

INSTRUCTIONS FOR USE

A-dec 300® Delivery Systems

332/333 and 334/335

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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.

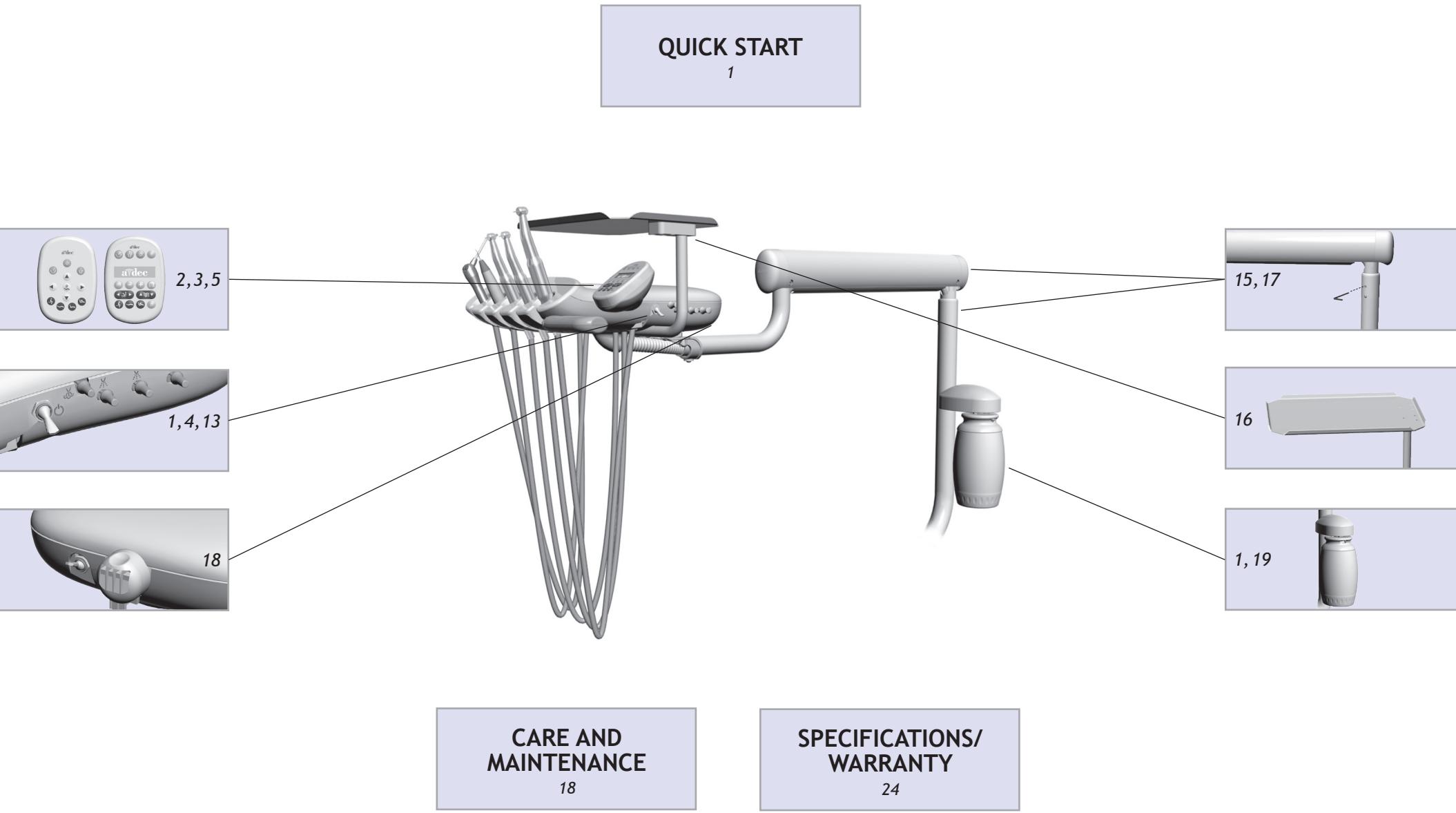
Regulatory Information

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.

CONTENT MAP



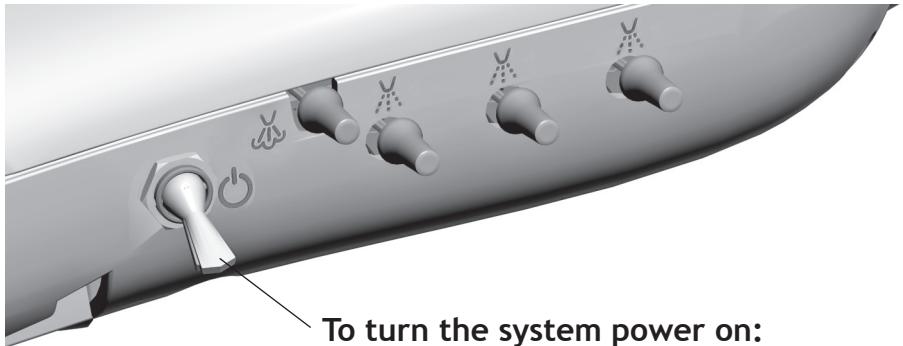
QUICK START



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.)



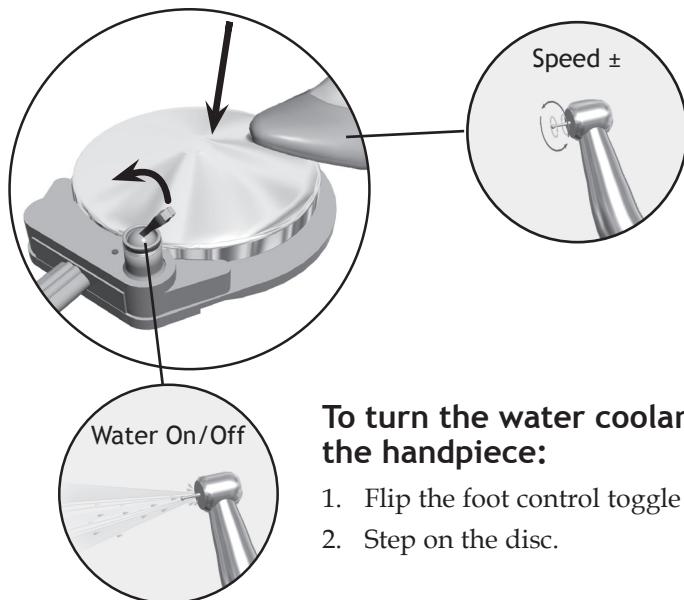
To turn the system power on:

Flip the toggle up.



