

Instructions for Use

A-dec 300 Dental Systems

Dental Chair, Delivery Systems, Assistant's Instrumentation, Support Center with Cuspidor

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Contradiction

None.

Production Date

See the label.

Spare Parts List

For details of product accessories, wear and tear parts and their use methods, refer to the detailed description of each component.

Intended Application and Use

This equipment/system is intended for diagnostic and therapeutic treatment of dental patients by licensed health care professionals. A dental operative unit (with or without accessories) is an AC-powered device intended to supply power to and serve as a base for other dental devices, such as a dental handpiece, a dental operating light, an air or water syringe unit, an oral cavity evacuator, a suction operative unit, and other dental devices and accessories.

Regulatory Information

The Regulatory Information and Specifications document is delivered with A-dec dental device equipment as mandated by agency requirements. If you need this information, please go to the Document Library at www.a-dec.com.

Product Service

For service information, contact your local authorized A-dec dealer. To find your local dealer, go to www.a-dec.com.

Product Model/Specification

A-dec 300 Systems

Product Configuration

The product consists of the 363/461 support center, 363/461 cuspidor, 311 dental chair, 332/333/334/335/336 delivery system, 352/353/551 assistant arm, disc foot control (part number: 38.1821.00/38.1834.00/38.1838.00/38.1862.00 /38.1862.01) and lever foot control (part number:62.0163.01).

Expected Service Life

With proper maintenance and service, A-dec products are designed for a defined “Service Life”, 20 years from the date of manufacture. At the end of the defined Service Life, all products require examination by a trained Service Technician prior to continued use. Following this, additional examinations are required every 5 years.

Service Life is the expected functional use limit, based on product design goals. Service Life is separate from the warranty period; there are no implied or explicit extensions of the warranty period. Service part availability is dependent on A dec suppliers and product obsolescence timelines.

The dental delivery system can be equipped with a scaler, curing light, and a dental light which are not within the scope of the registration declaration.

Intended Use

This product is used for diagnosis and surgery in the dental department.

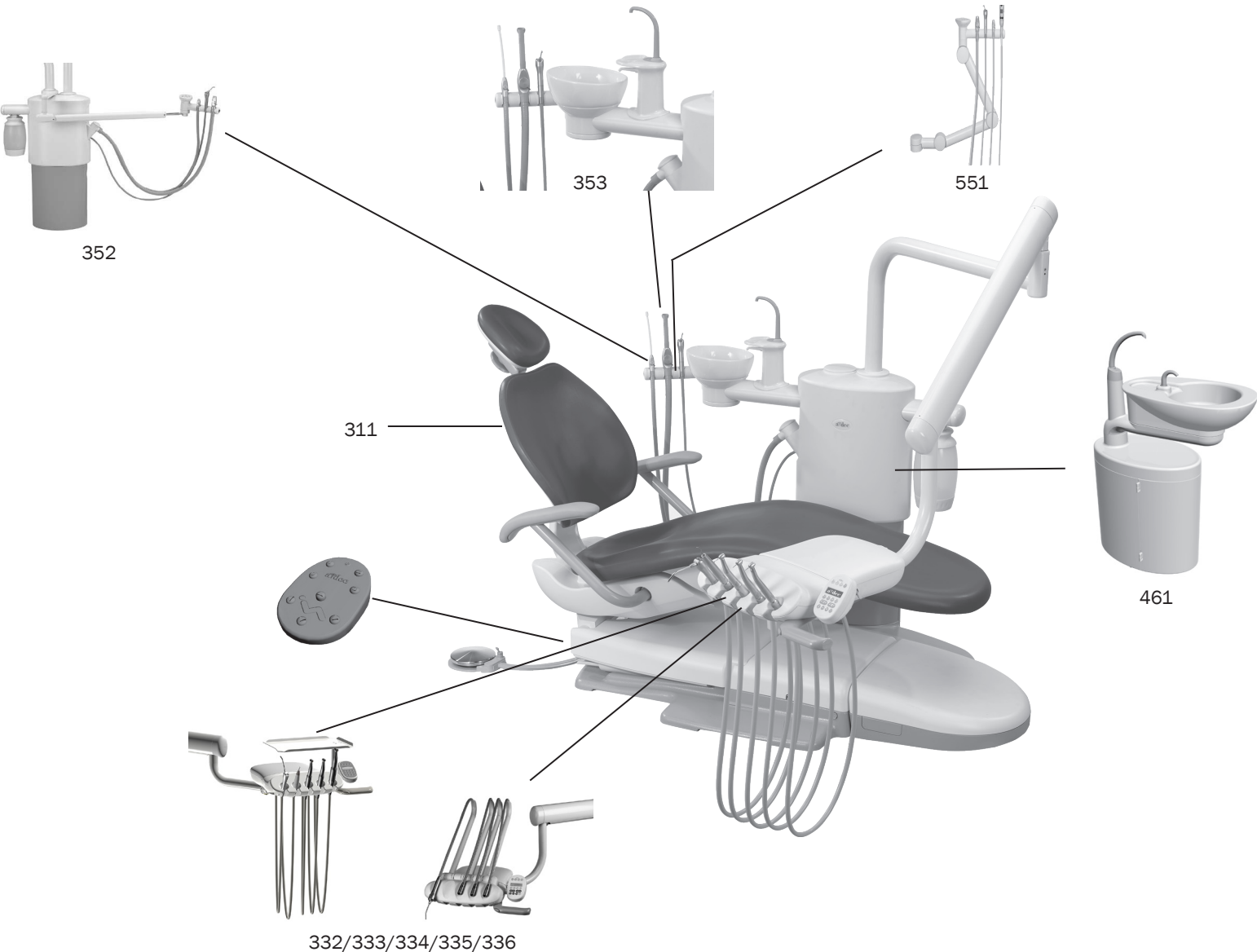
Software Information

- a) Software Name: A-dec 300
- b) Software Type: 43.0363.00
- c) Software Version: 1.0001

Product Models and Versions Covered in this Document

Models	Versions	Description
311	B	Dental Chair
332	A	Delivery System
333	A	Delivery System
334	A/B	Delivery System
335	A/B	Delivery System
336	A	Delivery System
352	A	Assistant’s Instrumentation
353	A	Assistant’s Instrumentation
551	A	Assistant’s Instrumentation
363	A	Support Center and Cuspidor
461	A	Support Center and Cuspidor
38.1821.00		Disc Foot Control
38.1834.00		Disc Foot Control
38.1838.00		Disc Foot Control
38.1862.00		Disc Foot Control
38.1862.01		Disc Foot Control
62.0163.01		Lever Foot Control

Content Map



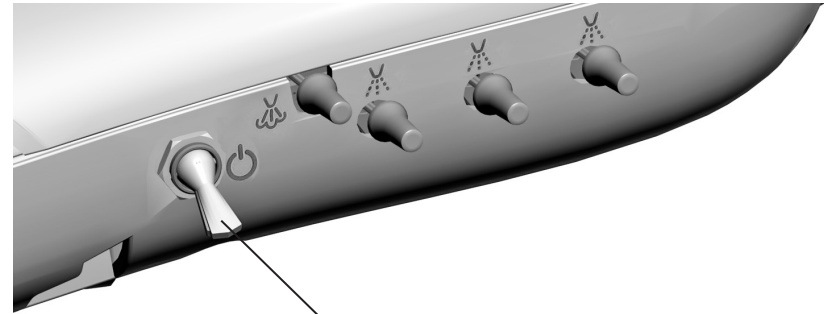
Quick Start



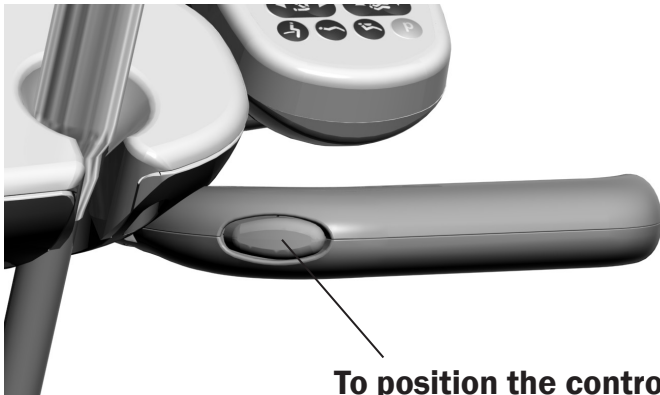
Before using the system:

1. Drop one A-dec ICX[®] tablet into the empty bottle (*do not touch tablet*).
2. Fill with tap water.

(For detailed instructions on water usage, see the *Self-Contained Water System Instructions For Use*, p/n 86.0609.00.)

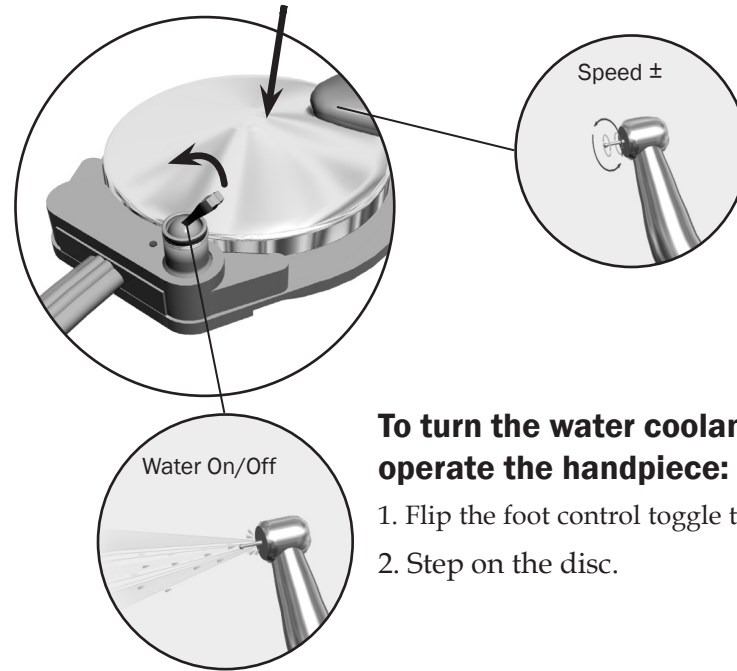


To turn the system power on:
Flip the toggle up.



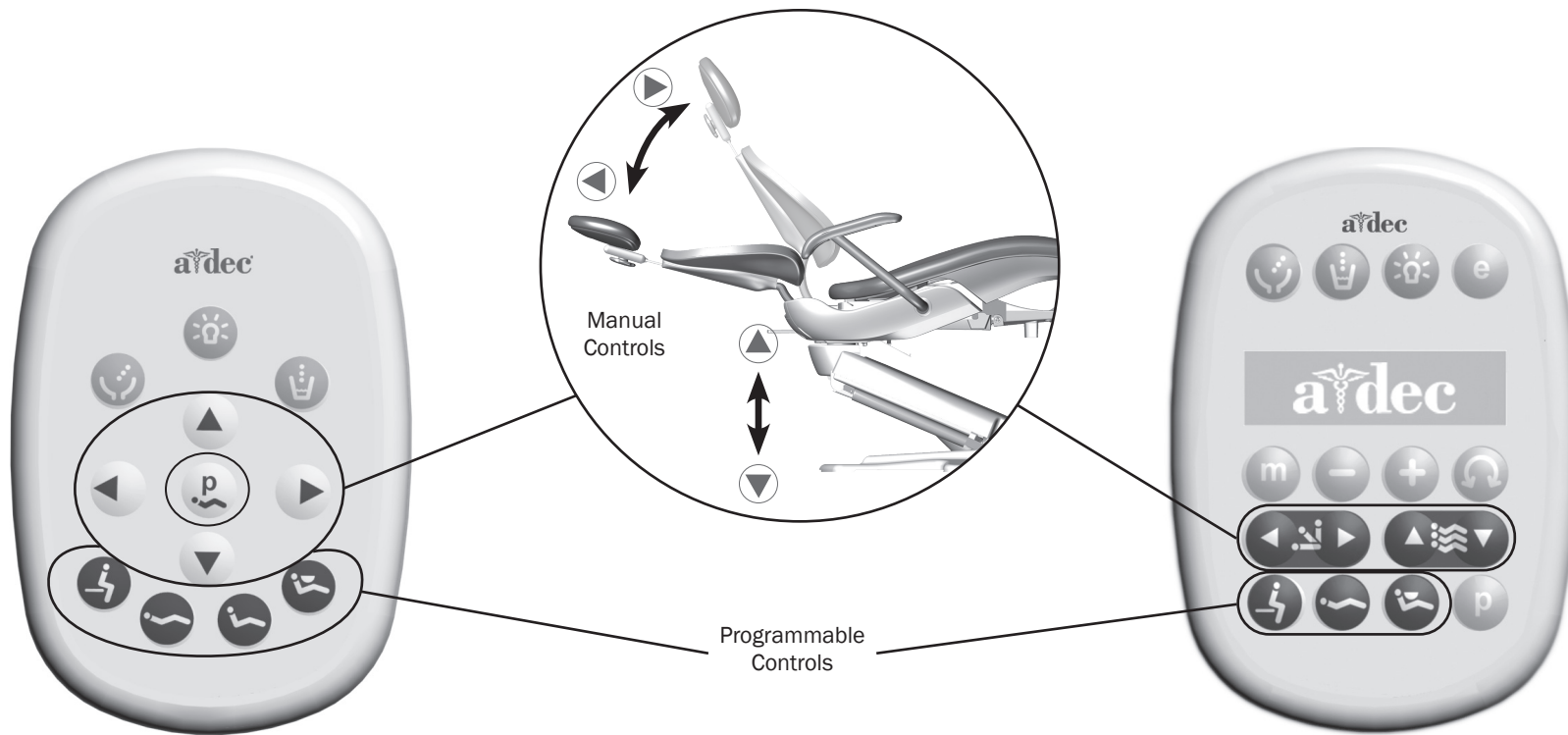
To position the control head:

1. Press and hold the button to release the brake.
2. Release the button to engage the brake.

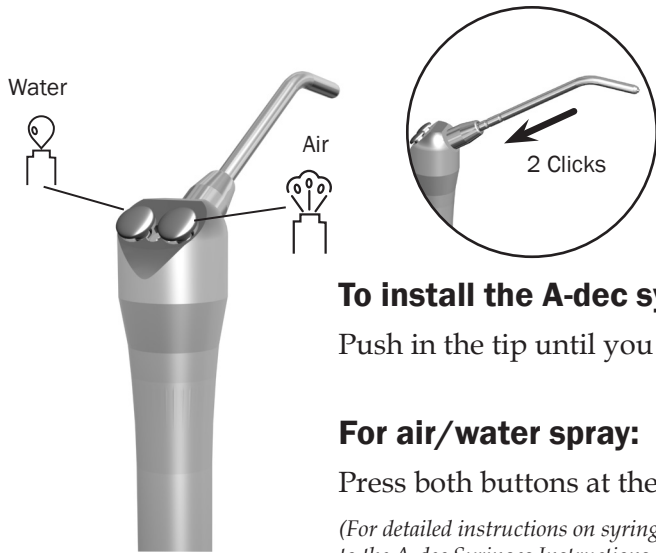


To turn the water coolant on and operate the handpiece:

1. Flip the foot control toggle toward the blue dot.
2. Step on the disc.



To position the chair:
Press the manual or programmable buttons.
(For complete chair programming instructions, see page 15.)



To install the A-dec syringe tip:

Push in the tip until you feel two clicks.

For air/water spray:

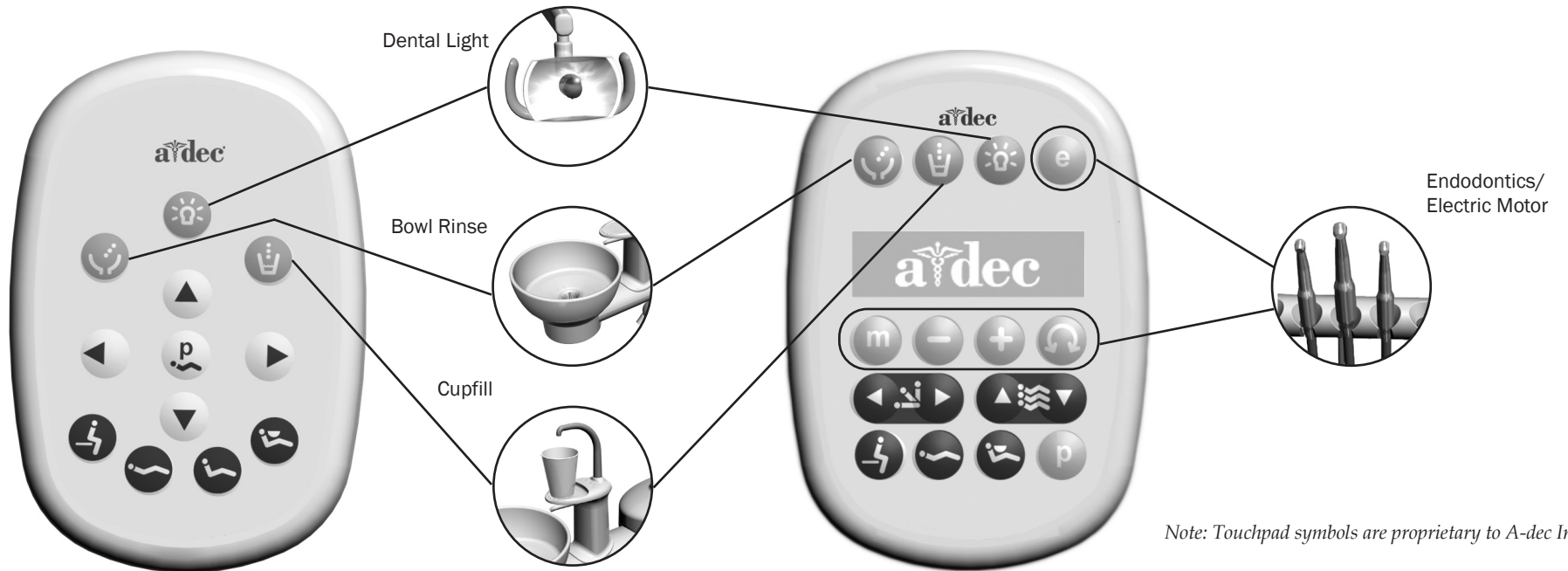
Press both buttons at the same time.

(For detailed instructions on syringe usage and maintenance, refer to the A-dec Syringes Instructions For Use, p/n 85.0680.00.)

To control the dental light, cuspidor, and electric motor functions:

Press the corresponding buttons on the touchpad.

(For detailed programming instructions, see page 15.)



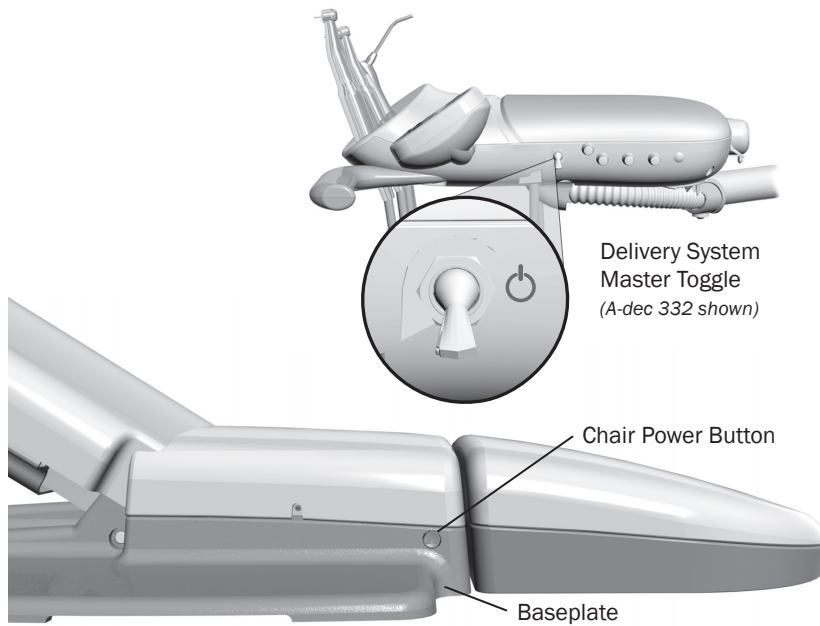
Note: Touchpad symbols are proprietary to A-dec Inc.

