Waters™

Andrew+ Pod

User Manual

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Version 00

Table of contents

1 General information

1.1 Copyright notice

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1.3 Safety considerations

Some reagents and samples used with Waters instruments and devices can pose chemical, biological, or radiological hazards (or any combination thereof). You must know the potentially hazardous effects of all substances you work with. Always follow good laboratory practices and consult your organization’s standard operating procedures as well as your local requirements for safety.

1.3.1 Safety hazard symbol notice

The  symbol indicates a potential hazard. Consult the documentation for important information about the hazard and the appropriate measures to prevent and control the hazard.

1.3.2 Electrical power safety notice

Do not position the device so that it is difficult to disconnect the power cord.

1.3.3 Equipment misuse notice

If equipment is used in a manner not specified by its manufacturer, the protection provided by the equipment may be impaired.

1.3.4 Safety advisories

Consult the "Safety advisories" appendix in this publication for a comprehensive list of warning advisories and notices.

1.4 Safety instructions

1.4.1 Safety precautions for power supplies

To ensure maximum safety and minimize the risk of electrocution due to accidental liquid spills, you must follow these guidelines for the installation and use of power supplies for tools, connected devices, and Andrew+.

- Install RCD/GFCI systems: The safest option is to ensure that the electrical network used to power the equipment is equipped with a Residual Current Device (RCD) or a Ground Fault Circuit Interrupter (GFCI). If installing a fixed RCD/GFCI system is not possible, use a portable adapter with built-in RCD or GFCI protection. These devices provide critical protection against electrical faults that could lead to electrocution.
- Suspend power supplies: It is mandatory that you suspend all the power supplies of the connected devices and Andrew+ from the top surface of the bench where the Andrew+ Pod is located. Use the provided Velcro to secure them at the highlighted location. This helps prevent contact with spilled liquids and reduces the risk of electrocution.
- Ensure safe placement of power outlets: Position all non-RCD/GFCI power outlets in a safe location where they are not susceptible to collecting water. This is mandatory to prevent electrical hazards from potential spills.

1.4.2 Safety instructions

- Ensure adequate material resistance when using chemical substances.
- For safe and correct use of the Andrew+ Pod, Waters recommends that both operating and service personnel follow the instructions contained in this guide when installing, using, cleaning, and maintaining this instrument. If the instructions described in this manual are not carefully followed, the Andrew+ Pod cannot function correctly and the warranty will be null and void.
- For detailed information on handling dominos and associated consumables, refer to the Andrew Alliance Help Center.
- After completing any repair or maintenance, the responsible person must verify that the unit is restored to a safe operating condition.
- The device is intended for indoor use only.
- The safety of the user cannot be ensured if non-official parts or accessories are used.
- The safety of the user cannot be ensured if modifications are made to the device or parts of the device by third parties.
- If the device is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.
- This product contains magnets that may interfere with pacemakers, implantable cardioverter defibrillators (ICDs), or other implanted medical devices. Users with such devices should consult their healthcare provider for specific safety advice.
- If the Andrew+ Pod is potentially biohazardous due to the use of biohazardous substances, it should be prominently marked with the following symbol: 
- At a minimum, a biohazard symbol should be placed near the sampling area and should be visible during NORMAL USE.
- Any part of the equipment that contains biohazardous waste material that can be removed from the equipment during NORMAL USE, or a biohazardous drain connection, should be marked with an appropriate biohazard symbol.
- The system must only be powered using the power supply and main electrical cable provided.
- All input or output ports are Safety Extra Low Voltage (SELV) circuits.
- You should only connect SELV circuits to other SELV circuits.
- Do not spill any liquid on the workbench of the Andrew+ Pod.
- Ensure that the AC power outlet used to connect the system is easily accessible and not susceptible to flooding.
- Before plugging or unplugging the ventilation systems, ensure that the Andrew+ Pod power supply is disconnected from the main power.

- The product is heavy; ensure that at least two people are present during installation, uninstallation, or maintenance of the product, and follow the detailed instructions.
- Do not lean against or on the device.

1.5 Certifications

Certifications	Information
Electrical safety	• IEC 61010-1:2010/AMD1:2016 • EN 61010-1/A1:2019 • CAN/CSA-22.2 n° 61010-1-12/A1-18 (R2022) • UL 61010-1 (3rd Ed); Am1
EMC	• IEC 61326-1:2020 • EN 61326-2:2021
RoHS	RoHS 3 (EU) 2015/863

FCC	• FCC 47 CFR part 15 subpart B section 15.107 (b) and section 15.109 (b and g). Class A all over other device tested per ANSI C63.4(Ed. 2014) procedures.
	• This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
	  • This device may not cause harmful interference.
	  • This device must accept any interference received, including interference that may cause undesired operation.
	• This Class A digital apparatus complies with Canadian ICES-003.

1.6 Applicable symbols

The following symbols can be present on the device, system, or packaging.

Symbol	Definition
	Manufacturer
	Date of manufacture

Symbol	Definition
CE	Confirms that a manufactured product complies with all applicable European Community directives
UK CA	UK Conformity Assessed marking confirms that a manufactured product is in conformity with the applicable requirements for products sold within Great Britain
	Australia EMC compliant
MET c US	Confirms that a manufactured product complies with all applicable United States and Canadian safety requirements
INTERTEK ETL LISTED c US	Confirms that a manufactured product complies with all applicable United States and Canadian safety requirements
25	Environmentally friendly use period (China RoHS): indicates the number of years from the date of manufacture until the product, or components within the product, are likely to be discarded or degrade into the environment
ACT. The Environmental Impact Factor Label	ACT (Accountability, Consistency, and Transparency) is an environmental impact factor label that provides third-party verification of the sustainable impacts of a life science lab product, its operations, and its end of life.
	Consult instructions for use
	Alternating current
	Electrical and electronic equipment with this symbol may contain hazardous substances and should not be disposed of as general waste For compliance with Waste Electrical and Electronic Equipment legislation, contact Waters Corporation for the correct disposal and recycling instructions
	For indoor use only

Symbol	Definition
	No pushing
	Do not connect to an LC system
	Indicates the maximum load you can place on that item (for example, 10kg)
	Indicates that the part can be cleaned in an ultrasonic bath
SN	Serial number
REF	Part number, catalog number

1.7 Symbols

Symbol	Definition
	**DANGER** Caution; read the user manual when you see this symbol. Situation that could cause injury to yourself and others.
	**DANGER** Radiation with potential for risk to health or death as a consequence.
	**DANGER** Biohazard with potential for risk to health or death as a consequence.
!	**CAUTION** Situation that could cause damage to your device or other equipment.
	**Lifting hazard** Do not lift or move this equipment without assistance.

1.8 Contacting Waters

Contact method	Information
Chat	Chat with support directly in OneLab Software
Email	Send us an email to aa_support@waters.com
Corporate contact information	Waters Corporation 34 Maple Street Milford, MA 01757 USA +1-508-478-2000

1.9 Customer comments

We seriously consider every customer comment we receive. Help us better understand what you expect from our documentation so that we can continuously improve its accuracy and usability. To report any errors that you encounter in this document or to suggest ideas for otherwise improving it, reach us at tech_comm@waters.com.

1.10 Updated information

To check for updates to this document, go to the Waters website (www.waters.com), click **Support** > **Support Documents and Downloads**, and then use the Search function to find the document number shown at the bottom of this page.

