INSTRUCTIONS FOR USE

A-dec 541/545
DELIVERY SYSTEMS
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For required regulatory information and the A-dec warranty, see the Regulatory Information, Specifications, and Warranty document (p/n 86.0221.00) available in the Resource Center at www.a-dec.com.

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

Product Models and Versions Covered in This Document

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Deluxe Plus Touchpad Content Map

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<td>17</td>
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Note: Touchpad icons and symbols are proprietary to A-dec Inc.
Operate / Adjust

Turn On/Turn Off the Air, Water, and Power

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 26.

Master Toggle
Use the master toggle to turn on the system air, water, and power. The toggle is located under the worksurface.

When to Turn Off the Power
To save energy and reduce the chance of air leaks, turn off the system power at the end of the work day and before longer periods of non-use.

Operate the 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 more details on syringe usage and maintenance, see your A-dec syringe Instructions for Use.
Position the Handpiece Holders

1. Pull Out
2. Rotate

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

You can adjust the instrument holders independently or as a set (on the doctor’s side and the assistant’s side).

1. Pull the holder, or holders, away from the touchpad/handle.
2. Rotate to the desired position and release.

Adjust the Worksurface and Instrumentation Height

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

1. Lift up the instrument arm or worksurface.
2. Slide the adjustment ring to the desired position.
3. Lower the instrument arm or worksurface post until the ring is securely seated.
HVE/Saliva Ejector Left/Right Conversion

To convert the standard high-volume evacuator (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.
**Operate the Foot Control**

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

<table>
<thead>
<tr>
<th>Control</th>
<th>Operation</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc Foot Control</td>
<td>Run a handpiece.</td>
<td>Press on the disc. Push down to increase speed.</td>
</tr>
<tr>
<td></td>
<td>Run a handpiece with or without water coolant.</td>
<td>Press ⬇️ on the touchpad to turn the coolant on or off, or flip the wet/dry toggle (which works as a three-way switch in conjunction with the touchpad). Then press on the disc.</td>
</tr>
<tr>
<td></td>
<td>Run the optional accessory/chip blower.</td>
<td>Press the accessory/chip blower button.*</td>
</tr>
<tr>
<td></td>
<td>Operate the intraoral camera.</td>
<td>Press on the disc to capture an image.*</td>
</tr>
<tr>
<td>Lever Foot Control</td>
<td>Run a handpiece with water coolant.</td>
<td>Move the lever to the left. Move farther to increase speed.</td>
</tr>
<tr>
<td></td>
<td>Run a handpiece without water coolant.</td>
<td>Move the lever to the right. Move farther to increase speed.</td>
</tr>
<tr>
<td></td>
<td>Run the optional accessory or chip blower.</td>
<td>Press the accessory/chip blower switch.*</td>
</tr>
<tr>
<td></td>
<td>Operate the intraoral camera.</td>
<td>Move the lever to the left or right to capture an image.*</td>
</tr>
</tbody>
</table>

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

**NOTE** On systems with a lever foot control, water coolant cannot be activated, or deactivated, from the touchpad.

**NOTE** The lever foot control wet/dry 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.
Operate Touchpad Lockout, User Setting, and Auxiliary Device Control

<table>
<thead>
<tr>
<th>Icon/Function</th>
<th>Actions/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touchpad Lockout</td>
<td>Press and hold to activate the touchpad lockout, which allows you to barrier protect and clean/disinfect the touchpad without unintentionally activating any commands. A small light above the icon flashes while the touchpad is locked for 15 seconds.</td>
</tr>
<tr>
<td>A/B User</td>
<td>Two sets of customizable settings (A and B) are available. To select a different user setting, press . The selected user setting is indicated by the A or B in the lower left corner of the touchpad display.</td>
</tr>
<tr>
<td>Auxiliary Device</td>
<td>If your system includes an A-dec relay module and a connected device, press to turn on or turn off that device. A small light above the icon illuminates when the device is on.</td>
</tr>
</tbody>
</table>

**NOTE** If two operators use the delivery system, be sure to select the correct user setting (A or B) before changing any memory settings. The selected set is indicated by the A or B in the lower-left corner of the touchpad display.
Position the Chair with Manual Controls

**IMPORTANT** The A-dec touchpad and footswitch move the chair in the same manner. For more details about footswitch controls, see your chair Instructions for Use.

