

INSTRUCTIONS
FOR USE

A-dec® 541pro/545sta

DUO DELIVERY SYSTEM/ASSISTANT'S INSTRUMENTATION



a dec®

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Regulatory Information and Warranty

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.

For quick access to this document online, scan, tap, or click this QR code, which points to: [a-dec.com/regulatory-guide](https://www.a-dec.com/regulatory-guide).



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*

Models	Versions	Description
541pro	n/a	Delivery System
545sta	n/a	Assistant's Instrumentation

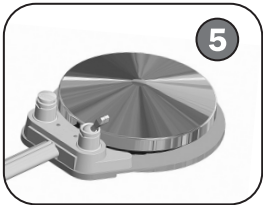
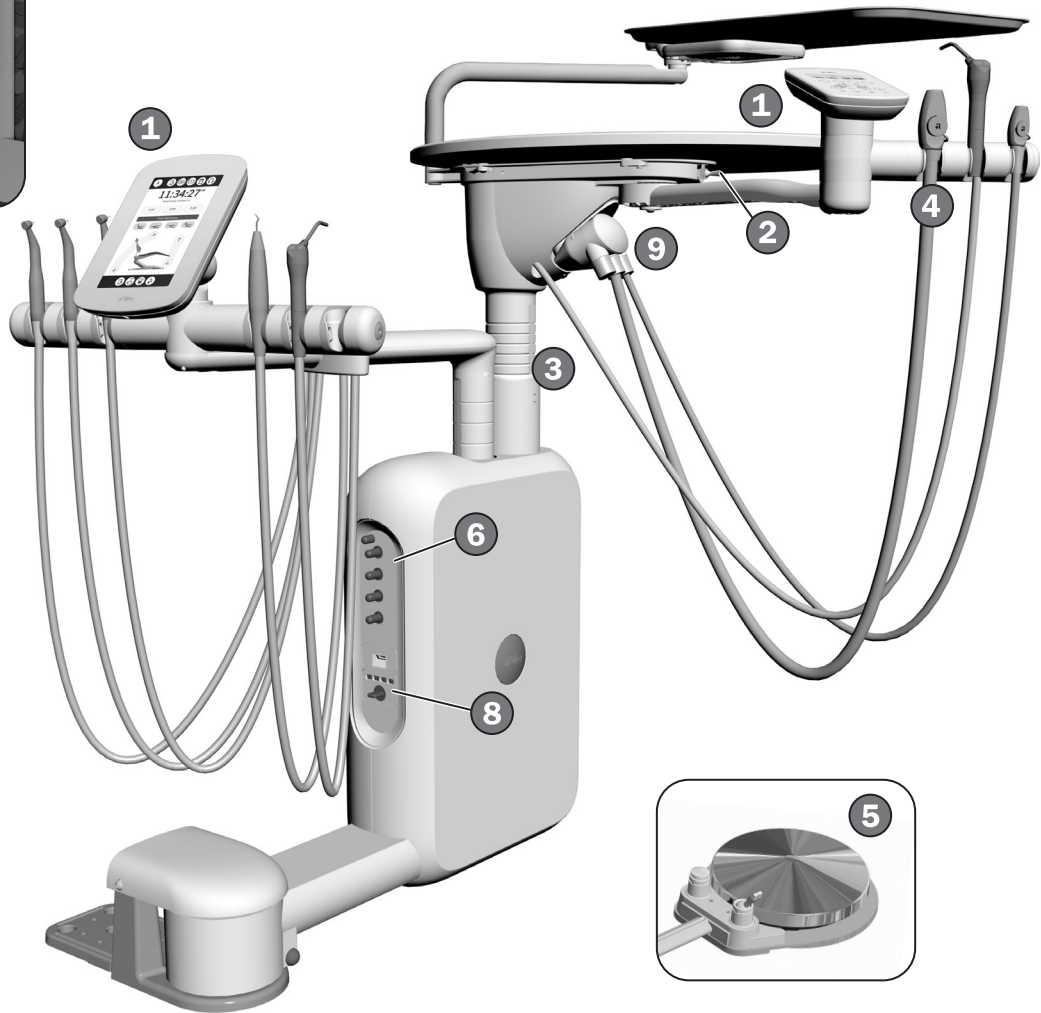
** Equipment shown in this document may include optional features or accessories. Some products, versions, and options in this document may not be available in certain regions.*

CE Marking

The product models listed below comply with applicable EU regulations across all EU member states under the following notified body number:

Models	CE Mark
545sta	0297

Content Map



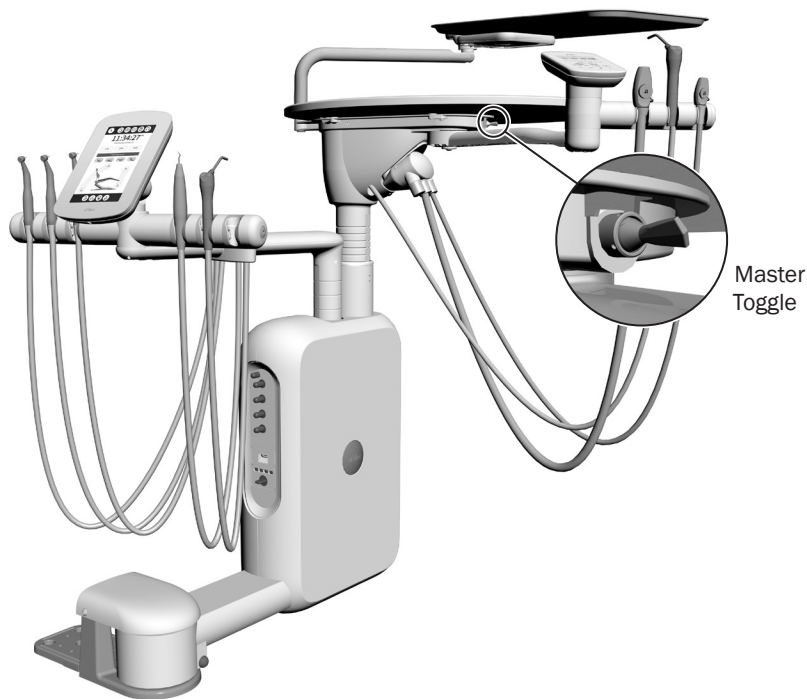
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(541pro duo delivery system shown)