2 Andrew+ Pod User Manual

2.1 Glossary

Term/Abbreviation	Definition
ABEK	ABEK refers to a classification system used for gas mask filters, indicating the types of gases and vapors that the filter can protect against. Each letter represents a specific type of gas or vapor.
HEPA	HEPA refers to a high-efficiency particulate air filter used to purify the air. This type of air filter can theoretically remove at least 99.995% of dust, pollen, mold, bacteria, and any airborne particles with a size of 0.3 microns (µm).
Tool	Device that can be automatically handled by the Andrew+ Pipetting Robot. Some tools may require an adaptor (for example, PIPETTE ADAPTOR) as an interface to allow manipulation.

2.2 About this user manual

Read the user manual before using this device. Strictly follow the usage and maintenance instructions provided. It is the user's responsibility to become familiar with all the available information concerning the correct use, care, and limitations of these products. If you are uncertain about the correct use or limitations of the products, contact Waters service and support. The manufacturer, the distributor, and their respective owners, employees, agents, and representatives are not responsible or liable for errors or omissions.

Information in this user manual is subject to change without notice and does not represent a commitment on the part of Waters. Waters assumes no responsibility for any inaccuracies that may be contained in this user manual. Waters does not commit to update or keep current the information in this user manual, and it reserves the right to make improvements to this user manual or to the products described herein at any time without notice.

If you find information in this manual that is incorrect, misleading, or incomplete, we welcome your comments and suggestions.

2.3 Andrew+ Pod

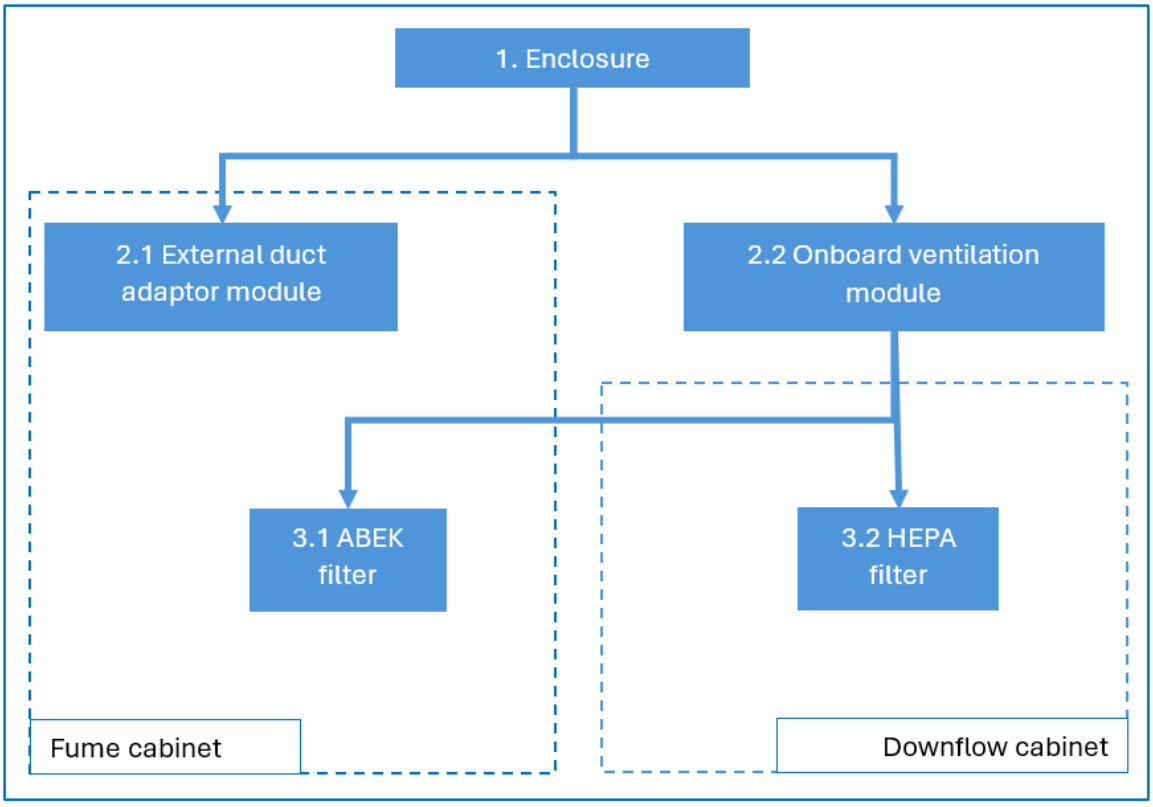
2.3.1 Unit description

The Andrew+ Pod is a laboratory benchtop safety enclosure that can host an Andrew+ Pipetting Robot equipped with dominos, connected devices, and tools.

The product comprises three main sub-modules:

- Enclosure
- Ventilation system (optional)
  - External duct adaptor module
  - Onboard ventilation module
- Filters (optional):
  - HEPA filter (requiring “ventilation system”)
  - ABEK filter (requiring “ventilation system”)

Figure 2–1: Possible Andrew+ Pod configurations



2.3.2 Enclosure

The enclosure is the main module providing protection from possible physical collision with the users accessing the domino workbench while the Andrew+ Pipetting Robot is executing the experiment.

The enclosure has the following functionalities:

- Organized management of Ethernet, vacuum hose, and power cables
- Stable, robust reference surface designed specifically for the Andrew+ Pipetting Robot
- Seamless access to the Automation Portal for ACQUITY and Arc LC by Waters
- Safety interlock mechanism for enhanced user protection
- Dust cover to maintain a clean operating environment
- Built-in environmental sensor for real-time parameter monitoring
- Convenient, user-friendly tip disposal system
- Motorized sash for easy opening and closing
- Integrated LED illumination system

2.3.3 Ventilation system

The Andrew+ Pod offers flexibility in ventilation options. It can be connected to an external building ventilation system using the external duct adaptor module or it can operate independently with its onboard ventilation module. In the former setup, commonly used in ducted fume cabinet configurations, the Andrew+ Pod connects directly to the facility’s exhaust system, allowing efficient fume extraction.

External duct adaptor module

This optional module enables the Andrew+ Pod to connect seamlessly to the facility's exhaust ventilation system. For optimal performance and to maintain a clean operating environment, install a pre-filter module between the external duct adaptor and the Andrew+ Pod.

Onboard ventilation module

The Andrew+ Pod can be equipped with an onboard ventilation module, configurable to blow air in or out. This system helps maintain the Andrew+ Pod's internal temperature close to the ambient lab temperature. The onboard ventilation module is essential for achieving either a vertical laminar flow setup or a recirculating filtration fume cabinet configuration, ensuring optimal air management within the pod.

2.3.4 Filters

With the onboard ventilation module, the Andrew+ Pod can be configured as either a downflow cabinet or a recirculating filtration fume cabinet. The downflow cabinet configuration is achieved

by creating a vertical laminar flow that blows air in through a HEPA filter, protecting samples from contaminants. The recirculating filtration fume cabinet configuration blows air out of the Andrew+ Pod, filtering it through an ABEK filter to protect users and the environment from chemical fumes.

2.3.4.1 HEPA filter

A High-Efficiency Particulate Air (HEPA) filter is designed to capture at least 99.995% of particles that are 0.3 µm in diameter or larger, including dust, pollen, mold, bacteria, and airborne particles. A HEPA filter is made from interwoven fibers, usually of fiberglass. HEPA filters force air out through a dense mat that traps contaminants. The HEPA filter is an optional component that can be installed in the Andrew+ Pod if the ventilation module is present. Air is blown into the Andrew+ Pod, creating a contaminant-free airflow to protect samples.

