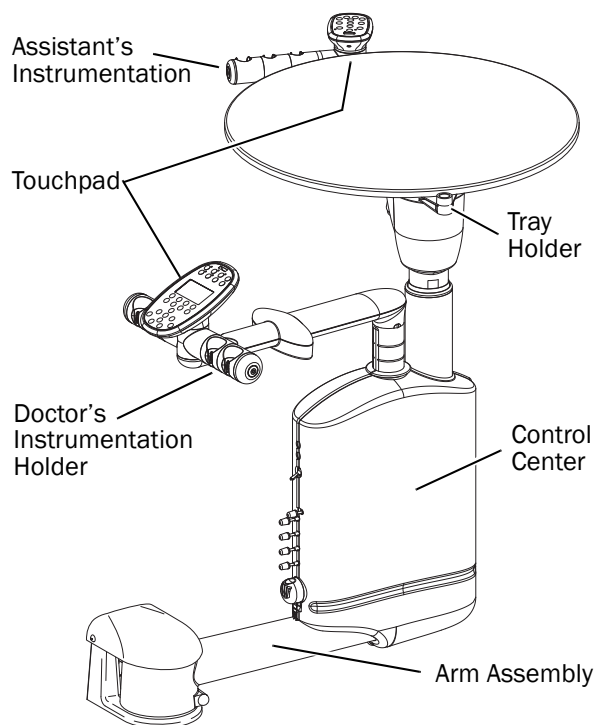
### Recommended Tools

- Adjustable wrench
- 7/16" open-end wrench
- 3/4" socket (deep well) with 6" extension
- 3/8" x 4" ratchet extension
- Ratchets (1/2" and 3/8" drive)
- Phillips head screwdriver
- Standard screwdriver
- 1/2" concrete drill bit (12" long) or 3/8" wood drill bit
- Torpedo level
- Hex key set
- 5/16" hex bit (3/8" drive)

A-dec 545 12 O'Clock Assistant's Instrumentation



A-dec 541 12 O'Clock Delivery System Components

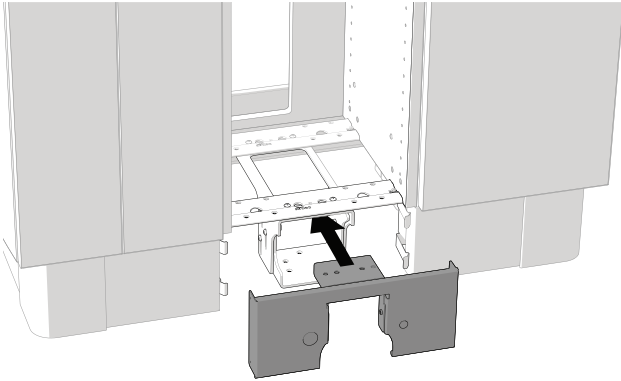


## Install the Floor Mount

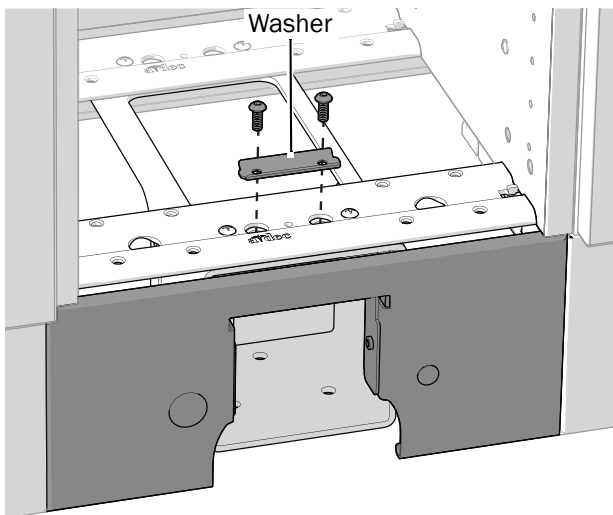
### Install the Faceplate (A-dec Inspire 591 Treatment Center Only)

You must install the faceplate on the A-dec Inspire 591 Treatment Center before installing the mount.

1. Slide the faceplate into position.



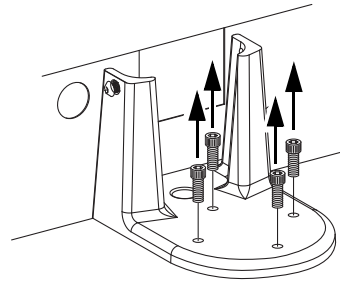
2. Install the washer and two screws by hand and finger tighten.