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 12.

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.

A-dec Touchscreens and Control Pads*



For touchscreen and control pad use, see the *A-dec DS7/CP5i/CP5 Touch Controls Instructions for Use* (p/n 86.0857.00) at a-dec.com/touchscreen-manual.

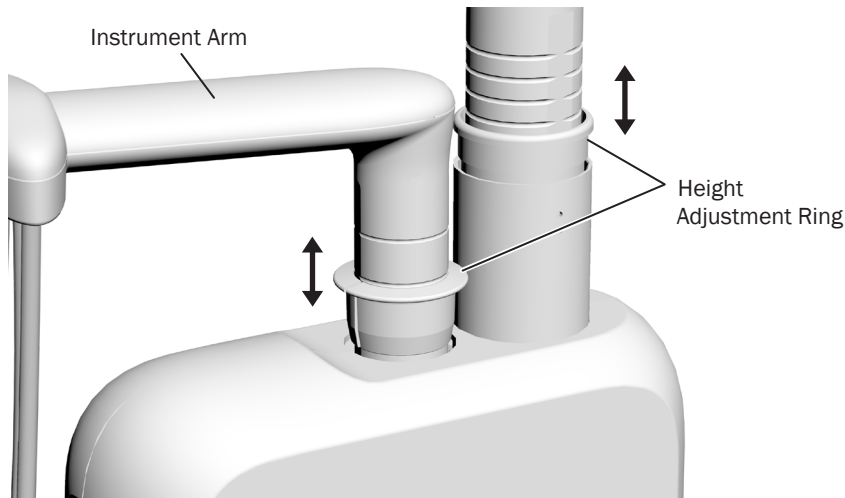


For configuring connectivity features, see the *A-dec+™ Software Platform Instructions for Use* (p/n 86.1030.00) at a-dec.com/connectivity-manual.



**Note.* Touch control symbols and icons are proprietary to A-dec, Inc.

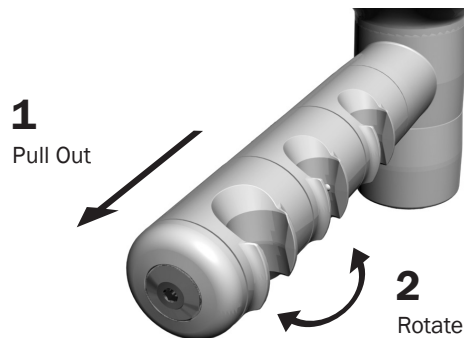
Adjust the Worksurface and Instrumentation Height



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.

Position the Instrument Holders

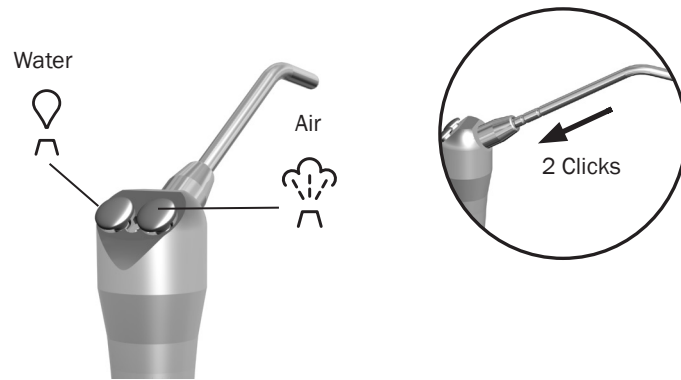


CAUTION Twisting the holder without pulling it away from the adjacent one will damage the mechanism.

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 touch control/handle.
2. Rotate to the desired position and release.

Operate the Autoclavable Syringe

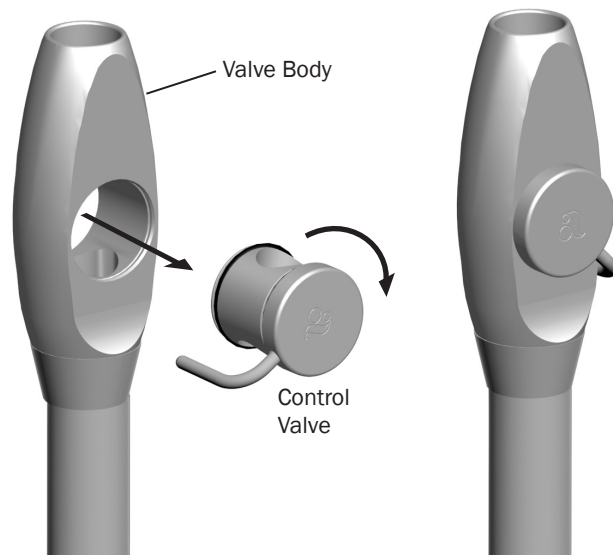


To install the A-dec syringe tip, push the tip in until you feel two clicks. Press both buttons simultaneously for the air/water spray.