A-dec 300 Reference Section

Dental Chair	6
Delivery System	13
Assistant's Instrumentation	26
Cuspidor	29
Self-Contained Water System	33
Care and Maintenance.....	36
Specifications	49
Equipment Dimensions.....	52
Electromagnetic Compatibility (EMC).....	60

Dental Chair

Power On/Off



NOTE A-dec recommends that you perform a shock treatment on the dental unit waterlines before you use the system for the first time. For more information, see “Waterline Maintenance” on page 37.

Master Toggle

Use the master toggle to turn on the power, water, and air. The master toggle is normally located on the delivery system, but may instead be located on the support center or floor box on chairs without a delivery system.

If there is no power to the system, verify that the chair power button is pushed in. The chair power must be on in order for the master toggle to control system power.

When to Turn Off the Power

To save energy, turn off the power at the end of the work day and during longer periods of non-use.

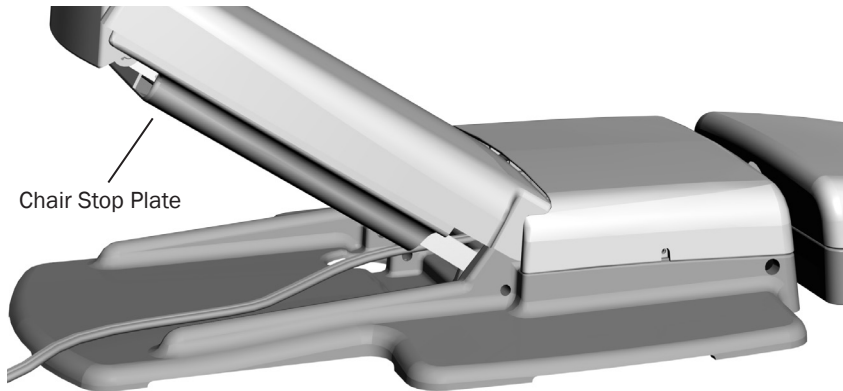
Touchpads and the Status Light

The A-dec logo on the touchpad illuminates when the system is on and ready for use. If the status light blinks, it may indicate that a safety feature has interrupted chair motion. See “Safety Features” on page 7 for more information.



For complete details on touchpad functionality, please see your delivery system Instructions For Use.

Safety Features



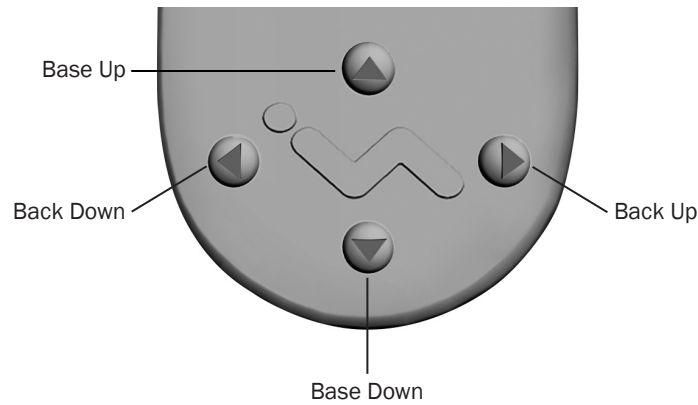
Stop Switches

If the status light begins to blink, an object under the equipment may have activated the chair stop plate or stop switch. To resume normal operation, use the footswitch or touchpad to raise the chair. Then remove the object.

Optional Chair Lockout

The optional lockout feature inhibits the operation of the dental chair when you remove a handpiece from its holder and step on the foot control. When this happens, the chair status light will blink quickly. To resume normal chair operation, lift your foot off of the foot control disk.

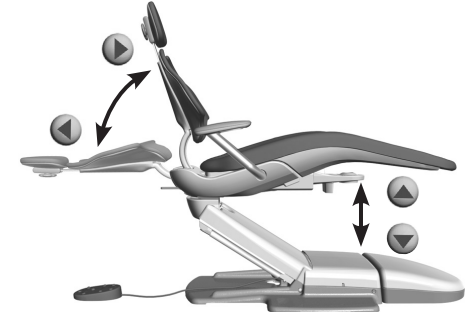
Chair Controls



The A-dec touchpad and footswitch control chair movement in the same way. See your delivery system Instructions for Use for detailed information about your touchpad controls.

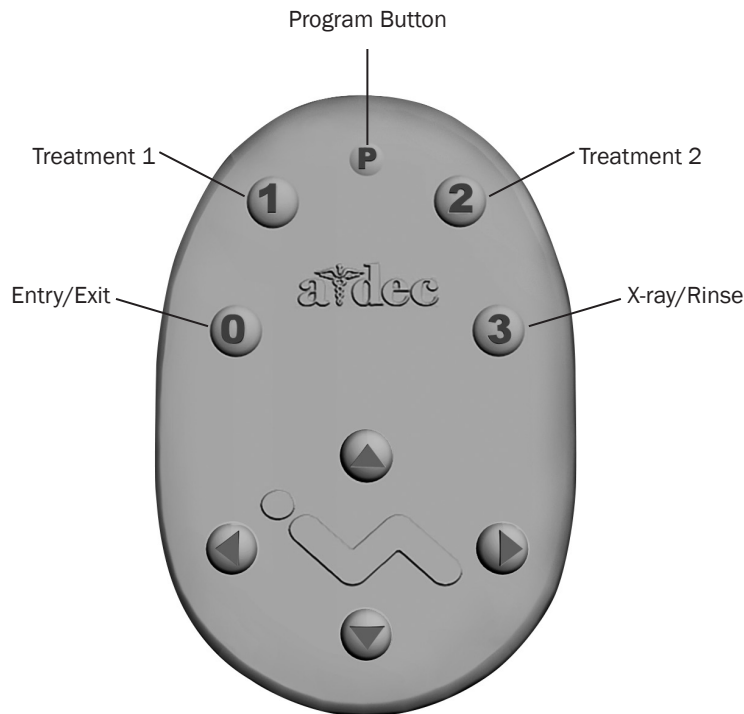
Footswitch Manual Controls

Press and hold an arrow button until the chair is in the desired position. The horizontal arrows raise and lower the chair back. The vertical arrows raise and lower the chair base.



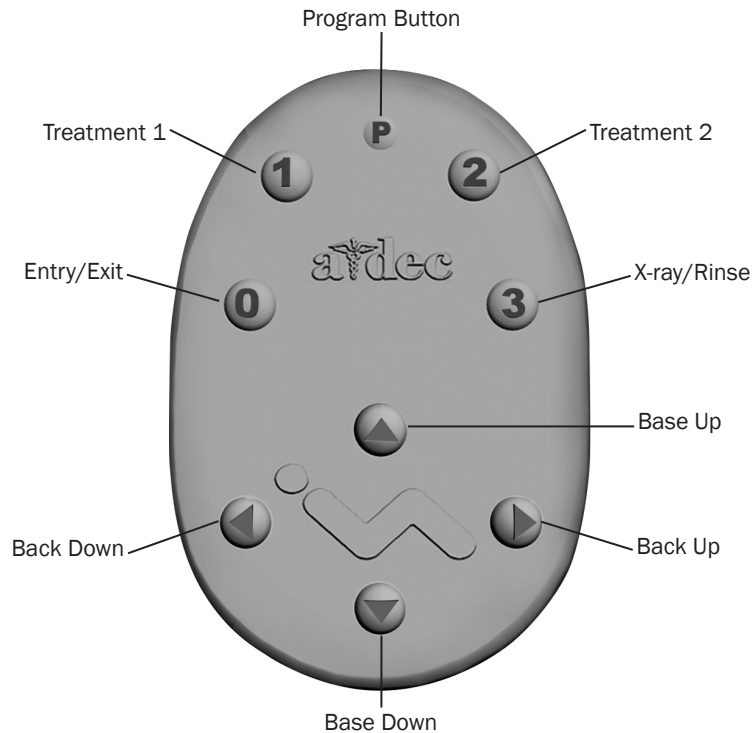
Footswitch Programmable Controls

Press and release a programmable button to move the chair to a preset position. These buttons are programmed at the factory as follows:



Icon	Position	Factory Setting
0	Entry/Exit	Positions the chair for patient entry/exit.
1	Treatment 1	Positions the chair base and back down.
2	Treatment 2	Positions the chair base down and back up.
3	X-ray/Rinse	Moves the chair to either x-ray or rinse position. Press again to move the chair to the previous position.

Chair Controls (continued)



WARNING Ensure that the patient is positioned safely before using the manual or programmable chair controls. Never leave the patient unattended while the chair is in motion. Always take extra care with small children and patients with limited mobility.

To stop the chair at any point during programmed movement, push any chair positioning button on the footswitch or touchpad.

Reprogram Buttons 0, 1, and 2

To change the factory preset chair positions assigned to the entry/exit and treatment buttons (0, 1, 2):

1. Use the manual controls to position the chair as desired.
2. Press and release P. One beep indicates that the programming mode is on.
3. Within five seconds, press the chair position button you wish to reprogram (for example, press 1). Three beeps confirm that the new setting is programmed into memory.

Reprogram X-Ray/Rinse Button

The x-ray/rinse button (3) is preset to move the chair and patient into an upright position for x-rays or cuspidor access. A second press of 3 returns the chair to the previous position.

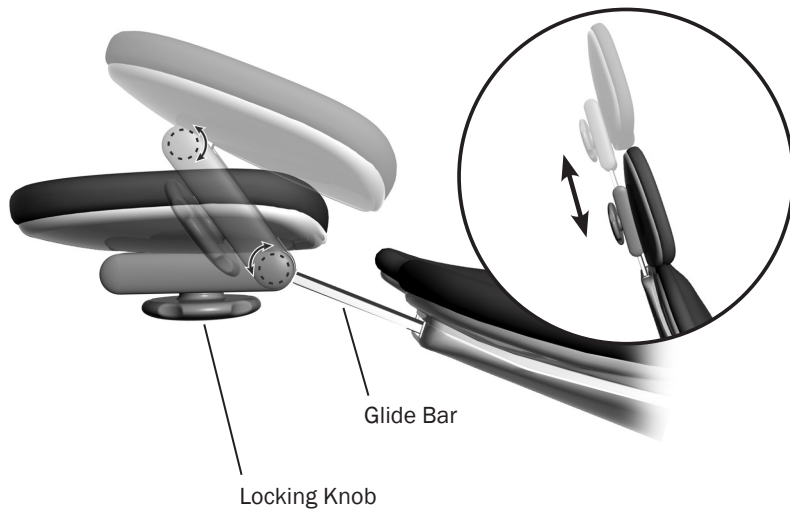
You can reprogram 3 to function in a similar way to the other programmable chair preset buttons. To change its function:

1. Press and hold P and 3 at the same time for three seconds.
 - o One beep indicates 3 is set as another programmable chair preset button.
 - o Three beeps confirm that 3 is configured as the x-ray/rinse factory preset (which toggles between the x-ray/rinse and the previous chair position).
2. If you reprogram 3 as another programmable button and want to assign a different chair position, follow the steps outlined in "Reprogram Buttons 0, 1, and 2" above.

Base Down Speed

The base down speed of the chair can be reduced. Contact your authorized A-dec dealer to reduce the base down speed.

Dual-Articulating Headrest



The dual-articulating headrest includes several adjustment features that improve your access to the oral cavity and increase patient comfort.

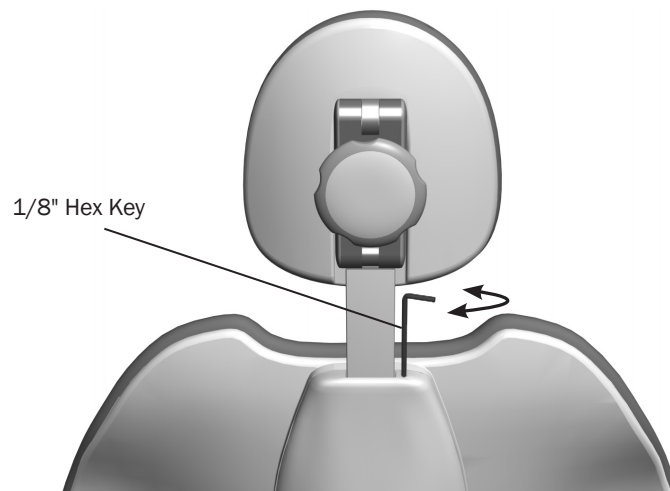
Use the glide bar to accommodate a variety of patient heights. Simply pull up or push down on the headrest until it is in the desired position. The gliding headrest cushion provides additional height adjustment.



WARNING If the glide bar has exceeded its maximum recommended working height, a warning line will be visible on the patient's side of the glide bar. Do not use the headrest in a position where this warning line is visible.

The locking knob allows you to easily adjust the headrest for a full range of positions. Release the headrest by turning the locking knob counterclockwise, then adjust the headrest for a proper fit. Lock the headrest in the desired position by turning the knob clockwise.

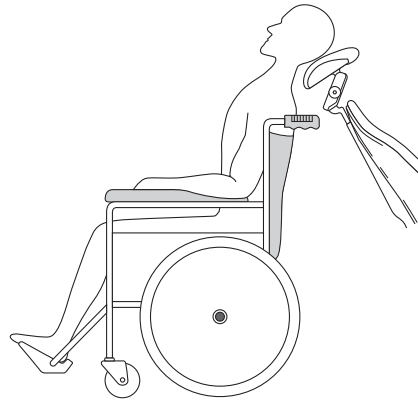
Headrest Glide Bar Tension



If the headrest drifts downward, or if it is difficult to move up or down, the glide bar tension needs adjustment.

To adjust the tension, use a 1/8" hex key. Turn the tension adjustment screw clockwise to increase friction or counterclockwise to decrease friction.

Headrest Position for Wheelchairs



To position the headrest for wheelchairs:

1. Remove the headrest from the dental chair.
2. Rotate the headrest 180° and slide the glide bar into the backrest until it stops.
3. Swivel the dental chair, if necessary, and position the backrest to its full upright position.
4. Position the wheelchair and the dental chair back to back.
5. Move the dental chair up or down, as needed, to adjust the headrest height.
6. Lock the wheelchair wheels.

Patient Positioning



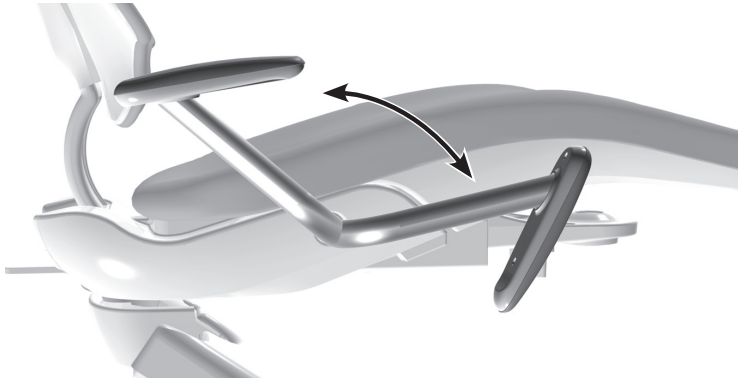
To properly seat patients in the chair, ask the patient to sit as far back in the seat pocket as possible. This ensures the best alignment with the lumbar support and headrest.

For optimal comfort, patients should place their forearms on the armrests or keep their arms comfortably folded on their lap.



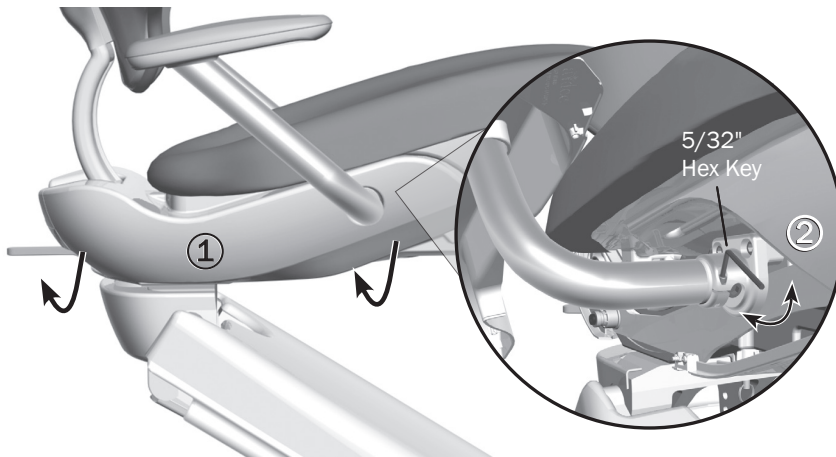
WARNING Do not allow patients to drop their arms behind the armrests or under the backrest during chair movement.

Two-Position Armrests



You can move the armrests out of the way to allow for easy patient entry/exit and to improve operator access when working direct. Push or pull to reposition the armrests in the forward or back position.

Armrest Rotation Tension



If the armrests become loose or are difficult to move, you can adjust the rotation tension. To adjust each armrest:

1. Remove the chair side cover by pulling on the left and lower right sides of the cover. Pull the cover out of the way to access the adjustment screw.
2. Use a 5/32" hex key and turn clockwise to tighten or counterclockwise to loosen the armrest tension. Only a small adjustment is needed to significantly increase or decrease tension.

Delivery System

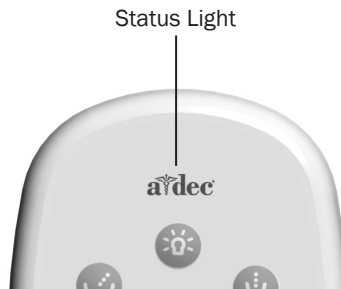
Power and the Master Toggle



Power to the chair and delivery system is controlled by the Master toggle on the control head. Some chairs have a power button on the chair base.

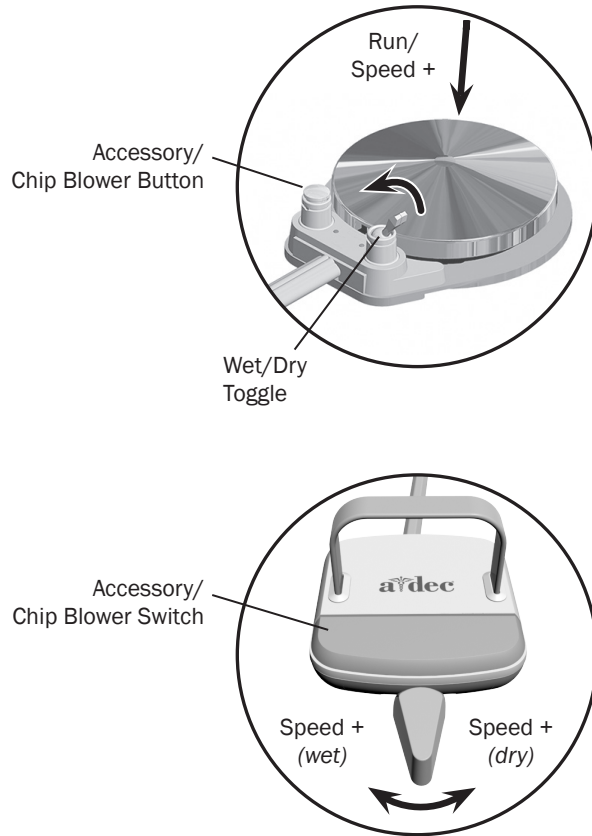
To save energy, turn the power off at the end of the work day and during longer periods of non-use. The power should always be turned off before service.