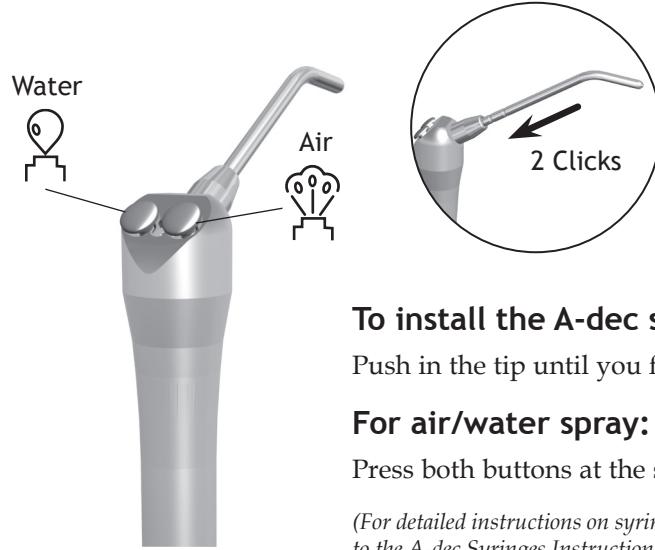
To position the control head:

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.



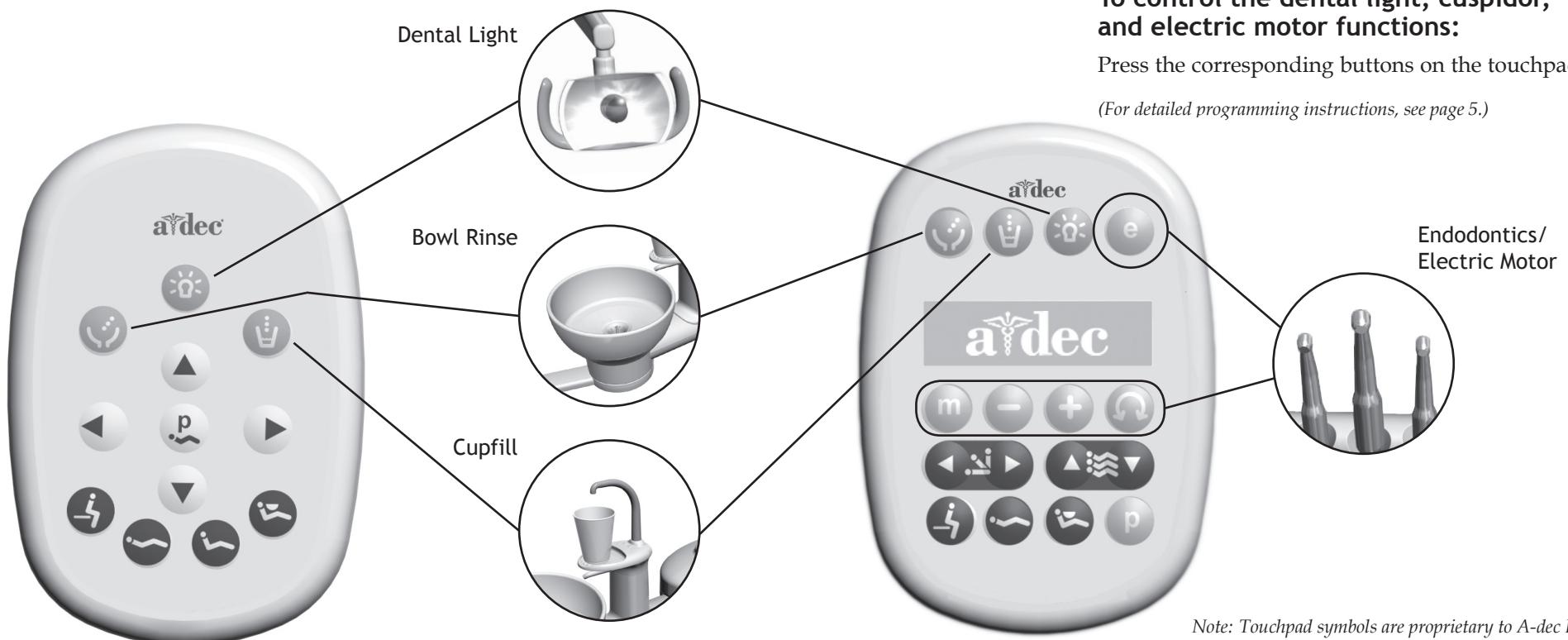
To install the A-dec syringe tip:

Push in the tip until you feel two clicks.

