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ACADIA® PLUS
AMALGAM SEPARATOR

INSTRUCTION MANUAL



AIR TECHNIQUES equipped for life®

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This manual covers the installation and maintenance of the ***Acadia Plus*** Amalgam Separator Assembly, P/N APLUS.

Installation tasks include the following:

- ❑ Adding to **any existing** liquid ring or dry vacuum system.
- ❑ Installing as part of a **new** liquid ring or dry vacuum system.

This manual provides additional maintenance and troubleshooting information, as well as instructions to replace a **filled** Collection Container. The ***Acadia Plus*** Amalgam Separator is hereafter referred to as the Separator in this manual. Make sure to review and follow the information specific to your installation to ensure that the Separator provides the highest level of safe service.

The Separator is designed to meet ISO 11143 requirements in the removal of amalgam from a dental suction system's wastewater stream. Installed between dental operatories and vacuum pumps, the Separator uses continuous separation of solids from liquids and gases through a sedimentation process where high-density particles (Amalgam) fall from suspension in the wastewater stream. The Separator has been independently tested and certified to be in compliance with ISO 11143.

Features include:

- ❑ Capable of processing effluent for up to ten (10) simultaneous users.
- ❑ Meets the ISO 11143 standard.
- ❑ Continuous separation of liquids and solids from gases.
- ❑ Minimal maintenance required.
- ❑ Collection Container
  - Easily removed using a quarter turn and pull.
  - Transparent housing enables user monitoring of capacity and when to replace container.
- ❑ Mounting & Connections
  - Multiple mounting configurations (Wall Mount, Floor Mount or Stack Rack Mount on Mini or XL).
  - Quick and easy installation using included fittings.

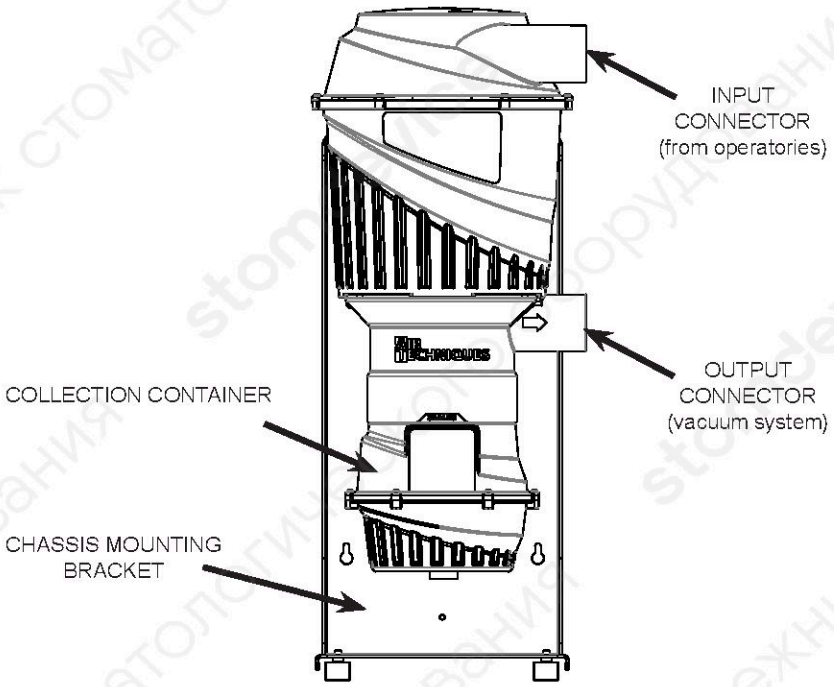


Figure 1. ***Acadia Plus*** Amalgam Separator Assembly

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SAFETY NOTICE

Knowledge of General Safety

The Separator has been designed to minimize exposure of personnel to hazards. While the equipment is designed for safe operation, certain precautions must be observed. Use of the Separator **not** in conformance with the instructions specified in this manual may result in permanent failure of the unit.

Users must exercise every precaution to ensure personnel safety, as well as be familiar with the general safety procedures concerning the Separator and associated vacuum systems. Which include the following:

- ❑ Observe all local codes and relevant regulations when installing the Separator.
- ❑ Converting or modifying the Separator in any way is strictly prohibited. In such cases, any and all warranties will immediately become invalid.
- ❑ The operator must be knowledgeable in the operation of the appliance.
- ❑ The product is not designed to be used in medical treatment areas where the danger of explosion exists. Areas where explosions could occur are those where flammable anesthetic material, skin cleansers, oxygen and skin disinfectants are present. This appliance is not to be used in areas where the atmosphere could cause fire.