System Status



The A-dec logo on the touchpad illuminates when the system is on and ready for use. If the status light blinks, it may indicate that a safety feature has interrupted chair motion. See See "Safety Features" on page 7 for more information. for more information.

Handpiece Activation and Operation



To activate a handpiece, lift it from the holder or pull the whip forward. Use the foot control to perform the desired handpiece operation.

Control	Operation	Procedure
Disc Foot Control	Run a handpiece.	Press on the disc. Push down to increase speed.
	Run a handpiece with or without water coolant.	Move the wet/dry toggle toward the blue dot for wet operation or away from the blue dot for dry operation. Then press on the disc.
	Run the optional accessory or chip blower.	Press the accessory/chip blower button.*
	Operate the intraoral camera.	Press on the disc to capture an image.*
Lever Foot Control	Run a handpiece with water coolant.	Move the lever to the left. Move farther to increase speed.
	Run a handpiece without water coolant.	Move the lever to the right. Move farther to increase speed.
	Run the optional accessory or chip blower.	Press the accessory/chip blower switch.*
	Operate the intraoral camera.	Move the lever to the left or right to capture an image.*

* Contact your authorized A-dec dealer for questions about the operation or configuration of your integrated A-dec accessories.



NOTE The lever foot control function can be reversed by a technician (change left direction to dry, right direction to wet). For more details, contact your authorized A-dec dealer.

For handpiece coolant adjustments, see “Handpiece Coolant Adjustments” on page 22.

Touchpad Controls

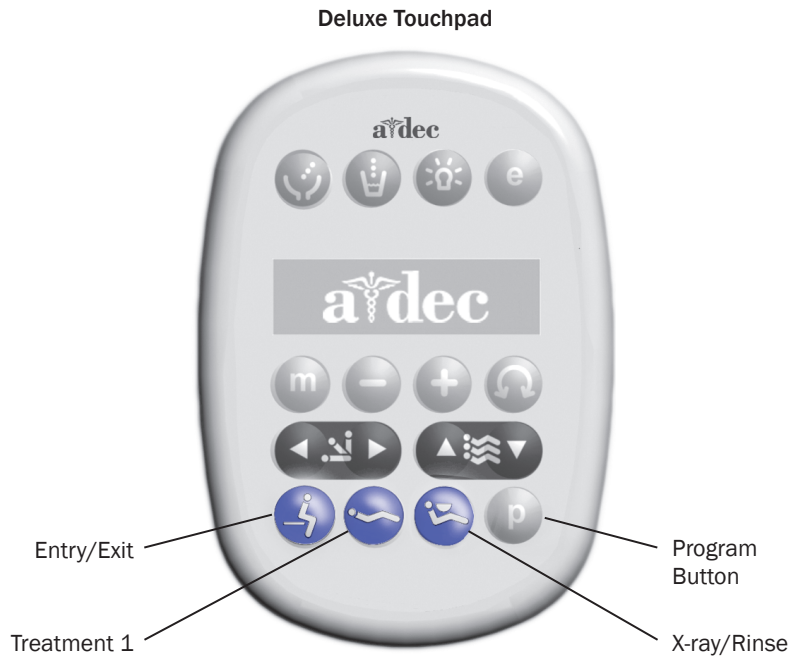


Programmable Chair Positions

NOTE Use normal patient precautions and watch closely whenever the chair is in motion.

Operate your A-dec chair using the manual controls or programmed presets on the touchpad (*see page 3 for manual controls*). You can change any of the preset buttons to meet your needs.

Icon	Position	Factory Setting
	Entry/Exit	Positions the chair for patient entry/exit.
	Treatment 1	Positions the chair base and back down.
	Treatment 2	Positions the chair base down and back up.
	X-ray/Rinse	Moves the chair to either x-ray or rinse position. Press again to move the chair to the previous position.



Chair Preset Buttons

To program the chair presets Entry/Exit, Treatment 1, or Treatment 2*

1. Use the manual controls to position the chair as desired.
2. Press and release **P** or **⏮**. One beep indicates that the programming mode is on.
3. Within four seconds, press the chair position button you wish to reprogram (for example, press **⏮**). Three beeps confirm that the new setting is programmed into memory.

* Note: The deluxe touchpad does not include a Treatment 2 button.

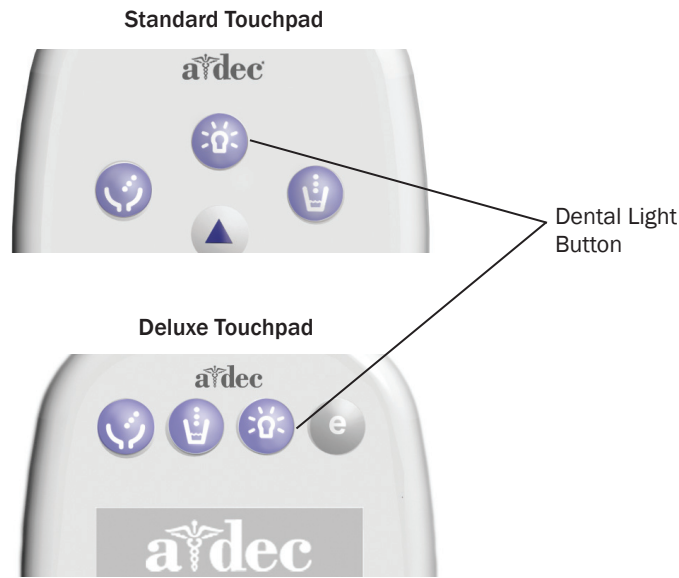
X-Ray/Rinse Button

The x-ray/rinse preset button moves the chair and patient into an upright position for x-rays or cuspidor access. A second press of this button moves the chair to the previous position.

The x-ray/rinse button can function either as x-ray/rinse or as another preset position. To change the function of the x-ray/rinse button:

1. Press and hold **P** or **⏮** and **⏮** at the same time for three seconds.
 - One beep indicates the button is set as another programmable chair preset button.
 - Three beeps confirm that the button is configured as the x-ray/rinse function set at the factory (toggles between the x-ray/rinse and the previous position).
2. If you use the x-ray/rinse button as an additional preset position, follow the steps outlined in "Chair Preset Buttons" above.

Touchpad Controls *(continued)*



Dental Light Auto On/Off Feature

The auto on/off feature turns the A-dec light on when the chair back reaches a treatment position. Press or to turn the dental light off.

To disable the auto on/off feature, press and hold the program button (or) and at the same time for three seconds. One beep indicates the dental light on/off feature is off.

To enable the auto on/off feature, press and hold or and at the same time for three seconds. Three beeps confirm that the auto on/off feature is activated.

For more information about dental light functions, see the *Instructions for Use* that came with your dental light.

Deluxe Touchpad Handpiece Settings



Standard Mode

Activate the electric motor by lifting the handpiece from the holder. The touchpad screen displays the previous settings used for that handpiece position. Standard mode provides four factory preset speeds for electric motors:

Memory Setting	Factory Preset Speed
M1	2,000 rpm
M2	10,000 rpm
M3	20,000 rpm
M4	36,000 rpm



You can reprogram these memory settings with your own specific preset speeds. A total of eight customized settings per handpiece is possible (four in Standard Mode and four in Endodontics Mode).

To program the handpiece setting:

1. Press **+** or **-** until the RPM setting you want is displayed on the touchpad screen.
2. Press **P** to save it to memory. One beep sounds.
3. Press **m** to display the memory settings for M1 through M4. When the desired memory setting is displayed, press **P**. Three beeps confirm the setting.

Endodontics Mode

In addition to handpiece speed adjustments, the Endo Mode allows you to change a number of settings based on the specific file and desired handpiece behavior. Icons on the touchpad screen reflect the settings.



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

To change a setting:

1. Lift the handpiece from the holder.
2. If the touchpad screen does not display the Endo Mode, press **e**.
3. Press **+** or **-** to activate the Endo Mode change. A white reverse video box is displayed on the touchpad screen.
4. Use the chair positioning buttons to move from setting to setting on the touchpad screen.
5. Use **+** or **-** to change the setting as desired.
6. To set the speed limit, torque limit, or ratio into memory, press **P**. One beep sounds.
7. Press **m** to display the memory settings for M1 through M4. When the desired memory setting is displayed, press **P**. Three beeps confirm the setting.

Deluxe Touchpad Handpiece Settings *(continued)*



Endo Mode Touchpad Screen Icons

Icon	Setting	Description
	Speed	Setpoint for file speed limit. For more information, consult your file manufacturer.
	Torque	Setpoint for file torque limit. For more information, consult your file manufacturer.
	Torque Units	Toggles between Ncm (Newton centimeters) gcm (Gram centimeters). Adjusting this setting for one handpiece changes it for all handpiece settings. <i>Note: 1 Ncm = 102 gcm.</i>
	Ratio	Sets the handpiece ratio. For more information, consult your handpiece manufacturer.
	Forward/Reverse Modes	Adjusting this setting for one handpiece changes it for all handpiece settings. This icon is displayed within the Forward/Reverse indicator.
	Auto Off	<ul style="list-style-type: none"> Auto-Off: The motor shuts off when the file speed reaches the torque limit.
	Auto Reverse	<ul style="list-style-type: none"> Auto-Reverse: The motor stops and reverses direction when the file reaches the torque limit.
	Auto Forward	<ul style="list-style-type: none"> Auto-Forward: When the file reaches the torque limit, the motor stops, reverses 3 turns, then changes back to forward again. <i>Note: If the file is stuck, the auto forward cycle repeats three times before the motor stops.</i>



Forward/Reverse Button

The forward/reverse button 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.

Other Handpiece Setting Choices

- **Auto-Off Delay** (deluxe touchpad with quad voltage intraoral light source) – The default time the handpiece remains lighted when idle is five 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** (deluxe touchpad with quad voltage intraoral light source) – When active, the handpiece light automatically turns on when you lift the handpiece from the holder. ON is the Standard Mode default. OFF is the Endodontics Mode default.
- **Voltage Adjustments** (quad voltage intraoral light source) – Adjust the voltage setting for each handpiece light source to match the bulb manufacturer's usage guidelines.

Deluxe Touchpad Handpiece Settings *(continued)*



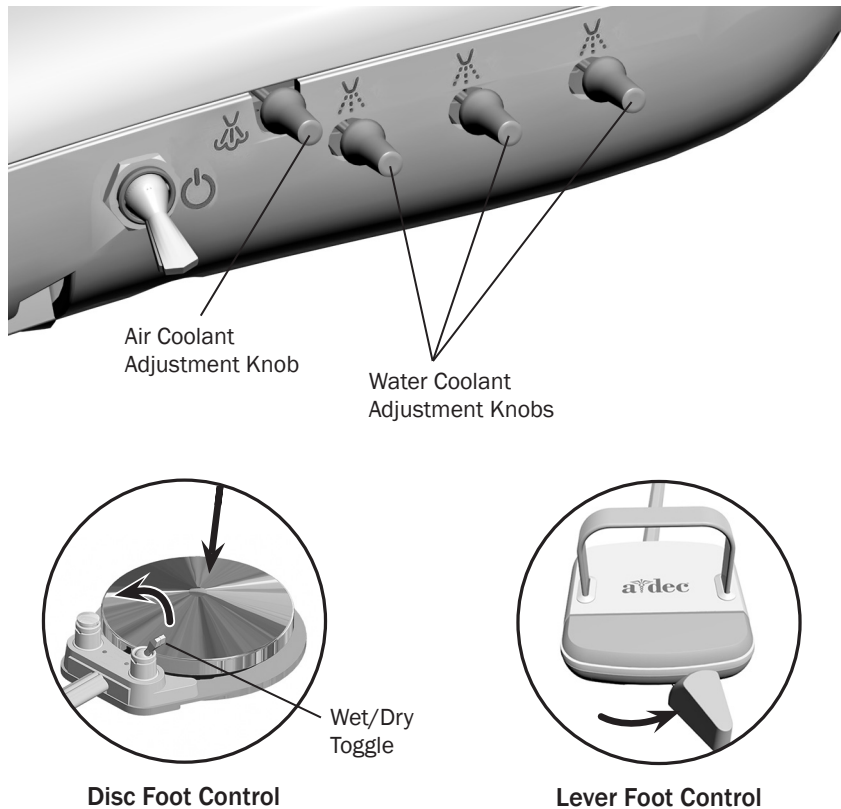
Touchpad Help Messages

Help messages are displayed on the deluxe touchpad to provide information about why an operation is disabled. When you see a message on your touchpad screen, write it down and note the function you were performing at the time. This may help if a call for service is needed.

Message	Description and Action
Too many handpieces in use Control Head	<ul style="list-style-type: none"> Two or more handpieces are withdrawn at one time. Only one motor, turbine, or ultrasonic instrument can be used at one time. Use one handpiece at a time and proceed as normal.
Chair is already at that position. Function halted by additional button press.	<ul style="list-style-type: none"> A preset button was pressed with the chair already at that position. The chair was in the process of moving to a preset position and another button was pressed, causing the movement to stop. Press the preset button again to continue to that position.
Chair will not move while foot control is in use.	<ul style="list-style-type: none"> The chair will not move when a handpiece is withdrawn and the foot control is pressed at the same time.
This button is disabled.	<ul style="list-style-type: none"> A button was pressed that has been disabled. You may operate the touchpad as normal without using the disabled button. If you would like to set up functions for this button or feature, call for service.

Message	Description and Action
Chair in Factory Default mode.	<ul style="list-style-type: none"> The chair was left in factory default. Preset buttons are disabled, but all other buttons function as normal. Call for service.
Chair in Enable/Disable mode.	<ul style="list-style-type: none"> The chair was left in factory default. Manual, preset, and program buttons are disabled and performing service-level functions. Call for service.
Chair back reached time limit. Please wait.	<ul style="list-style-type: none"> To maximize motor life, the chair back motor runs for a limited time. Wait for one minute, then proceed as normal.

Handpiece Coolant Adjustments



CAUTION When performing this procedure, do not attempt to completely shut off the water or air flow. The adjustment knobs are not designed to completely shut off flow and can damage the control block if you apply too much force.

The air coolant knob on your delivery system simultaneously adjusts air flow to all handpiece positions. Each water coolant knob adjusts water flow to a single position. Use the following process to adjust for the desired handpiece coolant atomization:

1. Insert a burs into the handpieces you are adjusting.
2. Turn the air coolant adjustment knob clockwise until coolant flow stops.
3. Lift the handpiece from the holder, or pull the whip forward, and do one of the following:
 - 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 right.
4. Locate the water coolant adjustment knob for the handpiece position you are adjusting and turn it clockwise until coolant flow stops.
5. Slowly turn the water coolant adjustment knob counterclockwise until water droplets are expelled from every water port on the handpiece head. Return the handpiece to the holder.
6. Repeat steps 3 through 5 for each handpiece.
7. To set the air coolant for the system, lift a handpiece from the holder or pull the whip forward.
8. Turn the air coolant adjustment knob counterclockwise until you achieve the desired atomization at the cutting surface of the bur.



CAUTION Do not continue turning the air coolant adjustment knob counterclockwise after the air coolant stops increasing. The stem may come out of the control block.

9. If you require more water coolant, increase the water output in step 5 as needed.

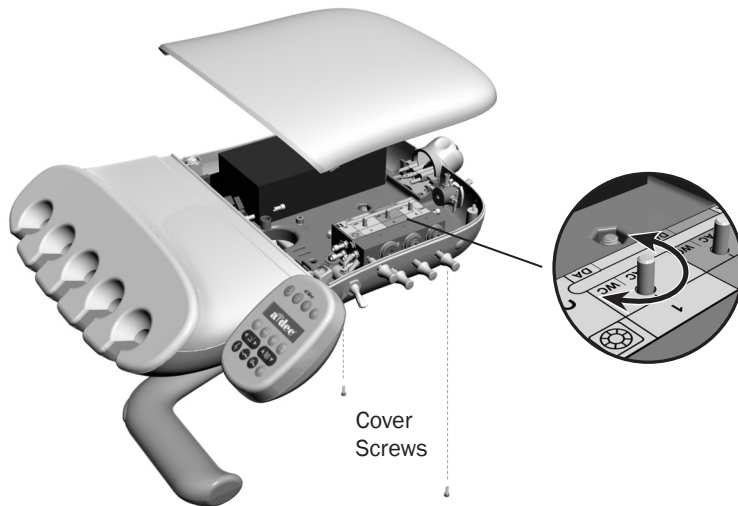
Drive Air Pressure



You can check drive air pressure on the deluxe touchpad screen by pressing **+** and **-** at the same time. For systems with a standard touchpad, and for the most accurate drive air measurement, use a handpiece pressure gauge attached to the handpiece tubing.

Complete these steps to adjust the drive air pressure for each handpiece:

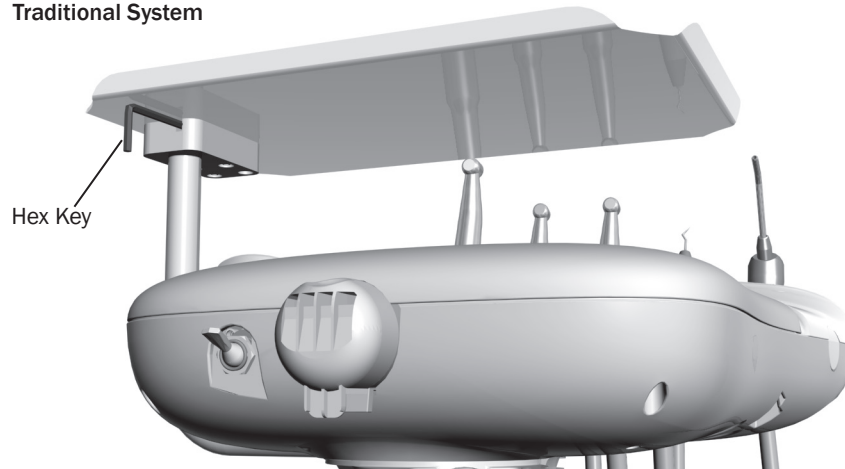
1. Use a 7/64" hex key to remove the control head cover screws. Remove the cover and locate the drive air pressure controls inside.
2. Lift the handpiece from the holder.
3. Press the foot control.
4. With the handpiece running, watch the deluxe touchpad readout or handpiece pressure gauge. Adjust the handpiece drive air pressure to meet the manufacturer's specifications.
5. Turn the control stem clockwise to decrease flow and counterclockwise to increase flow.



