

A-dec 300 Delivery Systems

Models 332, 333, 334, 335, and 336



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Regulatory Information

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

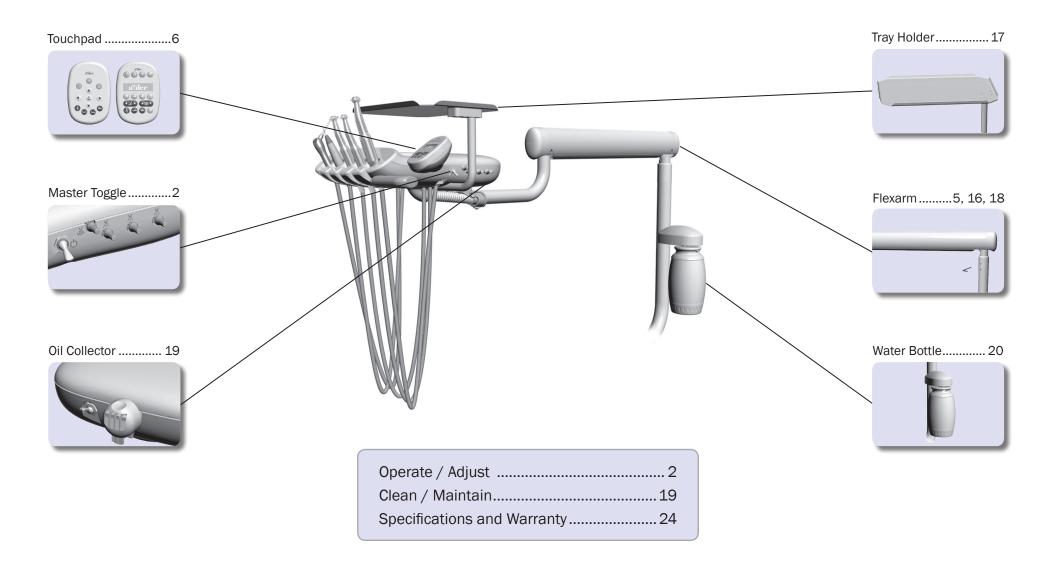
Product Service

Product service is available through your local authorized A-dec dealer. For service information, or to locate an authorized dealer, contact A-dec at 1.800.547.1883 in the USA and Canada or 1.503.538.7478 worldwide, or visit www.a-dec.com.

Product Models and Versions Covered in This Document

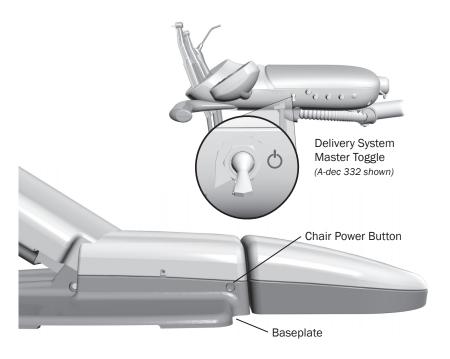
Model	Versions	Description
332	А	Delivery System
333	Α	Delivery System
334	A, B	Delivery System
335	A, B	Delivery System
336	Α	Delivery System

Content Map



Operate / Adjust

Power On/Off



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 "Chair Safety Features" on page 3 for more information.

For complete details on touchpad functionality, please see "Touchpad Controls" on page 6.

Chair Safety Features



A-dec dental chairs and systems include several features designed to improve safety. Activated stop switches may halt the chair or prevent it from moving. To help ensure uninterrupted chair motion:

- remove any potential obstructions under the chair and attached modules
- avoid pressing the foot control disk or lever
- keep handpieces properly seated in their holders

If the Chair Stops Unexpectedly

Check the actions listed above to correct the condition. If the downward movement of the chair stopped because of an obstruction, use the touchpad or footswitch to raise the chair and remove the obstruction.

Autoclavable Syringe



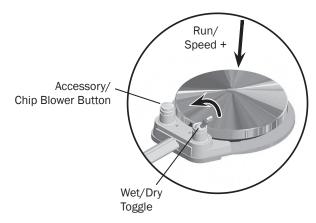
To install the A-dec syringe tip, push the tip in until you feel two clicks. Press both buttons simultaneously for the air/water spray.