**WARNING** Ensure that the patient is positioned safely before using the manual or preset 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 preset movement, press any chair positioning button on the footswitch or touchpad.

**NOTE** If you would like to adjust the maximum height of your chair, contact your local authorized A-dec dealer.

<table>
<thead>
<tr>
<th>Icon/Function</th>
<th>Actions/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\uparrow) Base Up</td>
<td>Press and hold (\uparrow) to raise the chair base.</td>
</tr>
<tr>
<td>(\downarrow) Base Down</td>
<td>Press and hold (\downarrow) to lower the chair base.</td>
</tr>
<tr>
<td>(\rightarrow) Back Up</td>
<td>Press and hold (\rightarrow) to raise the chair back.</td>
</tr>
<tr>
<td>(\leftarrow) Back Down</td>
<td>Press and hold (\leftarrow) to lower the chair back.</td>
</tr>
</tbody>
</table>
Position the Chair with Preset Controls

1. Position the Chair with Preset Controls

Press  or (also on the standard touchpad) to move the chair to a preset position. See the table (below left) for factory settings.

Customize the Chair Preset Positions

To customize chair presets or:
1. Position the chair as desired.
2. Press and hold until you hear one beep, which indicates program mode is on.
3. Within five seconds, press the chair preset you wish to change (for example, press ). Three beeps confirm that your new setting is saved.

Customize the X-Ray/Rinse Chair Preset

The factory preset  moves 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 also set  to function as a customized chair preset position. To change its function:
1. Press  and  at the same time and hold for three seconds.
   - One beep indicates  is set as another customizable chair preset.
   - Three beeps indicate that  is set as the x-ray/rinse factory preset (which toggles between the x-ray/rinse position and the previous chair position).
2. If you set  as another customizable chair preset and want to assign a different chair position, follow the steps outlined above in “Customize the Chair Preset Positions.”

<table>
<thead>
<tr>
<th>Icon</th>
<th>Preset Name</th>
<th>Factory Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Entry/Exit</td>
<td>Positions the chair for patient entry/exit.</td>
</tr>
<tr>
<td></td>
<td>Treatment 1</td>
<td>Positions the chair base and back down.</td>
</tr>
<tr>
<td></td>
<td>Treatment 2</td>
<td>Positions the chair base down and the back partially up.</td>
</tr>
<tr>
<td></td>
<td>X-Ray/Rinse</td>
<td>Moves the chair to either x-ray or rinse position. A second press moves the chair to the previous position.</td>
</tr>
</tbody>
</table>
Operate the Dental Light

Turn On/Turn Off the Dental Light and Change the Intensity
- To turn on the light, press  
- To change the light intensity mode, press . The indicator light flashes continuously in cure-safe and composite/low modes.
- To turn the light off, press and hold  

Set the Dental Light Auto On/Off Function
When you press  (also  on the standard touchpad), the dental light automatically turns on once chair motion stops. The light turns off when you press  or .

To disable or enable this function, press and hold  and  at the same time.
- One beep indicates the function is off.
- Three beeps indicate the dental light auto on/off function is on.

IMPORTANT For more details on dental light operation, see your dental light Instructions for Use.
Operate the Cuspidor

Turn On/Turn Off Cupfill and Bowl Rinse

Use the icons on the touchpad (💧, ⚪️), or the buttons on the cuspidor (💧, ⚪️) to control cupfill and bowl rinse functions.