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

Rotational Adjustments

Traditional System



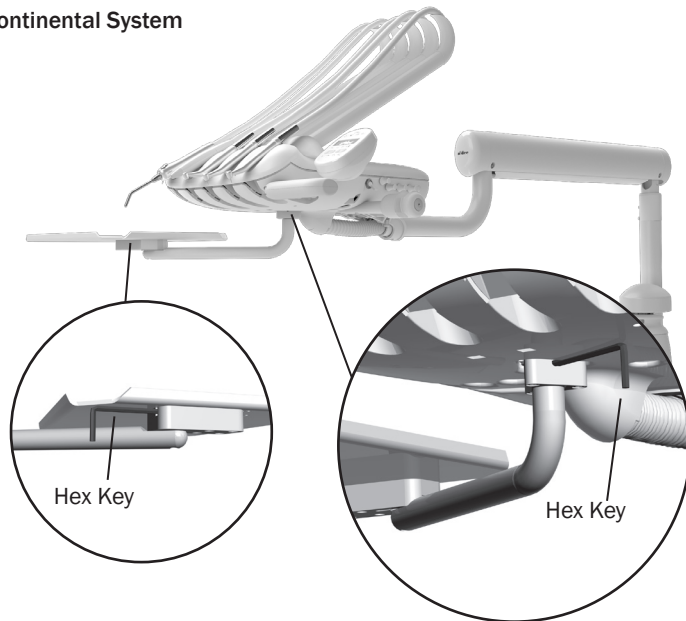
Tray Holder

If the tray holder rotation is too tight or too loose, use a 9/64" hex key to adjust the tension:

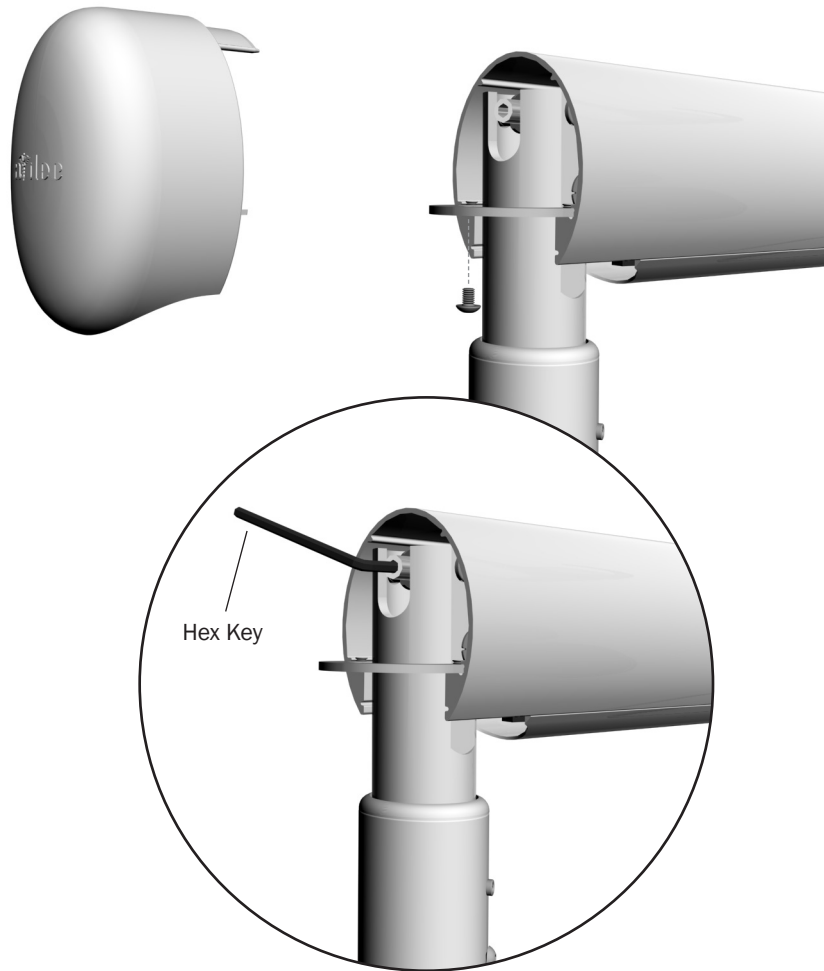
1. Insert the hex key through the mounting bracket. If necessary, rotate the holder or arm until the hex key slides completely into the mounting bracket.
2. While holding the bracket stationary, turn the tray holder clockwise to increase the tension or counterclockwise to reduce the tension.

For Continental®-style delivery, there are two adjustment locations: under the control head and under the tray holder.

Continental System



Flexarm Vertical Adjustments

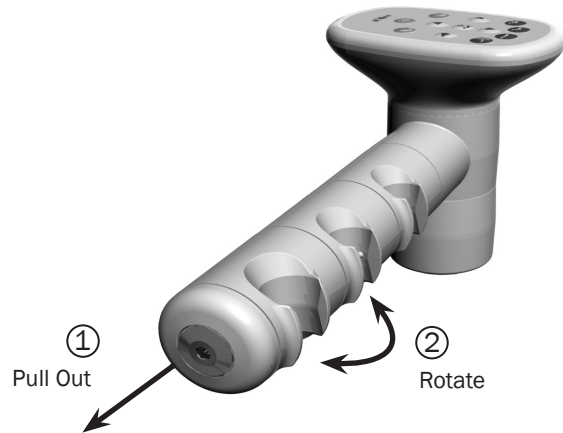


If the control head drifts up or down, complete these steps to adjust the spring-assisted flexarm:

1. Load the control head for normal use, attaching handpieces and placing a tray on the tray holder.
2. Using a 1/8" hex key, loosen the button head screw to remove the flexarm end cap farthest from the control head.
3. Raise the control head to its highest point.
4. Adjust the flexarm spring tension with a 3/16" hex key until the control head maintains balance at the normal working position.
 - If the control head drifts up, turn the adjustment screw counter-clockwise to loosen.
 - If the control head drifts down, turn the adjustment screw clockwise to tighten.

Assistant's Instrumentation

Instrument Holders

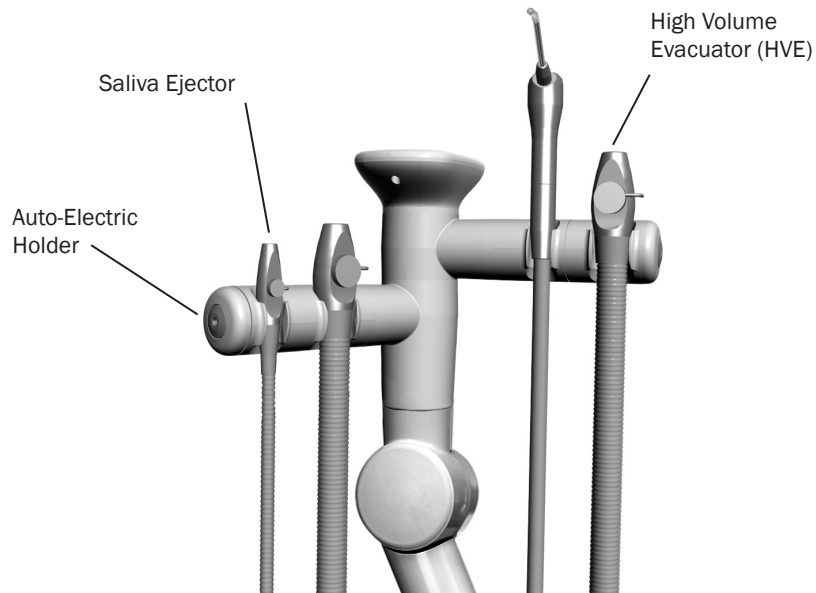


The instrument holders independently rotate for customized positioning of each instrument. To reposition, pull the holder slightly away from the adjacent one, rotate it to the desired position, and release.



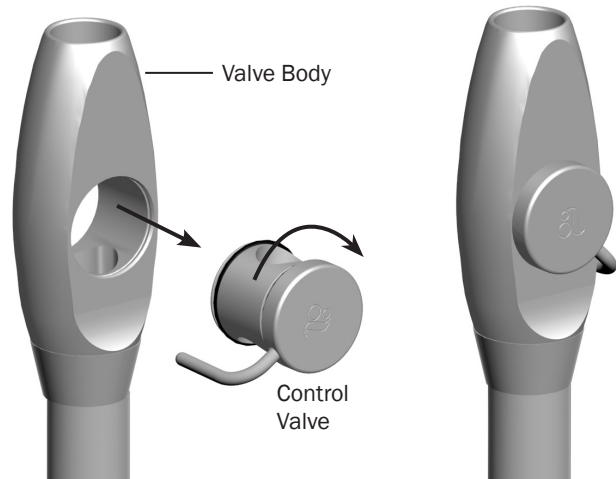
CAUTION Twisting the holder without pulling it away from the adjacent one will damage the mechanism.

Auto-Electric Holders



If you have a chair-side vacuum system and auto-electric holders, lift the HVE or saliva ejector from its holder and open the valve to turn on the vacuum. Return the instrument to its holder to turn off the vacuum.

HVE/Saliva Ejector Left/Right Conversion



To convert the standard HVE and saliva ejector for left-handed operation, push the control valve out of the valve body, rotate the control valve 180°, and push it back into place.

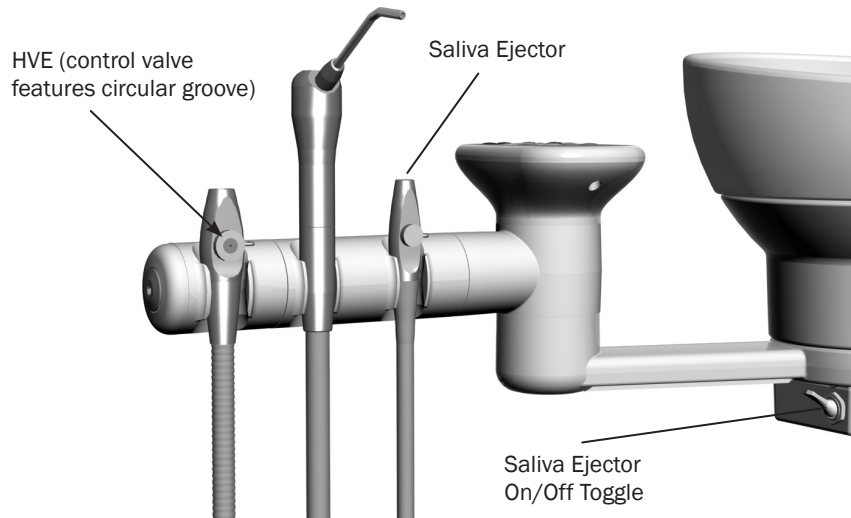


NOTE Be sure to reinstall the valve on the same side of the valve body. Otherwise, the HVE or saliva ejector will not operate properly.



CAUTION Do not attempt to remove the HVE valve if you have an Air Vacuum System (AVS). The HVE is permanently attached to the tubing in this configuration and cannot be removed (*see below*).

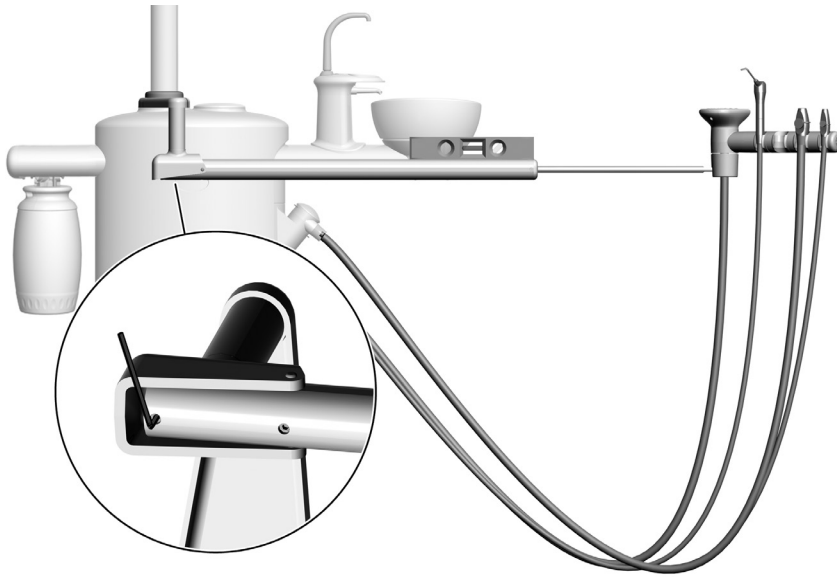
Air Vacuum System (AVS)



The AVS option includes a self-contained air vacuum generator. Also, with this option, the HVE valve body is permanently attached and cannot be removed from the tubing.

To activate the saliva ejector vacuum, use the on/off toggle.

Telescoping Arm Adjustment

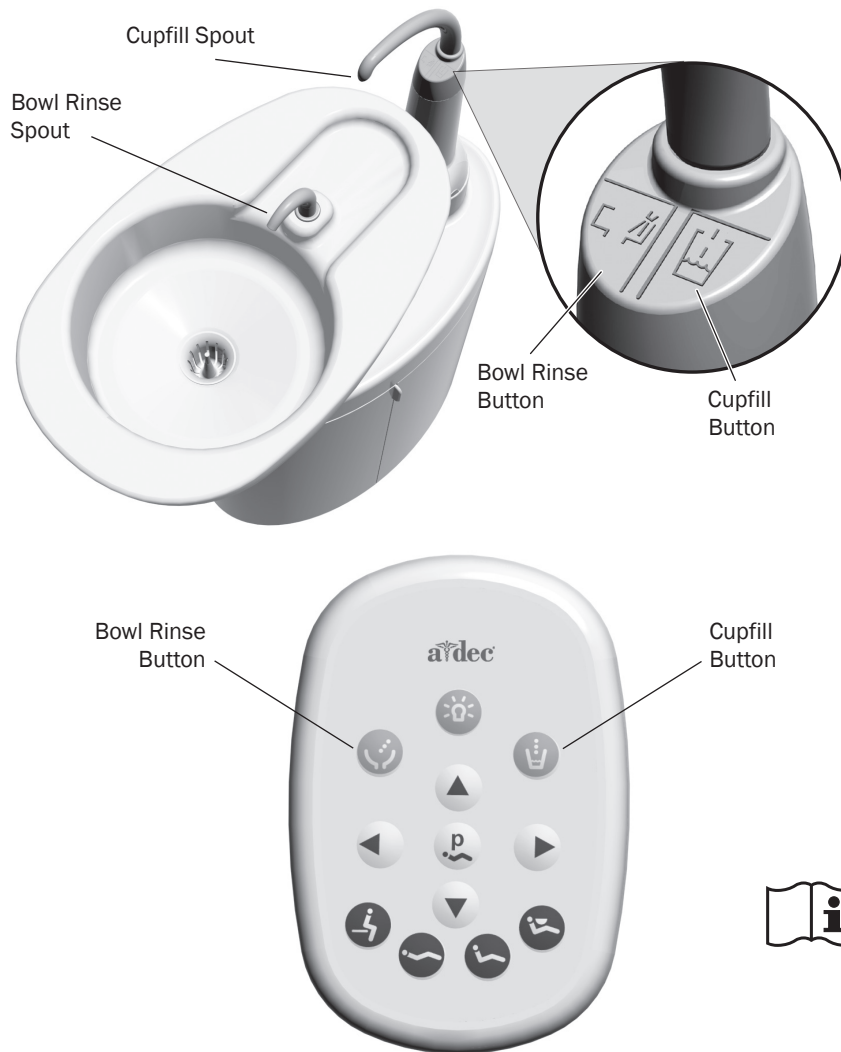


To level the telescoping arm:

1. Extend the arm.
2. Locate the adjustment setscrew underneath the arm.
3. Use a 1/8" hex key and turn the setscrew clockwise to tilt the arm up, counterclockwise to tilt the arm down.





Cuspidor

461 Cuspidor Functions



Bowl Rinse and Cupfill

Use the buttons under the cupfill spout or on the touchpad to control the bowl rinse and cupfill functions. The buttons support both programmed and manual operation.

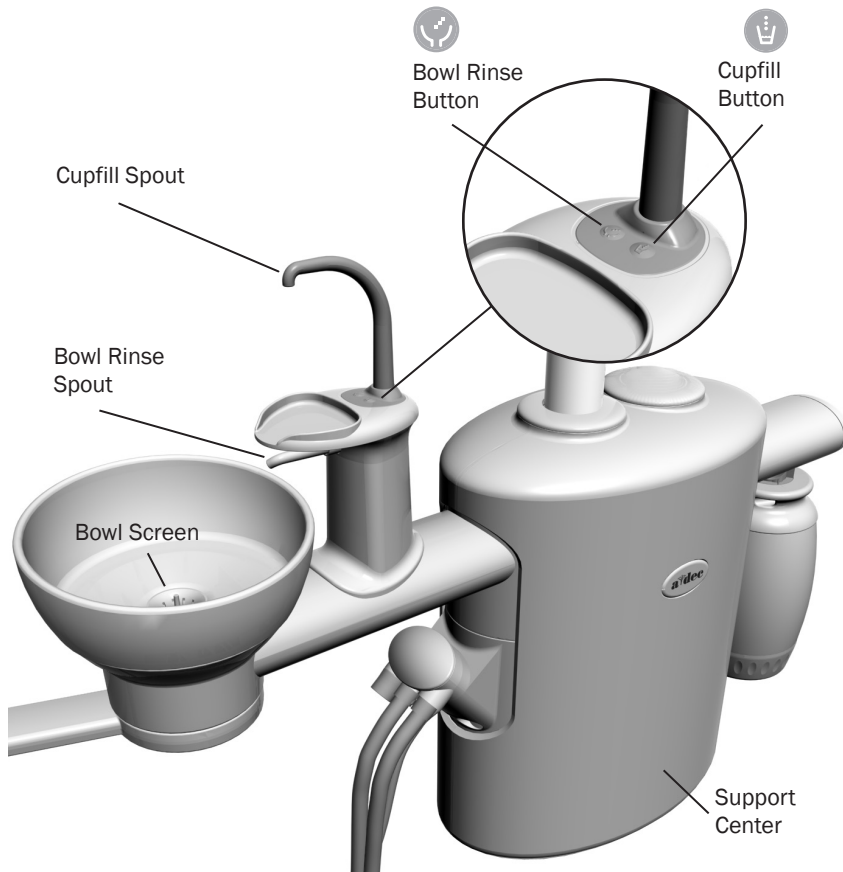
Button	Description and Factory Presets
 or 	<p>Bowl Rinse Operation:</p> <ul style="list-style-type: none"> Press and release the bowl rinse button for a timed operation. The factory preset is a 30 second rinse. Press and release the bowl rinse button twice in less than two seconds to activate the continuous operation mode. Press and release the button again to end the continuous mode. Press and hold the bowl rinse button for manual operation.
 or 	<p>Cupfill Operation:</p> <ul style="list-style-type: none"> Press and release 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.

Note: Touchpad symbols are proprietary to A-dec Inc.





For complete instructions on delivery system touchpad operation, see your delivery system Instructions For Use.

363 Cuspidor Functions



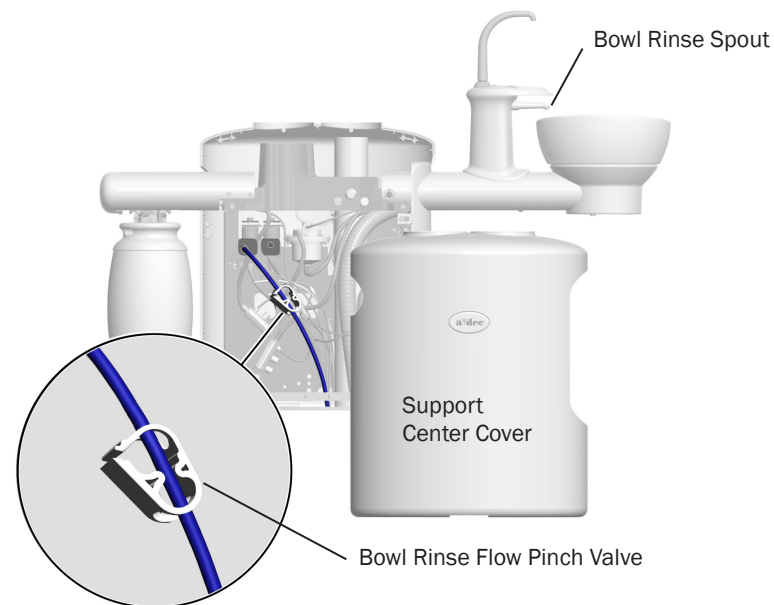
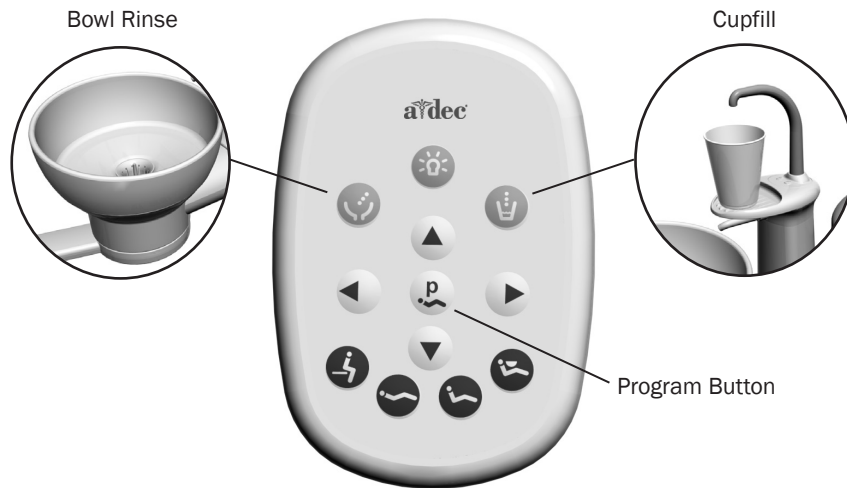
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Note: Touchpad symbols are proprietary to A-dec Inc.