### Position the Mount

1. Remove the top cardboard tray and round worksurface and set them aside.
2. Remove the mount from the plywood pallet and discard the screws securing the mount to the plywood.

3. Remove the mounting screws from the mount.



4. Remove the assembly from the box.
5. Slide the floor mount into position.
6. Locate the mounting holes for drilling.

- Next step**
- For concrete floors, see "Attach the Mount to a Concrete Floor" on page 2.
  - For non-concrete floors, see "Attach the Mount to a Non-Concrete Floor" on page 3.

### Attach the Mount to a Concrete Floor

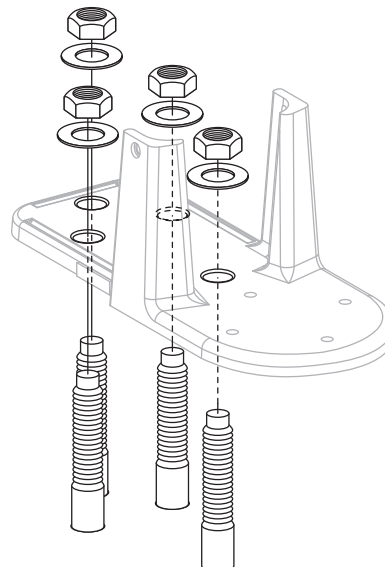
1. Drill the mounting holes:

- (1) Drill 1/2" (13 mm) diameter holes 2-3/4" (69.9 mm) deep.
- (2) Remove debris from the holes.



**TIP** A 12" long concrete drill bit is recommended to make it easier to drill inside the cabinet.

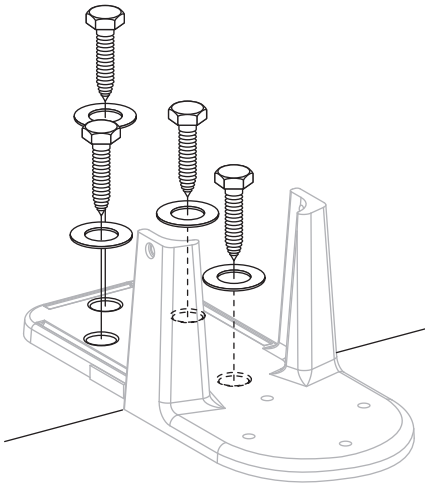
2. Install four 1/2" x 4" concrete studs into the holes and tighten the washers and nuts on the studs.



**Next step** See "Install and Level the Arm Assembly" on page 3.

## Attach the Mount to a Non-Concrete Floor

1. Drill the mounting holes:
  - (1) Drill 3/8" (9.5 mm) diameter holes 3-1/4" (82.5 mm) deep.
  - (2) Remove debris from the holes.
2. Use four washers and 1/2" x 4" lag screws to secure the mount.



## Install and Level the Arm Assembly

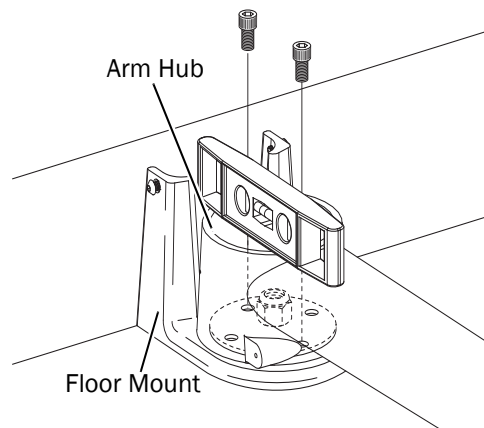
### Level the Hub

1. Set the arm assembly on the floor mount and align it to access the first set of mounting screw holes perpendicular to the cabinet or wall.



**TIP** Place the shortest piece of foam packaging underneath the far end of the arm assembly as a balance when you set the assembly on the floor mount.