2.3.4.2 ABEK filter

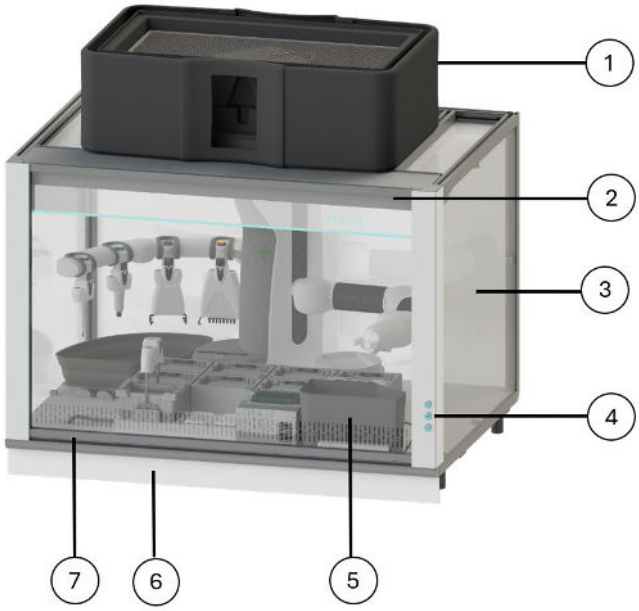
An ABEK filter is a type of respiratory filter that protects against various types of airborne hazards, including gases and vapors. The letters in "ABEK" stand for the following:

- A - Organic gases and vapors with a boiling point above 65 °C
- B - Inorganic gases and vapors (for example, chlorine, hydrogen sulfide)
- E - Acid gases and vapors (for example, sulphur dioxide, hydrogen chloride)
- K - Ammonia and organic ammonia derivatives

ABEK filters contain multiple layers of materials designed to capture and neutralize various contaminants. They are commonly used in industrial settings, chemical handling, firefighting, and other situations in which there is a risk of exposure to hazardous airborne substances.

2.3.5 Hardware overview

Figure 2–2: Andrew+ Pod overview



1. Optional ventilation module or external duct adaptor module
2. Front panel indicator
3. Side panels
4. Push buttons
5. Tip waste
6. Removable front panel
7. Sash