Dental Waste Handling

Collection Containers collect waste materials from dental procedures. All maintenance personnel must be familiar with the procedures and practices for handling such dental waste and exercise every precaution to ensure personnel safety. Additionally personnel must follow all local, state and/or federal laws and regulations for the proper disposal of dental waste containing mercury. Any operation, procedure or practice that if not strictly observed, may result in injury or long-term health hazards to personnel. The collected waste should be handled, stored and disposed of according to regulations applying to dental waste containing mercury.

Correct Usage

The Separator is for **Dental Use only**. Any use of the Separator that is not described in this Instruction Manual is deemed to be incorrect usage.

Incorrect Usage

Any use of the Separator above and beyond that described in this Instruction Manual is deemed to be incorrect usage. The manufacturer cannot be held liable for any damage resulting from incorrect usage. The operator will be held liable and bears all risks.

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Separation efficiency	Meets ISO 11143 requirements
Number of simultaneous users	Up to 10
Maximum liquid flow rate	0.26 gal per minute (1 liter per minute)
Liquid surge capacity	1.0 gal (3.78 liters)
Maximum filled volume	1.0 gal (3.78 liters)
Maximum fillable volume	0.42 gal (1.6 liters) As shown by label replacement line.
Maximum vacuum	20 in Hg (677 mbar)
Classification	Type 2 per ISO 11143
Connection type	2 in (5.08 cm) no hub, 1½ in (3.81 cm) no hub, 1 in (2.54 cm) NPT and ¾ in (1.91 cm) NPT
Mounting	Attached chassis/mounting bracket provided
Weight (empty)	16.7 lbs (7.6 kg)
Weight (max)	46.9 lbs (21.3 kg)
Dimensions	