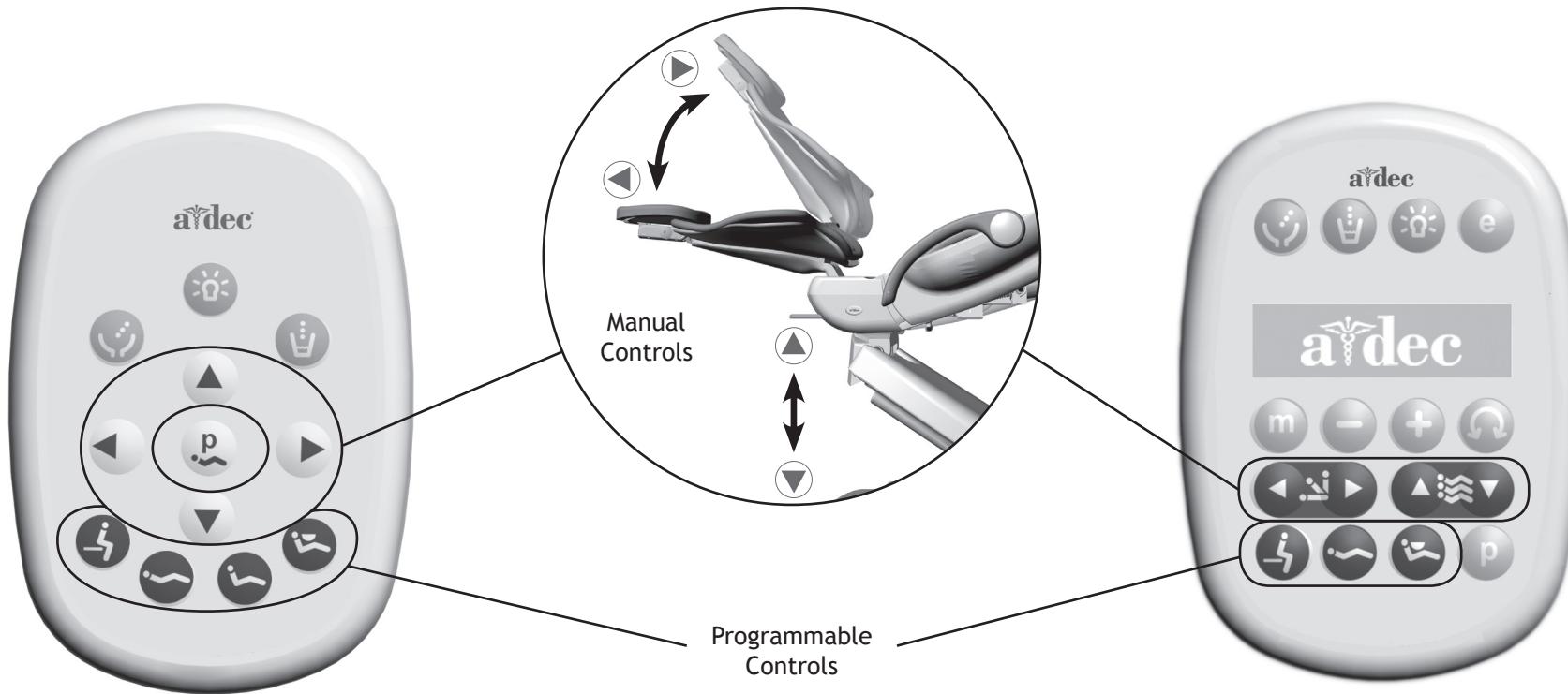
For air/water spray:

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.)



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

**To position the chair:**

Press the manual or programmable buttons.

(For complete chair programming instructions, see page 5.)

SYSTEM DETAILS AND ADJUSTMENTS

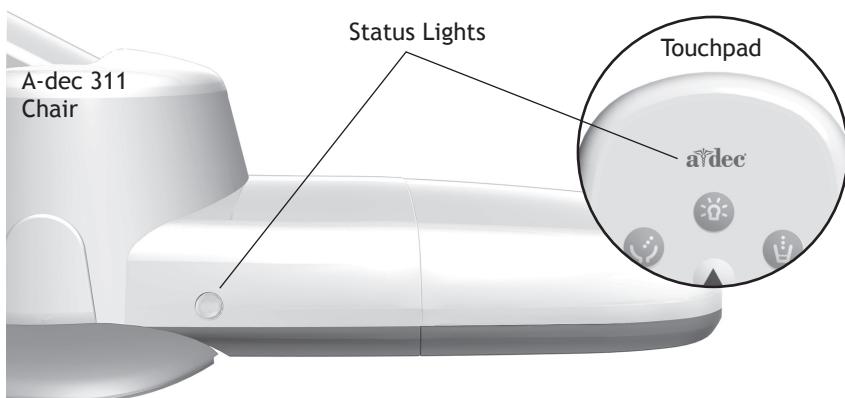
Power and the Master Toggle



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.

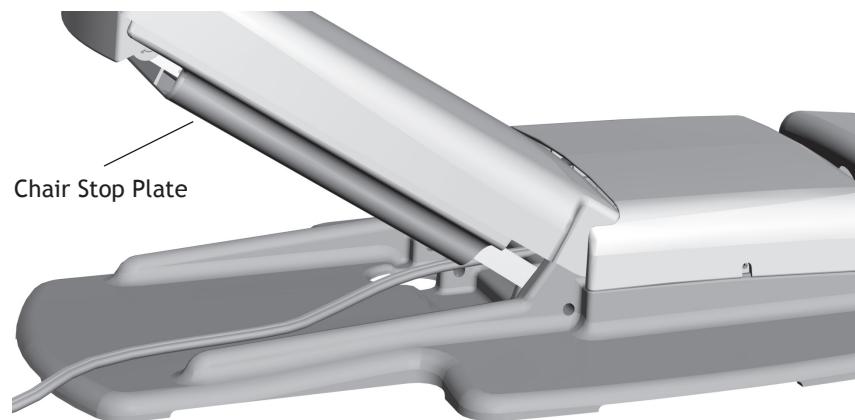
To save energy, turn the power off at the end of the work day and during longer periods of non-use. The power should always be turned off before service.

System Status



When the A-dec logo on the touchpad or the status light on the A-dec chair is illuminated, the system is on and ready for use. A blinking status light may indicate that something is lodged under the equipment, or that the chair is "locked out." For more information, see *Safety Features* on page 5.

Safety Features



Touchpad Controls



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.

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 adjust the chair position as desired.
2. Press and release **p** or **l**. One beep indicates the programming mode is on.
3. Within four seconds, press the chair position button you wish to reset (for example, press **t**). Three beeps confirm that the new setting is programmed into memory.