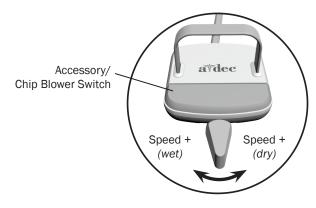


IMPORTANT For detailed instructions on syringe usage, flow adjustment, and maintenance, see the *A-dec Syringes Instructions for Use* (p/n 85.0680.00).

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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 page 14.

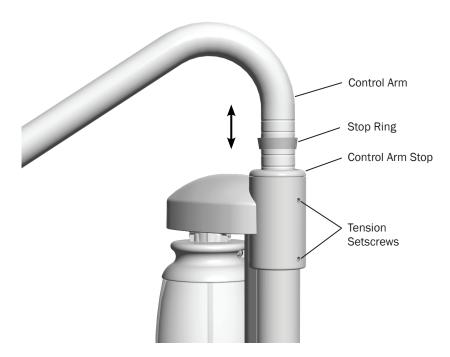
Control Head Positioning



Flexarm Brake

On systems with a counterbalanced flexarm, an integrated brake maintains the vertical position of the control head (with up to 8 lb [3.6 kg] of additional weight). The brake does not restrict side-to-side movement. To adjust the control head height:

- 1. Press and hold the button to disengage the brake while you position the control head.
- 2. Release the button to engage the brake.



Manual Height Adjustment (336 delivery system only)

To adjust the control head height on systems with manual height adjustment:

1. Lift the control arm.



NOTE The height adjustment range for the control arm is 5" (127 mm).

- 2. Slide the stop ring to the desired height groove.
- 3. Lower the control arm and stop ring into the control arm stop.

If the control arm is difficult to lift or rotate, or rotates too freely, use a 3/32" hex key to loosen or tighten the two tension setscrews.

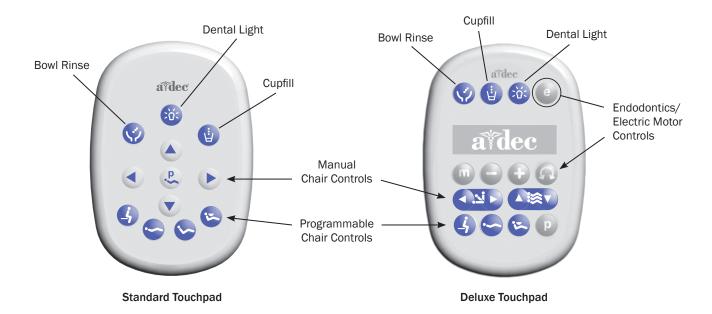
Touchpad Controls



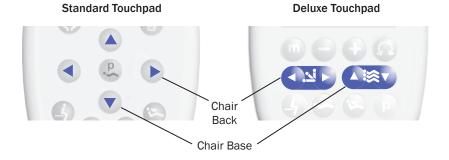
The A-dec touchpad and footswitch control chair movement in the same way. See your dental chair Instructions for Use for detailed information about your footswitch controls.

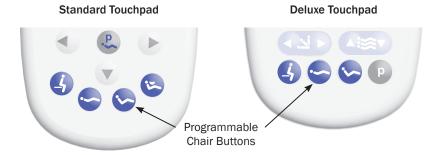
Basic Touchpad Functions

Your A-dec 300 system may include a standard or deluxe touchpad, or both. The standard touchpad operates the chair, cuspidor, and dental light functions. The deluxe touchpad adds functions for electric motors and other integrated clinical devices. Both touchpads provide manual and programmable controls.



Touchpad Controls (continued)





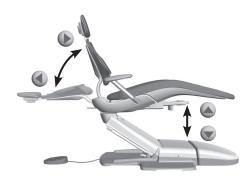


WARNING Ensure that the patient is positioned safely before using the manual or programmable chair controls. Never leave the patient unattended while the chair is in motion. Always take extra care with small children and patients with limited mobility.

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

Manual Chair 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.



Programmable Chair Controls

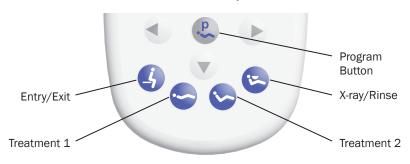
Press and release a programmable button to move the chair to a preset position. These buttons are programmed at the factory as follows:

Icon	Position	Factory Setting
4	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 partially up (standard touchpad only).
	X-ray/Rinse	Moves the chair to either x-ray or rinse position. Press again to move the chair to the previous position.