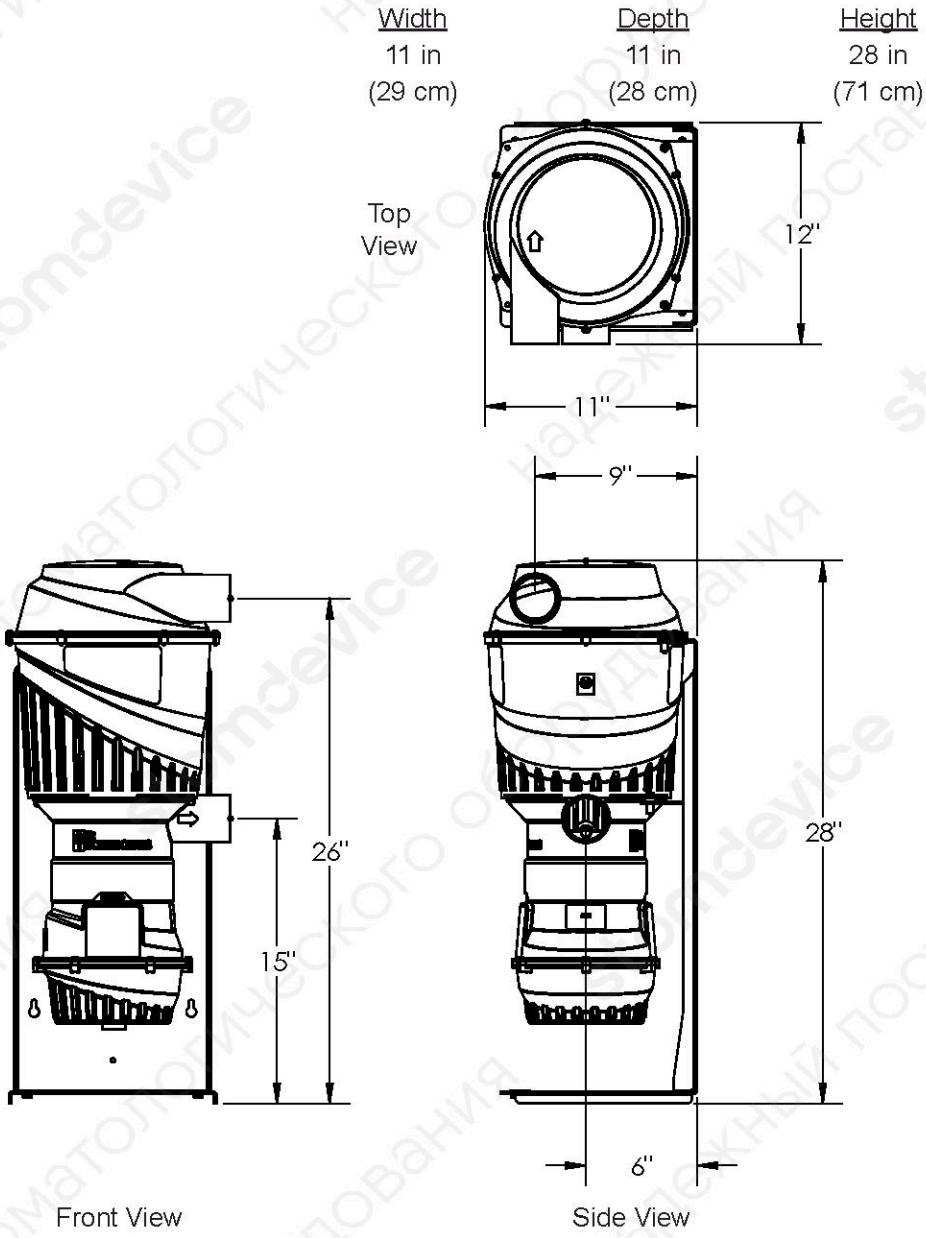


Figure 2. ***Acadia Plus*** Amalgam Separator Assembly Outline/Dimension Drawing

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UNPACKING AND INSPECTION

Unpacking

As shown by Figure 3, the Separator is shipped in a single carton containing the Separator assembly secured to the Chassis/Mounting Bracket, the Collection Container, connection fittings, hoses and an installation accessory kit. Unpack each component of the Separator and inspect for physical damage such as scratched panels, damaged connectors, etc.

Included Separator Components

Each Separator consists of the components shown by Figure 3. Verify that all listed items were received. If any item is missing, notify Air Techniques.

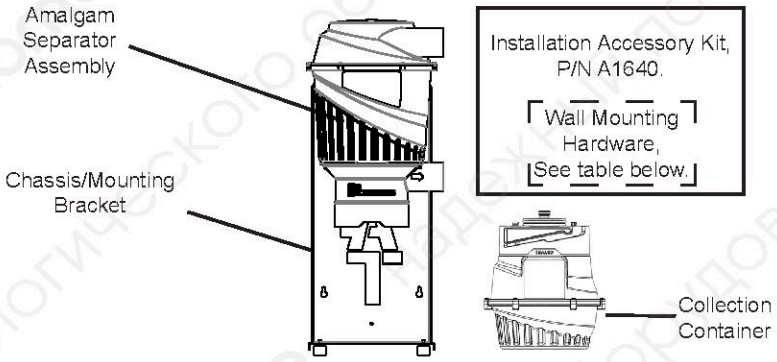


Figure 3. ***Acadia Plus*** Amalgam Separator Assembly Component Identification

Important: Installation Accessory Hardware, P/N A1640 provides the necessary parts to connect to all vacuum systems manufactured by Air Techniques. If the existing installations need different size fittings or hose lengths, they must be provided by the installer.

Accessory Kit Components

The table below lists the supplied parts used to connect the Separator to new or existing vacuum systems.

Installation Accessory Kit, P/N A1640

Description	Part No.	Quantity
1½ inch ID Clear with Blue Helix Spiral Hose **Note:** If more than 6 feet of hose is needed, order additional P/N 54521 by the foot.	54521	6 Feet
2 inch ID Clear with Blue Helix Spiral Hose **Note:** If more than 6 feet of hose is needed, order additional P/N 54512 by the foot.	54512	6 Feet
2 inch to 2 inch No-Hub Flexible Coupling	H5159	2
2 inch to 1½ inch No-Hub Flexible Coupling	H5158	2
1½ inch SPG X 3/4 inch FNPT Reducing Bushing	A1164	1
1½ inch SPG X 1 inch FNPT, Reducing Bushing	55552	1
Leveling Feet	55323	4
Acorn Nut	60113-1	4
Wall Mounting Hardware		
#10 X 1 inch plastic Anchor	30936	4
#12 X 3/4 Type A Phillips Pan Head	30935	4
#10 Flat Washer	30024	4
#8 Countersunk Washer	30023	2
#8 2½ inch Coarse Thread Drywall Screw	31905	2

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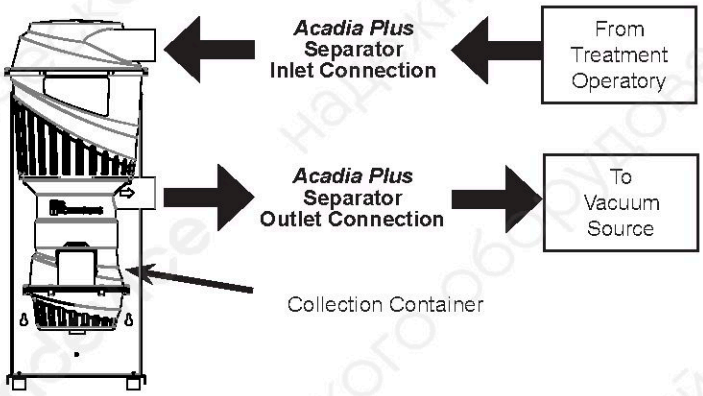
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Important: The Separator is only installed between the treatment operatory and the vacuum system input. **DO NOT** connect the unit to the outlet of any separation tank (dry vacuum system) or liquid ring pump (wet vacuum system).