IMPORTANT For more details on syringe usage and maintenance, see your A-dec syringe Instructions for Use.

A-dec HVE/Saliva Ejector Left/Right Conversion

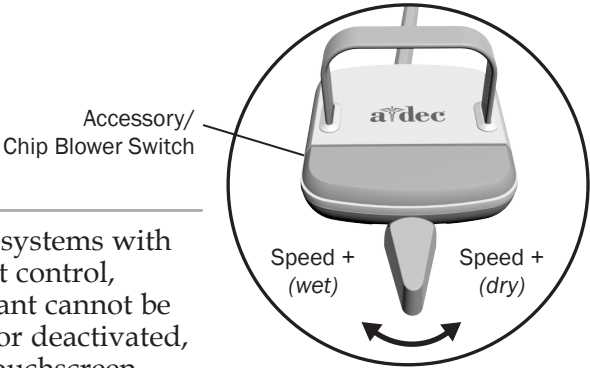
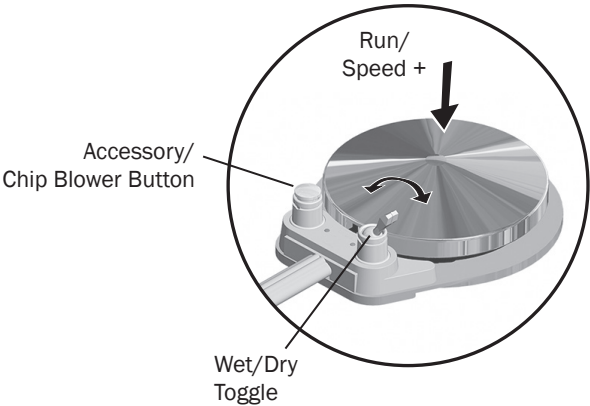


To convert the standard high-volume evacuator (HVE) and saliva ejector for left-handed operation, push the control valve out of the valve body, rotate the control valve 180°, and push it back into place.



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



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



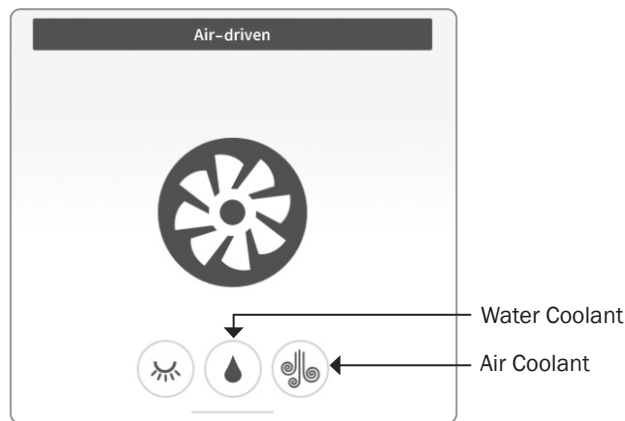
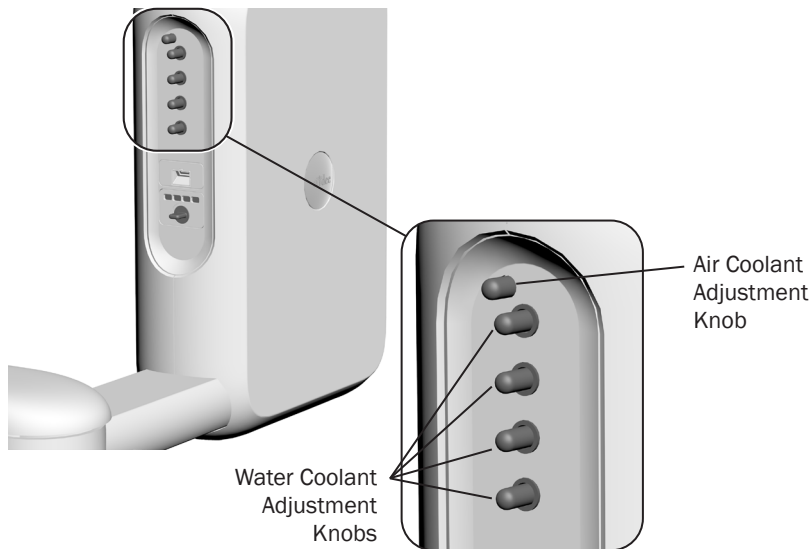
NOTE The lever foot control wet/dry function can be reversed by a technician (change left direction to dry, right direction to wet). For more details, contact your authorized A-dec dealer.

To activate a handpiece, lift it from the holder. 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.	Press  on the touchscreen to turn the coolant on or off, or flip the wet/dry toggle (which works as a three-way switch in conjunction with the touchscreen). Then press on the disc.
	Run the optional accessory/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 sanctioned clinical devices.