Figure 2–3: Ventilation module

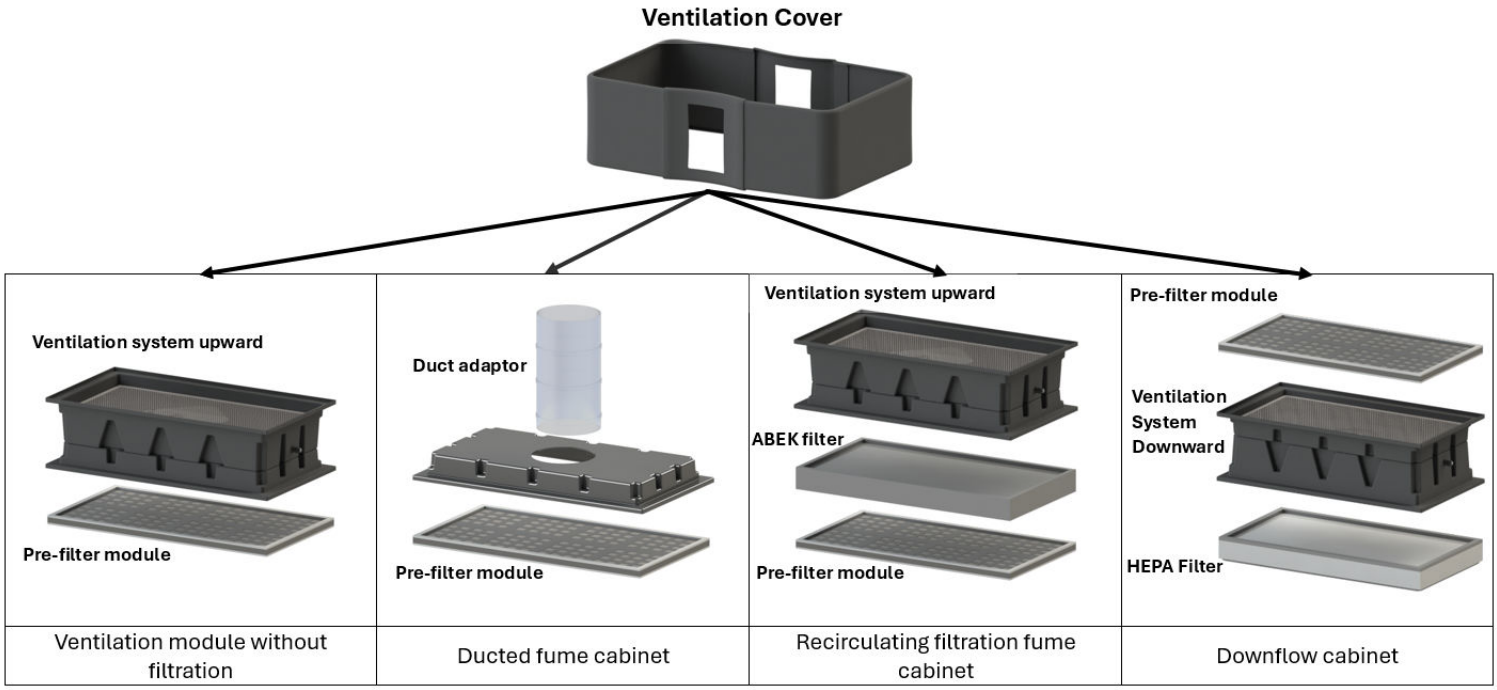


Figure 2–4: Ventilation system connector

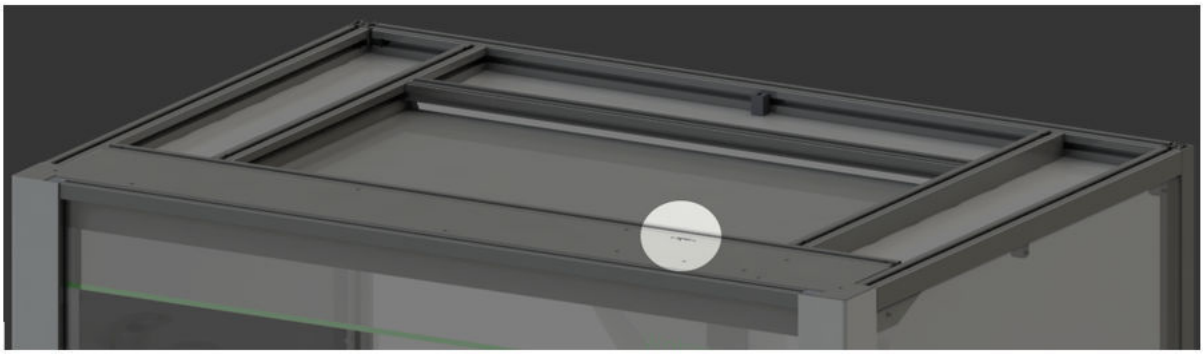


Figure 2–5: Andrew+ setup

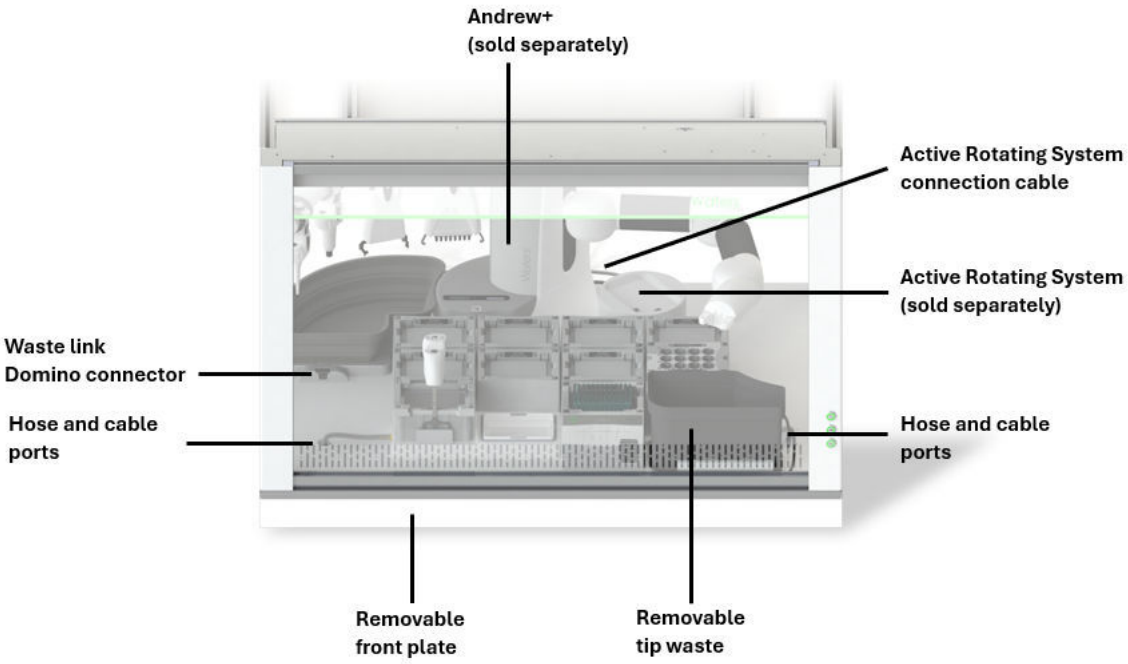
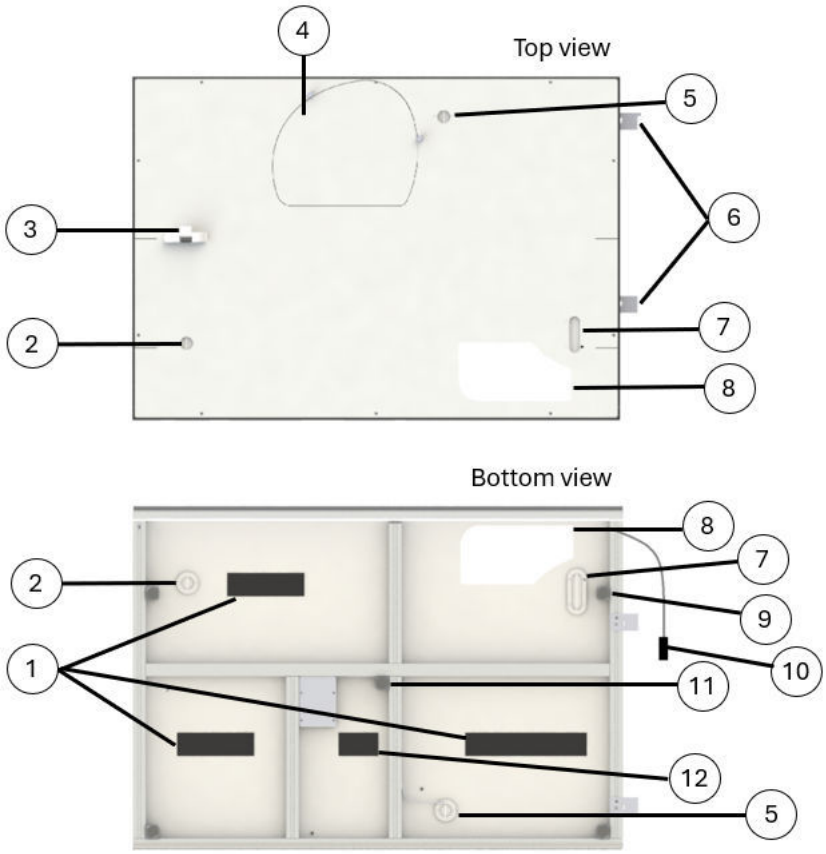


Figure 2–6: Andrew+ Pod top and bottom view



1. Power supply Velcro holders (see Safety precautions for power supplies (Page 5))
2. Port for vacuum hose or connected device power and Ethernet cables
3. Waste Link Domino Connector (power supply 24 V 1 A)
4. Andrew+ Robot positioning guide
5. Port hole for ARS connection cable and Andrew+ power and Ethernet cables
6. Alignment system for laboratory devices
7. Port for connected device power and Ethernet cables
8. Waste holder hole
9. Adjustable corner foot

(10) Power supply connection (24 V 6.67 A)

(11) Adjustable center foot

(12) Andrew+ Pod power supply

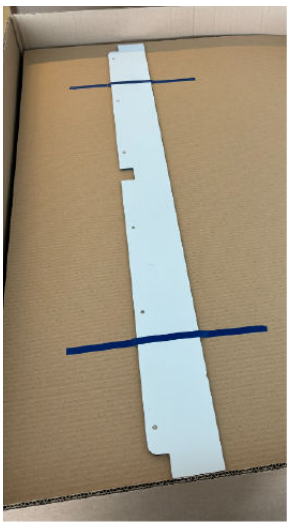
2.3.6 Installation of the Andrew+ Pod and optional modules

- The assistance of another person is required to manipulate the Andrew+ Pod.
- Lift with care to avoid back strain.
- Follow the steps carefully to ensure safe and proper handling of your new Andrew+ Pod.
- Use caution when opening the package if you use a sharp instrument to cut tape or straps.
- Inspect the outer packaging for any visible degradation. If you notice any significant damage, document it with pictures and contact the supplier before proceeding.
- Place the package on a flat, stable surface and carefully cut the tape that seals it.
- Be careful not to damage the content by cutting too deeply with a box cutter or scissors.
- Open the top flaps of the package and remove the protective material.

2.3.6.1 Installing the Andrew+ Pod main enclosure

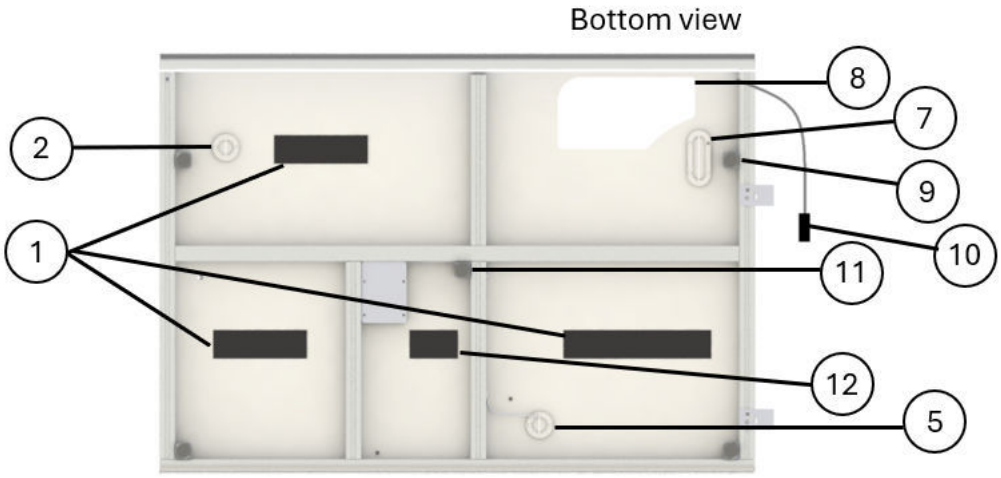
1. Ensure that all the packaging materials around the Andrew+ Pod are removed.
2. Set aside the removable bottom front panel that is attached to the packaging.