<table>
<thead>
<tr>
<th>Icon/Function</th>
<th>Actions/Options</th>
</tr>
</thead>
</table>
| 💧 (or ⚪️) Cupfill | • Press once for a timed operation. The factory preset is a 2.5 second fill.  
• Press and hold for manual operation. |
| ⚪️ (or ⚪️) Bowl Rinse | • Press once for a timed operation. The factory preset is a 30 second rinse.  
• Press twice for continuous flow. Then press once to stop the flow.  
• Press and hold for manual operation. Release to stop the flow. |

Customize Cupfill and Bowl Rinse Timing on the Touchpad

1. Press and hold ⚪️ until you hear one beep, which indicates program mode is on.
2. Within five seconds, press and hold ⚪️ or 💧 for the desired time.
3. Three beeps confirm that your new settings are saved.

Customize Cupfill and Bowl Rinse Timing on the Cuspidor

1. Press and hold ⚪️ and 💧 under the cupfill spout until you hear one beep, which indicates program mode is on.
2. Within five seconds, press and hold ⚪️ or 💧 for the desired time.
3. Three beeps confirm that your new settings are saved.
Activate the Air and Water Coolant

To see and change basic air handpiece functions on the touchpad, lift the handpiece from the holder. Basic air appears on the display screen any time a standard air-driven high- or low-speed handpiece is detected.

<table>
<thead>
<tr>
<th>Icon/Function</th>
<th>Actions/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌧️ Water Coolant</td>
<td>Press 🌧️. The icon appears on the left side of the screen when the water coolant is on.</td>
</tr>
<tr>
<td>🌧️ On/Off*</td>
<td></td>
</tr>
<tr>
<td>🌬️ Air Coolant</td>
<td>Press 🌬️. The icon appears on the left side of the screen when the air coolant is on.</td>
</tr>
<tr>
<td>🌬️ On/Off</td>
<td></td>
</tr>
<tr>
<td>🌪️ + 🌧️ or 🌬️</td>
<td>Euro mode allows you to turn on or turn off water and air coolant functions at the same time with one press of either icon.</td>
</tr>
<tr>
<td>🌪️ Euro Mode* On/Off</td>
<td>Press and hold 🌪️ and 🌧️ (or 🌪️ and 🌬️) for three seconds. Three beeps indicate that the Euro mode is on. One beep indicates that it is off.</td>
</tr>
</tbody>
</table>

*NOTE  The touchpad does not control water coolant on systems with a lever foot control. If you press 🌧️ on the touchpad, 🌧️ will appear on (or disappear from) the display screen—whether water coolant is on or off at the handpiece. Instead, use the lever (move left or right) for wet or dry handpiece operation. For this reason, Euro Mode is not available on systems with a lever foot control.
Operate Advanced Air® Handpieces

Advanced Air Memory Presets

In addition to basic handpiece controls, Advanced Air adds memory presets and handpiece sensitivity settings so you can save maximum bur speed and other function presets similar to an electric motor. Use the foot control to modulate bur speeds from 60,000 rpm up to your selected maximum bur speed shown on the display.

The factory default settings provide the following memory presets:

<table>
<thead>
<tr>
<th>Memory Preset</th>
<th>Maximum Bur Speed</th>
<th>Handpiece Mode</th>
<th>Air Coolant</th>
<th>Water Coolant</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1</td>
<td>60,000 rpm</td>
<td>Torque</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>m2</td>
<td>160,000 rpm</td>
<td>Torque</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>m3</td>
<td>240,000 rpm</td>
<td>Torque</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>m4</td>
<td>320,000 rpm</td>
<td>Torque</td>
<td>On</td>
<td>On</td>
</tr>
</tbody>
</table>

**NOTE** The Advanced Air system provides a maximum bur speed up to 320,000 rpm. However, handpiece performance may vary due to compressor performance, system air flow variances, and maintenance.