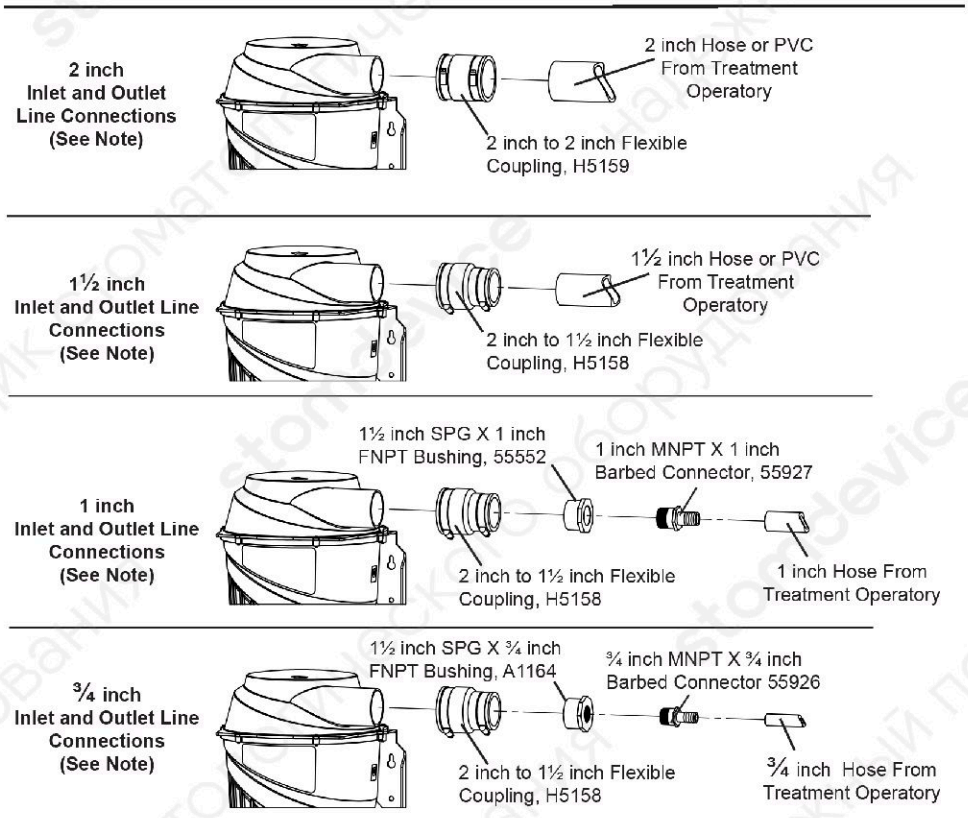
Introduction

As shown by Figure 4, View A, the Separator is installed onto the inlet of either an existing or new dry pump or liquid ring pump vacuum system. The unit is only installed between the treatment operatory output and the vacuum system input. There are four Inlet and outlet connection options as shown by Figure 4, View B. These options show the hardware that allows the connection of 2, 1½, 1 or ¾ inch lines to the Separator.

This new installation or modification is to be performed by authorized service personnel using similar quality connection hoses and fittings. All installations must conform to local codes and meet all local, state and/or federal environmental laws and regulations.



View A



View B **Note: Hardware options is the same for Inlet and Outlet Lines. Inlet connection shown.**

Figure 4. Typical ***Acadia Plus*** Amalgam Separator Installation Connections

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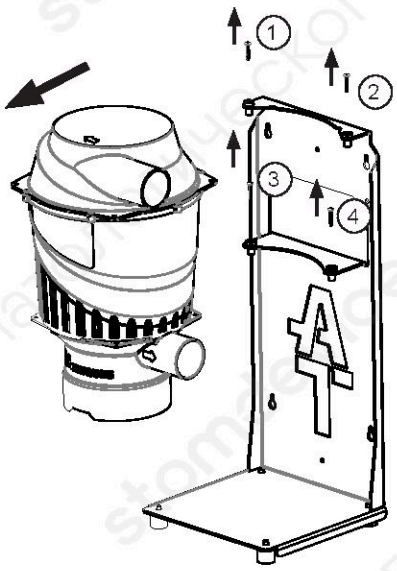
INSTALLATION INFORMATION