Figure 2–7: Removing the bottom front panel



3. Place the Andrew+ Pod on the table for installation and ensure that it remains in a horizontal position, allowing access to the bottom part.

Figure 2–8: Placing the Andrew+ Pod

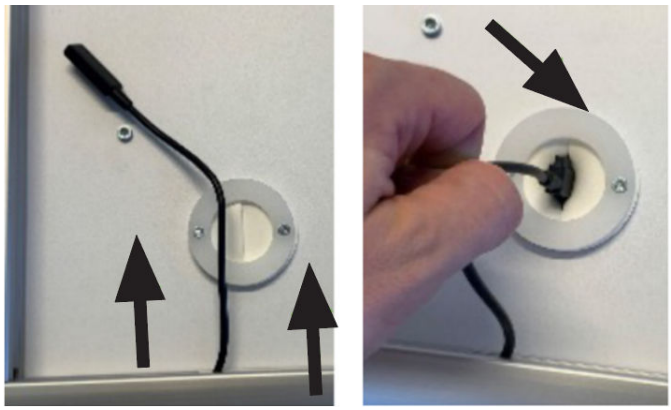


4. Install the five feet on the Andrew+ Pod.

   Note: There are two types of feet: adjustable and fixed. Ensure that the adjustable feet are positioned at the adjustable corner foot and center foot (locations 9 and 11).

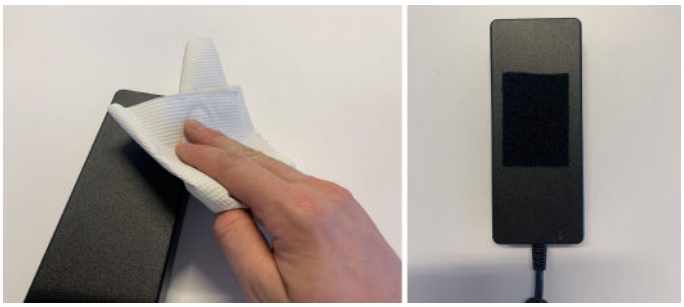
5. Pass the Andrew+ Active Rotating System cable through the port hole for the ARS connection cable (location 5).

   Figure 2–9: Passing the ARS cable through opening 5



6. Clean the Andrew+ Pod power supply using a soft cloth and alcohol (for example, IPA or ethanol).
7. When the power supply is dry, attach the Velcro tape at the center of the top side of the power supply.
8. Ensure that the Velcro tape is attached to a surface that does not have anything written on it, as shown below.

Figure 2–10: Cleaning the power supply



9. Install the Andrew+ Pod power supply (location 12) and connect it to the power supply connection (location 10).

   Figure 2–11: Installing the external power supply

10. Install the Andrew+ power supply (location 1) and pass the cable through the port hole for the Andrew+ power cable (location 5).

    Note: This step is required only if the Andrew+ unit is already available for installation in the Andrew+ Pod. If not, it can be completed when the Andrew+ unit arrives.

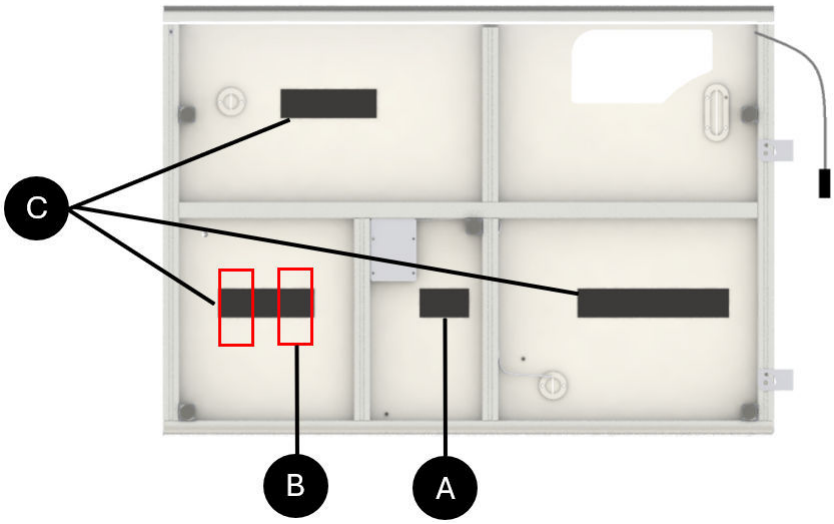
    Figure 2–12: Installing the Andrew+ power supply

2.3.6.2 Installing connected devices

For each additional connected device, install the power supply as described. If a Plate Sealer+ is included, it must be placed at the power supply Velcro holders (location 1), next to the Andrew+

power supply (location B). Other connected devices can be placed on any available Velcro area. Connected device positions are marked as (C) in the following image.

Figure 2–13: Connected device unit positions



A Andrew+ Pod power supply

B Andrew+ Robot power supply

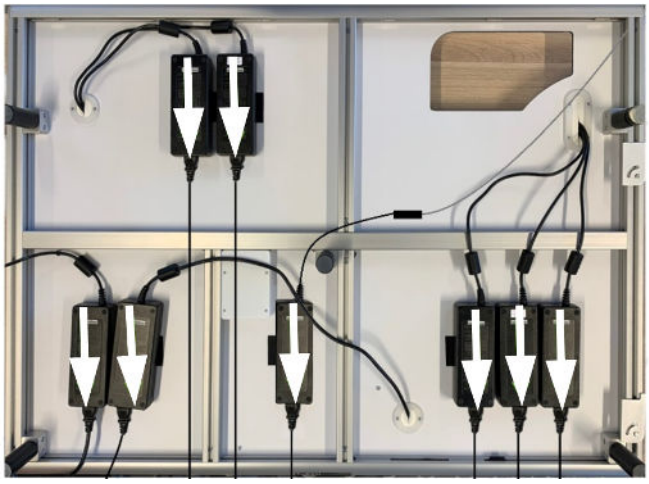
C Connected device power supplies

Note: If an Extraction+ device is used, the hose of the manifold must pass through the port for vacuum hose (location 2).

1. Route all the connected device cables through the port for connected device power and Ethernet cables (locations 2 and 7).

   These openings can also be used to pass all the necessary Ethernet cables.
2. Ensure that the AC side of each power supply faces downward, as shown below, to maintain a clean cable arrangement.

Figure 2–14: Arranging the cables



3. Ensure that the center foot (location 11) remains loose and that it is adjusted to its shortest possible length.

   Figure 2–15: Adjustable center foot

4. Adjust the corner foot (location 9) until the engraved line is visible.

   Figure 2–16: Adjustable corner foot

5. Carefully rotate the Pod to position it upright on its feet.

   Caution: The object is heavy. Lift with care and obtain help from a second person.

Figure 2–17: Arranging cables during Pod rotation

Note: For easier cable management during rotation, place the cables on the left- and right-hand sides, against the back feet.

6. Adjust the height of the corner feet and ensure that all the four feet touch the table.
7. Loosen the center foot until it makes proper contact with the tabletop.

Figure 2–18: Adjustable center foot

8. Remove the clamp that secures the door, and then open the door manually.

Figure 2–19: Removing sash clamp

9. Insert the tip waste holder in the designated opening.

Note: Push firmly against all the borders until the waste holder is properly clipped.

Figure 2–20: Installing the waste holder

10. Insert the removable tip waste.

Figure 2–21: Inserting the removable tip waste

Note: The tip waste holder can be used to route power and Ethernet cables, as shown below.