Adjust the Handpiece Coolant Spray



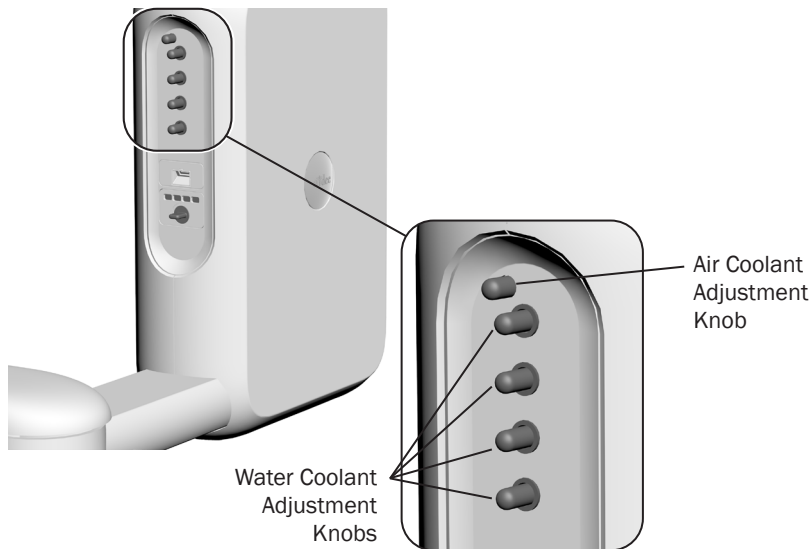
CAUTION When performing this procedure, do not attempt to completely shut off the water or air flow. The adjustment knobs are not designed to completely shut off flow and can damage the control block if you apply too much force.

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 handpiece coolant atomization:

1. Ensure that a bur is inserted into each handpiece you expect to adjust.
2. Withdraw a handpiece.
3. Select  on the touchscreen to turn off the air coolant.
4. Do one of the following:
 - **Disc foot control:** use the touchscreen or wet/dry toggle to turn on the water coolant, then press the disc all the way down.
 - **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 its holder.
7. Repeat steps 2 through 6 for each handpiece.

Adjust the Handpiece Coolant Spray *(continued)*

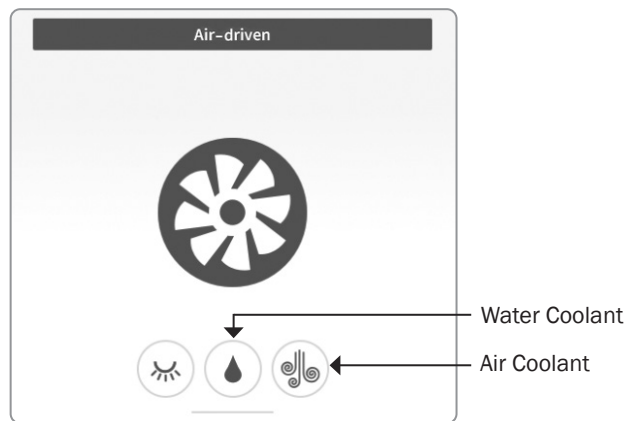


8. Lift the handpiece from the holder and press  on the touchscreen to turn on the air coolant.
9. Fully press the foot control.
10. Locate the air coolant adjustment knob. Adjust the air coolant until you achieve the desired atomization at the cutting surface of the bur. Counterclockwise increases flow.

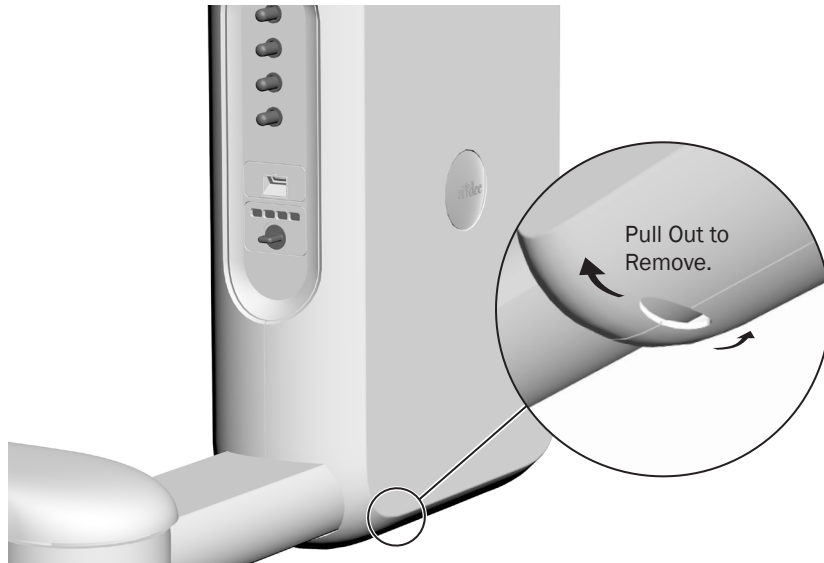


CAUTION Do not continue turning the air coolant adjustment knob counterclockwise after the air coolant stops increasing. The stem may come out of the control block.

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



WARNING Shock hazard. When you remove or replace the covers, take care not to damage any wiring or tubing. Verify that the covers are secure after you replace them.