**NOTE** The minimum bur speed with Advanced Air is 60,000 rpm. When the maximum bur speed in the memory preset is set to 60,000 rpm, the foot control essentially becomes an on/off switch for the handpiece.
Operate Advanced Air Handpieces (continued)

Customize the Advanced Air Memory Presets

Follow the steps below to customize the Advanced Air memory presets:

<table>
<thead>
<tr>
<th>Icon/Function</th>
<th>Actions/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1 — m4</td>
<td>Each A/B user setting provides four memory presets for each handpiece. To change a preset:</td>
</tr>
<tr>
<td>Instrument Memory Presets</td>
<td>1. Lift the handpiece from the holder.</td>
</tr>
<tr>
<td></td>
<td>2. Press — or + to change your preferred maximum bur speed, press ⌈ or ⌋ to turn on/turn off the water or air coolant, and press ⌅ to change the handpiece mode.</td>
</tr>
<tr>
<td></td>
<td>3. Press and hold ⌅ until you hear one beep, which indicates program mode is on.</td>
</tr>
<tr>
<td></td>
<td>4. Within five seconds, press m1, m2, m3, or m4 to save the settings under your preferred memory preset. Three beeps confirm that your new settings are saved.</td>
</tr>
</tbody>
</table>

Handpiece Mode

**Advanced Air Torque Mode** — Provides immediate high torque (as soon as the bur is under a load). Use when you require a high removal rate.

**Advanced Air Tactile Mode** — Provides a softer ramp-up to high torque when the bur is under a load. Use to finish steps where tactile feedback is more critical.

**Advanced Air Basic Mode** — Provides the ability to mimic basic air operation. Eliminates presets and touchpad speed control. Also allows for the use of non-Advanced Air handpieces in this position.
Operate Electric Handpiece Functions

Standard Mode Memory Presets
To activate the electric handpiece, lift it from the holder. The touchpad screen displays the previous settings used for that handpiece position. Use the memory presets to control motor speed and air/water coolant. Standard mode provides four factory presets with the following values:

<table>
<thead>
<tr>
<th>Memory Preset</th>
<th>Maximum Motor Speed</th>
<th>Air Coolant</th>
<th>Water Coolant</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1</td>
<td>2,000 rpm</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>m2</td>
<td>10,000 rpm</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>m3</td>
<td>20,000 rpm</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>m4</td>
<td>40,000 rpm</td>
<td>On</td>
<td>On</td>
</tr>
</tbody>
</table>

Customize Standard Mode Memory Presets
You can customize the memory presets with your own specific values. In standard mode, each A/B user setting provides four memory presets for each handpiece. The endodontics mode offers an additional four presets per handpiece for each A/B user setting.

To change a preset:
1. Press — or + to change your preferred maximum motor speed.
2. Press ⬆️ and ⬇️ to turn on/turn off water or air coolant.
3. Press and hold ⬆️ until you hear one beep, which indicates program mode is on.
4. Within five seconds, press m1, m2, m3, or m4 to save the setting under your preferred memory preset. Three beeps confirm that your new settings are saved.
**Operate Electric Handpiece Functions (continued)**

**Change the Motor Direction**

Press 🔄 to change the motor direction. In reverse mode, the screen icon flashes continuously. Forward/reverse cannot be saved as part of the standard mode settings. The direction defaults to forward after you return the handpiece to its holder or turn off the system.

**NOTE** You can also use the foot control to switch between forward and reverse. When the motor has stopped, tap the accessory/chip blower button to change the direction. For more information, see page 7.
Customize the Endodontics (Endo) Mode Memory Presets

The endo mode allows you to change a number of settings based on the specific file and desired handpiece behavior. Icons on the touchpad display screen reflect the settings.

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

To customize the endo mode settings:

1. Lift the handpiece from the holder.
2. If the touchpad screen does not display the endo mode, press iii.
3. To change settings in endo mode, press – or +. A white reverse video box is displayed on the touchpad screen.
4. Press ↑, ↓, ←, or → to move from setting to setting on the touchpad screen.
5. Press – or + to change the setting as desired.
6. Press and hold p until you hear one beep, which indicates program mode is on.
7. Within five seconds, press m1, m2, m3, or m4 to save the settings under your preferred memory preset. Three beeps confirm that your new settings are saved.