Figure 2–22: Routing power and Ethernet cables

11. Ensure that the magnets on the removable bottom front panel are facing upward.
12. Slide the panel beneath the Andrew+ Pod deck until the magnets secure the panel.

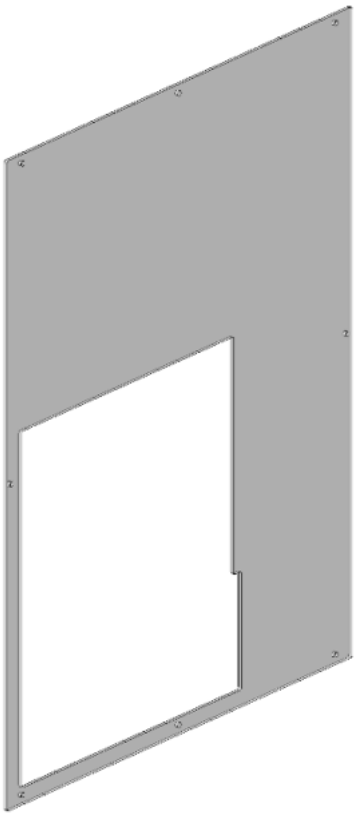
Figure 2–23: Securing the front panel

2.3.6.3 Installing and positioning the Automation Portal

If you use the Automation Portal, it must be installed on the right-hand side of the Andrew+ Pod. The instructions for preparing the Andrew+ Pod for the Automation Portal and positioning it correctly in relation to the Andrew+ Pod are as follows.

1. Starting with the bottom screws and moving upward, remove the screws and then remove the default right-hand side panel.

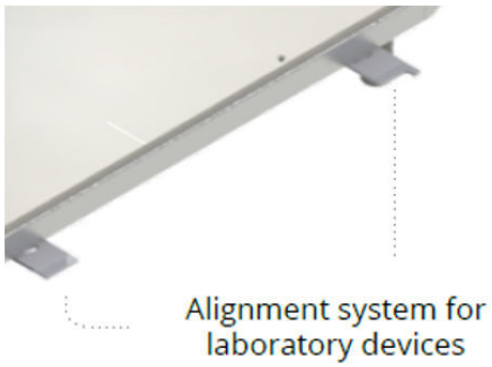
   Figure 2–24: Right-hand side panel



2. Align the automation portal side panel with the side opening.
3. Insert all the screws, keeping them loose initially.
4. After all screws are placed, tighten them from the top to the bottom.

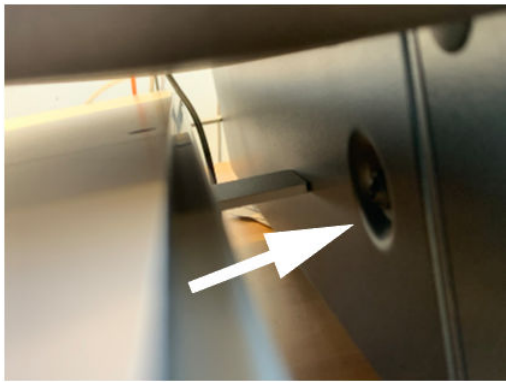
5. Unfold the alignment system for laboratory devices located below the right-hand side of the Andrew+ Pod.

Figure 2–25: Aligning the system



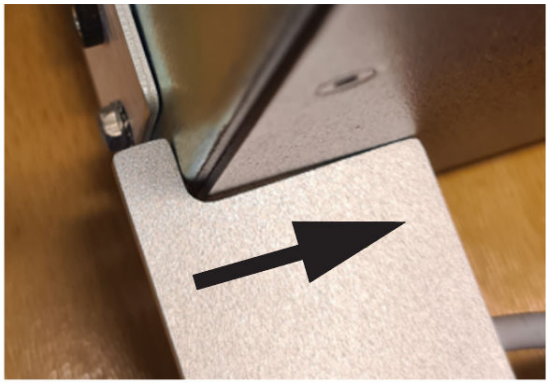
6. Place the Andrew+ Pod so that it aligns with the Automation Portal instrument and is in contact with the alignment system for laboratory devices.

Figure 2–26: Aligning Andrew+ Pod with Automation Portal



7. The rear side of the positioning system should be positioned to fit properly with the corner of the instrument structure.

Figure 2–27: Placing the positioning system



2.3.6.4 Installing and positioning the Plate Sealer+ device

If you use a Plate Sealer+ device, it should be installed on the left-hand side of the Andrew+ Pod. To prepare the Andrew+ Pod for the Plate Sealer+ and position it correctly in relation to the Andrew+ Pod:

1. Starting with the bottom screws and moving upward, remove the screws and then remove the default left-hand side panel.

   Figure 2–28: Left-hand side panel

2. Align the Plate Sealer+ side panel with the side opening.
3. Insert all the screws, keeping them loose initially.
4. After all screws are placed, tighten them from the top to the bottom.

2.3.6.5 Installing the ventilation system

The Ventilation Module can be assembled in multiple configurations, using different modules in a specific order. This section includes instructions for installing the Ventilation Module according to your setup.

2.3.6.5.1 Configuring the ventilation module without filtration

Note: Ensure that the Andrew+ Pod power supply is disconnected from the main power supply before proceeding with this installation.

Figure 2–29: Ventilation module without filtration configuration

To install the Andrew+ Pod without filtration:

1. From inside the Andrew+ Pod, remove the screws and then remove the top dust cover by loosening only the four screws with chamfered edges.

   ### Notes:

   - These screws are accessible from the interior of the Andrew+ Pod.
   - Remove only these four screws. Do not remove any other screws.

   ### Figure 2–30: Removing the dust cover screws

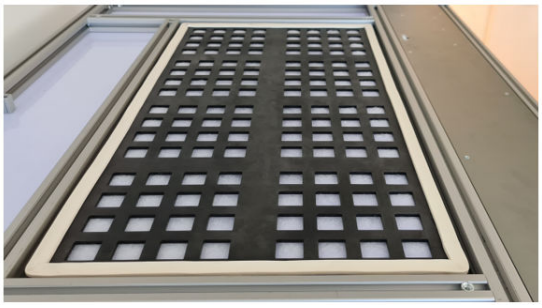
   

2. Open the pre-filter module and verify that the filter is properly assembled.

3. Close the pre-filter module, ensuring that all sides are secured.
4. Place the pre-filter module on top of the Andrew+ Pod.

   Note: Ensure that the pre-filter is correctly placed on top of the Andrew+ Pod.

   Figure 2–31: Pre-filter module



5. Tighten the sampling outlet of the ventilation system.

   Figure 2–32: Sampling outlet

6. Place the ventilation system with the three front arrows facing upward, and then connect its cable to the Andrew+ Pod.

   Figure 2–33: Arrows facing upward

7. Install the two cover clamps on the left- and right-hand sides.

   Note: Ensure that the clamps are fixed in the top part of the hood.

Figure 2–34: Cover clamps

8. Place the ventilation cover around the ventilation system to enclose it.

   The two cover clamps ensure that the ventilation cover stays firmly in the required position.

Figure 2–35: Ventilation cover

2.3.6.5.2 Installing the external duct adaptor module

If you want to connect the Andrew+ Pod to an external ventilation system, install an adaptor.

Figure 2–36: External duct adaptor configuration

To install an adaptor:

1. From inside the Andrew+ Pod, remove the screws, and then remove the top dust cover by loosening only the four screws with chamfered edges.

   Notes:

   - These screws are accessible from the interior of the Andrew+ Pod.
   - Remove only these four screws. Do not remove any other screws.