Cuspidor Functions *(continued)*



Customize Bowl Rinse or Cupfill Timing

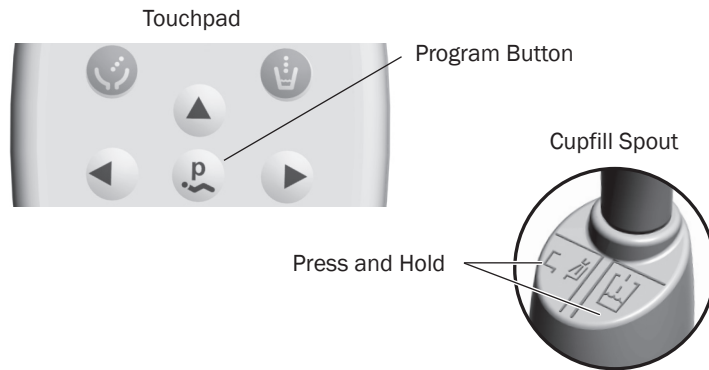
To reprogram the timed bowl rinse or cupfill functions:

1. Press on the touchpad, or press and hold the cupfill and bowl rinse buttons under the cupfill spout. Release the button(s) when you hear one beep.
2. Within five seconds, press and hold the cupfill or bowl rinse button for the desired time.
3. Release the button. Three beeps confirm that the program has changed.

Bowl Rinse Flow Adjustment

The bowl rinse function should provide enough water to completely rinse the cuspidor bowl. If the flow is not sufficient, an adjustment can be made inside the support center:

1. Remove the side cover from the support center by pulling the lower edges of the cover out.
2. With the bowl rinse on, squeeze the pinch valve to reduce the flow. Release the valve to increase the flow.
3. For the best rinsing action, adjust the flow pattern by rotating the bowl rinse spout.



Customize Bowl Rinse or Cupfill Timing

To reprogram the timed bowl rinse or cupfill functions:

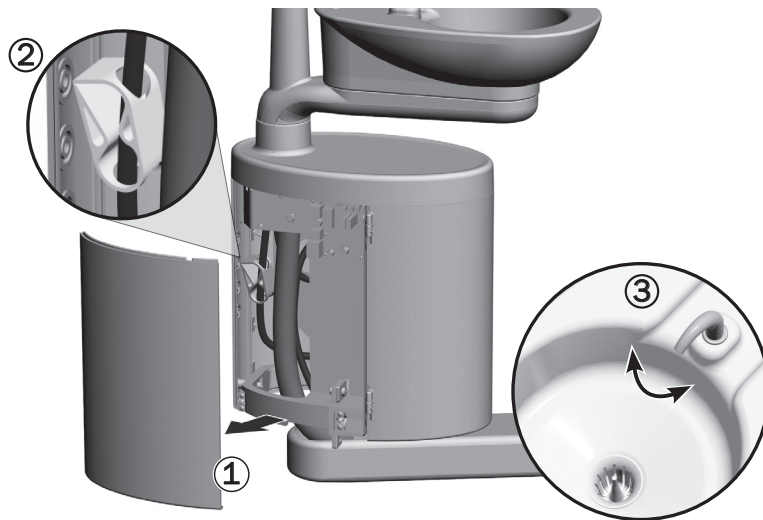
1. Press **P** on the touchpad, or press and hold the cupfill and bowl rinse buttons under the cupfill spout. Release the button(s) when you hear one beep.
2. Within five seconds, press and hold the cupfill or bowl rinse button for the desired time.
3. Release the button. Three beeps confirm that the program has changed.

Cuspidor Stop Switch

If an object gets caught under the cuspidor bowl as the chair is lowered, a stop switch will interrupt the chair motion to prevent damage. If the object becomes lodged, press Base Up (▲) on the footswitch or touchpad to remove the object and resume normal operation. See your dental chair Instructions for Use.



Bowl Rinse Flow Adjustment



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3. For the best rinsing action, adjust the flow pattern by rotating the bowl rinse spout.

Self-Contained Water System



Delivery Arm



Support Center



The self-contained water system includes a 2-liter, quick-disconnect water bottle that mounts to the delivery system arm or support center and supplies water to instruments and the cuspidor cupfill. It also provides an easy way to control the quality of your treatment water.

To properly maintain your system and water quality, A-dec recommends that you use an A-dec ICX[®] tablet with every water bottle refill.



IMPORTANT Follow the instructions that appear on the ICX packaging. For complete details on water usage in your A-dec system, see the *A-dec Self-Contained Water System Instructions For Use* (p/n 86.0609.00) and *Waterline Maintenance Guide* (p/n 85.0983.00).

Self Contained Water System



The 2-liter self-contained water bottle supplies water to handpieces, syringes, and the cuspidor cupfill. For proper installation:

1. To remove the bottle, turn off the Master toggle, and rotate the bottle clockwise.
2. Empty any remaining water from the bottle.



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

3. Following the ICX instructions for use, place an ICX tablet in the bottle and fill it with water.
4. Insert the bottle so the A-dec logo is in front, facing away from the chair.*



CAUTION Do not overtighten the water bottle or you may damage the components.

5. Rotate the bottle to the counterclockwise 1-1/2 turns. Do not overtighten.
6. Turn on the master toggle. A pressurization sound may be heard up to 2 minutes after the system is turned on.

* For left-handed configurations, the A-dec logo should face toward the chair.



WARNING Use only A-dec self-contained water bottles. Do not use other bottles, including glass or plastic beverage bottles. Do not use damaged bottles. These can pose a serious safety hazard while pressurized. A-dec plastic water bottles cannot withstand heat sterilization. Attempting to do so will damage the bottle and your sterilizer.

Self Contained Water System (continued)



CAUTION Use caution when using the self-contained water system with accessories that require an uninterrupted water supply (e.g., scalers), as these could get damaged without a continuous water source. Do not use saline solutions, mouth rinses, or any chemical solutions not specified in this guide in your A-dec self-contained water system. These may damage the system components and cause your dental unit to fail.

The hardness of water input and output of dental system should be in accordance with sanitary standard for drinking water (GB5749-2006).



Self-Contained
Water Bottle



How to Choose Treatment Water

The correct water to use in the A-dec self-contained water system depends on the quality of your municipal water. It's important to choose a source that consistently provides good water quality. For guidance, refer to the regulations specific to your location.

- Tap Water — If you have confidence in the quality of your municipal water supply, consider using tap water in your self-contained water bottle.
- Bottled Water — If you have concerns about the quality of your municipal water supply, use bottled water from a commercial source.
- Softened Water — In areas with hard water, greater than 200 mg/L as calcium carbonate (11.7 grains per gallon, 2.0 mmol/L), A-dec recommends the use of a water softener to prevent the buildup of mineral deposits that may impact the functionality of your delivery system.

A-dec recommends that you perform a shock treatment on the dental unit waterlines before you use the system for the first time.

For on-going waterline maintenance, A-dec recommends a three-part protocol: continuous use of A-dec ICX® waterline treatment tablets, regular dental unit water monitoring, and shock treatment.



IMPORTANT For complete details on how to maintain good water quality in your system, see the instructions for use provided with ICX and your self-contained water bottle:

A-dec ICX p/n 86.0613.00

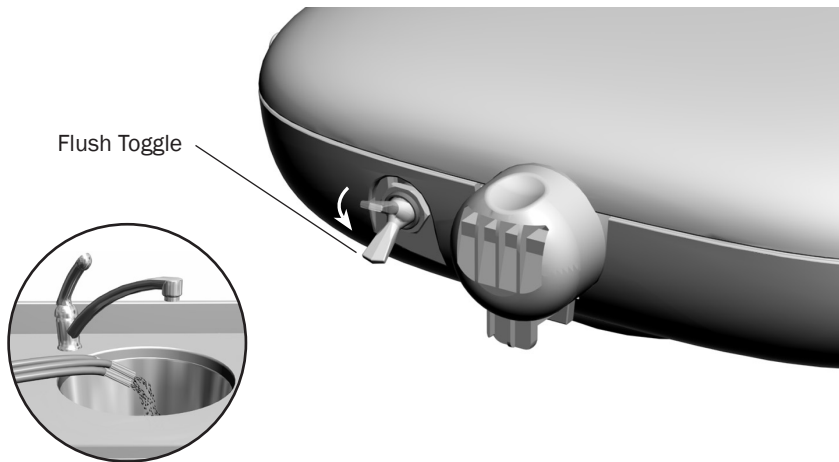
A-dec Self-Contained Water System p/n 86.0609.00

Waterline Maintenance Guide p/n 85.0983.00

If required by the customer, information on the materials used to the waterline can be provided.

Care and Maintenance

Handpiece Tubing



Use the flush toggle to move a high volume of water through the handpiece tubing. To flush the tubing after each patient:

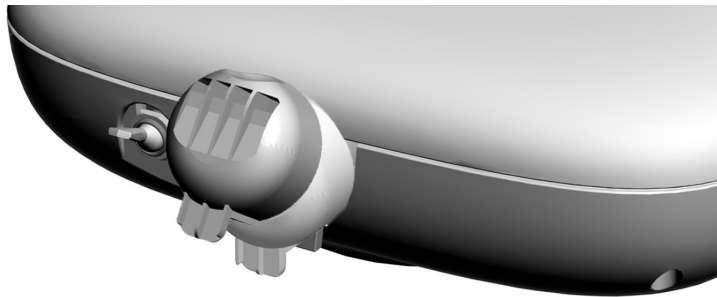
1. Disconnect the handpieces.
2. Hold all of the handpiece tubing that uses water coolant over a sink, cuspidor bowl, or basin.
3. Hold the flush toggle down for 20–30 seconds.



BIOHAZARD Discharge all tubing air and water lines for 20–30 seconds between each patient. This precaution reduces the risk of cross contamination between patients.



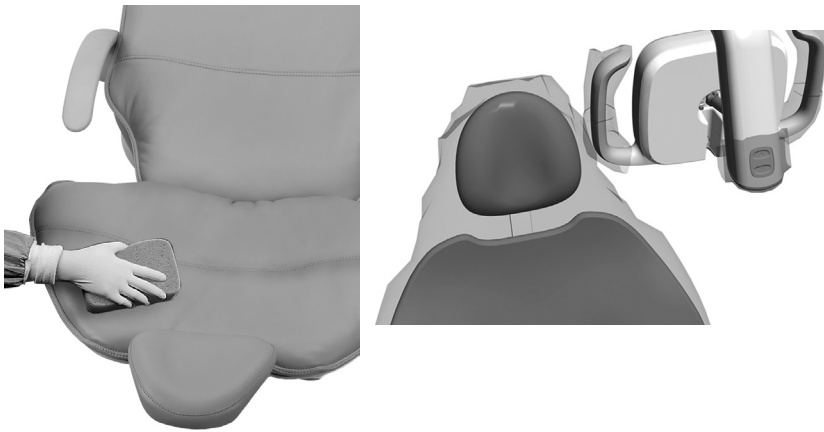
CAUTION Use a handpiece with anti-retraction device to avoid cross infection caused by retraction.



Service the oil collector on the delivery system once a week for normal usage and more often for heavier use. To service:

1. Unsnap the oil collector cover from the control head and discard the old gauze. Do **not** remove the foam muffler.
2. Fold a new gauze pad (2" x 2" [51 mm x 51 mm]) into quarters and place it inside the cover.
3. Snap the oil collector cover closed.

Touch and Transfer Surfaces



Touch surfaces are those areas that come into contact with hands and become potential cross-contamination points during dental procedures.

Transfer surfaces are those surfaces that are contaminated by contact with instruments and other inanimate objects.

A-dec recommends barrier protection for all applicable touch and transfer surfaces. When used, barriers must be produced under Good Manufacturing Practices (GMP) for protection. Refer to your national regulatory authorities for barrier recommendations specific to your location. Barrier plastics should be removed and discarded after each patient treatment.

For recommendations on cleaning and chemical disinfection of touch and transfer surfaces (where barrier protection is not applicable or when barriers are compromised), please see the *A-dec Equipment Asepsis Guide* (p/n 85.0696.00) included with your equipment.

Waterline Maintenance



A-dec's recommendation for waterline maintenance is based on continuous use of the A-dec ICX waterline treatment tablet. ICX is intended for use with potable water and should be used in conjunction with regular dental unit water testing and following a flush (or shock) treatment with an antimicrobial product registered with the U.S. Environmental Protection Agency (EPA). For detailed procedures using ICX, see the instructions that came with that product. For more information on waterline maintenance, see the *Self-Contained Water System Instructions For Use*, p/n 86.0609.00.

Cuspidor and Drain



Spouts and Bowl

The contoured spouts and smooth bowl of the cuspidor provide for quick and easy cleaning. Remember to empty and clean the bowl screen every time you clean the cuspidor.



CAUTION Do not remove the spouts when cleaning the cuspidor. This will help prevent cleaning solutions from damaging the equipment and contaminating the cupfill water.



CAUTION Do not empty the solids collector screen or bowl screen into the cuspidor. Doing so could plug the cuspidor drain. Dispose of the contents in an appropriate biohazard container according to the regulations specific to your location. After cleaning, always install the bowl screen in the cuspidor bowl to prevent debris from plugging the drain.

Gravity Drain Tubing

At the end of each day, flush the cuspidor to remove debris from the flexible drain tubing. If the cuspidor is not flushed regularly, debris may build up and impair draining. To flush the cuspidor, run the bowl rinse for about 60 seconds.

Maintenance Parts

For replacement cuspidor bowl screens, order p/n 75.0035.03.

Cuspidor and Drain



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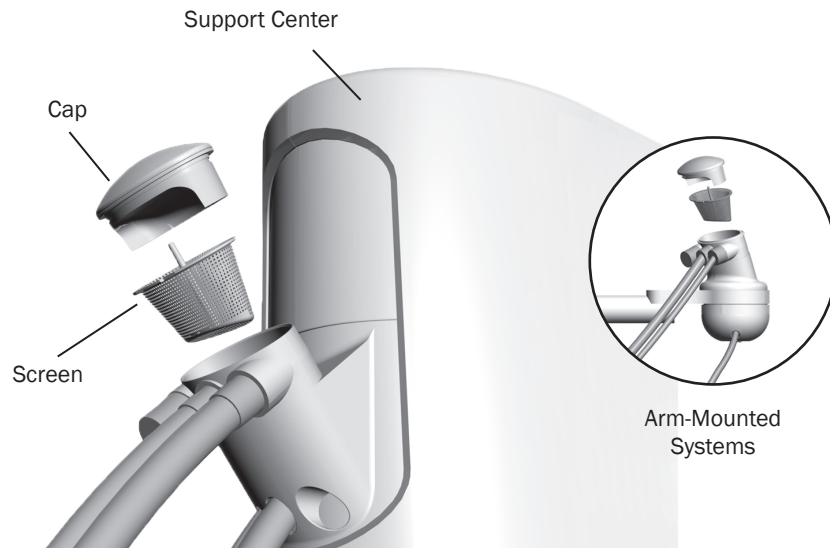
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Maintenance Parts

For replacement cuspidor bowl screens, contact your authorized A-dec dealer and order p/n 75.0035.03 (package of 5).

Solids Collector



DANGER Infectious waste may be present. Follow asepsis protocol to prevent cross contamination.

The solids collector aids in preventing solids from entering the central vacuum system. To ensure proper suction from the central vacuum and maintain proper treatment room asepsis, discard and replace the solids collector screen at least twice a week.



TIP For solids collector replacement screens, contact your local authorized A-dec dealer and reference Pinnacle p/n 5512 or A-dec p/n 11.1284.01.

To replace the solids collector screen:

1. Turn off the vacuum or open the HVE control valve.
2. Remove the solids collector cap and screen.
3. Discard the screen according to your local regulations.



CAUTION Do not empty the screen into your cuspidor. Doing so could plug the drain.

4. Inspect the collector cap O-ring, replace the O-ring as needed, and lubricate with A-dec silicone lubricant as needed.
5. Insert a new screen in the collector and replace the cap.

Syringe Tip Cleaning and Sterilization



CAUTION Disposable syringe tips are not sterilizable and should not be reused.

All syringe tips are considered critical items and must be heat sterilized or disposed of after each use.

Precleaning

Always preclean the syringe tips before sterilization.

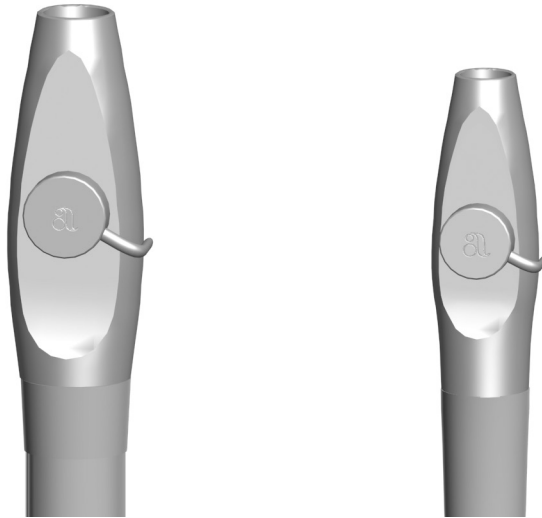
1. Remove the tip from the syringe.
2. Immerse the tip in a holding solution until ready for ultrasonic cleaning.
3. Clean the tip ultrasonically. Follow the manufacturer's instructions that came with the ultrasonic cleaning device.
4. Purge all cleaning agents from the tip before sterilization.

Sterilization

Follow these steps to sterilize syringe tips:

1. Rinse the syringe tips in clear water.
2. Flush with isopropyl alcohol or equivalent sterilant-disinfectant solution.
3. Heat sterilize using a steam autoclave for at least 4 minutes at a dwell temperature of 134°C (273°F).

HVE/Saliva Ejector Valve Body Assembly Asepsis



NOTE Vacuum lines should be cleaned at the end of each day by evacuating a detergent or water-based detergent-disinfectant through the system.

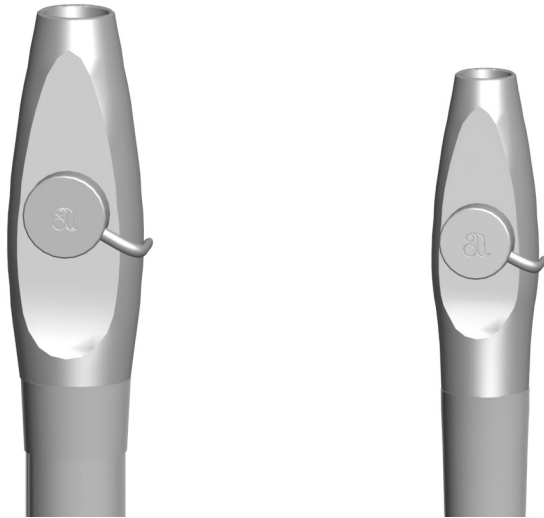
If you use barrier film to protect the main body of the HVE and saliva ejector, replace the barrier film after each patient. Clean and disinfect these instruments at the end of each day or after each patient if the barrier film has been compromised. If you do not use barrier film, or if you perform oral surgery, always clean and disinfect these instruments after each patient.

Disinfection

To disinfect the HVE and saliva ejector valve body assembly without disconnection from the vacuum system:

1. Remove the vacuum tip from the HVE or saliva ejector.
2. Disinfect the valve body assembly by using an intermediate-level disinfectant according to instructions for the disinfectant; A-dec recommends a phenolic (dual) water-based disinfectant.
3. Follow the manufacturer's instructions for disinfectant contact time.
4. Operate the HVE and the saliva ejector valves several times to verify that they rotate smoothly.