Input/Output Connector Orientation Option

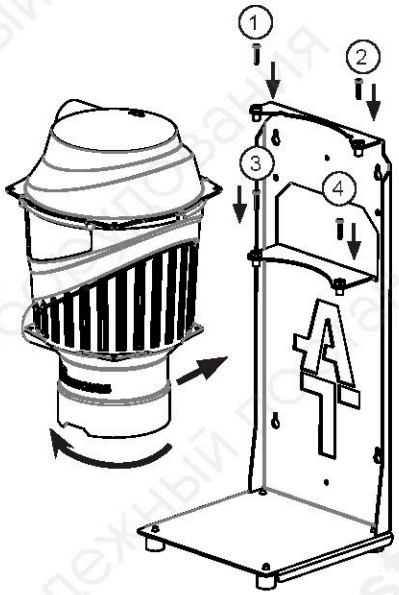
Although the Separator is shipped with the input and output ports facing to the right, the design allows the entire assembly to be rotated 180 ° so the connection ports face to the left side for installation flexibility. Refer to Figure 5 and perform the following steps to change the connector port orientation as necessary.

Note: Make sure to save all removed screws. They are reused during installation.

1. Remove the 4 screws securing the separator assembly to the chassis/mounting bracket.
2. Rotate the separator assembly 180 ° and remount onto the chassis/mounting bracket and secure with the 4 screws removed in step 1.



Removing the Separator Assembly from the Chassis/Mounting Bracket



Rotating the Separator and Installing to the Chassis/Mounting Bracket for Left-side Connection Ports

Figure 5. Changing the ***Acadia Plus*** Amalgam Separator Connection Port Orientation

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***Acadia Plus* Amalgam Separator Installation.**

Install the Separator onto either an existing or new dry pump or liquid pump vacuum system by performing the procedures provided by the following paragraphs.

***Acadia Plus* Amalgam Separator Mounting.**

The Separator can be placed on the floor, hung on a wall or mounted onto an optional MINI or XL Utility Stack Rack (not supplied). In all installations the Separator must be level, securely mounted and located between the output of the facility Treatment Operatory and the vacuum system input. The structure and fasteners should be capable of supporting 40 pounds. If mounting to drywall, use the four Keyhole Slots in the Chassis/Mounting Bracket along with the provided drywall anchors and screws.

Important: The Separator assembly must be removed from the chassis in order to mount the bracket to single wall stud. Refer to Figure 5.

When mounting directly to a single stud, use the two Center Mounting Holes of the Chassis/Mounting Bracket along with the provided Countersunk Washers and a #8 coarse drywall screw. Molly bolts or lag bolt anchors may be used for drywall installations providing they and the wall are capable of supporting the load.