For more details on these settings, see “Additional Details for Endo Mode Settings” on page 19.
**Operate Electric Handpiece Functions** (continued)

### Additional Details for Endo Mode Settings

<table>
<thead>
<tr>
<th>Icon</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="300 RPM" /></td>
<td>Speed</td>
<td>Setpoint for the file speed limit. For more information, consult your file manufacturer.</td>
</tr>
<tr>
<td><img src="image" alt="0.085 Ncm" /></td>
<td>Torque</td>
<td>Setpoint for the file torque limit. For more information, consult your file manufacturer.</td>
</tr>
<tr>
<td><img src="image" alt="85 g·cm" /></td>
<td>Torque Units</td>
<td>Toggles between newton centimeters (Ncm) and gram centimeters (gcm). When you change this setting, the change applies to all endo memory presets. <em>Note: 1 N·cm = 102 g·cm.</em></td>
</tr>
<tr>
<td>1:1</td>
<td>Ratio</td>
<td>Indicates the handpiece ratio or handpiece model. For more information, consult your handpiece manufacturer.</td>
</tr>
<tr>
<td><img src="image" alt="Beep" /></td>
<td>Beeper</td>
<td>When active, the warning beep sounds when you approach torque limit and beeps twice when the file auto reverses. When you change this setting, the change applies to all endo memory presets.</td>
</tr>
<tr>
<td><img src="image" alt="Light" /></td>
<td>Handpiece Light</td>
<td>Indicates if the handpiece light is on in the endo mode.</td>
</tr>
<tr>
<td><img src="image" alt="Auto" /></td>
<td>Auto Modes</td>
<td>The auto mode indicator is located inside the forward/reverse indicator. When you change this setting, the change applies to all endo memory presets.</td>
</tr>
<tr>
<td><img src="image" alt="Auto Stop" /></td>
<td>Auto Stop</td>
<td>• When the file reaches the torque limit, the motor shuts off.</td>
</tr>
<tr>
<td><img src="image" alt="Auto Reverse" /></td>
<td>Auto Reverse</td>
<td>• When the file reaches the torque limit, the motor stops and reverses direction until the foot control is released.</td>
</tr>
<tr>
<td><img src="image" alt="Auto Forward*" /></td>
<td>Auto Forward*</td>
<td>• When the file reaches the torque limit, the motor stops, reverses three turns, and then changes back to forward again.</td>
</tr>
</tbody>
</table>

---

**WARNING** Endo file settings must be set according to the file manufacturer. File speed limits, torque limits, supported gear ratios, and supported auto modes should be provided in the endo file Instructions for Use. If these settings are not set properly, patient injury may occur. For more information, consult with your file manufacturer.

*NOTE* If the endo file gets stuck, the auto forward cycle repeats three times before the motor stops.
**Operate Ultrasonic Instrument Functions**

NOTE The A-dec foot control provides variable scaler output up to the maximum power limit on the display. Most tabletop devices operate differently and use on/off switching.

**Ultrasonic Memory Presets**
To activate the device, lift it from the holder. The previous settings used for that handpiece position appear on the display screen. Standard mode provides four factory presets with the following values:

<table>
<thead>
<tr>
<th>Memory Preset</th>
<th>Maximum Power Limit / Acteon Tip Color*</th>
<th>Water Coolant</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1</td>
<td>25% / Green</td>
<td>On</td>
</tr>
<tr>
<td>m2</td>
<td>50% / Yellow</td>
<td>On</td>
</tr>
<tr>
<td>m3</td>
<td>75% / Blue</td>
<td>On</td>
</tr>
<tr>
<td>m4</td>
<td>100% / Orange</td>
<td>On</td>
</tr>
</tbody>
</table>

**Customize the Ultrasonic Memory Presets**
To customize an ultrasonic instrument preset:

1. Lift the instrument from the holder.
2. Press — or + to change the power limit percentage. With Acteon ultrasonic devices, the tip color changes automatically with power limit changes.
3. Press or to turn on or turn off water coolant.
4. Press and hold until you hear one beep, which indicates program mode is on.
5. Within five seconds, press m1, m2, m3, or m4 to save the settings under your preferred memory preset. Three beeps confirm that your new settings are saved.