HVE/Saliva Ejector Valve Body Assembly Asepsis *(continued)*



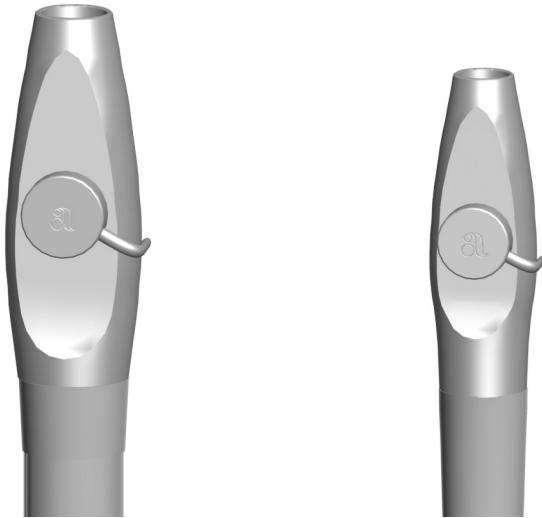
NOTE A-dec valve body assemblies are heat tolerant for sterilization. Users may sterilize at their discretion.

Routine Maintenance and Sterilization

To routinely maintain and sterilize the HVE and saliva ejector when disconnected from the vacuum system (frequency determined by the user):

1. Turn off the vacuum or open the control valve before disconnecting the HVE or saliva ejector.
2. Remove the vacuum tip from the HVE or saliva ejector. Discard disposable vacuum tips.
3. Remove the HVE or saliva ejector valve body assembly from the vacuum line by pulling it away from the tubing at the tailpiece.
4. Disassemble the valve body assembly by pushing the control valve out of the HVE or saliva ejector valve body.
5. Inspect the O-rings. Remove and discard if damaged.
6. Clean undamaged O-rings with a soft brush and a health authority approved detergent. O-rings may be cleaned in place or removed and cleaned at the discretion of the user.
7. Clean all exterior and interior surfaces of the valve body and control valve using a health authority approved detergent and the brushes provided with the product (or equivalent). Lumens or channels of the valve body must be cleaned with a brush of the proper length and diameter. The brush must be long enough to extend through the lumen.
8. Rinse thoroughly with water.

HVE/Saliva Ejector Valve Body Assembly Asepsis *(continued)*



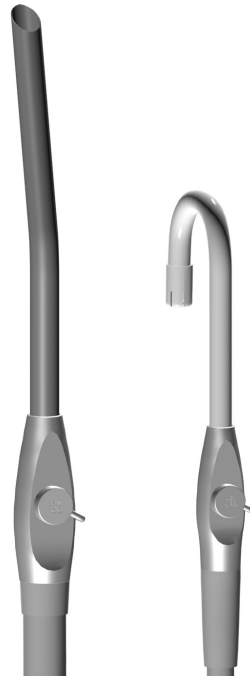
9. Process the disassembled valve body assembly components through a washer-disinfector. If a washer-disinfector is unavailable, valve body assembly components must be manually disinfected using a health authority approved disinfectant.
10. Allow the components to dry completely.
11. Sterilize the valve body assembly components at 132-134°C (270-273°F) for 4 minutes in a pre-vacuum sterilizer or 6 minutes in a gravity displacement sterilizer.
12. Prior to use, replace O-rings as needed, lubricate O-rings with A-dec silicone lubricant, and reassemble the valve body assembly.



CAUTION Use only silicone lubricant when lubricating instrumentation O-rings. Petroleum-based products will cause permanent damage to the O-rings.

13. Reinstall the valve body assembly on the tubing tailpiece.
14. Operate the HVE and the saliva ejector control valves several times to verify that they rotate smoothly.

HVE/Saliva Ejector Tip Asepsis



NOTE Select tips that are compatible with your HVE and saliva ejector openings. See “HVE and Saliva Ejector Openings for Tips” on page xx for specifications.

Disposable Tips

Replace disposable HVE and saliva ejector tips after each use.



CAUTION Disposable HVE and saliva ejector tips are not sterilizable and should not be reused.

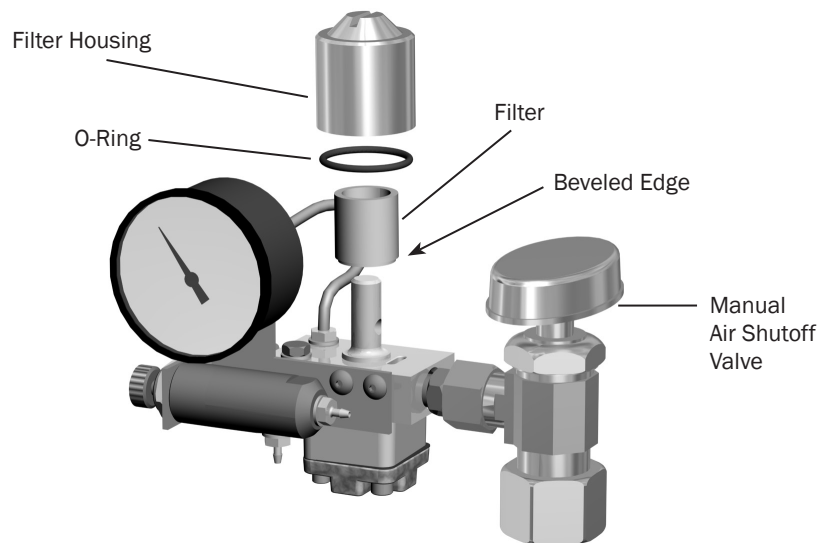
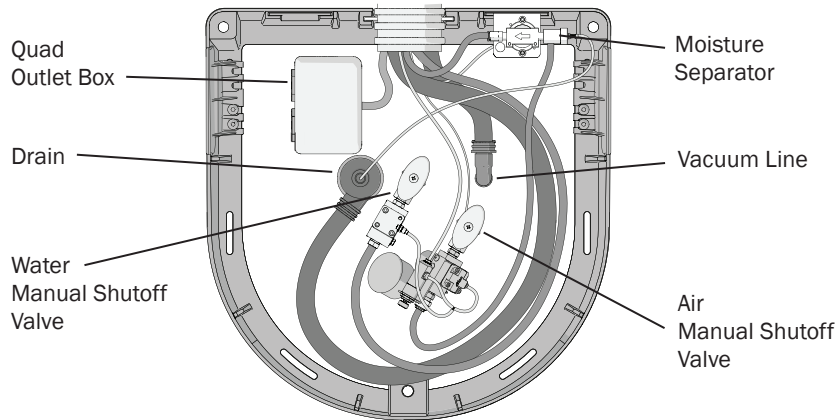


Sterilizable Tips

Heat sterilize stainless steel HVE tips after each use. To clean and sterilize a stainless steel HVE tip:

1. Remove the tip from the HVE.
2. Clean and rinse the tip using a mild detergent and water, then allow the tip to dry completely.
3. Sterilize the tip at 132-134°C (270-273°F) for 4 minutes in a pre-vacuum sterilizer or 6 minutes in a gravity displacement sterilizer.

Utilities and Shutoff Valves



The utilities for A-dec chair-mounted systems are located in the contoured floor box under your chair. To access, lift the cover up and off the floor box frame.



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

The manual shutoff valves control the air and water to the system. Leave these valves completely open (turned counterclockwise) during normal use to prevent leaks. From the valves, air and water pass through separate filters before entering the re-regulators. Replace these filters when they become clogged and restrict flow.

To check for clogged water filter:

1. Turn on the master toggle.
2. While watching the cuspidor, press the bowl rinse button. If the bowl rinse water flow fades or stops, replace the water filter.

To replace the filter:

1. Turn off the master toggle and close the shutoff valve (turn clockwise).
2. Bleed the system of air and water pressure by operating the syringe buttons until air and water no longer flow.
3. Using a standard screwdriver, remove the filter housing from the water pre-regulator assembly and remove the filter.
4. Replace the filter if it is clogged or discolored. Install the filter with the beveled edge facing the manifold.
5. Open the shutoff valves, turn on the master toggle, and operate the bowl rinse to remove air from the waterline.

The Effective Size, Material and Maintenance Filter

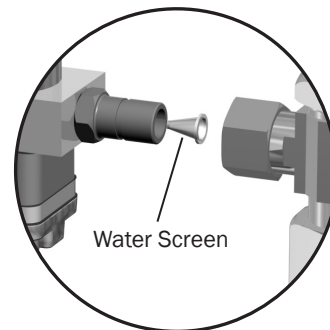
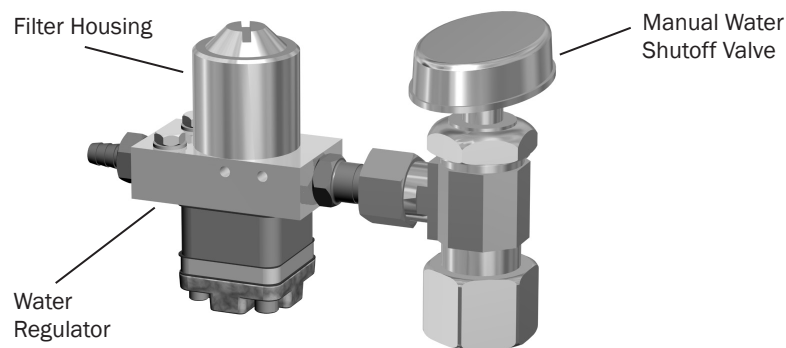
The filter is manufactured of 50 Micron Polypropylene or Polyethylene. They are to be replaced annually or after 1500 hours of clinical use.

To inspect and replace the filter:

1. Turn off the Master toggle and close the shutoff valves (turn clockwise).
2. Bleed the system of air and water pressure by operating the syringe buttons until air and water no longer flow.
3. Using a standard screwdriver, remove the filter housing from the air or water pre-regulator assembly and remove the filter.
4. Replace the filter if it is clogged or discolored. Install the filter with the beveled edge facing the manifold.



CAUTION To ensure proper operation, install the filter with the beveled edge facing the manifold.

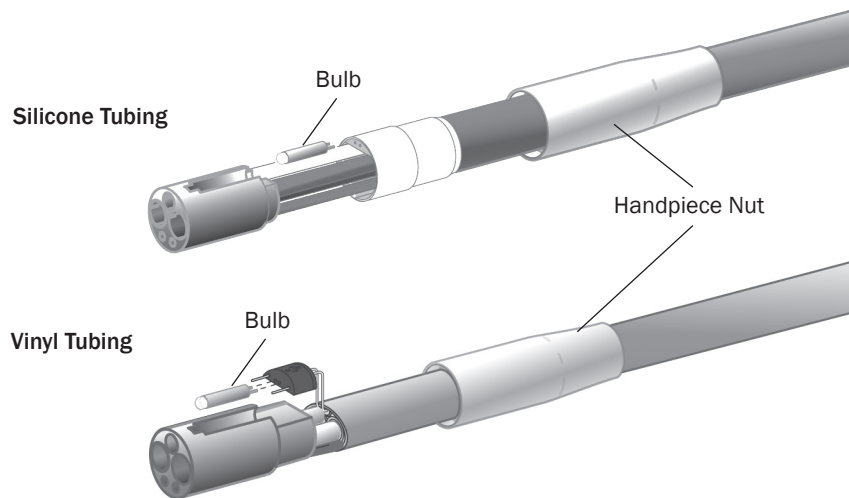


The manual water shutoff valves include a screen to prevent larger debris from entering the system. Periodically check and replace this screen to ensure unrestricted water flow.

To replace the water screen:

1. Turn off the Master toggle and close the shutoff valves (turn clockwise).
2. Use a 5/8" or adjustable wrench to loosen the compression nut on the manual water shutoff valve. Then pull the water regulator out of the shutoff valve.
3. Remove the old screen and replace with the new screen.
4. Reposition the water regulator in the manual shutoff valve outlet and tighten the compression nut.
5. Open the manual water shutoff valve (turn counterclockwise) and turn on the Master toggle. Check the fittings for leaks.

Bulb for Fiber-Optic Tubing



To replace the bulb in your fiber-optic 5-hole silicone or vinyl tubing:

1. Disconnect the handpiece and quick-connector coupling from the tubing.
2. Pull back the metal handpiece nut.
3. Slide back the metal portion of the handpiece terminal (silicone tubing only).
4. Replace the bulb.
5. Reinsert the metal portion of the terminal into the plastic portion (silicone tubing only).
6. Carefully slide the handpiece nut back over terminal.

Specifications



Minimum Air, Water, and Vacuum Service Requirements

Air:	70.80 L/min (2.50 scfm) at 551 kPa (80 psi)
Water:	5.68 L/min (1.50 gpm) at 276 kPa (40 psi)
Vacuum:	339.84 L/min (12 cfm) at 27 kPa (8" of mercury)

The air input to the dental system is clean without oil or water.

For electrical specifications, identification of symbols, and other regulatory requirements, refer to the Regulatory Information and Specifications document (p/n 86.0221.00) included with your equipment.



NOTE Specifications are subject to change without notice. Some requirements may vary depending on your location. For more information, contact your authorized A-dec dealer.



Maximum Load Weight for the Dental System

Patient Load:	400 lb (181 kg)
Dental Chair Weight:	165lb (75kg)
Tray Load:	4lb (1.8kg)
461 Support Center Load:	70 lb (31kg)
363 Support Center Load:	149lb (67kg)
Delivery System Load:	5lb (2.3kg)

Warranty

A-dec warrants all products against defects in materials or workmanship for one year from time of delivery. A-dec's sole obligation under the warranty is to provide parts for the repair, or at its option, to provide the replacement product (excluding labor). The buyer shall have no other remedy. All special, incidental, and coincidental damages are excluded. Written notice of breach of warranty must be given to A-dec within the warranty period. The warranty does not cover damage resulting from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from the use of cleaning, disinfecting or sterilization chemicals and processes. The warranty also does not cover light bulbs. Failure to follow instructions provided in the A-dec Instructions For Use (operation and maintenance instructions) may void the warranty.

A-dec warrants A-dec dental chair cylinders, both lift and tilt for ten years from the date of purchase of the chair or the cylinder. This warranty is retroactive to A-dec chair cylinders already in the field. The warranty covers chair cylinders A-dec finds to have manufacturing irregularities. Stool cylinders are covered under A-dec's one-year warranty. No other warranties as to merchantability or otherwise are made. For service information, contact your local authorized A-dec dealer. Check with local codes and the Americans with Disabilities Act (ADA) requirements for installation of this product.



CAUTION U.S. Federal law restricts this device to sale by or on the order of a dentist, physician, or any other practitioner licensed by the law of the state in which he or she practices to use or order the use of this device.

Minimum Installation Space

33384mm*2311mm*2279mm (length * width * height)

A-dec recommends to leave at least 700mm of space on both sides of the dental chair, 900mm for the patient's headrest (lowest seat) and 300mm for the patient's foot (the highest seat).

Identification of Symbols

These symbols appear on the actual product or are used in documentation to alert the user about cautions, warnings, hazards, or tips.

Symbol	Description
	Recognized by Underwriters Laboratories Inc. with respect to electric shock, fire and mechanical hazards only in accordance with ANSI/AAMI ES60601-1, CAN/CSA C22.2 No. 60601-1, and Amendment 1.
	Classified by Underwriters Laboratories Inc. with respect to electric shock, fire and mechanical hazards only in accordance with ANSI/AAMI ES60601-1, CAN/CSA C22.2 No. 60601-1, Amendment 1, and 80601-2-60.
	ICV & Preference ICC: UL listed to UL 61010A-1 and Canadian CAN/CSA C22.2, No.1010.1-92 safety standards. Simulator: UL listed to UL 61010-1 (3rd Edition), BS EN 61010-1 (3rd Edition) and Canadian CAN/CSA C22.2, No. 61010-1-12 (3rd Edition) safety standards.
	Conforms to applicable European Directives (refer to Declaration of Conformity).
	Conforms to MDD 93/42/EEC for Class IIa devices.
	Protective earth (ground).
	Functional earth (ground).
	Type B applied part.
	Caution: Hot surface.
	Electrical and electronic waste. Do not dispose of with domestic waste.
	Date of manufacture.
	Manufacturer of equipment.
	Sterilizable up to the stated temperature.
	VAC symbol.
	VDC symbol.
	VAC/VDC symbol.

Symbol	Description
REF	Model Number (Catalog Number).
SN or S/N	Serial Number.
PN or P/N	Part Number.
	General mandatory action sign. Not a caution. Take note of additional important instructions. e.g., NOTE: Assemble parts as shown.
	Advisable to consult accompanying documents. e.g., IMPORTANT: For more information, see the A-dec Equipment Asepsis Guide (p/n 85.0696.00).
	Mandatory to consult the manual. e.g., IMPORTANT: When installing this light on an A-dec 311 light post, use the instructions that came with the post instead of this guide.
	Caution. Failure to follow instructions could result in damage to product or minor injury. e.g., CAUTION: Do not overtighten the adjustment screw. Overtightening could break the screw.
	Biohazard. Failure to follow instructions could increase risk of infection. e.g., DANGER: Infectious waste may be present. Follow asepsis protocol to prevent cross contamination.
	Danger. Failure to turn off the power before you begin this procedure can lead to electrical shock. e.g., DANGER: Disconnect the main power or shut off the main power before servicing. 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. e.g., WARNING: Turn off the power before removing the pump cover. Failure to turn off the power before you begin this procedure can lead to product damage and result in serious injury or death.
	Single use only. e.g., CAUTION: Disposable HVE and saliva ejector tips are not sterilizable and should not be reused.
	Temperature shipping and storage limits.
	Relative humidity shipping and storage limits.
	This side up.
	Fragile.
	Keep dry.