* Note: The deluxe touchpad does not include a Treatment 2 preset 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 back 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 **l** and **w** at the same time for three seconds.
 - One beep indicates the button is set as an additional programmable preset position.
 - 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)

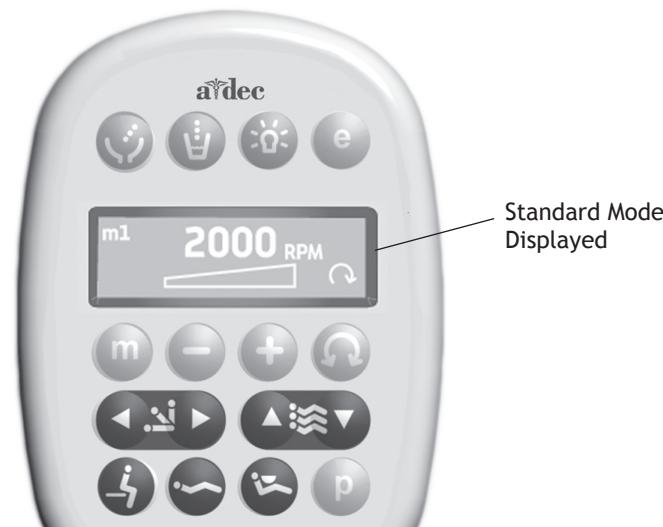
Standard Touchpad



Deluxe Touchpad



Deluxe Touchpad Handpiece Settings



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 with a blue outline) and at the same time for three seconds. One beep indicates the dental light on/off function is off.

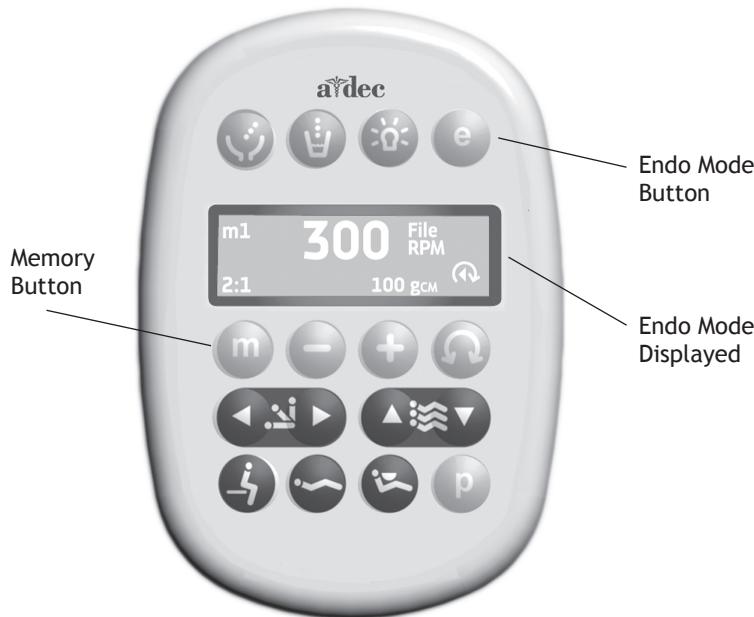
To enable the auto on/off feature, press and hold or with a blue outline and at the same time for three seconds. Three beeps confirm that the auto on/off feature is activated.

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

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 Endodontic 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
300 File RPM	Speed	Setpoint for file speed limit. For more information, consult your file manufacturer.
1.00 Ncm	Torque	Setpoint for file torque limit. For more information, consult your file manufacturer.
300 gcm	Torque Units	Toggles between Ncm (Newton centimeters) and gcm (Gram centimeters). Adjusting this setting for one handpiece changes it for all handpiece settings. <i>Note: 1 Ncm = 102 gcm.</i>
WD - 79M 2:1	Ratio	Sets the handpiece ratio. For more information, consult your handpiece manufacturer.
Auto Off	Forward/ Reverse Modes	Adjusting this setting for one handpiece changes it for all handpiece settings. This icon is displayed within the Forward/Reverse indicator. <ul style="list-style-type: none"> Auto-Off: The motor shuts off when the file speed reaches the torque limit. Auto-Reverse: The motor stops and reverses direction when the file reaches the torque limit. Auto-Forward: When the file reaches the torque limit, the motor stops, reverses 3 turns, then changes back to forward again.
Auto Reverse		
Auto Forward		<i>Note: If the file is stuck, this cycle repeats three times before the motor stops.</i>



CAUTION A-dec | W&H endodontic attachments have a special feature due to their ball-bearing design. Their life-long efficiency factor is stable and known; therefore, the A-dec endodontics system is able to control and display file torque very accurately. All other handpieces have unknown life-long efficiency factors and therefore stated torque values are approximate.



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

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

- **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)



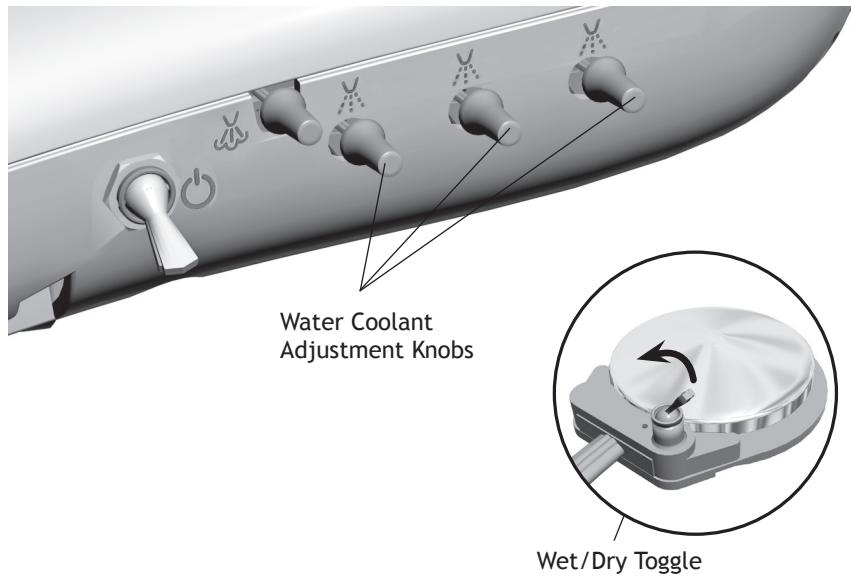
Message	Description and Action
Too many handpieces in use Control Head	<ul style="list-style-type: none"> Two or more handpieces are withdrawn at one time. Only one motor, turbine, or ultrasonic instrument can be used at one time. Use one handpiece at a time and proceed as normal.
Chair is already at that position.	<ul style="list-style-type: none"> A preset button was pressed with the chair already at that position.
Function halted by additional button press.	<ul style="list-style-type: none"> 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.