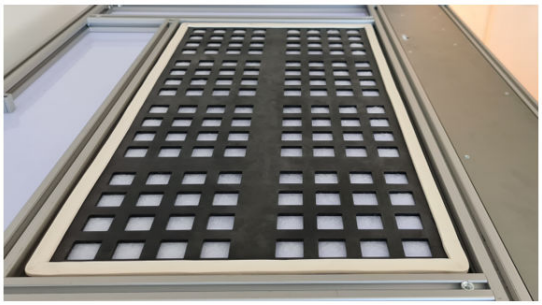
   Figure 2–37: Removing the dust cover screws

2. Open the pre-filter module and verify that the filter is properly assembled.
3. Close the pre-filter module, ensuring that all sides are secured.
4. Place the pre-filter module on top of the Andrew+ Pod.

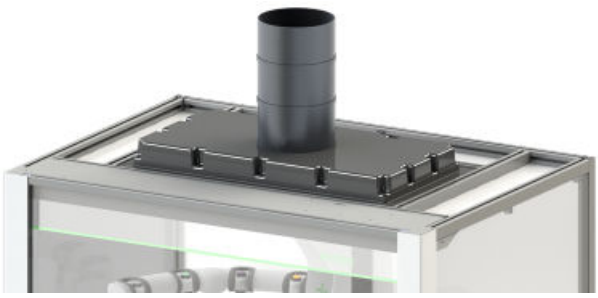
   Note: Ensure that the pre-filter is correctly placed on top of the Andrew+ Pod.

   Figure 2–38: Pre-filter module

5. Place the duct adaptor, ensuring that it is secured correctly on all sides.

   Figure 2–39: Duct adaptor placement

2.3.6.5.3 Recirculating filtration fume cabinet

Note: Ensure that the Andrew+ Pod power supply is disconnected from the main power supply before proceeding with this installation.

Figure 2–40: Filtration fume cabinet configuration

To install the Andrew+ Pod as a filtration fume cabinet:

1. From inside the Andrew+ Pod, remove the screws and then remove the top dust cover by loosening only the four screws with chamfered edges.

   Notes:

   - These screws are accessible from the interior of the Andrew+ Pod.
   - Remove only these four screws. Do not remove any other screws.

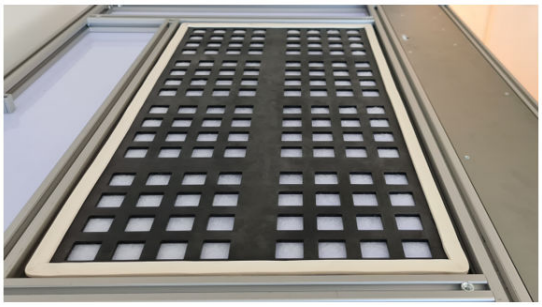
   Figure 2–41: Removing the dust cover screws

2. Open the pre-filter module and verify that the filter is properly assembled.
3. Close the pre-filter module, ensuring that all sides are secured.
4. Place the pre-filter module on top of the Andrew+ Pod.

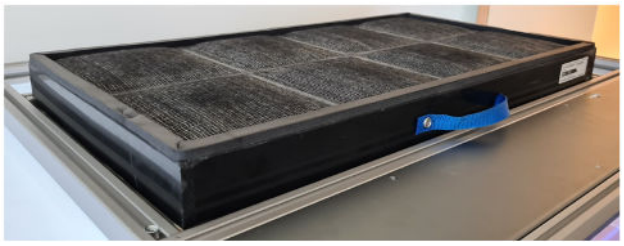
Note: Ensure that the pre-filter is correctly placed on top of the Andrew+ Pod.

Figure 2–42: Pre-filter module



5. Place the filter with the foam gasket facing upward, ensuring that it is secured correctly on all sides.

Figure 2–43: Foam gasket



Caution: The object is heavy. Lift with care and obtain help from a second person.

6. Tighten the sampling outlet of the ventilation system.

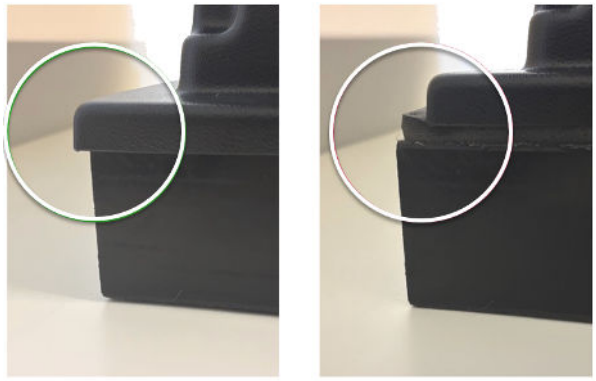
Figure 2–44: Sampling outlet

7. Place the ventilation system with the three front arrows facing upward, and then connect its cable to the Andrew+ Pod.

Figure 2–45: Arrows facing upward

Note: Ensure proper alignment between the ventilation system and the filter.

Figure 2–46: Ventilation system and filter alignment



8. Install the two cover clamps on the left- and right-hand sides.

   Note: Ensure that the clamps are fixed in the top part of the hood.

   Figure 2–47: Cover clamps

9. Place the ventilation cover around the ventilation system to enclose it.

   The two cover clamps ensure that the ventilation cover stays firmly in the required position.

Figure 2–48: Ventilation cover

2.3.6.5.4 Configuring for vertical laminar flow

Note: Ensure that the Andrew+ Pod power supply is disconnected from the main power supply before proceeding with this installation.

Figure 2–49: Vertical laminar flow configuration

If you want to install the Andrew+ Pod for vertical laminar flow, proceed as follows:

1. From inside the Andrew+ Pod, remove the screws and then remove the top dust cover by loosening only the four screws with chamfered edges.

   Notes:

   - These screws are accessible from the interior of the Andrew+ Pod.
   - Remove only these four screws. Do not remove any other screws.

Figure 2–50: Removing the dust cover screws

2. Open the pre-filter module and verify that the filter is properly assembled.
3. Close the pre-filter module, ensuring that all sides are secured.
4. Place the HEPA filter with the arrow pointing downward.

> **Caution:** The object is heavy. Lift with care and obtain help from a second person.

Figure 2–51: HEPA filter

5. Tighten the sampling outlet of the ventilation system.

Figure 2–52: Sampling outlet

6. Place the ventilation system with the three front arrows facing downward, and then connect its cable to the Andrew+ Pod.

Figure 2–53: Arrows facing downward

Note: Ensure proper alignment between the ventilation system and the filter.

Figure 2–54: Ventilation system and HEPA filter alignment

7. Place the pre-filter on top of the HEPA filter, ensuring that it is secured correctly on all sides.

Figure 2–55: Pre-filter on top of HEPA filter

8. Install the two cover clamps on the left- and right-hand sides.

Note: Ensure that the clamps are fixed in the top part of the hood.

Figure 2–56: Cover clamps

9. Place the ventilation cover around the ventilation system to enclose it.

   The two cover clamps ensure that the ventilation cover stays firmly in the required position.