Service Parts

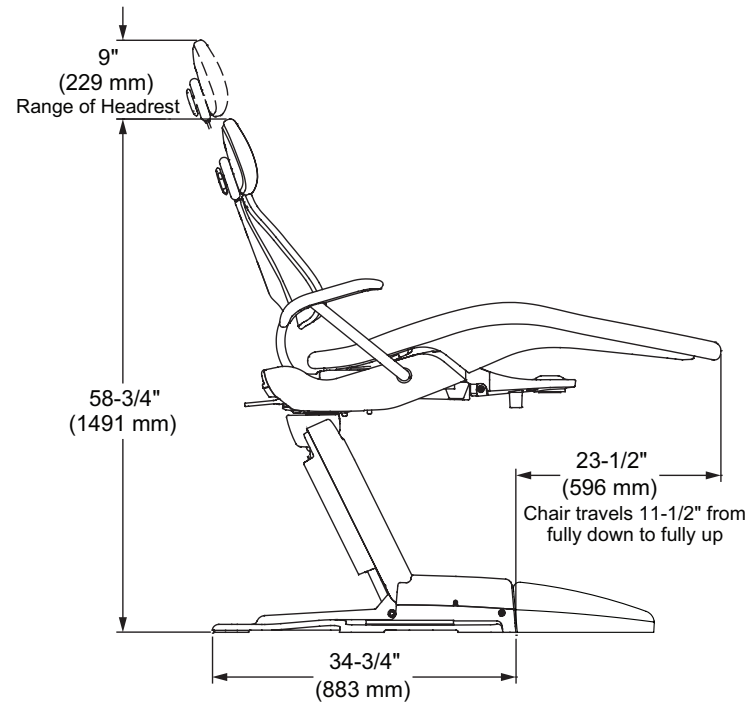
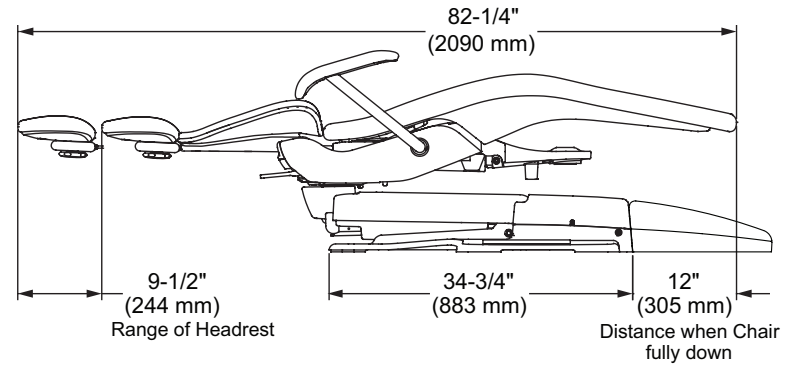
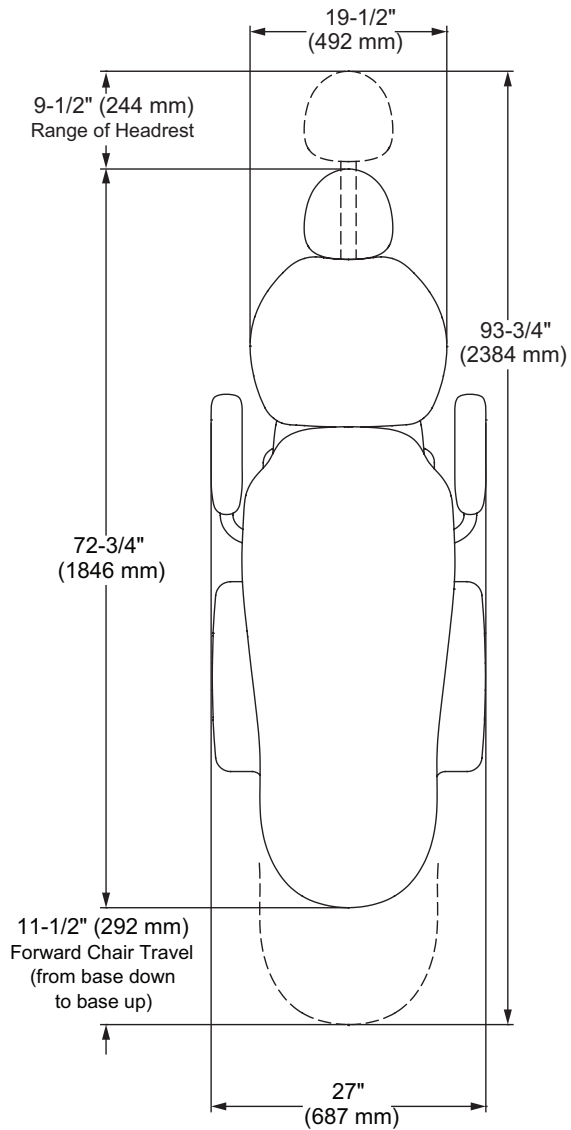
Below are a few of the most common service parts for A-dec 300 modules. For a complete list refer to the *A-dec Service Parts Catalog* (p/n 85.5000.00) or the *A-dec 300/400/500 Delivery Systems Service Guide* (p/n 86.0382.00), and *A-dec 311/411/511 Dental Chairs Service Guide* (p/n 86.0380.00).

Part Number	Description	Part Number	Description
61.0197.00	Chair hydraulic oil for all A-dec hydraulic chairs - 1 pint (16 ounces)	030.035.02	O-ring for vacuum connector (package of 10)
38.1775.00	Handpiece block kit	034.013.01	O-ring for HVE valve for tip (package of 10)
38.0711.01	Control block diaphragm (package of 5)	034.107.01	O-ring for SE valve for tip (package of 10)
90.0593.00	Foot control III valve service kit	024.218.03	SE tubing, 10', gray
98.1094.00	1/8" X 10-32 barb fittings (package of 10) gray	009.018.00	Hex wrench kits
98.1095.00	Handpiece tubing (4-hole) 84" gray	23.1234.00	Syringe button valve kit
98.1096.00	Handpiece tubing (5-hole fiber-optic) 84" gray	23.0872.01	Syringe tips (package of 5)
98.0885.00	Handpiece tubing (6-pin fiber-optic) 84"	12.0985.00	Cupfill spout
12.1210.00	Assistant's HVE 3 position holder	12.0986.00	Bowl rinse spout
12.1258.00	Assistant's saliva ejector and tubing	14.0468.00	2 L water bottle
11.1025.04	HVE valve and tubing, white	12.0991.00	Drain seal
75.0078.00	Vacuum connector for single HVE	12.0989.00	Drain tube
11.1017.00	Vacuum screen and lid single for HVE		

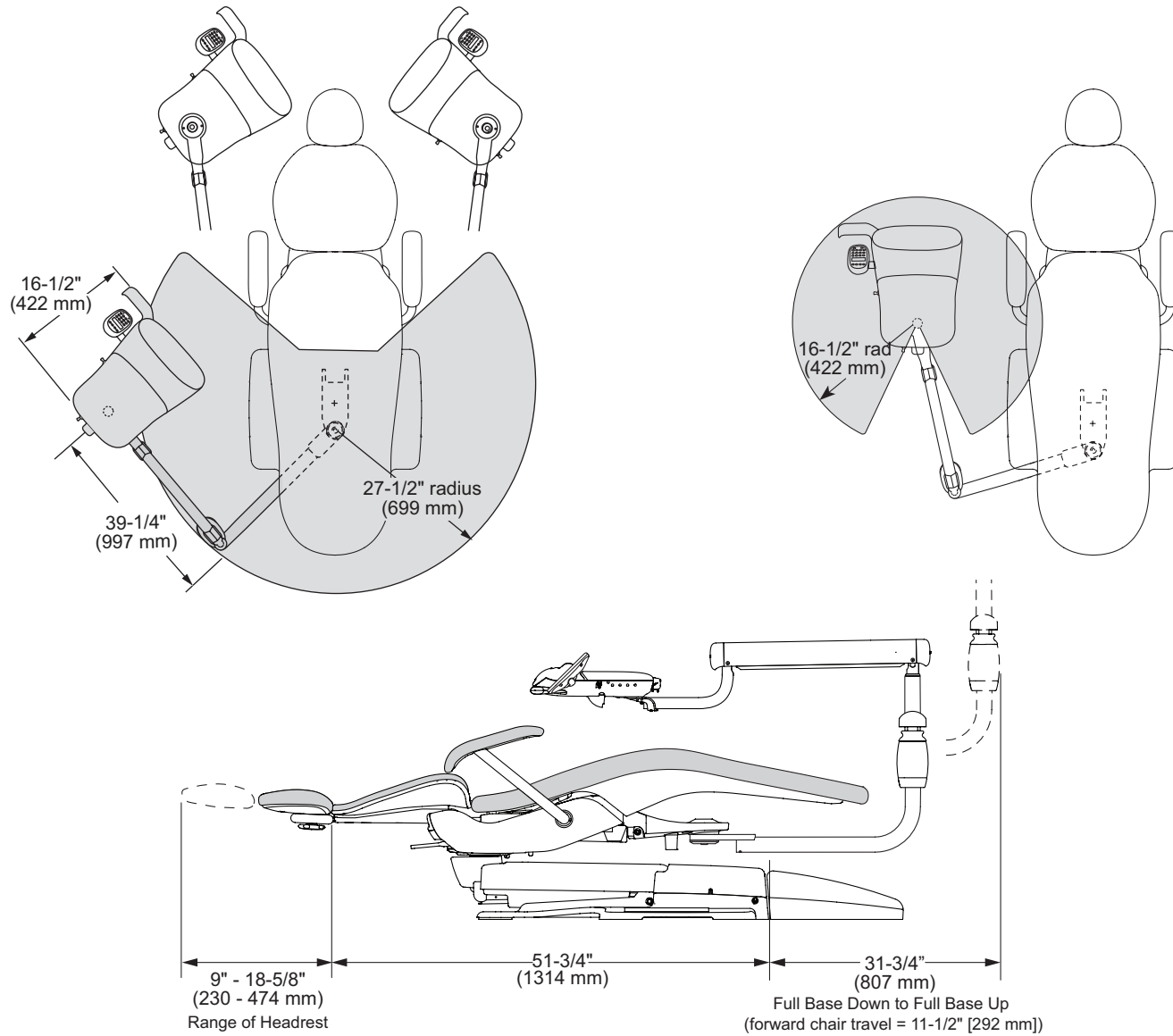
* For the repair parts mentioned above, it is recommended that the user reserve spare parts.

Equipment Dimensions

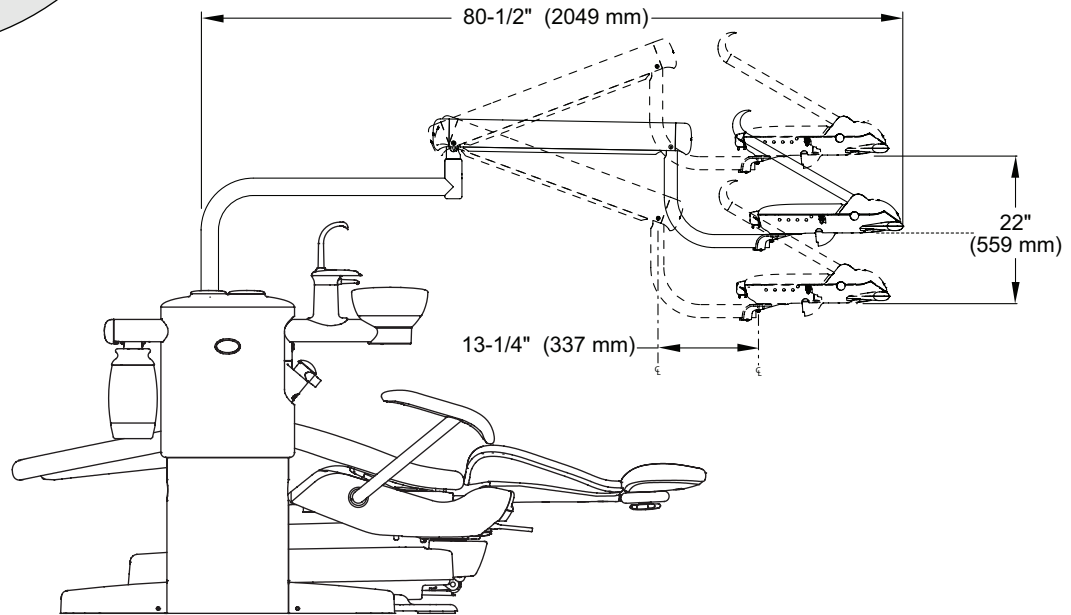
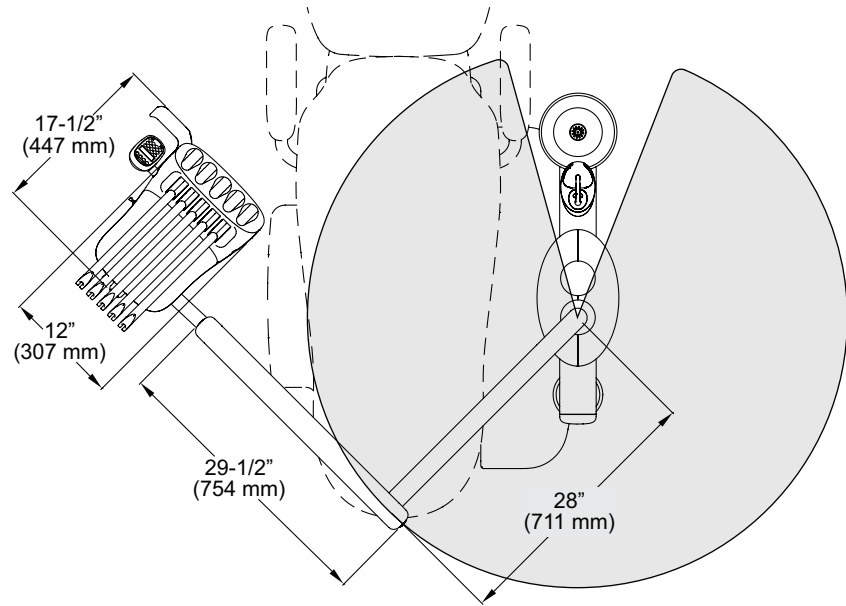
A-dec 311 Dental Chair



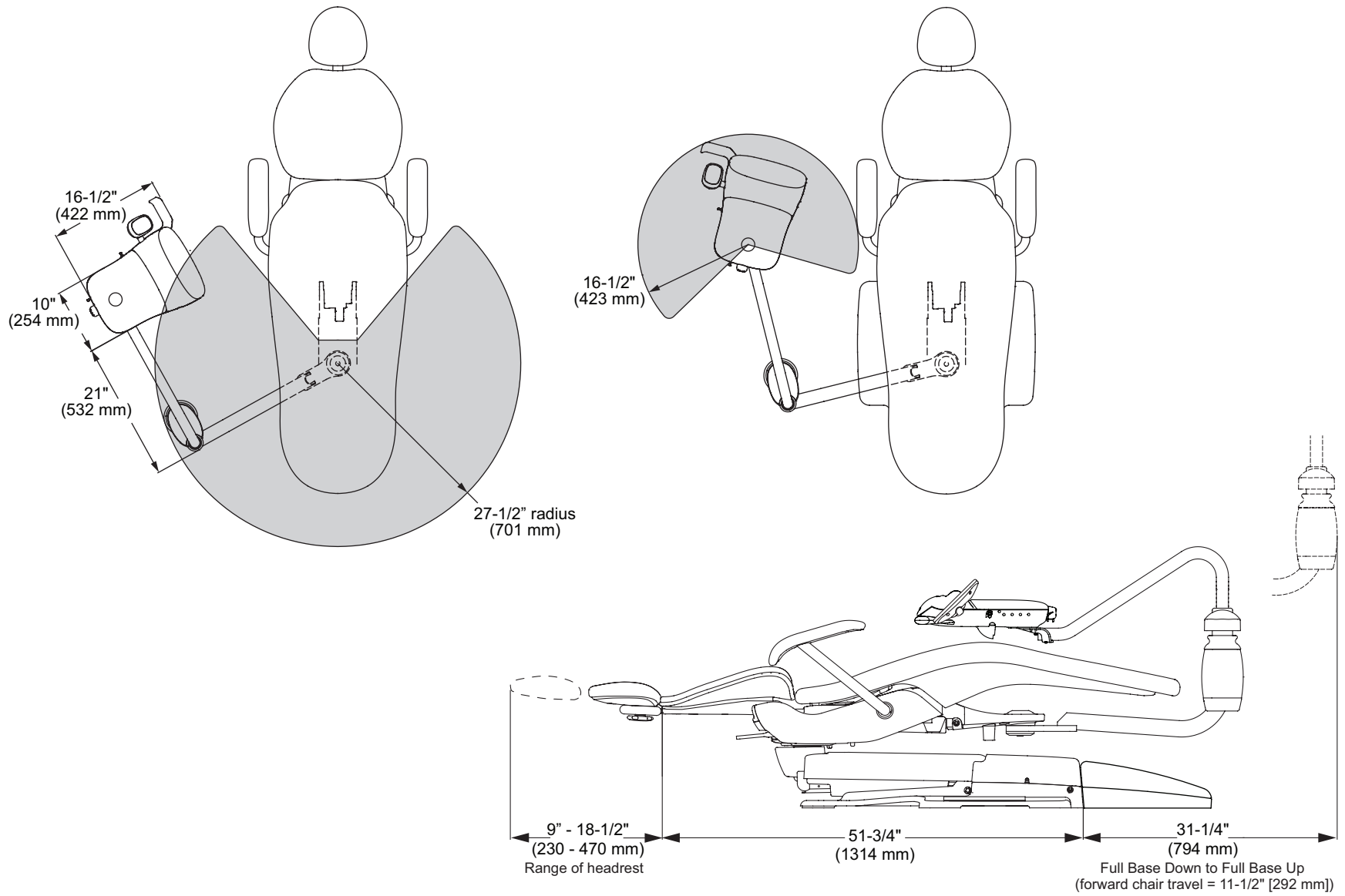
A-dec 332/333 Delivery System on 311 Dental Chair



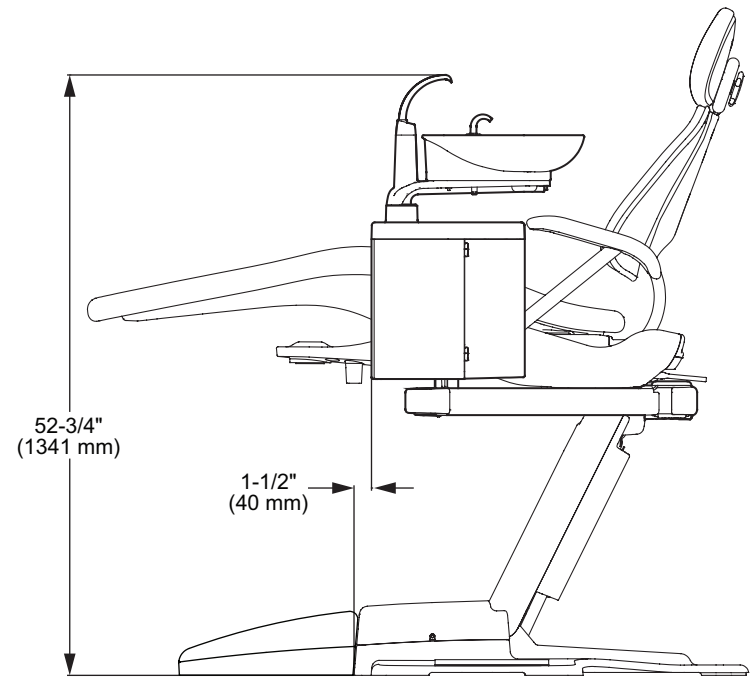
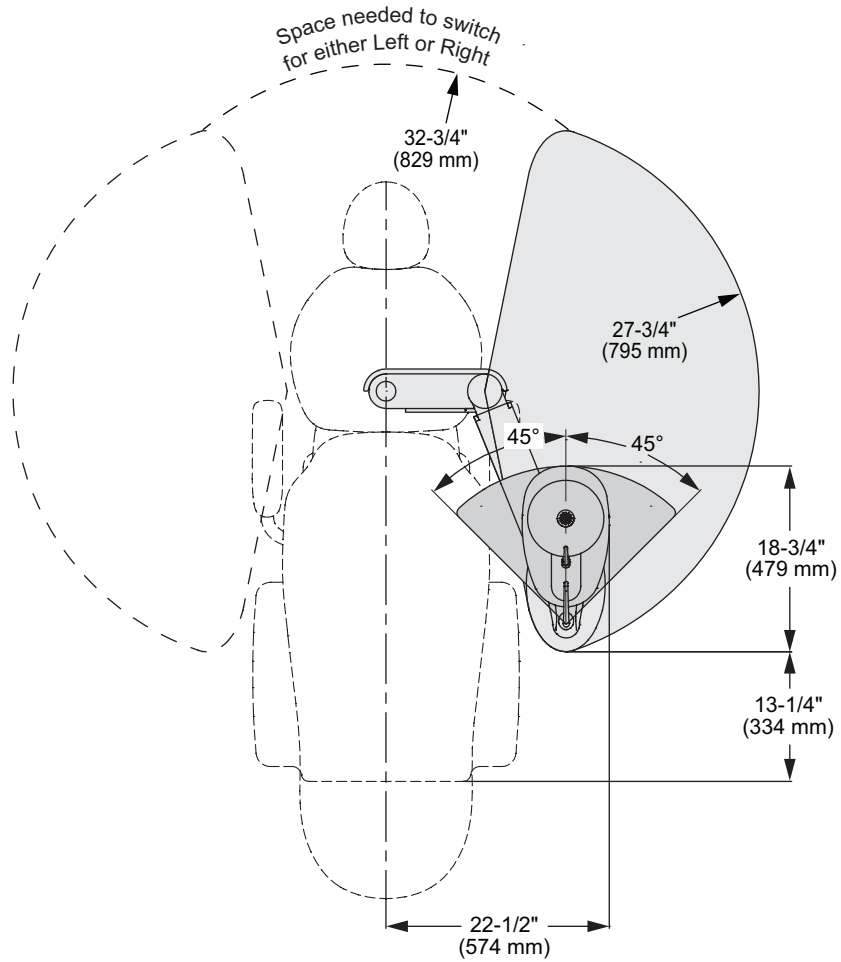
A-dec 334/335 Delivery System