2. Insert the first set of mounting screws and loosely fasten them.



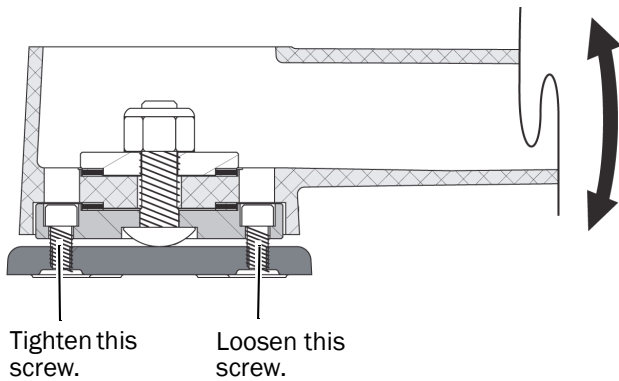
3. Level the hub by first loosening one mounting screw and then tightening the other mounting screw, as necessary. As a guide, place the level on the hub, parallel to the arm.



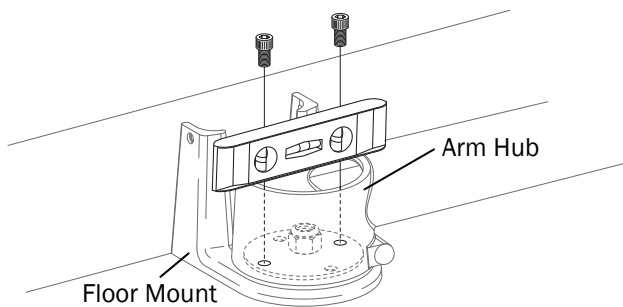
**TIP** The support arm balances on a pivot. To raise or lower the long side of the arm, adjust the screw nearest the cabinet or wall. Once the arm is level, tighten the second screw to hold the arm in place.

## Raise the Long End of the Arm

1. Loosen the screw at the front of the hub.
2. Tighten the screw at the rear of the hub.



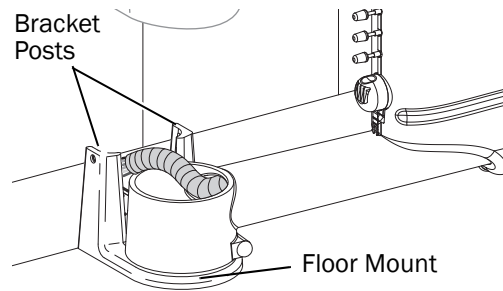
3. Rotate the assembly parallel to the cabinet or wall to access the second set of mounting screw holes.
4. Insert the second set of mounting screws and loosely fasten them.
5. With the second set of mounting screws, level the hub by first loosening one mounting screw and then tightening the other mounting screw, as necessary. Place a level on top of the hub as a guide.



6. If you can jiggle the end of the arm up and down, tighten the hub locknut. When you rotate the arm, there should be slight resistance, and the arm should not drift.

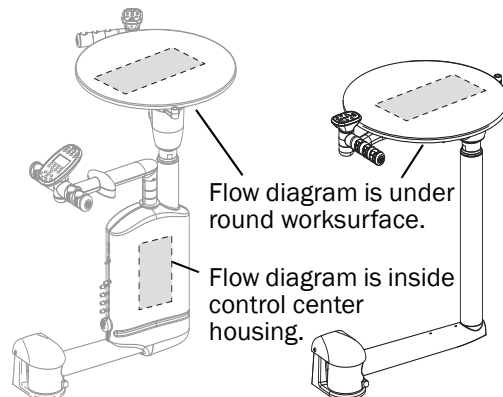
## Plumb the Delivery System

1. Position the tubing between the floor mount bracket posts. Route the vacuum line last. Ensure all tubing is completely tucked down between the posts.



2. Route the tubing and connect matching tubing colors and patterns; for example, yellow dashed tubing to yellow dashed tubing. Refer to the flow diagram located either under the round worksurface or inside the control center housing.

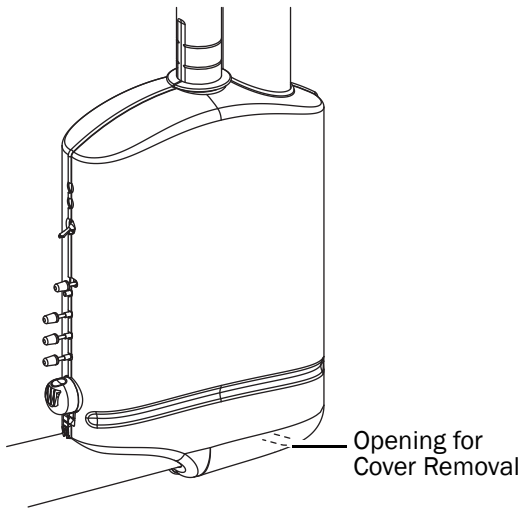
A-dec 541/545 Delivery Systems



- For the A-dec 541, locate the hole directly under the control center and pull the covers away from each other to remove them.