*NOTE Tip color settings are only compatible with the Acteon Color Coding System™ and Newton® tips. For more information, contact your local authorized A-dec dealer.
**Touchpad Help Messages**

The touchpad displays help messages for disabled operations and other errors. When a help message appears, take note of the message, as well as the function you were performing, in case service is required.

For more details on help messages, see the *Regulatory Information, Specifications, and Warranty* document (p/n 86.0221.00), which is available in the Resource Center at [www.a-dec.com](http://www.a-dec.com).

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**Other Handpiece and Accessory Settings**

Contact 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 (until the foot control is pressed) when the handpiece is removed from the holder.

- **On in Endo** – specifies whether the handpiece light turns on or off when the endo mode is selected. The default setting is off.

- **Voltage Adjustment** – allows for customized light output voltage for each handpiece position. The default setting is 3.2 VDC.
Adjust the Handpiece Coolant Spray

**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 adjusts air flow to all handpiece positions simultaneously. Each water coolant knob adjusts water flow to a single handpiece position.

Use the following process to adjust for the desired handpiece coolant atomization:

1. Ensure that a bur is inserted into each handpiece you expect to adjust.
2. Lift the handpiece from the holder.
3. Press on the touchpad to turn off the air coolant.
4. Do one of the following:
   - On systems with a disc foot control—use the touchpad or wet/dry toggle to turn on the water coolant, then press the disc all the way down.
   - On systems with a lever foot control—move the lever all the way to the left to run the handpiece at full speed with water.
5. Gently turn the water coolant adjustment knob (to the corresponding handpiece) clockwise until coolant flow stops. Then slowly turn the knob counterclockwise until water droplets are expelled from every water port on the handpiece head.
6. Release the foot control and return the handpiece to the holder.
7. Repeat steps 2 through 6 for each handpiece.

*Continue with step 8 on page 23.*
8. Lift the handpiece from the holder and press \( \text{on} \) the touchpad to turn on the air coolant.

9. Fully press the foot control.

10. Locate the air coolant adjustment knob. Adjust the air coolant until you achieve the desired atomization at the cutting surface of the bur. Counterclockwise increases 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.

11. Use the water coolant adjustment knob, as needed, to make any additional fine adjustments in water coolant output.

12. Repeat steps 8 through 11 for each handpiece.
Adjust Handpiece Drive Air Pressure

**CAUTION** Exceeding the manufacturer’s recommended drive air pressure increases the risk of damage and may significantly decrease the life of your handpiece components. For the proper drive air pressure, see the handpiece manufacturer’s Instructions for Use.

**NOTE** Drive air pressure varies throughout the system and can be more than 5 psi (34 kPa) lower at the handpiece than what is shown on the touchpad. To achieve the most accurate drive air measurement, use a handpiece pressure gauge attached to the handpiece tubing. To order a gauge, or for more information, contact your local authorized A-dec dealer.

**CAUTION** When you remove or replace the cover, take care not to damage any wiring or tubing. Verify that the cover is secure after you replace it.

In order to adjust handpiece driver air, you must first remove the delivery system covers. Locate the hole directly under the delivery system and pull the covers apart. To replace, position the covers over the delivery system and snap together.
Adjust Handpiece Drive Air Pressure (continued)

A handpiece must be attached to the tubing to read the pressure. For systems with a disc foot control:

1. Lift the handpiece from the holder.
2. Use the touchpad or wet/dry toggle to turn off the water coolant.
3. Press − and + at the same time to show the drive air pressure on the touchpad.
4. Locate the drive air pressure adjustment stem that corresponds with the active handpiece.
5. Fully press the foot control to run the handpiece and adjust the drive air pressure to meet the manufacturer’s specifications.