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
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 Control Adjustments



A-dec 300 delivery systems supply and regulate air and water to operate dental handpieces, syringes, and ancillary devices. You can adjust the delivery system water coolant flow, air flow, and drive air pressure.

Water Coolant Flow

The system includes water coolant flow control for each handpiece. Use the adjustment knob to complete the adjustments:

1. Lift the handpiece from the holder or pull the whip forward.
2. Locate the coolant water flow controls.
3. Turn the water coolant on (flip the wet/dry toggle toward the blue dot on the foot control).
4. Press the foot control to activate the handpiece.
5. Adjust the water coolant flow by turning the adjustment knob clockwise to decrease flow and counterclockwise to increase flow.



NOTE Water and air coolant adjustment knobs are not intended to completely shut off flow.

Handpiece Control Adjustments (continued)



Air Coolant Flow

The air coolant knob adjusts the air coolant flow for all handpieces. To adjust the air coolant:

1. Lift the handpiece from the holder.
2. Press the foot control to activate the handpiece.
3. Turn the adjustment knob clockwise to decrease flow and counterclockwise to increase flow.



NOTE Air and water coolant adjustment knobs are not intended to completely shut off flow.



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.

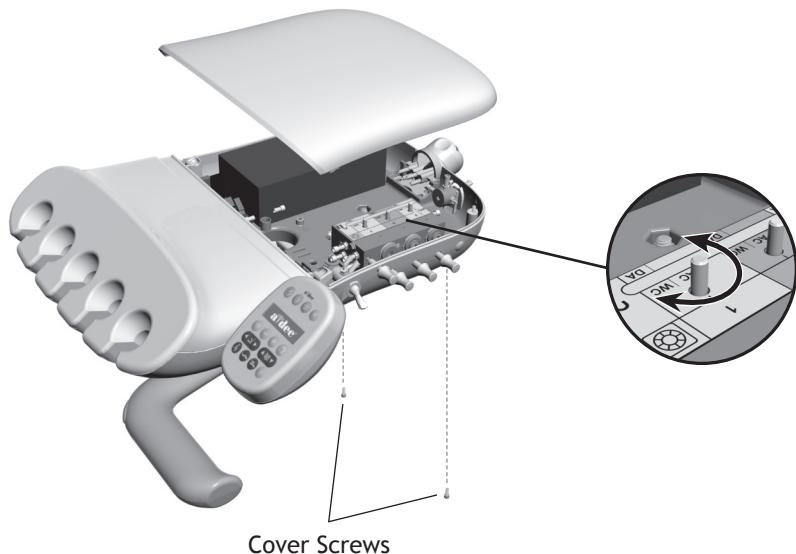


Drive Air Pressure

You can check drive air pressure on the deluxe touchpad screen by pressing \oplus and \ominus 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.

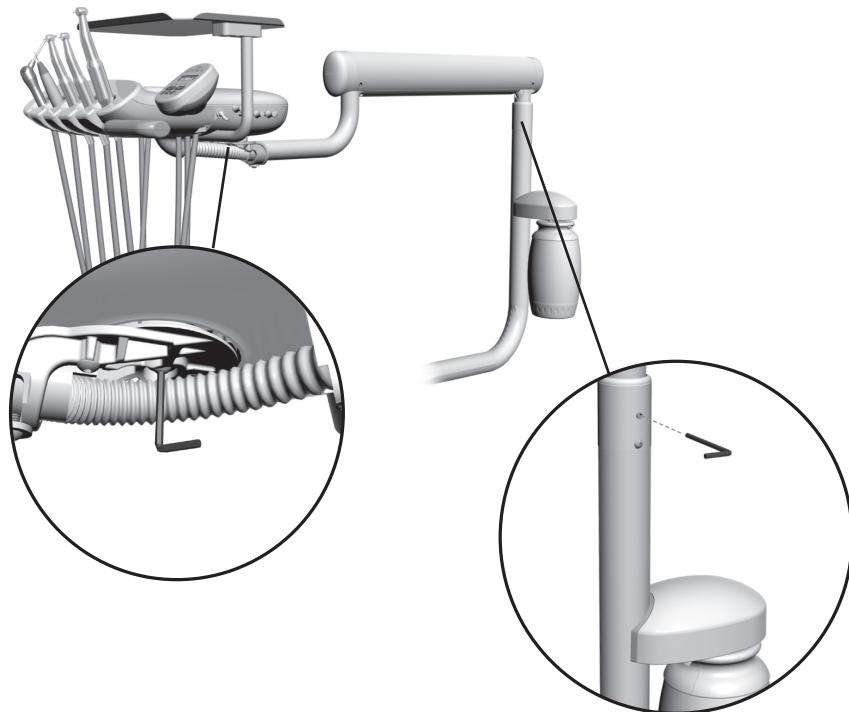
Complete these steps to adjust the drive air pressure for each handpiece:

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



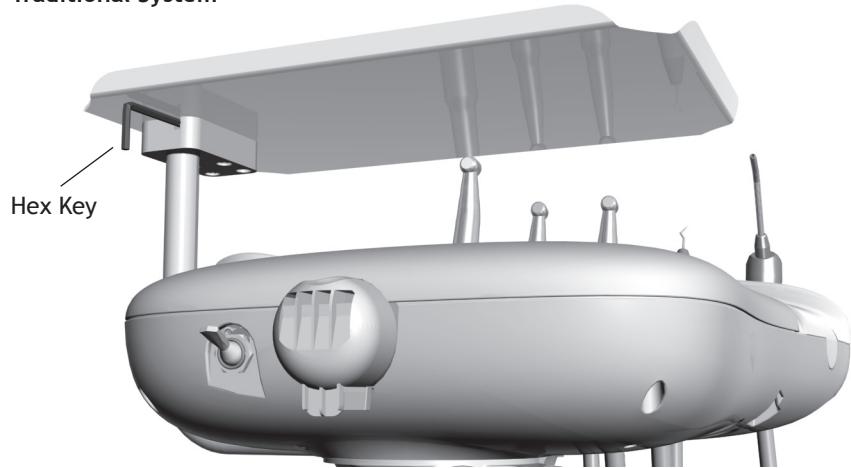
Control Head

If the control head is too loose or difficult to rotate, use a 5/32" hex key to adjust the tension screw under the control head.

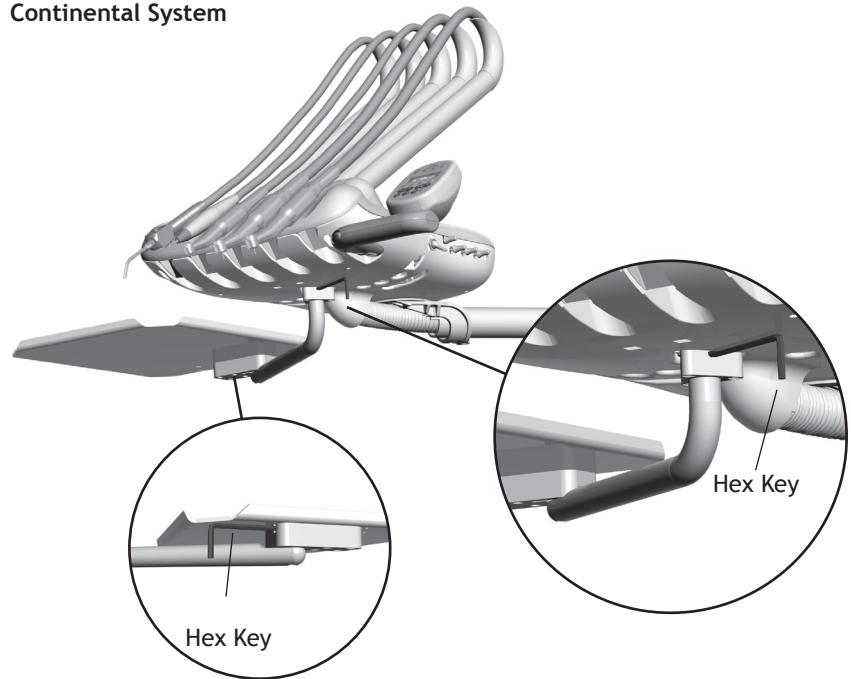
Flexarm Rotation

If the control head begins to drift right or left, use a 1/8" hex key to adjust the setscrew tension for the flexarm rotation.

Traditional System



Continental System



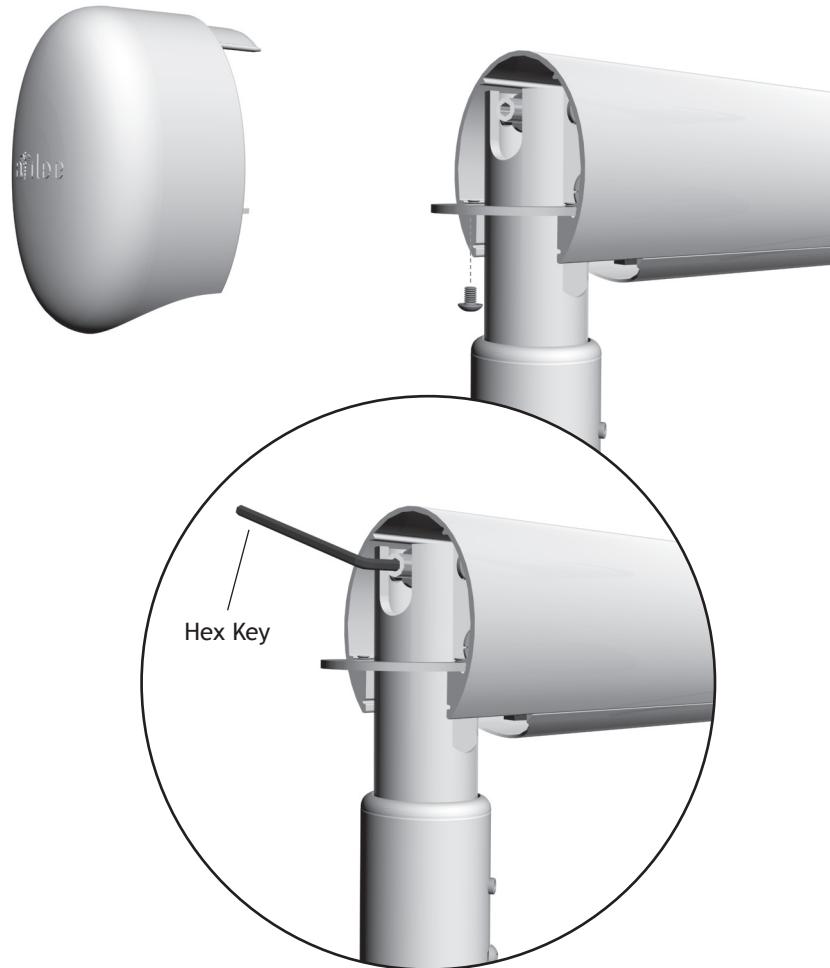
Tray Holder Rotation

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 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.