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



### Connect the Vacuum

- Apply adhesive (not provided) to the vacuum connection.
- Connect the vacuum line to the vacuum stub. Use the appropriate adaptor provided in the kit.

### Connect the Self-Contained Water Bottle Tubing

Refer to the instructions included with the water bottle.

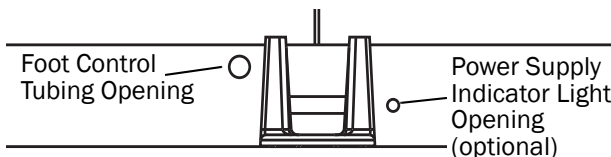
### Connect the Foot Control (A-dec 541 only)

To attach the foot control to a cabinet:

- Route the foot control tubing through the subbase.

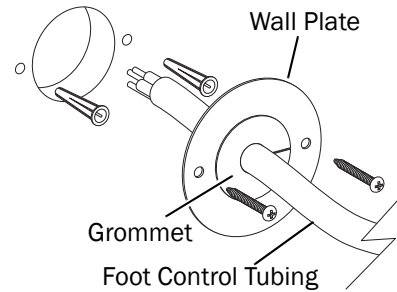


**NOTE** A-dec provides sufficient tubing length for a remote mount foot control.



### To install the foot control on a wall:

- Drill a 2-1/8" (54 mm) hole.
- Install the tubing through the grommet. Push the grommet and tubing through the wall plate.



- Attach the cover plate to the wall. Use fasteners provided in the wall plate kit.
- Connect the foot control tubing to the corresponding tubing (size, color, and pattern) from the control head.

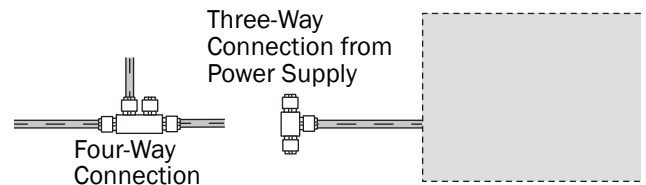
### Attach the Power Supply

Refer to the flow diagram. This procedure is for standard 300-watt power supplies only.

- Splice the power supply tubing into a line with the matching tubing.



**NOTE** If you must make connections to any configuration other than a standard 300-watt power supply, follow the instructions provided with that power supply. Remote power supply cables are available to connect the delivery system to the 511 chair. Refer to the *A-dec Dental Equipment* catalog (p/n 85.5006.00) for more information.



## Connect the Air Supply

1. Purge the manual shutoff valves of debris.
2. Connect the air/filter regulator to the manual air shutoff valve.

## Wire the Delivery System

1. Connect all of the data lines from the delivery system. Use the data connector provided.



**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.

2. Connect the low-voltage power cables to the power supply.

## Install Ancillary Equipment

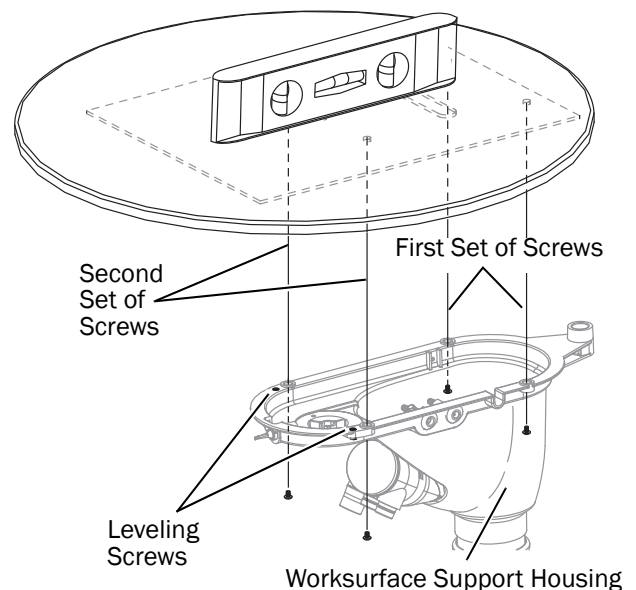
Install any ancillary equipment (such as a curing light, etc.) for the A-dec 500 12 o'clock system. Use the instructions provided with the modules.