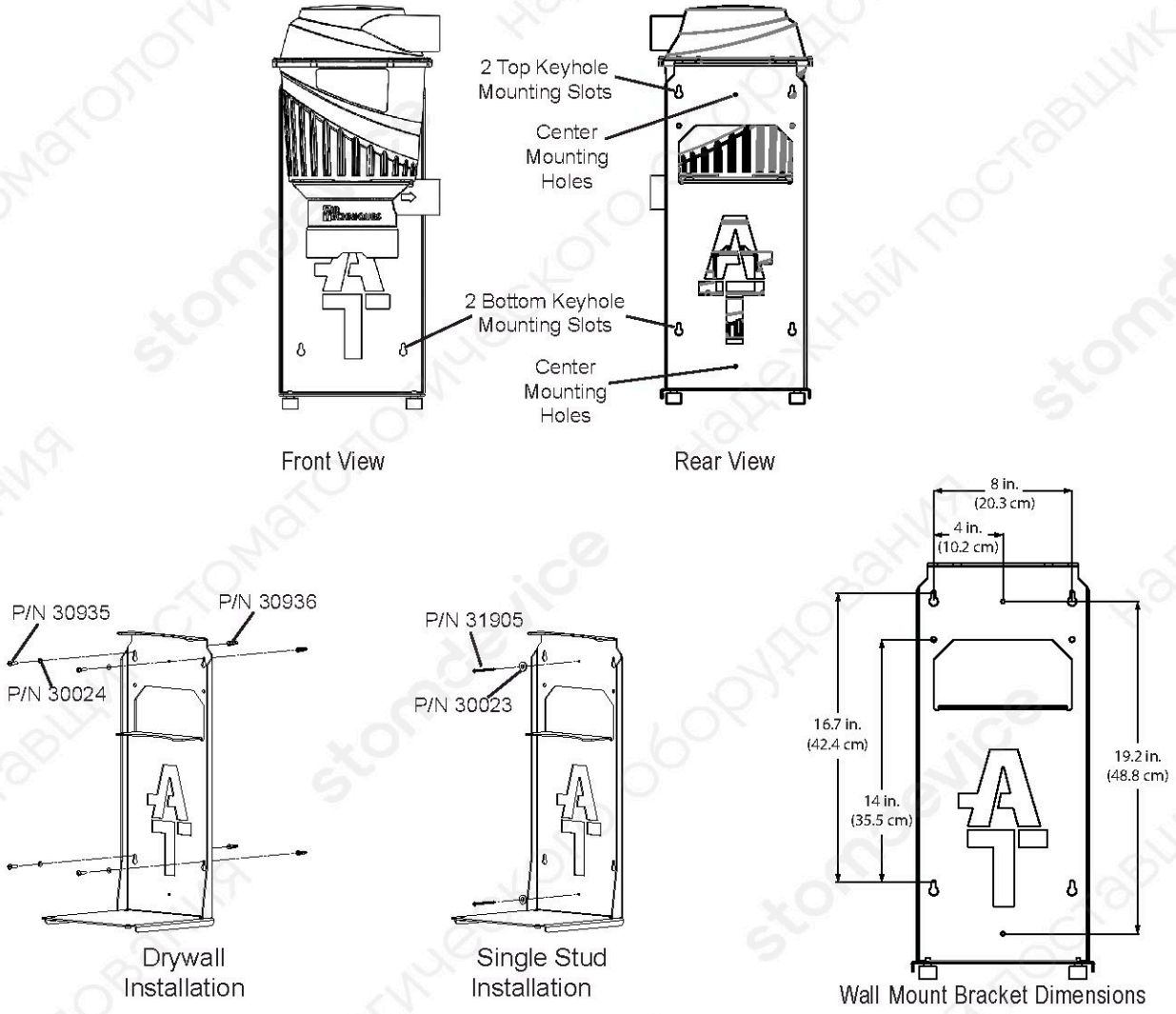


Figure 6. Separator Wall Mounting

Inlet and Outlet Connection Fittings Installation.

Refer to Figures 4 and 5 and install the Inlet and Outlet Connection Fittings as necessary.

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INSTALLATION INFORMATION

Multiple Unit Parallel Installation.

Installation of two (2) or more Acadia Plus units require that all units are mounted/fixed at the same elevation with respect to one another. Do not install multiple Acadia Plus units at different heights as this can result in unequal distribution of solids and more frequent cartridge replacements than the other units(s). Parallel connections are shown by Figure 7.

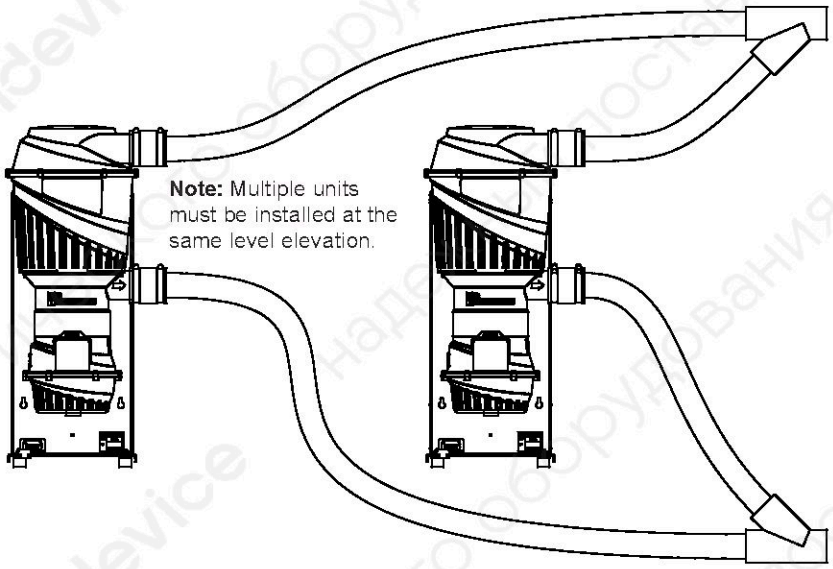
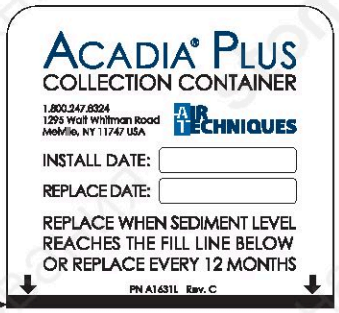


Figure 7. Hose Connections for Parallel Installations

Collection Container Installation.

Refer to Figure 7 and install the Collection Container as follows.

1. Align the two tabs of the container with the corresponding slots of the collar.
2. Lift the Collection Container into place and secure by turning to the right.
3. Record the installation date on the label.