Flexarm Vertical Adjustments

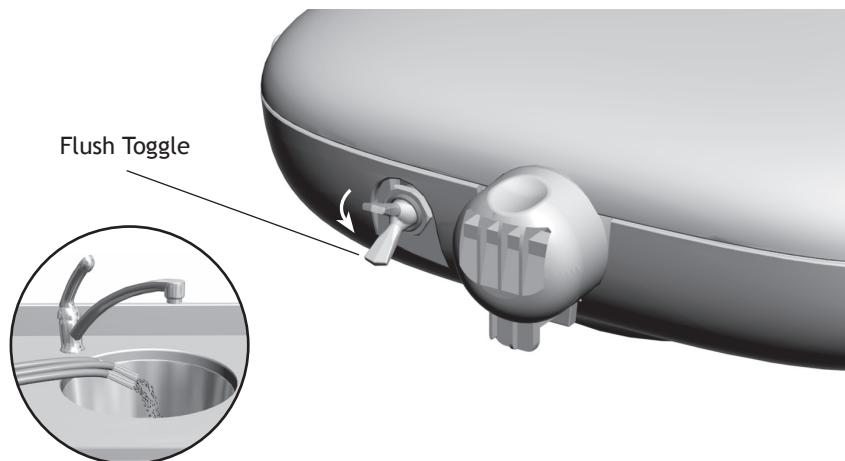


If the control head drifts up or down, complete these steps to adjust the spring-assisted flexarm:

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 counterclockwise to loosen.
 - If the control head drifts down, turn the adjustment screw clockwise to tighten.

CARE AND MAINTENANCE

Handpiece Tubing



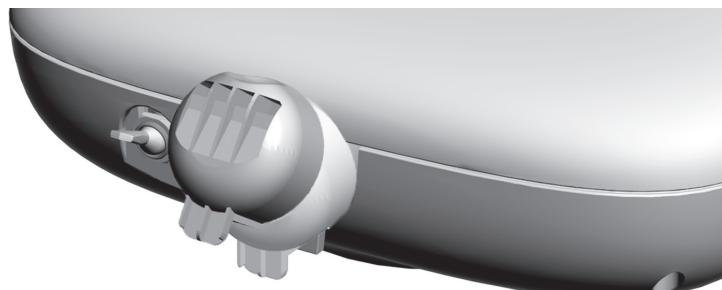
Use the flush toggle to move a high volume of water through the handpiece tubing. To flush the tubing after each patient:

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.

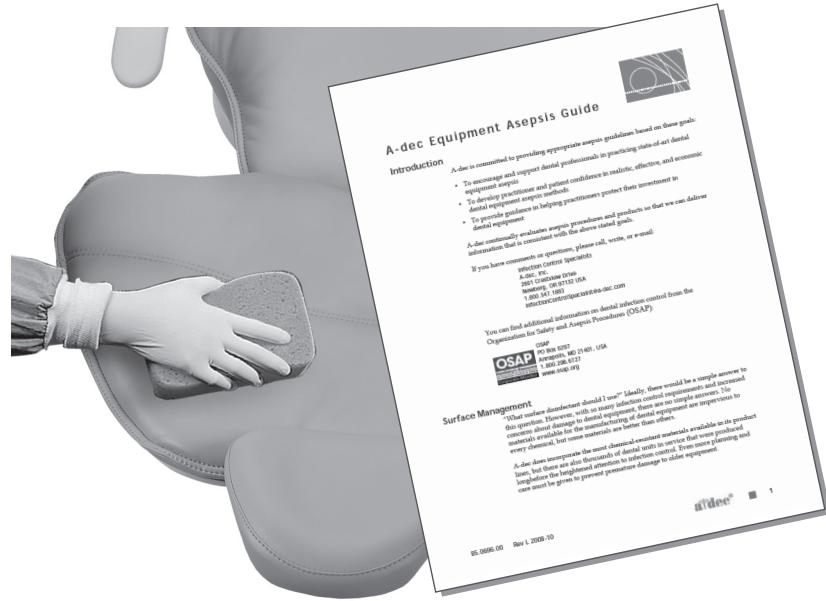
Oil Collector



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 Protocol



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.

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.

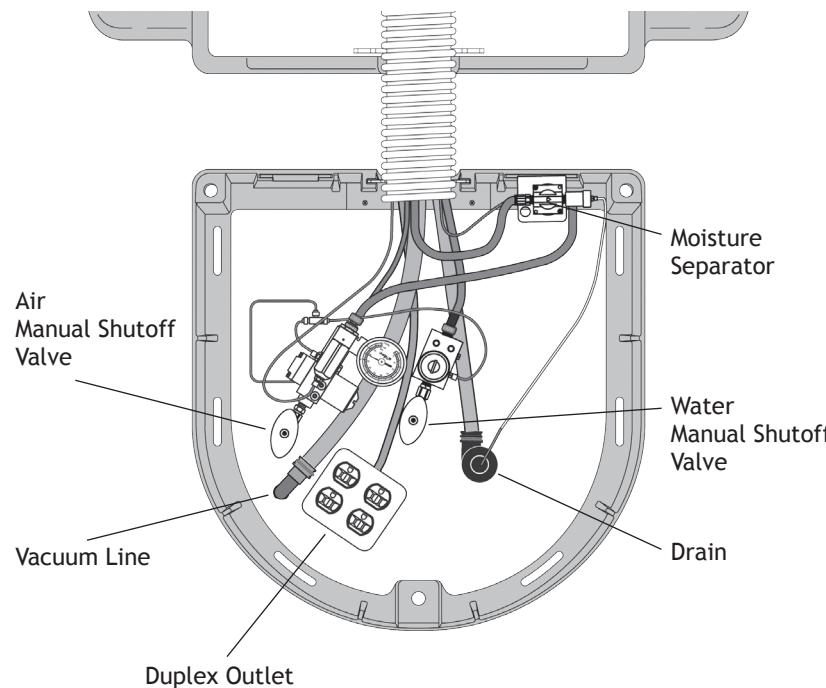
1. Remove the tip from the syringe.
2. Immerse the tip in a holding solution until ready for ultrasonic cleaning.
3. Clean the tip ultrasonically. Follow the manufacturer's instructions that came with the ultrasonic cleaning device.
4. Purge all cleaning agents from the tip before sterilization.

