



A-dec Syringes

INSTRUCTIONS FOR USE

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INTRODUCTION

Thank you for choosing A-dec equipment. This guide contains basic operating instructions, adjustments, and maintenance for A-dec Autoclavable Standard and Warm Water Syringes. This guide is intended for doctors and dental staff.

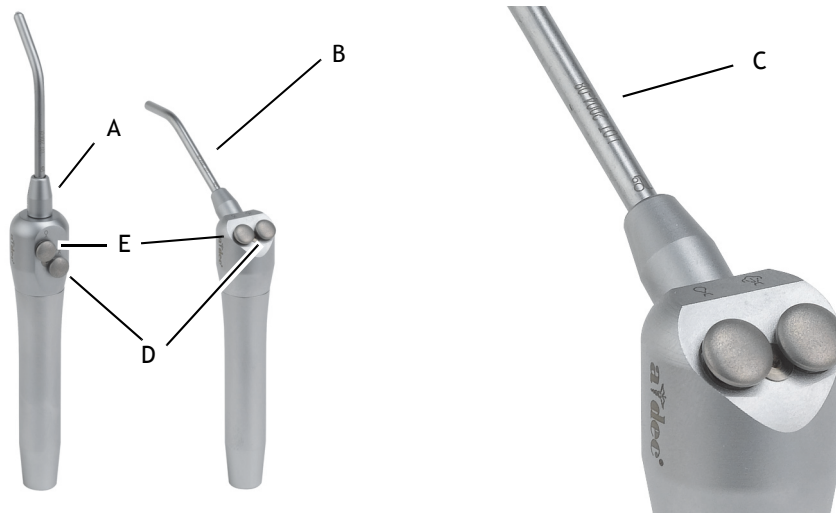
Before using the A-dec Syringes Instructions for Use, read all cautions and warnings. Read the component descriptions, and become familiar with the locations of features and controls.



Features

The A-dec Autoclavable Syringe is a three-way air and water syringe with a patented quick-disconnect autoclavable tip system.

Figure 1. Autoclavable Syringes Features



Item	Description	Supporting Instructions for Use
A	Syringe Tip Retainer Assembly	“Syringe Tip Retainer Assembly” on page 4
B	Syringe Tip	“A-dec Syringe Tip” on page 3
C	Lot Number	“Customer Service” below
D	Air Button	“Water, Air, and Spray Functions” on page 3
E	Water Button	“Water, Air, and Spray Functions” on page 3

Customer Service

For service information, contact your local authorized A-dec dealer. When calling A-dec Customer Service, please have the lot number for the product available. The lot number is located on the syringe or on the syringe tip retainer in a year month format.

Basic Operation

Water, Air, and Spray Functions

All A-dec autoclavable syringes have buttons that provide control of syringe water, air, and spray functions. For spray, press both buttons simultaneously.

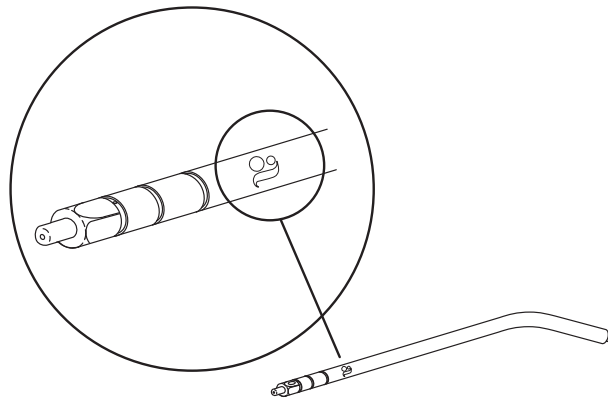
Figure 2. Water, Air, and Spray Buttons



A-dec Syringe Tip

Your A-dec syringe is packaged with two specially designed A-dec syringe tips. These tips have three locking grooves which hold the tip in place when properly installed and prevent ejection of the tip during use. A-dec tips have the distinguishing mark of the A-dec “a” printed on them.

Figure 3. Distinguishing Mark



WARNING Use only A-dec syringe tips in A-dec syringes. A-dec syringe tips have been engineered and manufactured for use with A-dec syringes. Using syringe tips manufactured by a company other than A-dec may result in syringe tip ejection. Tip ejection may result in ingestion or aspiration of the tip, requiring immediate medical attention.