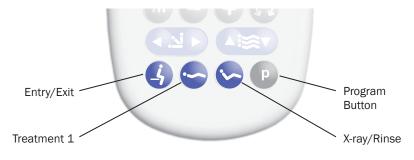
Note: Touchpad symbols are proprietary to A-dec Inc.

Touchpad Controls (continued)

Standard Touchpad



Deluxe Touchpad



Reprogram Entry/Exit, Treatment 1 and 2* Buttons

To change the factory preset chair positions assigned to the entry/exit and treatment buttons ($\{\S\}$, $\{\S\}$, $\{\S\}$):

- 1. Use the manual controls to position the chair as desired.
- 2. Press and release ② or ②. 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 ⑤). Three beeps confirm that the new setting is programmed into memory.

Reprogram X-Ray/Rinse Button

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

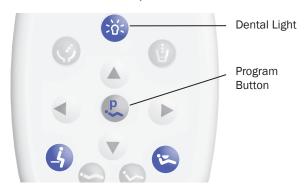
You can reprogram to function in a similar way to the other programmable chair preset buttons. To change its function:

- 1. Press and hold ② or ② and ③ at the same time for three seconds.
 - One beep indicates is set as another programmable chair preset button.
 - Three beeps confirm that is 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 as another programmable button and want to assign a different chair position, follow the steps outlined in "Reprogram Entry/Exit, Treatment 1 and 2* Buttons" above.

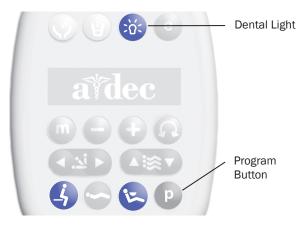
^{*} Note: The deluxe touchpad does not include a Treatment 2 button.

Touchpad Controls (continued)

Standard Touchpad



Deluxe Touchpad



Dental Light Auto On/Off Feature

The auto on/off feature turns the A-dec light on once the chair reaches a preset treatment position.

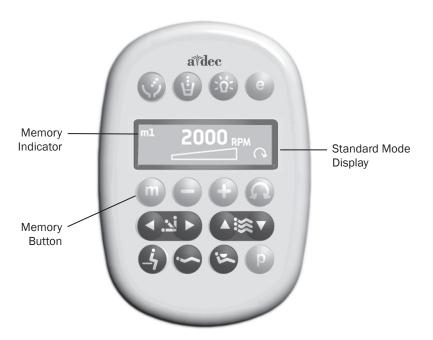
When you press • or •, the dental light turns off and the chair moves to that preset position.

To disable the auto on/off feature, press and hold the program button (or at the same time for three seconds until you hear one beep.

To enable the auto on/off feature, press and hold **P** or **A** and **B** at the same time for three seconds until you hear three beeps.

For more information about dental light functions, see your dental light Instructions for Use.

Electric Handpiece Settings (deluxe touchpad only)



Standard Mode

To activate the electric motor, lift 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 displays on the touchpad screen.
- 2. Press p to save it to memory. One beep sounds.
- 3. Press to display the m1 through m4 memory settings. When the desired memory setting displays, press p. Three beeps confirm the setting.

Electric Handpiece Settings (deluxe touchpad only) (continued)



Endodontics (Endo) 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 program the handpiece setting:

- 1. Lift the handpiece from the holder.
- 2. If the touchpad screen does not display the endo mode, press ②.
- 3. To change settings in endo mode, press or •. A white reverse video box displays 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 **D**. One beep sounds.
- 7. Press **(m)** to display the m1 through m4 memory settings. When the desired memory setting displays, press **(D)**. Three beeps confirm the setting.