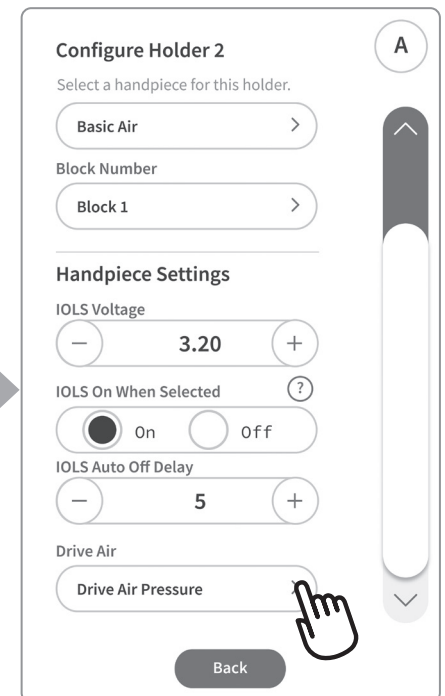
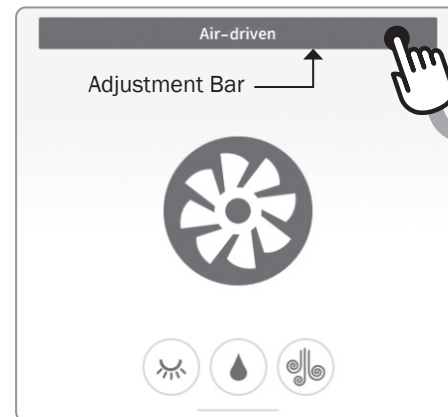


NOTE Drive air pressure may be lower at the handpiece than what is shown on the touch control. Pressure can also be measured with a handpiece pressure gauge.

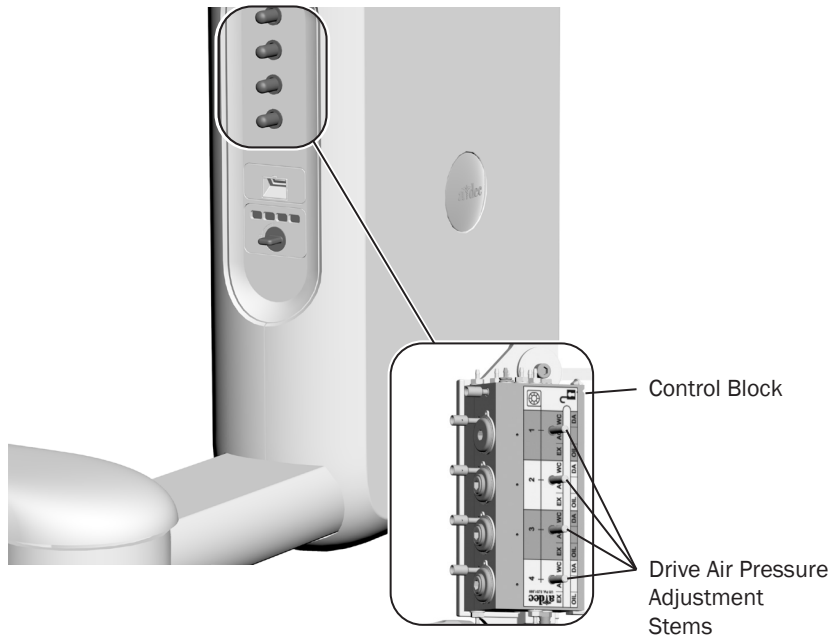
Remove the 541pro delivery system covers before you adjust the handpiece drive air pressure. Locate the hole directly under the delivery system and pull the covers apart. To replace, align the covers and snap together.

In order to read drive air pressure from the DS7 touchscreen, a handpiece must be attached to the tubing. To access the drive air pressure settings:

1. Withdraw the handpiece.
2. On the touchscreen, select and hold the adjustment bar.
3. Scroll down to **Drive Air**, select **Drive Air Pressure**, then complete the following steps on page 10.

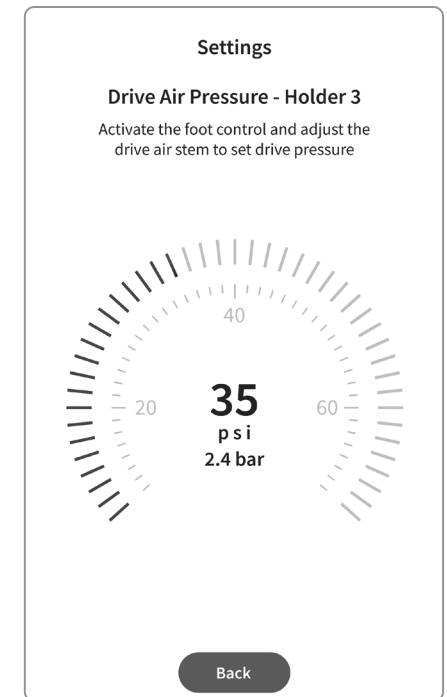


Adjust Handpiece Drive Air Pressure *(continued)*



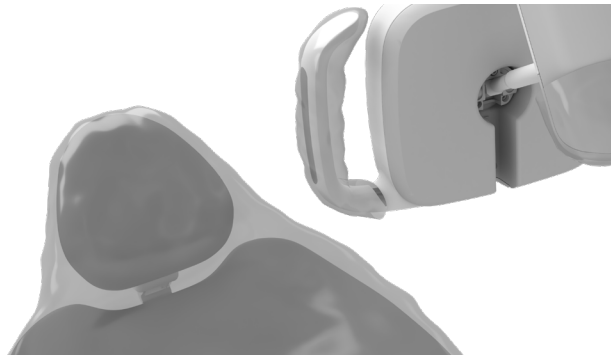
CAUTION Exceeding the manufacturer's recommended drive air pressure increases the risk of damage and may significantly decrease the life of your handpiece components. For the proper drive air pressure, see the handpiece manufacturer's Instructions for Use.

4. With the handpiece withdrawn, do one of the following:
 - **Disc foot control:** flip the wet/dry toggle to dry, and press the disc all the way down.
 - **Lever foot control:** move the lever all the way to the right.
5. Locate the corresponding drive air control stem under the delivery system control head.
6. Refer to the touchscreen while you adjust the drive air pressure to meet the handpiece manufacturer's specifications. Turn the control stem clockwise to decrease flow and counterclockwise to increase flow.