Install the Syringe Tip

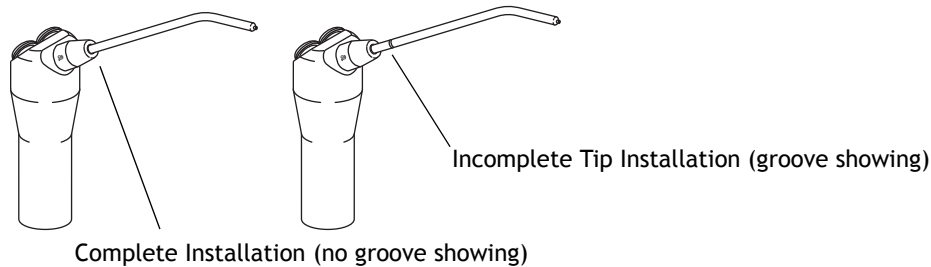
The tip installation is the same for both the standard and locking retainer assemblies.

1. Push the syringe tip into the syringe tip retainer assembly until you feel two clicks.



WARNING If you do not feel two clicks as you install the syringe tip, do not use the syringe. The O-rings inside the syringe tip retainer assembly are damaged and may allow the syringe tip to be ejected. Replace the O-rings before using the syringe.

Figure 4. Install the Tip



2. Point the syringe at the floor and press the air button several times to be sure the tip is properly installed.

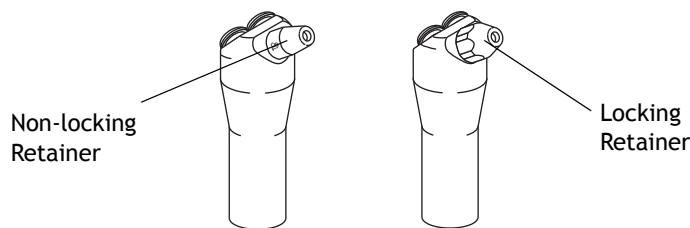


TIP Remove the syringe tip by pulling the tip straight out of the syringe.

Syringe Tip Retainer Assembly

A-dec syringes are factory equipped with a non-locking syringe tip retainer assembly. A locking retainer assembly is optional.

Figure 5. Syringe Non-Locking and Locking Tip Retainer Assemblies



Non-Locking Retainer Assembly

The non-locking syringe tip retainer has a smooth exterior surface and allows you to easily remove and install the syringe tip.



NOTE The non-locking retainer assembly is not appropriate for use as a cheek retractor because it allows the syringe tip to rotate.

Locking Retainer Assembly

The locking retainer has a hex-shaped exterior that allows the nut to be tightened, preventing the tip from easily rotating. The tip can then be used for cheek retraction.

Restrict The Tip Rotation

Your syringe tip rotates to spray in different directions. However, if you use your syringe tip for cheek retraction and you have the hex-shaped retainer nut, you may adjust the nut so the tip does not rotate easily.

1. Install the syringe tip. See “Install the Syringe Tip” on page 4.
2. Use the plastic wrench provided with the hex nut to tighten the hex nut.
3. Ensure that the tip does not rotate easily.



CAUTION Tightening a hex retainer nut on an improperly installed syringe tip crushes the internal collet, making removal of the syringe tip difficult and installation of a new tip impossible.

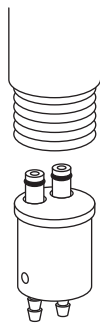


TIP Remove the tip by turning the hex nut 1/4 turn counterclockwise and pulling the tip straight out of the syringe.

Quick-Disconnect Syringe Terminal

An A-dec quick-disconnect terminal allows you to remove a syringe from the delivery system without turning the system off.

Figure 6. A-dec Quick-Disconnect Syringe Terminals



To Disconnect the Syringe

1. Turn off the Master Toggle.
2. Press the syringe air and water buttons to relieve the system air and water pressure.
3. Unscrew the syringe handle until the syringe head separates from the syringe terminal.
When the syringe is disconnected, any water remaining in the syringe head drips out.



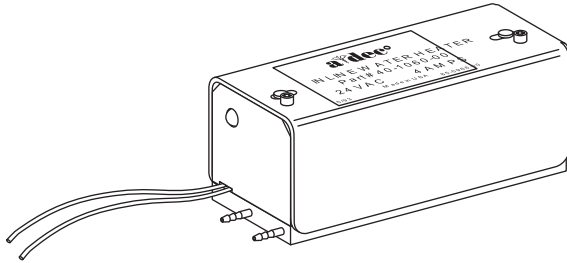
CAUTION Before disconnecting the syringe on units without a quick-disconnect syringe terminal, remove the self-contained water bottle. If the water bottle is located above the height of the syringe, water can drain out of the tubing.

A-dec Warm Water Syringes

An A-dec warm water syringe delivers warm water to the oral cavity, eliminating the discomfort that can be caused by spraying cold water on sensitive tissues.