Operate / Adjust

Electric Handpiece Settings (deluxe touchpad only) (continued)

Endo Mode Touchpad Screen Icons

Icon	Setting	Description		
300 File	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 newton centimeters (N·cm) and gram centimeters (g·cm). Adjusting this setting for one handpiece changes it for all handpiece settings. Note: $1 N \cdot cm = 102 g \cdot cm$.		
WD - 79M 2: 1	Ratio	Sets the handpiece ratio. For more information, consult your handpiece manufacturer.		
	Auto Modes	Adjusting this setting for one handpiece changes it for all handpiece settings. The auto mode indicator displays inside of the forward/reverse indicator.		
	Auto Stop	 When the file reaches the torque limit, the motor shuts off. 		
\odot	Auto Reverse	 When the file reaches the torque limit, the motor stops and reverses direction. 		
(O)	Auto Forward	When the file reaches the torque limit, the motor stops, reverses 3 turns, then changes back to forward again Note: If the file is stuck, the auto forward cycle repeats three times before the motor stops.		



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.

Touchpad Help Messages



The deluxe touchpad screen displays help messages for disabled operations. When a help message appears, record the screen message and the function you were performing in case service is required. For complete details on help messages, see the *Regulatory Information*, *Specifications, and Warranty* document (p/n 86.0221.00), which is available in the Document Library at www.a-dec.com.

Other Handpiece and Accessory Settings

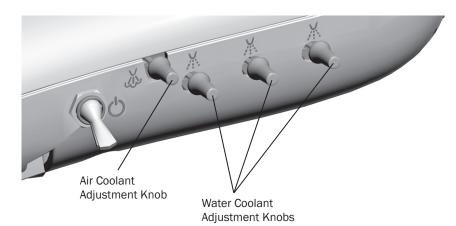
See your authorized A-dec dealer to change any of these handpiece and accessory settings, if applicable:

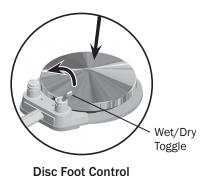
- **Auto-Off Delay –** determines how long the handpiece light remains on if the foot control is released. The default setting is 5 seconds.
- On When Selected specifies whether the handpiece light turns on or remains off when the handpiece is removed from the holder. The default setting is on.
- On in Endo specifies whether the handpiece light turns on or off when the endo mode is selected. The default setting is off, which is recommended to reduce heat and extend bulb life.
- **Ultrasonic Colors –** for Acteon ultrasonic instruments, specifies whether color-coded tip categories are on or off. The default is on.
- **Voltage Adjustment -** allows for customized light output voltage for each handpiece position. The default setting is 3.2 VDC.

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.







Lever Foot Control

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:

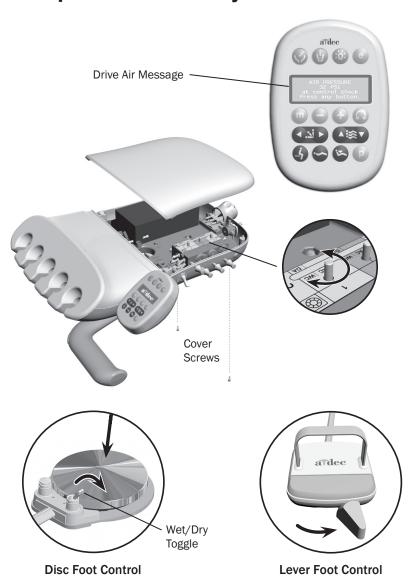
- 1. Insert a bur into each handpiece you are adjusting.
- 2. Turn the air coolant adjustment knob clockwise until coolant flow stops.
- 3. Lift the handpiece from the holder, or pull the whip forward, and do one of the following:
 - On a disc foot control: flip the wet/dry toggle to water (toward the blue dot) and press the disc all the way down.
 - o On a lever foot control: move the lever all the way to the left.
- 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.

Handpiece Drive Air Adjustments



You can check drive air pressure on the deluxe touchpad screen by pressing \oplus and \bigcirc at the same time. For systems with a standard touchpad, and for the most accurate drive air measurement, use a handpiece pressure gauge (A-dec p/n 50.0271.00) attached to the handpiece tubing.