## Attach and Level the Round Worksurface

1. If necessary, remove the screws from the threaded standoffs in the metal plate underneath the worksurface.
2. Position the round worksurface on the worksurface support housing. Align the screw holes in the worksurface support housing with the threaded standoffs in the metal plate on the bottom of the worksurface.
3. Insert two of the worksurface screws that you removed in step 1.
4. Use a 1/8" hex key to securely tighten them.
5. Position the worksurface arm in a typical working position and center a level on the round worksurface over the support housing.
6. Use a 1/8" hex key to adjust the two setscrews in the worksurface support housing until the surface is level.
7. Insert the second set of worksurface screws and securely tighten them.

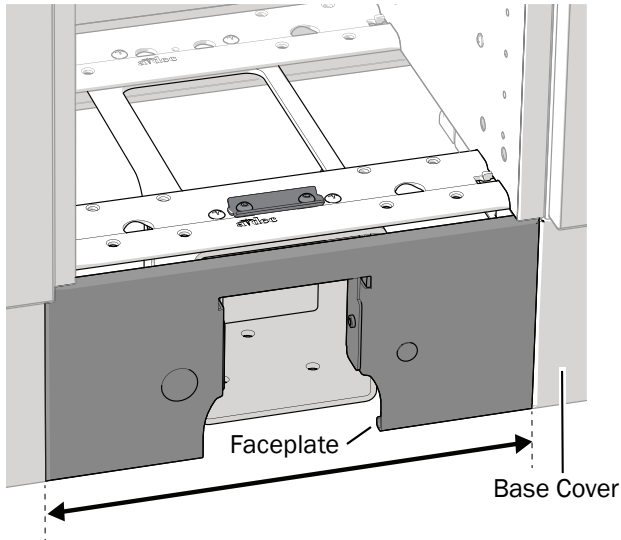


**NOTE** Do not overtighten the second set of worksurface screws, or the level may change.



## Adjust and Secure the Faceplate

1. Ensure the bottom of the faceplate is flush with the bottom of the base covers.
2. Use a 5/32" hex key to secure the faceplate.



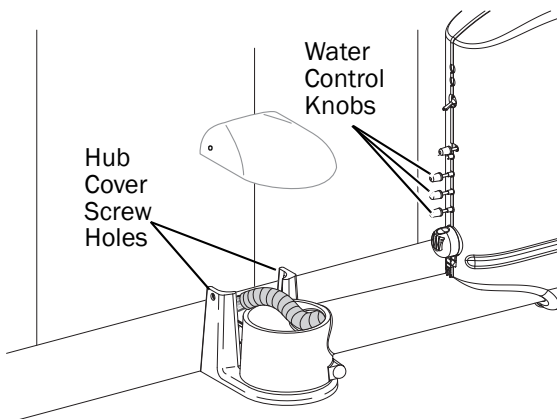
## Attach the Hub Mount Cover and Water Control Knobs

1. Use cap screws provided and a 5/32" hex key to secure the cover on the hub mount.



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

2. Install the water control knobs in the control center.



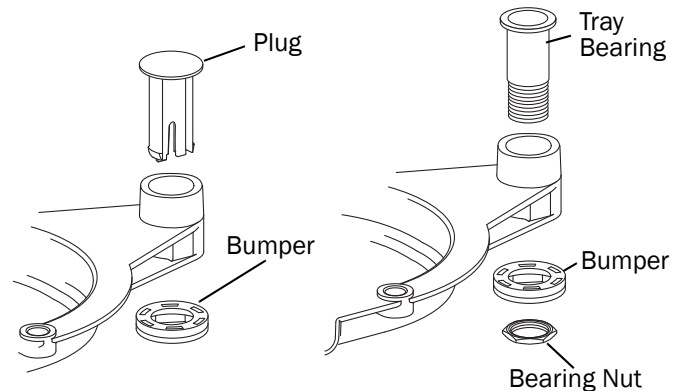
## Install the Tray

1. Remove the plug and bumper from the tray mount.



**NOTE** The plug and bumper snap together.

2. Insert the tray bearing nut in the hexagonal depression in the underside of the bumper.
3. Insert the tray bearing.
4. Tighten the bearing nut to secure the bumper assembly.