Clean/Maintain

Protect with Barriers



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

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 that you use ICX Renew® dental unit waterline shock treatment* before you use the system for the first time.

For on-going waterline maintenance, A-dec recommends a three-part protocol:

- Continuous use of A-dec ICX® waterline treatment tablets
- Regularly monitor the water quality in your dental equipment
- Shock treatment whenever the test results exceed your established water quality action level

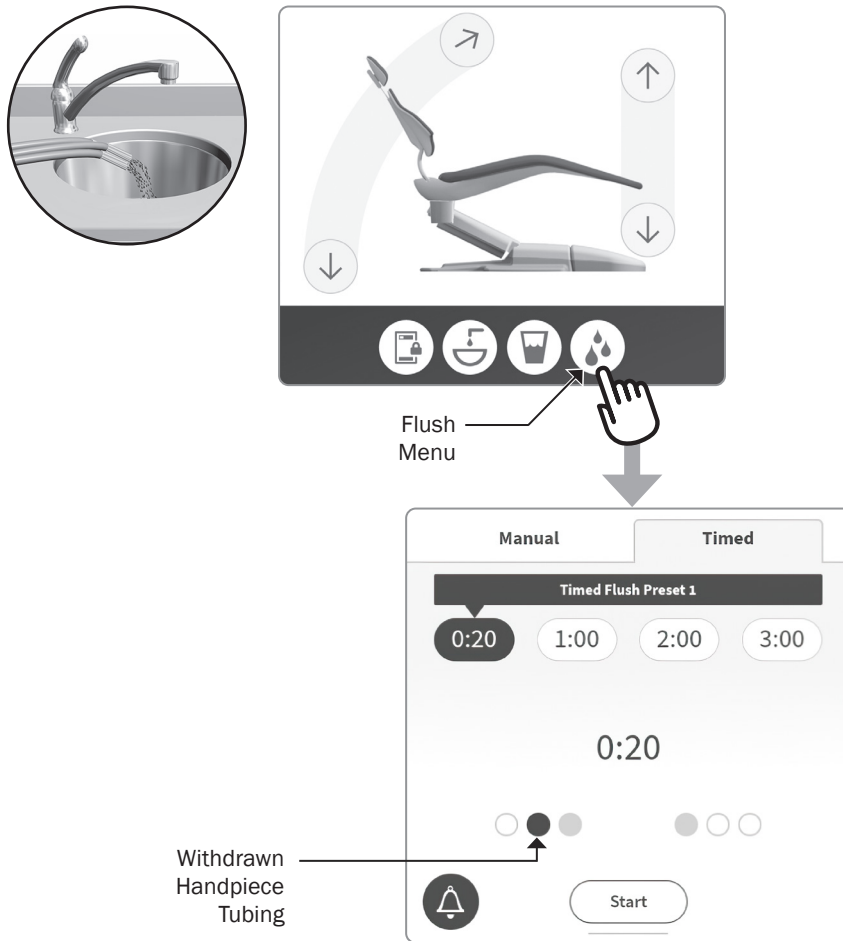


IMPORTANT For complete details on how to maintain good water quality, see the appropriate Instructions for Use provided with your A-dec waterline maintenance products. For quick access to these documents online, scan, tap, or click the QR code below.



* Note. ICX Renew may be sold under different names in different regions.

Flush the Handpiece Tubing



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.

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

1. Disconnect the handpieces and hold the tubing over a sink, cuspidor bowl, or basin.
2. Select  at the bottom of the touchscreen for the flush menu.
3. Use the manual or timed controls on the touchscreen to flush the tubing. The solid colored dot indicates which handpiece tubing is withdrawn.

Maintain the Oil Collector



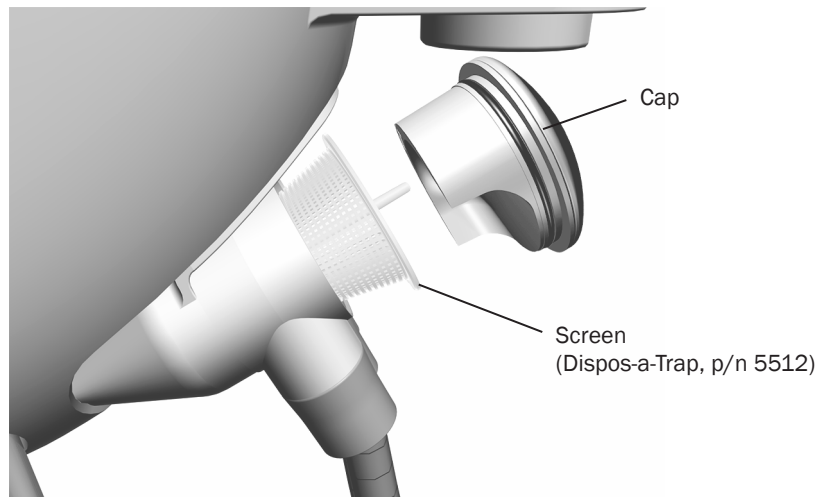
1. Turn the oil collector housing key clockwise to unlock, then pull out the housing.
2. Remove and replace the old cotton gauze (use two 2" x 2" [51 mm x 51 mm] pads folded in half).