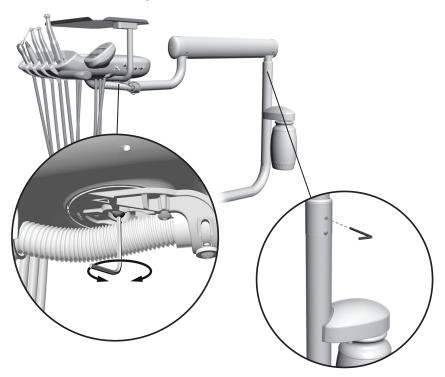
To adjust the drive air pressure for each handpiece:

- 1. Remove the control head cover screws. Remove the cover and locate the drive air pressure controls inside.
- 2. Lift the handpiece from the holder or pull the whip forward.
- 3. Do one of the following:
 - On a disc foot control: flip the wet/dry toggle to dry, and press the disc all the way down.
 - o On a lever foot control: move the lever all the way to the right.
- 4. With the handpiece running, check the deluxe touchpad readout or handpiece pressure gauge.
- 5. Adjust the handpiece drive air pressure to meet the manufacturer's specifications. Turn the control stem clockwise to decrease flow and counterclockwise to increase flow.



CAUTION See your handpiece documentation for the drive air pressure specification. Exceeding manufacturer's recommendations increases the risk of damage and may significantly decrease the life of your handpiece components.

Rotational Adjustments



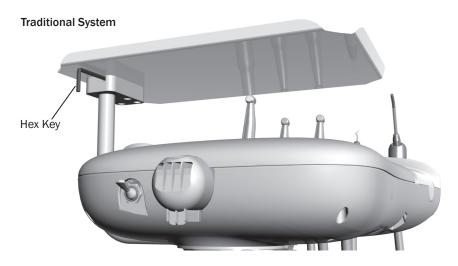
Control Head

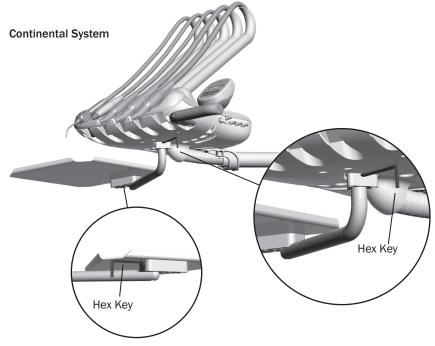
If the control head is too loose or difficult to rotate, use a 5/32" hex key to adjust the tension screw under the control head.

Flexarm

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.

Rotational Adjustments (continued)





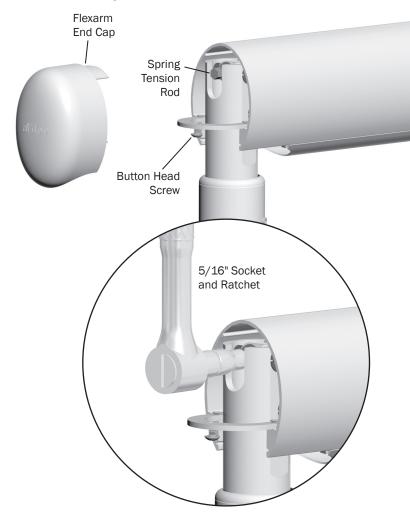
Tray Holder

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 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.

Vertical Adjustments

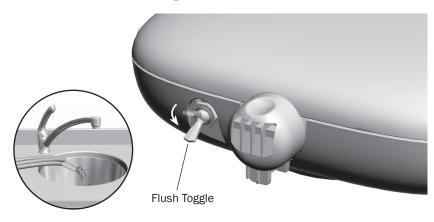


If the control head falls or rises rapidly when you flip the master toggle to the off position, complete these steps to adjust the flexarm spring tension:

- 1. Flip the master toggle to the on position.
- 2. Load the control head for normal use, attaching handpieces and placing a tray on the tray holder.
- 3. Position the control head so the flexarm is level.
- 4. Use a 1/8" hex key to loosen the button head screw that secures the end cap farthest from the control head, then pull the cap straight out.
- 5. Flip the master toggle to the off position.
- 6. Use a 5/16" socket and ratchet to adjust the flexarm spring tension rod until the control head rises gradually when you flip the Master toggle to the off position.
 - o If the control head rises rapidly, turn the rod counterclockwise.
 - o If the control head falls, turn the rod clockwise.

Clean / Maintain

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.



NOTE Discharge all tubing air and water lines for 20–30 seconds after each patient.



IMPORTANT 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).