FILL line

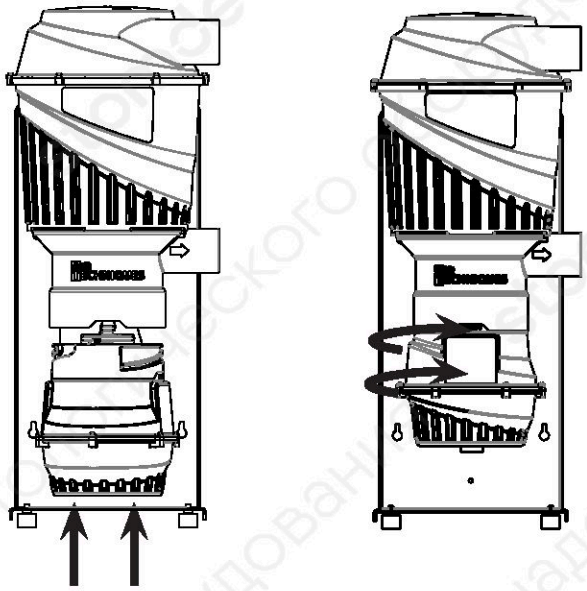


Figure 8. Collection Container Installation

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CONTAINER REPLACEMENT & DISPOSAL

Important: The Collection Container is not to remain in use for a period longer than 12 months (one year) from the date of installation. Check container sediment level line weekly to ensure the effectiveness of waste collection.

Note: The Collection Container of an **Acadia Plus** Amalgam Separator may **fill faster** than expected especially after a new vacuum pump is installed. A new vacuum pump may have the capability to remove built up deposits from the vacuum lines that would inevitably fill the Separator in less time than anticipated.

Usage Period of Collection Container

The Collection Container is not to remain in use for a period longer than 12 months (one year) from the date of installation. Effectiveness of the Collection Container is reduced after 12 months due to the common growth of organic material within the unit. If the container becomes full of collected solid dental waste and not replaced, it would result in improper separation of amalgam and make it non-compliant to an amalgam inspection. Consequently, it is recommended that the container sediment level, as shown by Figure 8, be checked on a weekly basis to ensure the effectiveness of the separator. The following provides a guideline to predict when to replace the collection container based on the number of users.

Collection Container Replacement

Number of Users	Use Period
1 to 2	9 to 12 months
3 to 4	6 to 9 months
5 to 10	6 months or less

CAUTION
No vacuum pressure causes Separator liquid spills.
- The vacuum system **must be on** when replacing Collection Container.

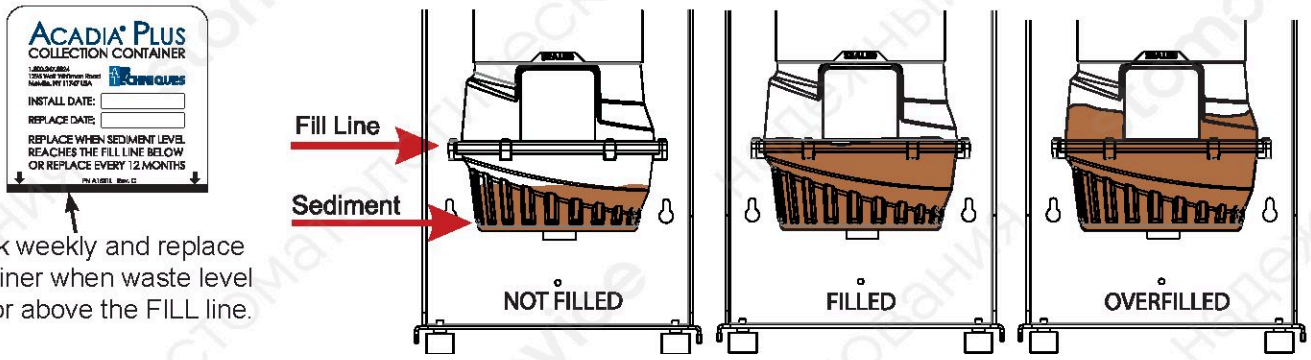


Figure 9. Collection Container Waste Fill Levels

CAUTION
Bleach reduces Separator effectiveness.
- **DO NOT** use Chlorine Bleach or solutions of sodium Hypochlorite to clean or disinfect the Separator or vacuum system.

Replacement and Disposal of the Collection Container

The use period for the Collection Container of an ***Acadia Plus*** Amalgam Separator is **12 months** or less based on the above table. At the end of the use period, arrangement **must** be made for proper removal and disposal of the Collection Container and its contents in accordance with all local, state and/or federal laws and regulations for disposal of dental waste containing mercury.

A Recycle Kit for the Collection Container (P/N APREC) is available from Air Techniques. The kit provides container recycling instructions (Instruction Sheet, P/N APREC-1), a replacement container, along with pre-paid shipping labels for no-hassle, safe disposal/recycling using our hazardous waste recycling partners.