NOTE Do not replace the cotton roll in the right corner of the oil collector. This is a brake muffler that rarely needs replacement. For more information, see your local authorized A-dec dealer.

3. Reinsert the housing and turn the key counterclockwise to lock.

Maintain the Solids Collector



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

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 the Kerr® Dispos-a-Trap™ p/n 5512.

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.

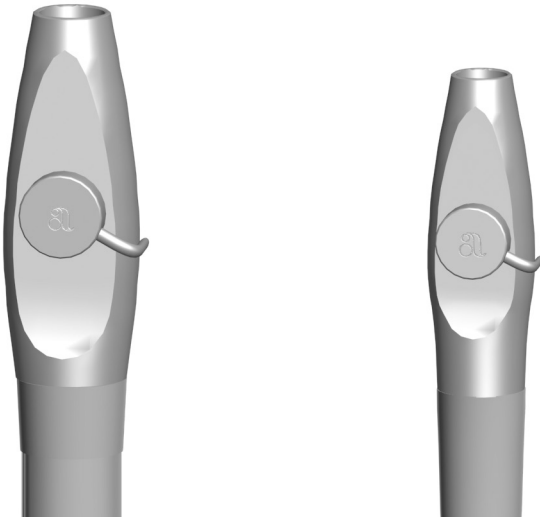
3. Remove the solids collector screen and discard according to your local regulations.



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.

A-dec HVE/Saliva Ejector Valve Body Assembly Asepsis



NOTE Vacuum lines should be flushed at the end of each day or more frequently according to your clinic's protocols.

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.

Cleaning and Disinfection



CAUTION Clean the valve body assembly as soon as possible after treating each patient. Do not allow blood and debris to dry on instruments. If you cannot clean it immediately, keep the valve body assembly moist.



NOTE Use an intermediate-level EPA-registered hospital-grade disinfectant containing a tuberculocidal claim with one of the following compositions: high-dilution water-based phenolic formulation or quaternary ammonium compound with less than 25% isopropanol.

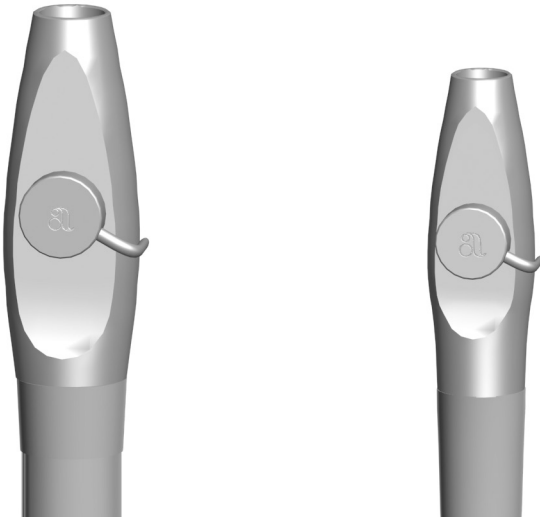


NOTE If using a spray solution, spray on a soft, low-lint wipe to apply solution to the valve body assembly.

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

1. Remove the vacuum tip from the HVE or saliva ejector valve body assembly. Discard disposable vacuum tips.

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



2. Clean the valve body assembly to remove visible soil using a disinfectant wipe or spray solution. Keep the valve body assembly wet according to the manufacturer's recommended contact time. Repeat, if necessary, until the valve body assembly is visibly clean.
3. Disinfect the valve body assembly using a new disinfectant wipe or spray solution. Keep the valve body assembly wet according to the manufacturer's recommended contact time.
4. Allow the valve body assembly to air dry.
5. Operate the HVE and the saliva ejector valves several times to verify that they rotate smoothly.

Routine Maintenance and Sterilization



CAUTION Clean the valve body assembly as soon as possible after treating each patient. Do not allow blood and debris to dry on instruments. If you cannot clean it immediately, keep the valve body assembly moist.

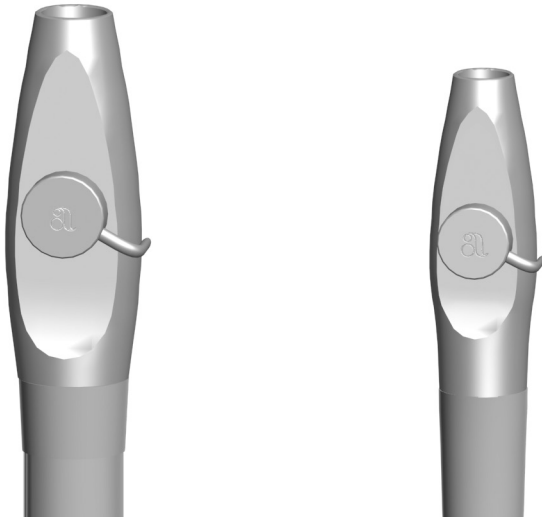


NOTE A-dec valve body assemblies are heat tolerant for sterilization. Users may sterilize at their discretion.

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

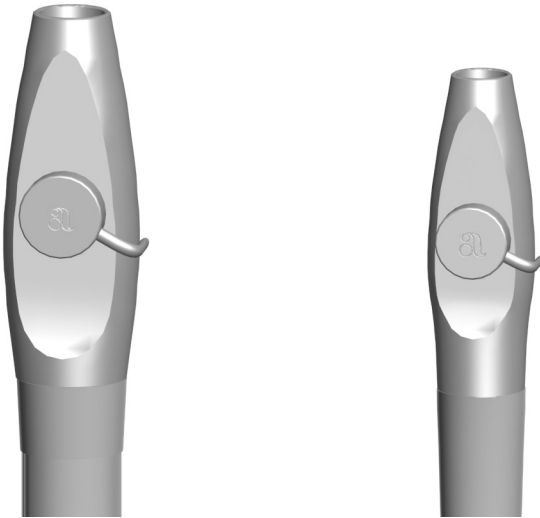
1. Remove the valve body assembly from the vacuum line by pulling it away from the tubing at the tailpiece.
2. Disassemble the valve body by pushing the control valve out of the valve body.
3. Clean soiled valve body components using a soft, low-lint wipe.