## Test the Unit

1. Fill the water bottle. Use the fill procedure specified by the dental staff.
2. Turn on the master toggle. Check the air pressure of the unit. It should be at 75 psi  $\pm$  5 psi.
3. Check for air and water leaks while operating the syringe.
4. Test all of the ancillary equipment.
5. Reinstall all of the covers.



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



**NOTE** To replace the control center cover, align the front and back halves and snap them together.

## Adjust the Delivery System

This section describes the steps to adjust the A-dec 12 o'clock delivery system. After installation, you can adjust the:

- Worksurface arm and instrumentation arm height
- Handpiece controls
  - Water coolant
  - Air coolant
  - Drive air flow
    - On a disc foot control: flip the wet/dry toggle to water (toward the blue) dot, and press the disc all the way down.
    - On a lever foot control: move the lever all the way to the left

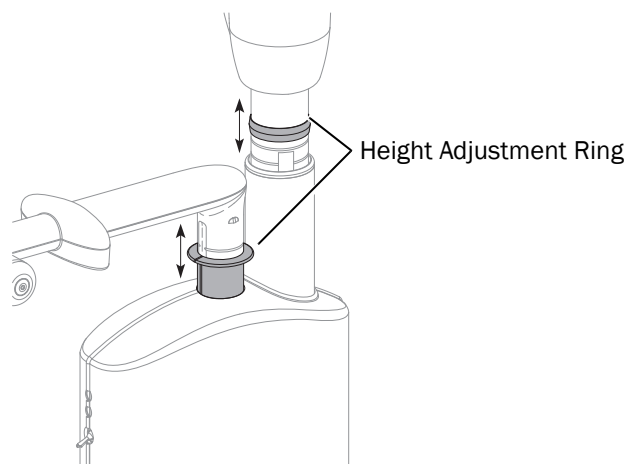
Using the drive air pressure controls in the control head, turn the control stem clockwise to decrease flow and counterclockwise to increase flow.

- Touchpad settings
  - Standard
  - Deluxe

## Adjust the Worksurface and Instrumentation Arm Height

To adjust the height of the worksurface and the instrumentation arm:

1. Lift the upper part of the vertical post.
2. Slide the height adjustment ring to the desired position.
3. Lower the vertical post onto the ring.



## Handpieces—Drive Air Pressure

The drive air pressure controls adjust the pressure for each handpiece. The digital drive air pressure gauge is located inside the control center. The gauge indicates, in psi, the drive air pressure as it leaves the control block to the active handpiece.



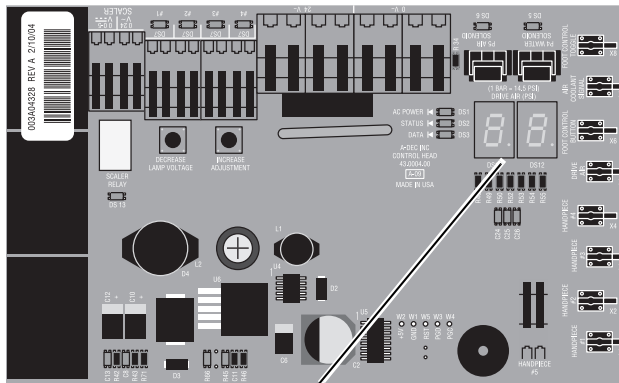
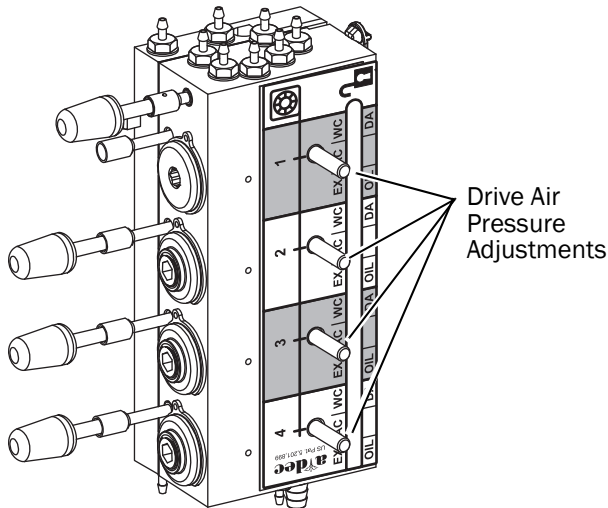
**NOTE** Use a handpiece pressure gauge attached to the handpiece tubing for exact drive air measurement. One bar equals 14.5 psi.