Air Techniques also offers a Replacement Kit for the Collection Container (P/N AP REP), which includes only a replacement container for customers who prefer to use their own hazardous waste recycling merchant.

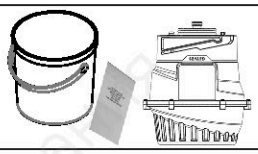
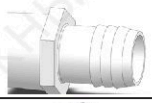
A Shipping Kit is available as well that only includes the materials needed to recycle a used Collection Container (P/N APKIT), that provides all necessary packaging and pre-paid shipping labels for no-hassle, safe disposal/recycling without a replacement container.

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REPLACEMENT PARTS

The following lists the part number and description for components available to maintain the Separator to meet your professional needs. Contact your authorized dealer for information.

Acadia Plus Amalgam Separator Replacement Parts

Description	Part No.	Item
Collection Container replacement with recycling kit	APREC	
Collection Container replacement without recycling kit	APREP	
Recycling kit without Collection Container	APKIT	
1½ inch ID Clear with Blue Helix Spiral Hose **Note:** If more than 6 feet of hose is needed, order additional P/N 54521 by the foot.	54521	
2 inch ID Clear with Blue Helix Spiral Hose **Note:** If more than 6 feet of hose is needed, order additional P/N 54512 by the foot.	54512	
2 inch to 1½ inch Flexible Coupling	H5158	
2 inch to 2 inch Flexible Coupling	H5159	
1½ inch SPG X 1 inch FNPT Bushing	55552	
1½ inch SPG X ¾ inch FNPT Bushing	A1164	
¾ inch MNPT X ¾ inch Barbed Connector	55926	
1 inch MNPT X 1 inch Barbed Connector	55927	
Leveling Feet	55323	

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MAINTENANCE

The ***Acadia Plus*** Amalgam Separator requires minimal maintenance. The only maintenance requirements include:

- ❑ Checking the fill level of Collection Container and replacing as necessary.
- ❑ Replacing the Collection Container 12 months (one year) from the date of installation.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Low suction or no suction.	a. Collection Container filled.	a. Replace the Collection Container. Call your authorized dealer if necessary.
	b. Check that the input and output line connections to the Separator are tight. Make sure that there is no clogs or kinking collapsing.	b. Call your authorized dealer for repair service if faulty connections are found.

WARRANTY

This Air Techniques equipment is warranted to be free from defects in material and workmanship for a period of twenty-four (24) months from the date of installation by authorized Air Techniques Dealer service personnel.

Any item returned to our factory during the warranty period through an Authorized Dealer will be repaired or replaced at our option at no charge provided that our inspection shall indicate it is defective. Dealer labor, shipping and handling charges are not covered by this warranty.

This warranty does not apply to damage due to shipping, misuse, careless handling or repairs by non-authorized service personnel. The warranty does not include the Collection Container Replacement. Warranty void if installed or serviced by other than authorized service personnel. Air Techniques is not liable for indirect or consequential damages or loss of any nature in connection with this equipment.

This warranty is in lieu of all other warranties expressed or implied. No representative or person is authorized to assume for us any liability in connection with the sale of our equipment.

ON-LINE WARRANTY REGISTRATION

Quickly and easily register your new In-line Amalgam Separator on-line. Just have your product model and serial numbers available. Then go to the Air Techniques web site, **www.airtechniques.com**, click the **register a product link** and complete the registration form. This on-line registration ensures a record for the warranty period and helps Air Techniques keep you informed of product updates and other valuable information.

IF YOU NEED ASSISTANCE

Air Techniques Vacuum systems and accessories are designed and manufactured to high standards to deliver high-quality performance. If any difficulties are encountered with this product, please contact Air Techniques Technical Support as follows:

Headquarters:
1295 Walt Whitman Road, Melville, New York 1 I 747- 3 062
Phone: 800-247-8324 • Fax: 1-888-247-8481
Website: www.airtechniques.com

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For over 50 years, Air Techniques has been a leading innovator and manufacturer of dental products. Our priority is ensuring complete satisfaction by manufacturing reliable products and providing excellent customer and technical support. Whether the need is digital imaging, utility room equipment or merchandise, Air Techniques can provide the solution via our network of authorized professional dealers. Proudly designed, tested and manufactured in the U.S., our products are helping dental professionals take their practices to the next level.

Air Techniques' family of quality products for the dental professional include:

❑ Digital Imaging

- Digital Radiography
- Intraoral Camera
- Caries Detection Aid
- Intraoral X-ray
- Film Processors

❑ Utility Room

- Dry Vacuums
- Wet Vacuums
- Air Compressors
- Amalgam Separator
- Utility Accessories
- Utility Packages

❑ Merchandise

- Evacuation System Cleaner
- Imaging Accessories
- Chemistry
- Processor Accessories

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