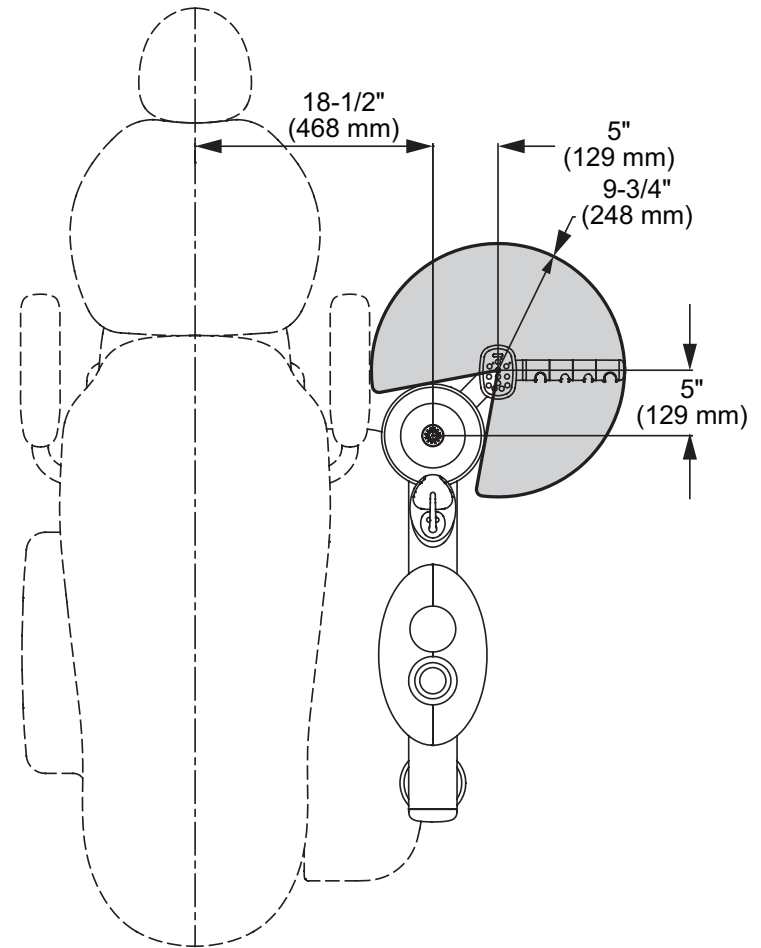
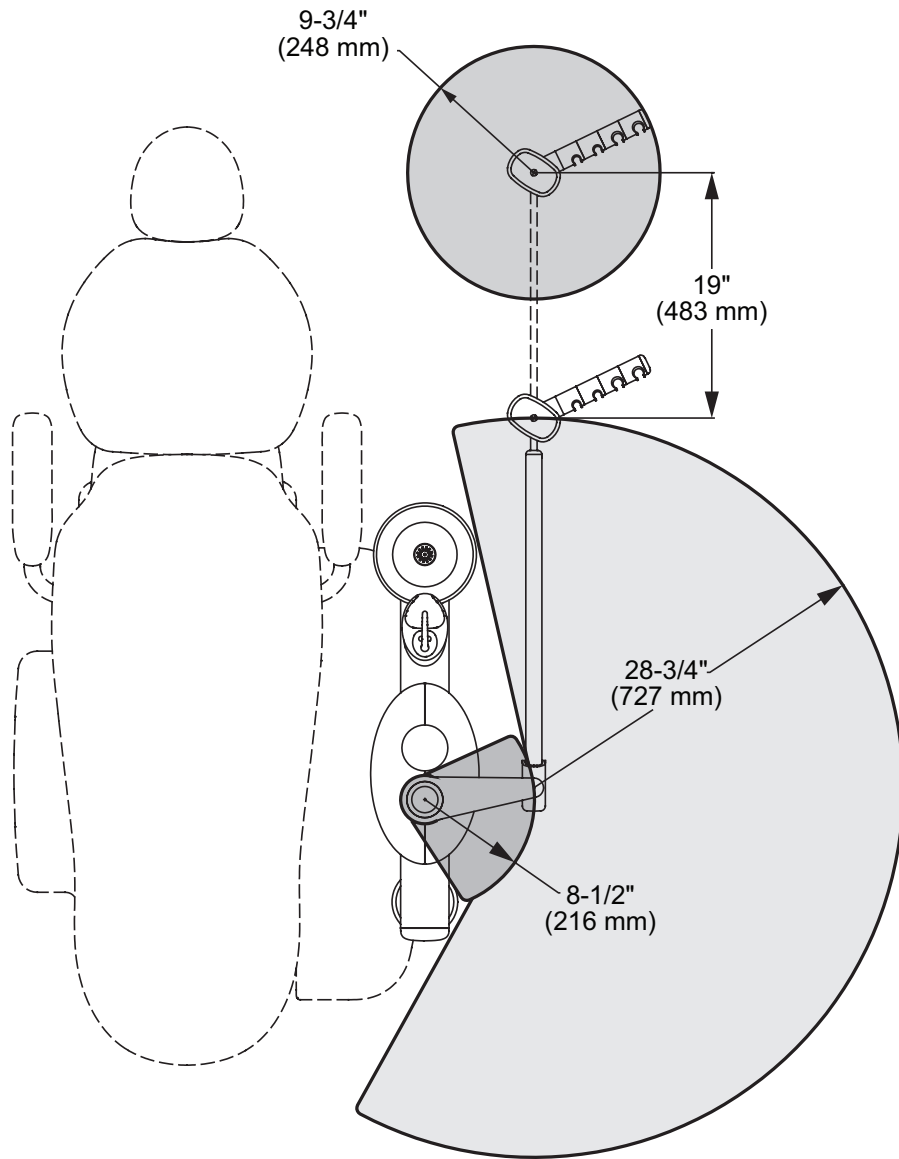
A-dec 336 Delivery System on 311 Dental Chair



A-dec 461 Support Center and Cuspidor on 311 Dental Chair

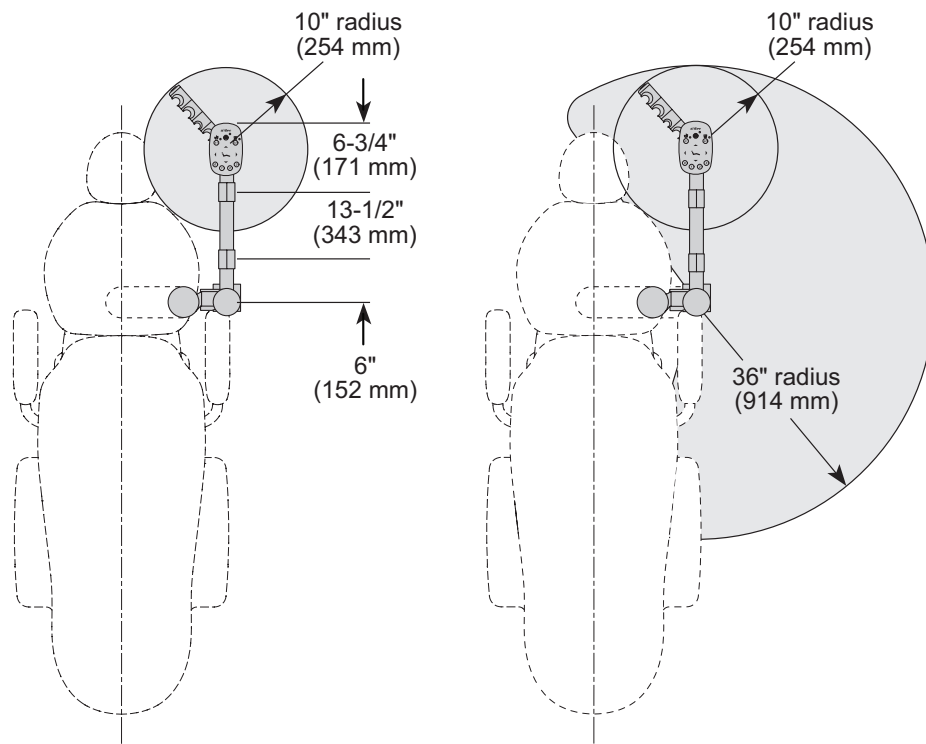


A-dec 352/353 Assistant's Instrumentation

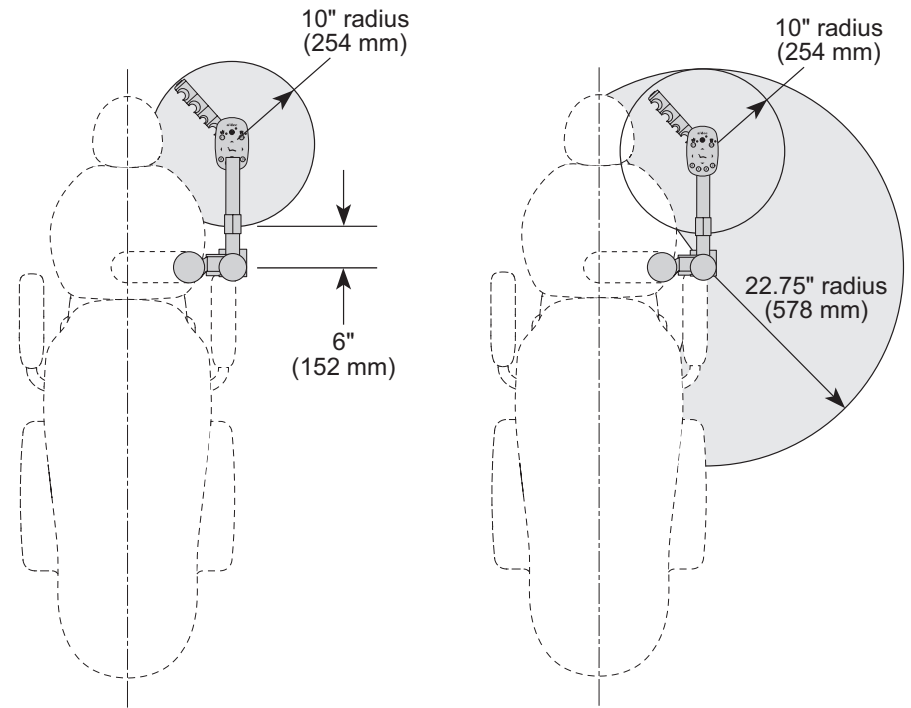


A-dec 551 Assistant's Instrumentation on 311 Dental Chair

Long Arm



Short Arm



Electrical Rating

A-dec Product	Frequency (Hz)	Voltage Range (VAC)	Maximum Current (Amps)
Dental Chairs			
A-dec 311	50-60	100/110-120/220-240	Input = 10/10/10 Duplex output = 10 Amps max. Chair pump typical = 4/4/2
Delivery Systems, Assistant's Instrumentation, and Cuspidors			
Systems with 300W Power Supply	50-60	100/110-120/220-240	Input = 3.1/2.8/1.4

Environmental Specifications

Temperature/Humidity	Specification
Storage/Transportation Temperature	-20 °F to 122 °F (-29 °C to 50 °C) - Relative humidity: 10 – 90%.
Operating Temperature	50 °F to 104 °F (10 °C to 40 °C) - Relative humidity: 80% for up to 87 °F (31 °C), decreasing linearly to 50% at 104 °F (40 °C).
Indoor Use	Altitude up to 2,000 m (6,563'), installation category II, pollution degree 2.

Electromagnetic Compatibility

This equipment has been tested and found to comply with the limits for medical devices in YY0505-2012. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. In the event of interference, power the devices from separate mains supplies and/or increase the physical distance between devices. Contact A-dec Customer Service if you have any questions.

Decommissioning and Disposal of A-dec Equipment

A-dec dental equipment removed from service should be decommissioned in accordance with local regulatory requirements. Circuit boards and electrical cabling should be recycled as electrical salvage. Aluminum, brass, iron, and steel components should be recycled as metal salvage. Molded plastic components include mold marks indicating the type of plastic and should be recycled accordingly. The cuspidor, waste lines from the cuspidor, and extraction lines should be treated as biologically contaminated materials and handled with appropriate precautions during dismantling. Any material unsuitable for recycling should be disposed of appropriately. For specific questions regarding material type, please contact A-dec Customer Service. For decommissioning information on associated equipment from other manufacturers, refer to the documentation from the manufacturer.

Electromagnetic Compatibility (EMC)

Special precautions relating to electromagnetic compatibility (EMC) are required for this device and this device must be installed and used as set forth in the EMC section herein.

This device must be operated with the attached cable and accessories. The cable information is described as below:

Cable Name	Length
Standby mode	1.8 m

Except for cables (transducers) offered as spare parts for internal components, the use of other accessories and cables (transducers) may lead to increased emission of the device or system or decreased immunity.

The device or system shall not be put close to or stacked with other devices; if the same must be so put or stacked, please observe and verify whether it operates normally with its configuration adopted.

Basic performance:

Name	Description
Moving up or down of the electric dental chair, leaning forward or backward of the backrest	It should be able to move up and down and lean forward and backward normally.
Standby mode	The electric dental chair is placed in the clinic position (the height of the chair is adjusted to the middle and the backrest also to the middle position). At this moment, the chair has no movement.

Guidance and Statement of the Manufacturer - Electromagnetic Emission

This device is expected to be used in the electromagnetic environments as provided below and buyers or users shall make sure it is used in such electromagnetic environments:

Emission Test	Comformity	Electromagnetic Environment - Guidance
RF Emission GB 4824	1 group	This device uses RF energy only for its internal functions and thus it has low RF emission and has a very low possibility to interfere nearby electronic devices.
RF Emission GB 4824	Class B	This device is suitable for use in all facilities, including being used at home and connected to residential public LV power supply networks directly for household use.
Harmonic radiation GB 17625.1	Class A	This device is suitable for use in all facilities, including being used at home and connected to residential public LV power supply networks directly for household use.
Voltage fluctuation/flicker emission GB 17625.2	Conforming	


Guidance and Statement of the Manufacturer - Electromagnetic Immunity

This device is expected to be used in the electromagnetic environments as provided below and buyers or users shall make sure it is used in such electromagnetic environments:

Immunity Test	Test Level	Comforming Level	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD) GB/T 17626.2	±6kV contact discharge ±8kV air discharge	±6kV (contact) ±8kV air	This device uses RF energy only for its internal functions and thus it has low RF emission and has a very low possibility to interfere nearby electronic devices.
Electrical fast transient burst GB/T 17626.4	±2kV power line ±1kV input/output line	±2kV power line N/A	The quality of the network power supply shall meet the requirements of typical commercial or hospital environments.
Surge GB/T 17626.5	±1kV line to ground ±2kV line to ground	±1kV line to ground ±2kV line to ground	The quality of the network power supply shall meet the requirements of typical commercial or hospital environments.
Voltage sag, short interruption and voltage change on power supply input line GB/T 17626.11	<5% UT, duration: 0.5 period (on UT, > 95% voltage sag) 40% UT, duration: 5 periods (on UT, 60% voltage sag) 70% UT, duration: 25 periods (on UT, 30% voltage sag) <5% UT, duration: 5s (on UT, >95% voltage sag)	<5% UT, duration: 0.5 period (on UT, > 95% voltage sag) 40% UT, duration: 5 periods (on UT, 60% voltage sag) 70% UT, duration: 25 periods (on UT, 30% voltage sag) <5% UT, duration: 5s (on UT, >95% voltage sag)	The quality of the network power supply shall meet the requirements of typical commercial or hospital environments. In case of need of continuous operation of this device during power interruption, UPS or battery is recommended for power supply.
Power frequency magnetic field (50Hz) GB/T 17626.8	3A/m	3A/m	The power frequency magnetic fields shall have the level and characteristics of those used in typical commercial or hospital environments.
Notes: UT refers to AC network voltage before applying the test voltage.			

Guidance and Statement of the Manufacturer - Electromagnetic Immunity

This device is expected to be used in the electromagnetic environments as provided below and buyers or users shall make sure it is used in such electromagnetic environments:

Immunity Test	Test Level	Conforming Level	Electromagnetic Environment - Guidance
RF conduction GB/T 17626.6 RF radiation GB/T 17626.3	3V (effective value) 150kHz - 80MHz 3V/m 80MHz-2.5GHz	3V (effective value) 3V/m	Portable and mobile RF communication instrument shall not be used with a closer distance to any part (including cables) of this device than the recommended isolation distance. Such a distance shall be calculated based on the corresponding formula relevant to the transmitter frequency. Recommended isolation distance $d = 1.2 \sqrt{(P)} \text{ 150kHz-80MHz}$ $d = 1.2 \sqrt{(P)} \text{ 80MHz-800MHz}$ $d = 2.3 \sqrt{(P)} \text{ 800MHz-2.5GHz}$ Wherein: P- the maximum rated output power of transmitter provided by the transmitter manufacturer (unit: W);d - the recommended isolation distance (unit: m). The field intensity of the stationary RF transmitter is determined by the electromagnetic field survey* and shall be lower than the conforming level in each frequency range. Interference may exist around the device with the following symbol. 

Note 1: Adopt the formula for higher-frequency band at 80MHz and 800MHz frequency points.
 Note 2: The Guidance may not be suitable for all situations and the electromagnetic transmission may be affected by the absorption and reflection of buildings, objects and human bodies.
 a The field intensity of a stationary transmitter, such as wireless (cellular/cordless) telephone and ground movable wireless radio station, amateur radio, amplitude modulation and frequency modulation wireless radio and television broadcasting cannot be accurately predicted in theory. In order to evaluate the electromagnetic environment of stationary RF transmitter, the electromagnetic field should be surveyed. If the field strength of the place where the device is located is measured to be higher than the applicable RF above, please observe and verify whether the device operates normally. Take supplementary measures, such as readjusting the direction or position of the device in case that any abnormal performance is observed.
 b The field intensity within 150kHz-80MHz shall be lower than 3V/M.

Recommended Isolation Distance Between the Portable and Mobile RF Communication Instrument and This Device

This device is expected to be used in an electromagnetic environment with controlled RF radiation disturbance. Based on the maximum rated output power of the communication device, buyers or users may prevent electromagnetic interference by maintaining a minimum distance between the portable and mobile RF communication instrument (transmitter) and the device according to the following recommendations.

Maximum Rated Output Power of the Transmitter (W)	Total Distance Corresponding to Different Transmitter Frequency/m		
	150kHz - 80MHz $d = 1.2\sqrt{(P)}$	80MHz - 800MHz $d = 1.2\sqrt{(P)}$	800MHz - 2.5GHz $d = 2.3\sqrt{(P)}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For maximum rated output powers of the transmitter not listed in the above table, the recommended isolation distance is d (unit: m), which can be determined by the formula in the corresponding transmitter frequency column; wherein, P is the maximum rated output (unit: W) of the transmitter provided by the transmitter manufacturer.

Note 1: Adopt the formula for higher-frequency band at 80 MHz and 800MHz frequency points.

Note 2: The Guidance may not be suitable for all situations and the electromagnetic transmission may be affected by the absorption and reflection of buildings, objects and human bodies.



Agent/after-sales service unit:

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528 Shunfeng Rd., Qianjiang Economic Development Zone

Hangzhou, Zhejiang, China 311100

Tel: 400-600-5434 (within China)

Tel: +0571-89026088 (outside China)

Registrant/manufacturer:

A-dec, Inc.

2601 Crestview Drive, Newberg, Oregon 97132, USA

Tel: 1-800-547-1883 (within US/Canada)

Tel: 1-503-538-7478 (outside US/Canada)

Fax: 1-503-538-0276

www.a-dec.com

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