**NOTE** Refer to your handpiece documentation for the drive air pressure specification.

To adjust the drive air pressure:

1. If you have a deluxe touchpad, ensure the water coolant is not selected.
2. Locate the drive air pressure gauge and controls inside the control center.
3. Press the foot control.
4. With the handpiece running, watch the gauge and adjust the handpiece drive air pressure to meet manufacturer's specifications.
  - Turn the control to the right to decrease flow.
  - Turn the control to the left to increase flow.



Digital Drive Air Pressure Gauge on Circuit Board

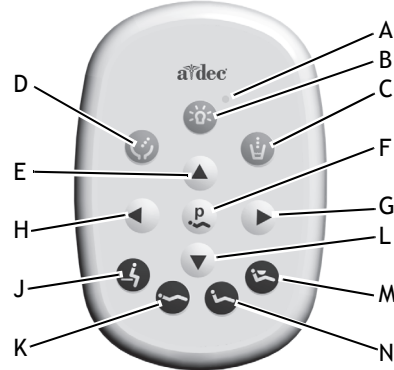


**CAUTION** Do not turn the drive air or air coolant adjustment keys too far. The stem may come completely out.

## Touchpad Setting Adjustments

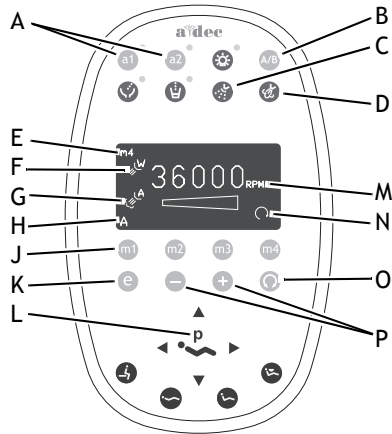
A-dec touchpads control multiple chair and delivery system functions:

- **Standard Touchpad:** Chair, light, and cuspidor controls.

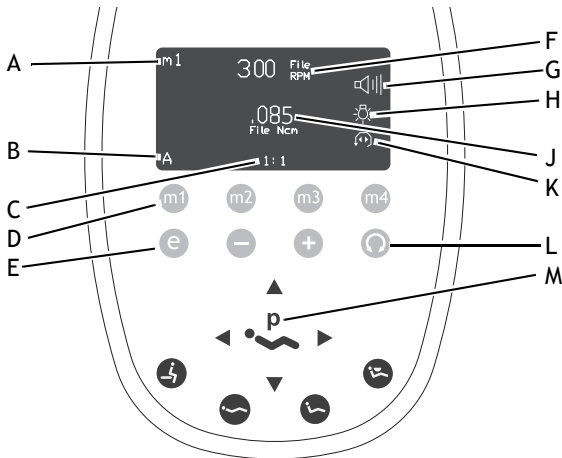


| Item | Description               | Item | Description                      |
|------|---------------------------|------|----------------------------------|
| A    | Dental Light Status LED   | H    | Back Down                        |
| B    | Dental Light 3-Way Switch | J    | Entry/Exit                       |
| C    | Cupfill                   | K    | Position 1                       |
| D    | Bowl Rinse                | L    | Base Down                        |
| E    | Base Up                   | M    | Position 3 (X-Ray/Rinse/Program) |
| F    | Program Button            | N    | Position 2                       |
| G    | Back Up                   |      |                                  |

- **Deluxe Touchpad:** Standard touchpad settings plus setting for two modes:
  - Standard Mode: air/water coolant, electric handpiece speed, scaler, and users A/B.
  - Endodontics Mode: Standard Mode settings plus file speed and torque limit, torque units, handpiece ratio, torque mode behavior, warning beeper, and handpiece light.



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



| 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             | M    | Program Button                            |

Manual Operation

You can use the touchpad buttons to manually operate:

- Chair positions
- Cupfill
- Bowl rinse
- Dental light
- A-dec relay
- Handpiece settings (Deluxe Touchpad only)

**Chair Positions:** The chair positioning buttons allow you to manually move the chair base up/down and back up/down.

**Cupfill:** The cupfill function controls water flow from the cuspidor into a cup:

- Press the cupfill button for a timed operation.
- Press and hold the cupfill button for manual operation.

**Bowl Rinse:** Bowl rinse provides rinse water for the cuspidor bowl:

- Press and release the bowl rinse button for a timed operation.
- Press and hold the bowl rinse button for manual operation.



