A-dec 300 Delivery Systems
Spare Parts List
For details of product accessories, wear and tear parts and their use methods, refer to the detailed description of each component.

Intended Application and Use
This equipment/system is intended for diagnostic and therapeutic treatment of dental patients by licensed health care professionals.

A dental operative unit (with or without accessories) is an AC-powered device intended to supply power to and serve as a base for other dental devices, such as a dental handpiece, a dental operating light, an air or water syringe unit, an oral cavity evacuator, a suction operative unit, and other dental devices and accessories.

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

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

Product Model/Specification
A-dec 300 Systems

Product Configuration
The product consists of the 363 support center, 363 cuspidor, 311 dental chair, 334 delivery system, 353 assistant arm, foot control (part number: 62.0163.01).
**Expected Service Life**

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

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

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

**Intended Use**

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

**Software Information**

a) Software Name: A-dec 300
b) Software Type: 43.0363.00
c) Software Version: 1.0001
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 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 system power on:
Flip the toggle up.

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.)

To control the dental light, cuspidor, and electric motor functions:
Press the corresponding buttons on the touchpad.
(For detailed programming instructions, see page 8.)

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 8.)
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

The A-dec logo on the touchpad illuminates when the system is on and ready for use. If the status light blinks, it may indicate that a safety feature has interrupted chair motion. See “Safety Features” on page 6 for more information.
Safety Features

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

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

<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>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.</td>
</tr>
<tr>
<td></td>
<td>Run the optional accessory or 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 accessories.

For handpiece coolant adjustments, see page 15.

**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.
Touchpad Controls

Programmable Chair Positions

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

Operate your A-dec chair using the manual controls or programmed presets on the touchpad (see page 4 for manual controls). You can change any of the preset buttons to meet your needs.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Position</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 back up.</td>
</tr>
<tr>
<td></td>
<td>X-ray/Rinse</td>
<td>Moves the chair to either x-ray or rinse position. Press again to move the chair to the previous position.</td>
</tr>
</tbody>
</table>
**Chair Preset Buttons**

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

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

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

**X-Ray/Rinse Button**

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

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

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

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

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

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

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

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**Deluxe Touchpad Handpiece Settings**

**Standard Mode**

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

<table>
<thead>
<tr>
<th>Memory Setting</th>
<th>Factory Preset Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>2,000 rpm</td>
</tr>
<tr>
<td>M2</td>
<td>10,000 rpm</td>
</tr>
<tr>
<td>M3</td>
<td>20,000 rpm</td>
</tr>
<tr>
<td>M4</td>
<td>36,000 rpm</td>
</tr>
</tbody>
</table>
You can reprogram these memory settings with your own specific preset speeds. A total of eight customized settings per handpiece is possible (four in Standard Mode and four in Endodontics Mode).

To program the handpiece setting:
1. Press ↩️ or ⬅️ until the RPM setting you want is displayed on the touchpad screen.
2. Press ⬅️ to save it to memory. One beep sounds.
3. Press ↩️ to display the memory settings for M1 through M4. When the desired memory setting is displayed, press ⬅️. 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.

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**NOTE**

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

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To change a setting:
1. Lift the handpiece from the holder.
2. If the touchpad screen does not display the Endo Mode, press ⬅️.
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 ⬅️. One beep sounds.
7. Press ⬅️ to display the memory settings for M1 through M4. When the desired memory setting is displayed, press ⬅️. Three beeps confirm the setting.
### Deluxe Touchpad Handpiece Settings (continued)

#### Endo Mode Touchpad Screen Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon](300 RPM)</td>
<td><strong>Speed</strong></td>
<td>Setpoint for file speed limit. For more information, consult your file manufacturer.</td>
</tr>
<tr>
<td>![Icon](100 gcm)</td>
<td><strong>Torque</strong></td>
<td>Setpoint for file torque limit. For more information, consult your file manufacturer.</td>
</tr>
</tbody>
</table>
| ![Icon](300 gcm) | **Torque Units** | Toggles between Ncm (Newton centimeters) gcm (Gram centimeters). Adjusting this setting for one handpiece changes it for all handpiece settings.  
*Note: 1 Ncm = 102 gcm.* |
| ![Icon](Ratio) | **Ratio** | Sets the handpiece ratio. For more information, consult your handpiece manufacturer. |
| ![Icon](Forward/Reverse Modes) | **Forward/Reverse Modes** | Adjusting this setting for one handpiece changes it for all handpiece settings. This icon is displayed within the Forward/Reverse indicator.  
- **Auto-Off**: 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.  
*Note: If the file is stuck, the auto forward cycle repeats three times before the motor stops.* |

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**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**

- **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)

![Image of Deluxe Touchpad Handpiece Settings]