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).

Utilities



Floor Box Access

Utilities for your A-dec 300 system are located either in the utility area of the chair or in a remote floor box. The location is determined by your chair configuration and facilities.

For chairs with multiple covers, grasp the floor box cover on both sides and pull up. Some chairs include an integrated coin slot to make removal easier.

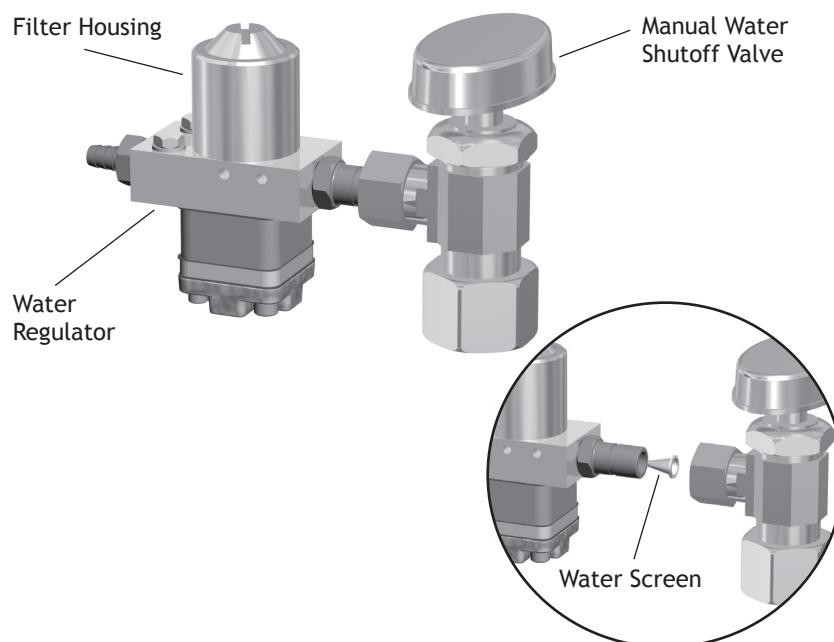
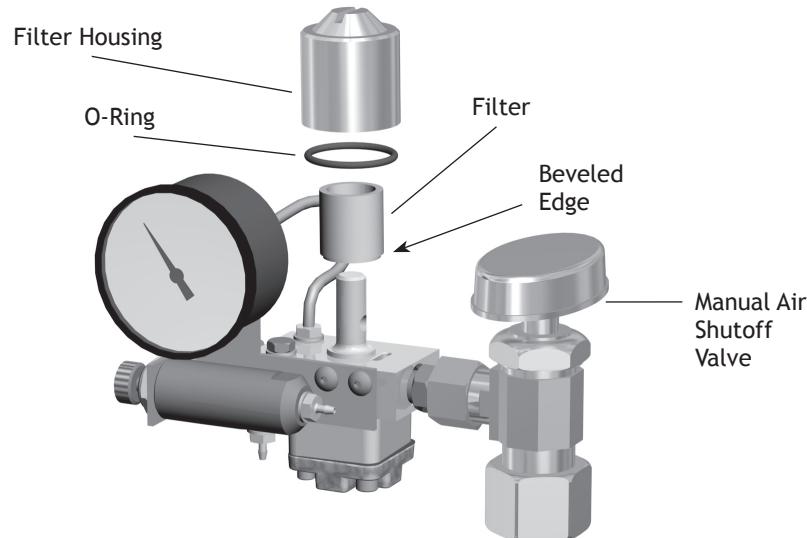
CAUTION Take care not to damage the cover if using the coin slot.

For A-dec 311 chairs with an integrated floor box cover, gently pull out at the cover posts and lift the cover off.

Utilities and Shutoff Valves

The manual shutoff valves control the air and water to the system. To prevent leaks, these valves should remain fully open (turned counterclockwise), except while your system is being serviced.

Air and water pass through separate filters before entering the regulators. Replace these filters when they become clogged and restrict flow.



To check for a clogged air or water filter:

1. Turn on the Master toggle.
2. While watching the air pressure gauge, press the syringe air button. If the system air pressure drops by more than 15 psi, replace the air filter.
3. While watching the cuspidor, press the bowl rinse button. If the bowl rinse water pressure fades or if the water flow stops, replace the water filter.

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.



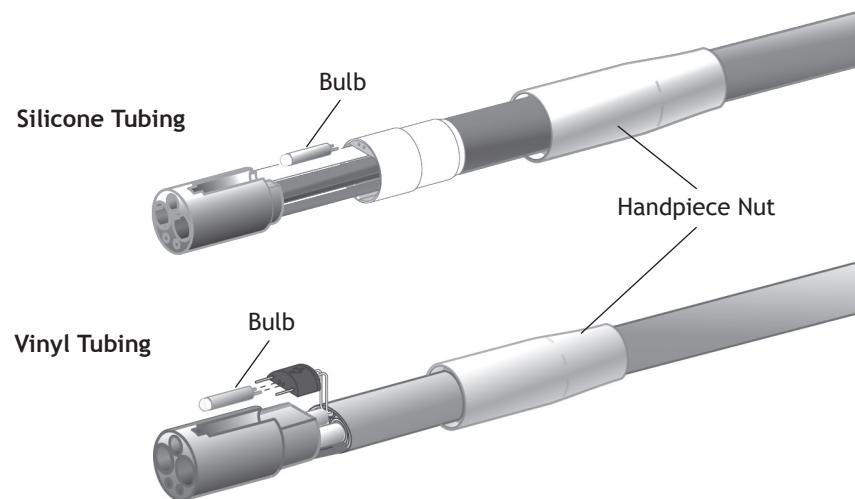
CAUTION To ensure proper delivery system operation, install the filter with the beveled edge facing the manifold.

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)

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 from country to country. For more information, contact your authorized A-dec dealer.

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.



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