**NOTE** If you press the bowl rinse button twice in less than two seconds, it switches to continuous operation mode. Press the button once to end the continuous bowl rinse mode.

**Dental Light:** The dental light button on the touchpad functions as a three-way switch. You can turn the dental light on or off from either the touchpad or the dental light:

- Press the dental light button to toggle between two intensity settings. The dental light toggles between composite-medium intensity or composite-high intensity settings.

When the dental light is in composite mode, the indicator light next to the button blinks. The dental light has an auto on/off feature. When you use a programmed chair position (1 or 2) the dental light turns on when the chair reaches operating position.

- Press Position 0 (entry/exit) and the dental light automatically turns off.



**NOTE** If Position 3 has been changed to a programmable position, the light operates the same as for Position 1 and 2.

## Factory Presets

Chair positioning, light functions, cuspidor functions, handpiece behavior and speed are factory preset. Table 1 lists and defines the Standard Touchpad factory presets.

**Table 1. Standard Touchpad Factory Preset**

| Icon | Preset Definition                                                                                                                                  |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------|
|      | Bowl rinse for 30 seconds.                                                                                                                         |
|      | Cup fills for 2.5 seconds.                                                                                                                         |
|      | Position 0—Chair moves to entry/exit position, dental light turns off.                                                                             |
|      | Position 1—Chair moves base up and back up, dental light turns on and remains on.                                                                  |
|      | Position 2—Chair changes base up and back up, dental light turns on and remains on.                                                                |
|      | Position 3—Chair moves to x-ray/rinse position, dental light turns off. Button toggles between x-ray/rinse position and chair's previous position. |

**Table 2. Deluxe Touchpad Additional Factory Presets**

| Touchpad Icon | Preset Definition                                                                                                                                                                  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <ul style="list-style-type: none"> <li>• Air coolant on for all memory buttons (Standard Mode)</li> <li>• Air coolant off for all memory buttons (Endodontics Mode)</li> </ul>     |
|               | <ul style="list-style-type: none"> <li>• Water coolant on for all memory buttons (Standard Mode)</li> <li>• Water coolant off for all memory buttons (Endodontics Mode)</li> </ul> |
|               | <ul style="list-style-type: none"> <li>• 2,000 RPM electric motor speed</li> <li>• 25% scaler throttle level</li> </ul>                                                            |
|               | <ul style="list-style-type: none"> <li>• 10,000 RPM electric motor speed</li> <li>• 50% scaler throttle level</li> </ul>                                                           |
|               | <ul style="list-style-type: none"> <li>• 20,000 RPM electric motor speed</li> <li>• 75% scaler throttle level</li> </ul>                                                           |
|               | <ul style="list-style-type: none"> <li>• 36,000 RPM electric motor speed</li> <li>• 100% scaler throttle level</li> </ul>                                                          |

## Program the Touchpad

Use the Program button to:

- Override or reset factory preset functions on either the Standard or Deluxe Touchpad.
- Customize handpiece operations on the Deluxe Touchpad.

## Program the Deluxe Touchpad

In addition to the programmable features of the Standard Touchpad, the Deluxe Touchpad allows customizing of multiple users, the air/water coolant, electric handpieces, scaler, endodontics functions, and auxiliary equipment.

Table 2 lists and defines the additional presets on a Deluxe Touchpad. For more information on customizing touchpad settings, refer to the *A-dec 500® 12 O'Clock Delivery System Instructions For Use* (86.0605.00) and the *A-dec EA-51LT Electric Motor Instructions for Use* (86.0616.00).

## Touchpad Troubleshooting

The Deluxe Touchpad displays system and handpiece status to assist you in troubleshooting issues.

### System Status Icon

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

- Solid blue – normal operation and power is on.
- Blinking – chair stop plate or cuspidor limit switch is active. The icon returns to solid blue once you remove any obstructions.
- Double Blink – a jumper on the chair circuit board is still in the factory default position.

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## 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 located in the Document Library at [www.a-dec.com](http://www.a-dec.com).

## 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](http://www.a-dec.com).

### Product Models and Versions Covered in this Document

| Models            | Versions | Description      |
|-------------------|----------|------------------|
| A-dec Inspire 591 | A        | Dental Furniture |
| Preference 5580   | A        | Dental Furniture |
| A-dec 541, 545    | A        | Delivery System  |