The A-dec 300[®] and the A-dec 500[®] delivery systems and assistant's instrumentation use syringe tubing heated by resistance wiring and have five temperature settings. Cascade[®] and older model delivery systems and post boxes use an in-line water heater and syringe tubing heated by resistance wiring. The water temperature on a Cascade or older delivery system is not adjustable. For temperature adjustments, see "Temperature" on page 8.

Figure 7. In-Line Low Voltage Water Heater for Cascade and Older Delivery Systems



Asepsis

All syringe tips are considered critical items and must be heat sterilized after each use. A-dec has designed syringes and syringe tips to be autoclavable or heat sterilized. Remove the syringe and syringe tips from the delivery system for sterilization.

Disconnect the Syringe

1. Turn off the Master Toggle.
2. Press the syringe air and water buttons to relieve the system air and water pressure.
3. Unscrew the syringe handle until the syringe head separates from the syringe terminal.
When the syringe is disconnected, any water remaining in the syringe head drips out.

Precleaning

Preclean the syringe and tips before sterilization.

1. Gently brush the syringe threads with a nylon or brass bristle brush.
2. Remove the tip from the syringe.
3. Immerse the tip in a holding solution until ready for ultrasonic cleaning.
4. Clean the tip ultrasonically, following the ultrasonic manufacturer's instructions.
5. Purge all cleaning agents from the syringe and tip before sterilization.

Sterilization

Follow these steps to sterilize the syringe and syringe tip:

1. Rinse the syringe and syringe tips in clear water.
2. Flush the tips with isopropyl alcohol or Harvey's Vapo-Steril.
3. Heat sterilize the syringe and syringe tip using a steam autoclave for at least 4 minutes at a dwell temperature of 273° F (134° C).



CAUTION Sterilizing equipment at higher temperatures reduces the O-ring life-span.

Adjustments

A-dec syringes are adjustable for air and water flow. A-dec warm water syringes for the A-dec 300 and A-dec 500 products also have a temperature adjustment.

Air and Water Flow

A-dec uses three different methods to adjust syringe air and water flow. Use the table below to identify the location and method of adjustment for your A-dec delivery system or assistant's instrumentation.

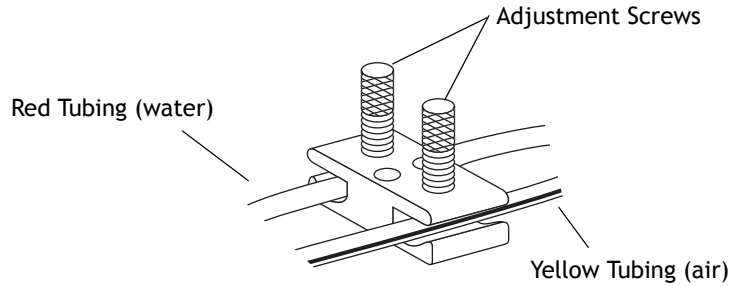
Table 1. Location and Methods of Flow Control

Model	Location of Flow Control	Method of Adjustment
A-dec 300, 532, 533, 541 and 542 delivery systems	Control head and control center (541/542)	Pinch valve
A-dec 300 back-mount assistant's instrumentation	Power supply area	Pinch valve
A-dec 300 support-side assistant's instrumentation	Support center	Pinch valve
Radius® 2122 and 2132 delivery systems	Control head	Flow control valves on the control block
A-dec 551 assistant's instrumentation	Lift arm of chair	Pinch Valve
Radius 7115 assistant's instrumentation	Lift arm of chair	Pinch valve
Radius 7285 assistant's instrumentation	Cuspidor support housing	Pinch valve
Cascade 2140 and 2150 delivery systems	Control head	Flow control valves on the control block
Cascade assistant's instrumentation	Post box	Pinch valve

Adjust the Flow With a Pinch Valve

1. Turn the adjustment screw for the water tubing clockwise to reduce the water flow, or counterclockwise to increase the flow (see Figure 8).
2. Turn the adjustment screw for the air tubing clockwise to reduce the air flow, or to counterclockwise to increase the flow.
3. Press both syringe buttons to test the spray.

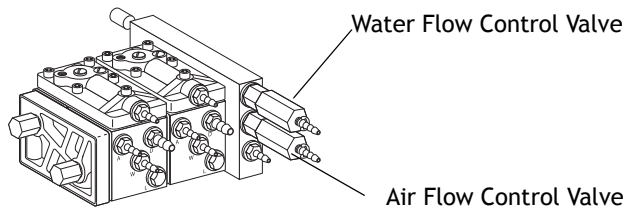
Figure 8. Pinch Valve



Adjust the Flow With a Flow Control Valve

1. Turn the top flow control valve clockwise to decrease water flow or counterclockwise to increase water flow (see Figure 9).
2. Turn the bottom flow control valve to clockwise to decrease air flow or counterclockwise to increase air flow.
3. Press both syringe buttons to test the spray.