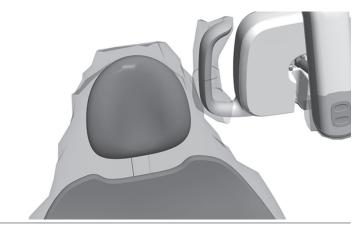
Oil Collector



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.

Barrier Protection





NOTE For proper use and disposal of barriers, see the instructions provided by the barrier manufacturer.

A-dec recommends barrier protection for all applicable touch and transfer surfaces. Touch surfaces are areas that come into contact with hands and become potential cross-contamination points during dental procedures. Transfer surfaces are areas that come into contact with instruments and other inanimate objects.

In the USA, barriers must be produced under the Current Good Manufacturing Practice (CGMP) as specified by the U.S. Food and Drug Administration (USFDA). For regions outside the USA, refer to the medical device regulations specific to your location.



IMPORTANT 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).

Waterline Maintenance

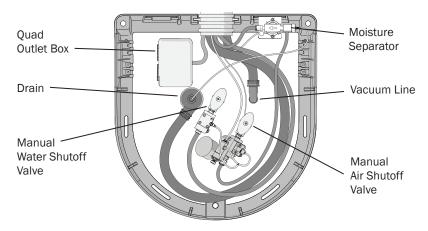


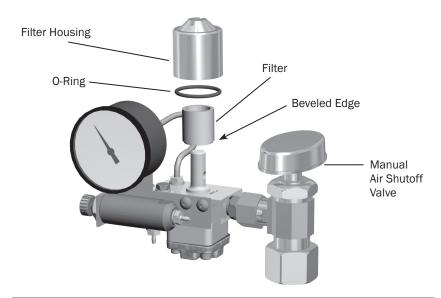
A-dec recommends a three-part protocol to maintain good water quality in your system: continuous use of A-dec ICX® waterline treatment tablets, regular dental unit water monitoring, and shock treatment. Use a dental unit waterline shock treatment product that is registered with the U.S. Environmental Protection Agency (US EPA). If you're located outside the U.S., contact your authorized A-dec dealer for product recommendations that are compatible with A-dec equipment.



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).

Utilities and Shutoff Valves







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

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 pre-regulators. Replace these filters when they become clogged and restrict flow.

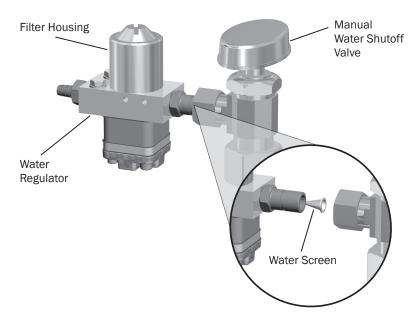
To check for a clogged air or water filter:

- 1. Flip the master toggle to the on position.
- 2. While watching the air pressure gauge, press the syringe air button. If the pressure drops by more than 15 psi, replace the air filter.
- 3. While watching the cuspidor, press the bowl rinse button. If the water flow fades or stops, replace the water filter.

To replace the filter:

- 1. Flip the master toggle to the off position 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, flip the master toggle to the on position, and operate the bowl rinse to remove air from the waterline.

Utilities and Shutoff Valves (continued)

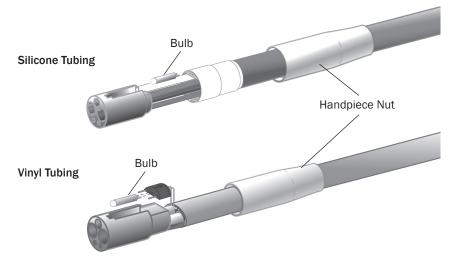


The manual water shutoff valves include a screen to prevent larger debris from entering the system. Periodically check and replace this screen to ensure unrestricted water flow.

To replace the water screen:

- 1. Flip the master toggle to the off position 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 flip the master toggle to the on position. 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.



IMPORTANT To replace the bulbs in your handpieces or quick-disconnect couplings, see the instructions that came with your handpieces.

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)



IMPORTANT For chair accessory load capacity, electrical specifications, identification of symbols, and other regulatory requirements, see the *Regulatory Information, Specifications, and Warranty* document (p/n 86.0221.00), which is available in the Document Library at www.a-dec.com.



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

Warranty

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



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