For systems with a lever foot control:

1. Lift the handpiece from the holder.
2. Press − and + at the same time to show the drive air pressure on the touchpad.
3. Locate the drive air pressure adjustment stem that corresponds with the active handpiece.
4. Move the foot control lever all the way to the right to run the handpiece at full speed without water.
5. Adjust the drive air pressure to meet the manufacturer’s specifications.
Clean / Maintain

Protect with Barriers

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.

NOTE For proper use and disposal of barriers, see the barrier manufacturer’s Instructions for Use.

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


IMPORTANT For complete details on how to maintain good water quality in your system, see the Instructions for Use for 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
Flush the Handpiece Tubing

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

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

**NOTE** Flush all handpiece tubing (air and waterlines) in accordance with the regulations in your area. If no regulations exist, flush the tubing for a minimum of 20–30 seconds at the beginning of the day and after each patient.

Maintain the Oil Collector

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

1. Unsnap the oil collector cover from the delivery system 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.
Maintain Solids Collector

The solids collector helps prevent 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** To obtain replacement solids collector screens, contact your authorized A-dec dealer and reference Pinnacle p/n 5512.

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

To replace the solids collector screen:

1. Turn off the vacuum or open the HVE control valve.
2. Remove the solids collector cap.

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

3. Remove the solids collector screen and discard according to your local regulations.

   **NOTE** When you replace the solids collector cap, ensure that the keyed cutout faces down, or it will cut off the vacuum flow.

4. Insert a new screen in the solids collector and replace the cap.
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 barriers to protect the main body of the HVE and saliva ejector, replace the barriers after each patient. Clean and disinfect these instruments at the end of each day or after each patient if the barriers have been compromised. If you do not use barriers, or if you perform oral surgery, always clean and disinfect these instruments after each patient.

Disinfection

To disinfect the A-dec 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 with an intermediate-level, hospital-grade disinfectant. Follow the disinfectant manufacturer’s Instructions for Use.
3. Operate the HVE and the saliva ejector valves several times to verify that they rotate smoothly.
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 A-dec 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, mild dishwashing liquid, and water. 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 with the brushes provided with the product (or equivalent), mild dishwashing liquid, and water. 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. Disinfect the valve body components with an intermediate-level, hospital-grade 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.

**CAUTION** Use only silicone lubricant when lubricating the black O-rings in A-dec instruments. Petroleum-based products will cause permanent damage to the O-rings.

12. Prior to use, replace O-rings as needed, lubricate O-rings with A-dec silicone lubricant, and reassemble the valve body assembly.
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/Saliva Ejector Tip Connections” on page 34 for specifications.

Disposable Tips

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

Replace disposable HVE and saliva ejector tips after each use.

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, then allow it 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.
**Bulb for Fiber-Optic 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.

**Access the Utilities**

**CAUTION** When you remove or replace the panel, take care not to damage any wiring or tubing. Verify that the panel is secure after you replace it.

The system utilities are located in the cabinet base and typically include the electrical outlet, as well as the system hookups for air, water, and vacuum. To access, open the doors of the cabinet, then lift and remove the bottom panel. For maintenance, contact your local authorized A-dec dealer.
Specifications

System Accessory Load

Maximum accessory load capacity: 20 lb (9.1 kg)
(in addition to integrated accessories)

HVE/Saliva Ejector Tip Connections

- Standard 11 mm HVE: 0.438" (11.1 mm) diameter opening
  (for standard HVE tips)
- Large bore 15 mm HVE: 0.594" (15.1 mm) diameter opening
  (for large bore HVE tips)
- Standard 6 mm SE: 0.257" (6.5 mm) diameter opening
  (for standard SE tips)

Solids Collector Screen/Filter

Maximum mesh opening size: 0.047" (1.194 mm) ≡ 1200 µm

IMPORTANT For electrical specifications, identification of symbols, and other regulatory requirements, see the Regulatory Information, Specifications, and Warranty document (p/n 86.0221.00) available in the Resource Center 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.