### 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.

<table>
<thead>
<tr>
<th>Message</th>
<th>Description and Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too many handpieces in use Control Head</td>
<td>- Two or more handpieces are withdrawn at one time. Only one motor, turbine, or ultrasonic instrument can be used at one time.</td>
</tr>
<tr>
<td></td>
<td>- Use one handpiece at a time and proceed as normal.</td>
</tr>
<tr>
<td>Chair is already at that position.</td>
<td>- A preset button was pressed with the chair already at that position.</td>
</tr>
<tr>
<td>Function halted by additional button press.</td>
<td>- The chair was in the process of moving to a preset position and another button was pressed, causing the movement to stop.</td>
</tr>
<tr>
<td></td>
<td>- Press the preset button again to continue to that position.</td>
</tr>
<tr>
<td>Chair will not move while foot control is in use.</td>
<td>- The chair will not move when a handpiece is withdrawn and the foot control is pressed at the same time.</td>
</tr>
<tr>
<td>This button is disabled.</td>
<td>- A button was pressed that has been disabled.</td>
</tr>
<tr>
<td></td>
<td>- 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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Description and Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair in Factory Default mode.</td>
<td>- The chair was left in factory default.</td>
</tr>
<tr>
<td></td>
<td>- Preset buttons are disabled, but all other buttons function as normal. Call for service.</td>
</tr>
<tr>
<td>Chair in Enable/Disable mode.</td>
<td>- The chair was left in factory default.</td>
</tr>
<tr>
<td></td>
<td>- Manual, preset, and program buttons are disabled and performing service-level functions. Call for service.</td>
</tr>
<tr>
<td>Chair back reached time limit. Please wait.</td>
<td>- To maximize motor life, the chair back motor runs for a limited time.</td>
</tr>
<tr>
<td></td>
<td>- Wait for one minute, then proceed as normal.</td>
</tr>
</tbody>
</table>
**Handpiece Coolant Adjustments**

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

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

1. Insert a burs into the handpieces you are adjusting.
2. Turn the air coolant adjustment knob clockwise until coolant flow stops.
3. Lift the handpiece from the holder, or pull the whip forward, and do one of the following:
   - On a disc foot control: flip the wet/dry toggle to water (toward the blue dot) and press the disc all the way down.
   - On a lever foot control: move the lever all the way to the right.
4. Locate the water coolant adjustment knob for the handpiece position you are adjusting and turn it clockwise until coolant flow stops.
5. Slowly turn the water coolant adjustment knob counterclockwise until water droplets are expelled from every water port on the handpiece head. Return the handpiece to the holder.
6. Repeat steps 3 through 5 for each handpiece.
7. To set the air coolant for the system, lift a handpiece from the holder or pull the whip forward.
8. Turn the air coolant adjustment knob counterclockwise until you achieve the desired atomization at the cutting surface of the bur.

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

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

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

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

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

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

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

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. 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 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.
Component Connection Diagram
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 depending on your location. For more information, contact your authorized A-dec dealer.

Maximum Load Weight for the Chair

Patient Load: 400 lb (181 kg)

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.
Identification of Symbols

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

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HALO</td>
<td>Recognized by Underwriters Laboratories Inc. with respect to electric shock, fire and mechanical hazards only in accordance with ANSI/AAMI ES60601-1, CAN/CSA C22.2 No. 60601-1, and Amendment 1.</td>
</tr>
<tr>
<td>UL</td>
<td>Classified by Underwriters Laboratories Inc. with respect to electric shock, fire and mechanical hazards only in accordance with ANSI/AAMI ES60601-1, CAN/CSA C22.2 No. 60601-1, Amendment 1, and 80601-2-60.</td>
</tr>
<tr>
<td>CE</td>
<td>Conforms to applicable European Directives (refer to Declaration of Conformity).</td>
</tr>
<tr>
<td>ISO</td>
<td>Conforms to MDD 93/42/EEC for Class IIa devices.</td>
</tr>
<tr>
<td></td>
<td>Protective earth (ground).</td>
</tr>
<tr>
<td></td>
<td>Functional earth (ground).</td>
</tr>
<tr>
<td></td>
<td>Type B applied part.</td>
</tr>
<tr>
<td></td>
<td>Caution: Hot surface.</td>
</tr>
<tr>
<td></td>
<td>Electrical and electronic waste. Do not dispose of with domestic waste.</td>
</tr>
<tr>
<td></td>
<td>Date of manufacture.</td>
</tr>
<tr>
<td></td>
<td>Manufacturer of equipment.</td>
</tr>
<tr>
<td></td>
<td>Sterilizable up to the stated temperature.</td>
</tr>
<tr>
<td></td>
<td>VAC symbol.</td>
</tr>
<tr>
<td></td>
<td>VDC symbol.</td>
</tr>
<tr>
<td></td>
<td>VAC/VDC symbol.</td>
</tr>
</tbody>
</table>

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

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

**Environmental Specifications**

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

**Electromagnetic Compatibility**

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

**Decommissioning and Disposal of A-dec Equipment**

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