Figure 9. Flow Control Valves on a Control Block



Temperature

The A-dec warm water syringe has five temperature settings. Contact your authorized A-dec dealer to have your water temperature adjusted.

Maintenance

The syringe is designed to be easily serviced in the operatory. The syringe parts subject to wear under normal use are provided in a syringe repair kit which can be ordered from your authorized A-dec dealer.

Proper care and maintenance of your A-dec syringe is critical to ensure the safety of your patients and the reliability of this precision instrument.

Use Only A-dec Silicone Lubricant

Use only A-dec Silicone Lubricant to lubricate the syringe button assemblies and the O-rings used in the syringe tip retainer assembly.



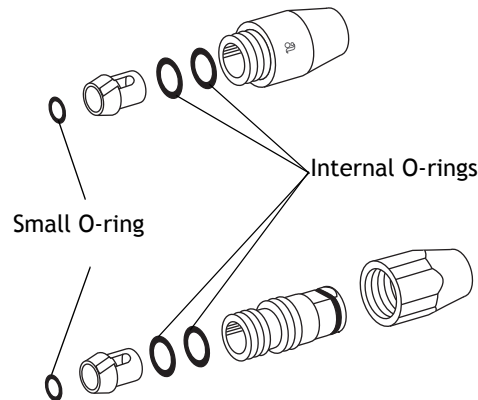
CAUTION The use of petroleum-based lubricants (jellies, creams, or lotions) cause the O-rings in the syringe to swell and/or deteriorate, resulting in syringe malfunction or failure.

A-dec Replacement Parts

A-dec replacement parts have been precisely designed for your A-dec syringe to ensure that the syringe functions properly.

As a means of preventive maintenance, A-dec recommends you replace the two internal O-rings (p/n 035.048.01) and the small O-ring (p/n 034.003.01) in the syringe tip retainer assembly at least once a year. Lubricate the O-rings with A-dec silicone lubricant (p/n 98.0090.01) at the time of replacement.

Figure 10. Syringe Retainer Nut Assembly O-Rings



Troubleshooting

Use the following troubleshooting table to identify and solve problems with the syringe:

Table 2. Troubleshooting

Problem	Possible Cause	Action
Syringe leaks air or water from a button	Faulty O-rings on the button	Replace the button assembly (p/n 23.1234.00)
Syringe tip drips when the syringe is not in use	Faulty O-rings on the water buttons	Replace the water button (p/n 23.1234.00)
A short burst of water sprays from the tip when the air button is pressed	Improperly installed or damaged syringe tip.	Pull out and reinstall the syringe tip correctly. Replace the syringe tip if it still leaks
Water or air leaks from the syringe handle	Syringe handle is not tightly connected to the syringe	Tighten the syringe handle onto the syringe
	O-rings on the terminal are damaged	Replace the O-rings (p/n 030.002.02) on the terminal and lubricate with A-dec silicone lubricant
Air leaks from the top of the tip retainer assembly	Syringe tip is damaged	Replace with a new tip (p/n 23.0872.01).
	Retainer internal O-rings are damaged	Replace the two inner O-rings (p/n 035.048.01) of the retainer assembly
Syringe tip is difficult to install	Retainer internal O-rings have been lubricated with a petroleum-based lubricant	Replace the O-rings (p/n 035.048.01) and remove remaining lubricant from the retainer. Use A-dec silicone lubricant on the new O-rings
	The tip retainer assembly has been damaged	Replace the tip retainer assembly (Non-locking - p/n 23.1112.00, Locking p/n 23.1090.00)
Water leaks from base of tip retainer assembly	Tip is not fully installed	Push tip completely into place with the third groove hidden
	Small O-ring in the retainer assembly has failed	Replace the O-ring or replace the retainer assembly (p/n 034.003.01)
Syringe tip is loose in the retainer assembly	A non-A-dec syringe tip is in use	Replace with an A-dec syringe tip (p/n 23.0872.01)
	Retainer O-rings are worn or damaged	Replace the O-rings (p/n 035.048.01)

Warranty

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



CAUTION 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.

Specifications

Minimum Air and Water Requirements

Air: 2.50 scfm (70.80 l/min) at 80 psi (551 kPa)

Water: 1.50 gpm (5.68 l/min) at 40 psi (276 kPa)



NOTE Specifications are subject to change without notice. Some requirements may vary from country to country. For more information, contact your authorized A-dec dealer.

Regulatory Information

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



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