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



4. Prepare a warm (32-43°C [90-110°F]) detergent solution (neutral pH enzymatic detergent or alkaline non-enzymatic detergent), according to the manufacturer's recommended instructions.
5. Soak soiled valve body components in the prepared detergent solution for at least one minute or for as long as the manufacturer's recommended instructions indicate (whichever is longer).
6. Inspect O-rings. Remove, discard, and replace if there are visible signs of damage.
7. Use a soft, nylon-bristle brush, or equivalent, to scrub the:
 - Exposed surface of the valve body components, while submerged, for a minimum of 30 seconds or until all visible soil has been removed.
 - Interior lumen of the valve body at least three times (in and out), clearing any visible soil from brush bristles.
8. Rinse the cleaned valve body components under flowing, warm (32-43°C [90-110°F]) potable water for a minimum of 30 seconds.
9. Allow valve body components to air dry.
10. Sterilize the valve body components according to the following:
 - Dynamic air-removal sterilizers: 4 minutes at 132-135°C (270-275°F)
 - Gravity-displacement sterilizers: 30 minutes at 121-123°C (250-254°F)
11. Allow the load to dry for 30 minutes before removing it from the sterilizer. Ensure the valve body components are completely dry before proceeding.

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



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, 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.

A-dec HVE/Saliva Ejector Tips



NOTE Select tips that are compatible with your HVE and saliva ejector openings. See "A-dec HVE/Saliva Ejector Tip Connections" on page 21 for specifications.

Disposable Tips

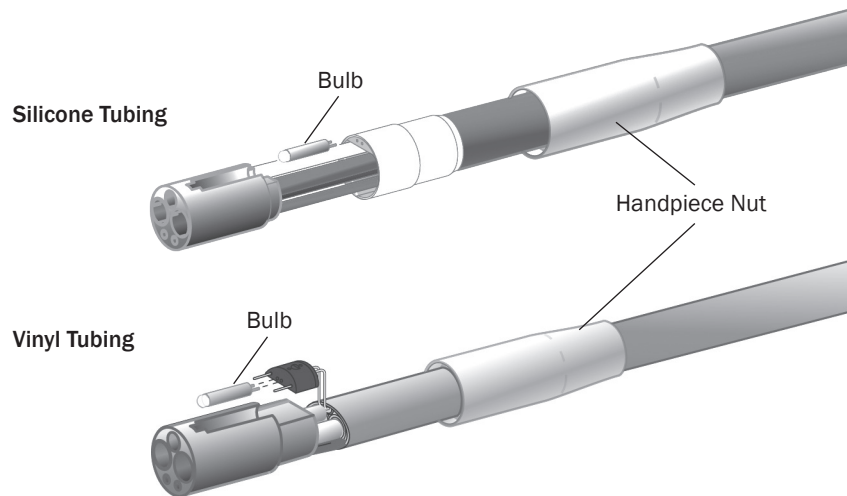


CAUTION Disposable HVE and saliva ejector tips are not sterilizable and should not be reused.



Replace disposable HVE and saliva ejector tips after each use.

Bulb for Fiber-Optic Tubing

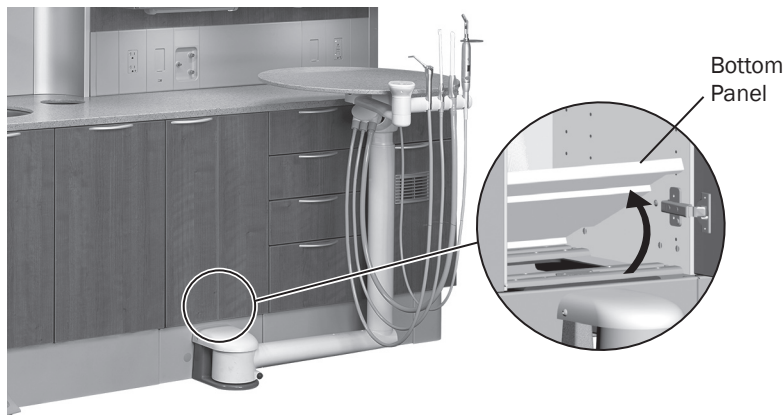


IMPORTANT To replace the bulb in your handpiece or quick-disconnect coupling, see your handpiece Instructions for Use.

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.

Access the Utilities



WARNING Shock hazard. When you remove or replace the covers, take care not to damage any wiring or tubing. Verify that the covers are secure after you replace them.

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:	11 mm (0.433") diameter opening (for standard HVE tips)
Large bore 15 mm HVE:	15 mm (0.591") diameter opening (for large bore HVE tips)
Standard 6 mm SE:	6 mm (0.236") diameter opening (for standard SE tips)

Solids Collector Screen/Filter

Maximum mesh opening size: 0.047" (1.194 mm) $\cong$ 1200 μ m



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.



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



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A-dec 545sta Assistant's Instrumentation
product in this manual:



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