Figure 2–57: Ventilation cover

2.3.6.6 Installing the Andrew+ inside the Andrew+ Pod

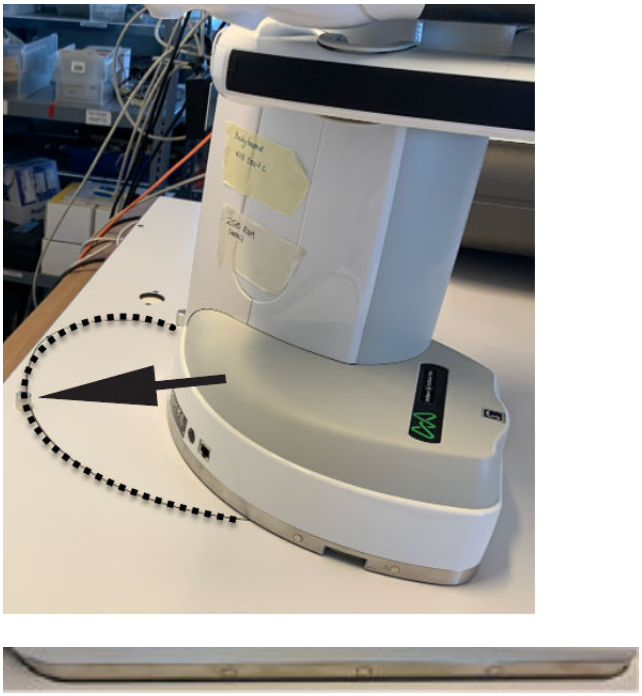
Note: If the Velcro strap is still attached to the Andrew+ arm, remove it and release the arm to avoid collisions with the back of the Andrew+ Pod.

1. Hold the Andrew+ at a slight angle to carefully guide it through the door opening.

   Caution: Lift with care and obtain help from a second person.

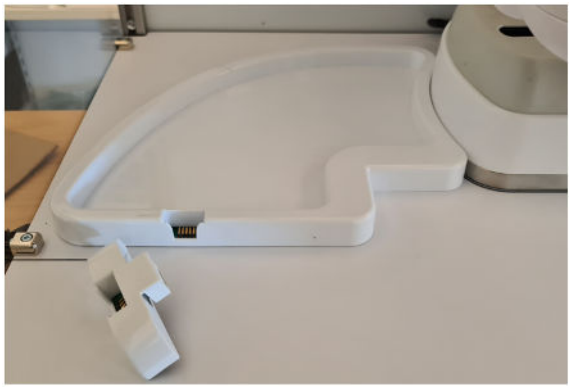
2. Place the Andrew+ at the required location within the Andrew+ Pod, and align it with the engraved footprint and mechanical guides.

Figure 2–58: Placing the Andrew+ inside enclosure



3. Place the waste tip domino on the left-hand side of the Andrew+.

Figure 2–59: Placing the waste tip domino

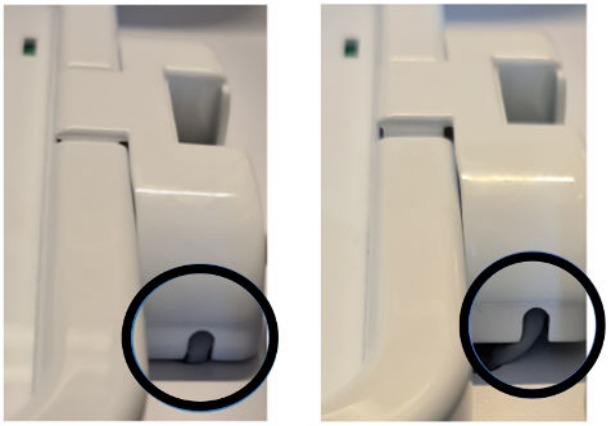


4. Plug the waste link domino connector into the tip waste domino.

Note: Press the connector to ensure a secure electrical connection. Ensure that the connector is fully inserted and that the cable is positioned so it does not interfere.

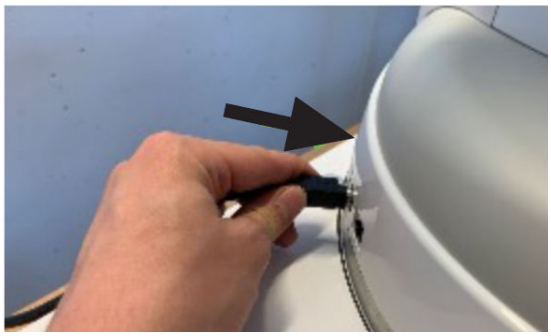
Figure 2–60: Waste link domino connector

Figure 2–61: Correct position of waste link domino connector



5. Plug the power supplies into the main power source or, if available, through an external RCD or GFCI to add protection.

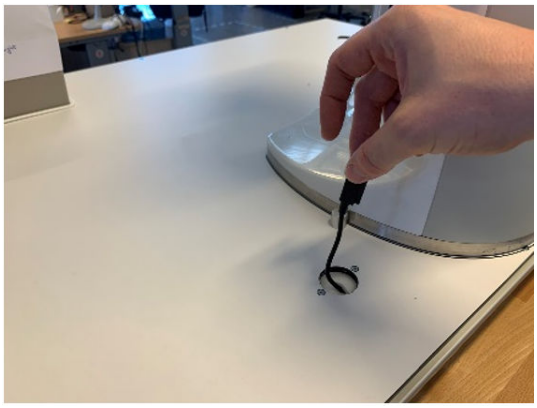
Figure 2–62: Plugging the power supply into the main power



2.3.6.7 Installing the Andrew+ Active Rotating System (ARS)

1. Pull the ARS connection cable out through the cable management opening located next to the Andrew+.

Figure 2–63: Pulling the ARS cable



2. Place the ARS unit beside the Andrew+.

Figure 2–64: Placing the ARS unit

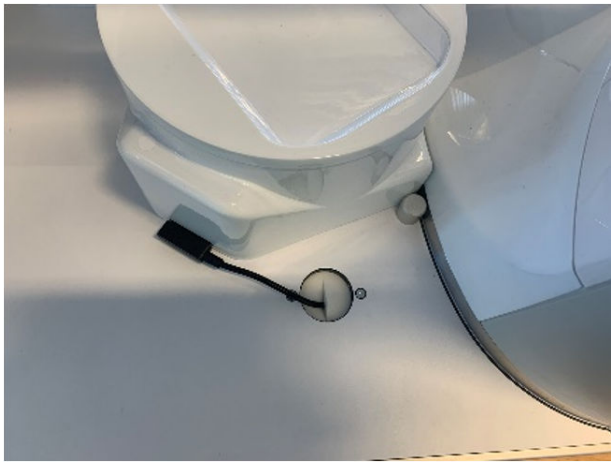
3. Attach the magnetic connector to the ARS.

   The magnet secures the connector in the correct orientation and holds it in place.

Figure 2–65: Connecting the magnetic connector to ARS

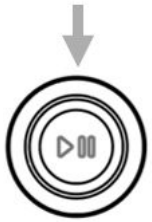
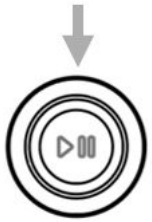
4. Ensure that the ARS is pressed firmly against the Andrew+ and aligned with the positioning pillar.

Figure 2–66: Correct ARS position



2.4 How to use the Andrew+ Pod

The Andrew+ Pod must be connected to the Andrew+ Pipetting Robot to establish connection with the OneLab software. The interface present on the Andrew+ Pod consists of three buttons on the right-hand side of the pod.

From status...	Action on push-button	The action triggered by the push-button
An experiment is Running.		The machine is paused.
An experiment is in Pause and the sash is closed.		The machine resumes.
No experiment is running, or an experiment is in Pause.		The sash is opened for the first or second stop.

From status...	Action on push-button	The action triggered by the push-button
No experiment is running, or an experiment is in Pause.		The sash is closed for the first stop.
The sash is opening or closing.	 	The sash is stopped.
The inner light of the Pod is ON.	 Press for two seconds	The light is turned off.

From status...	Action on push-button	The action triggered by the push-button
The inner light of the Pod is OFF.	 Press for two seconds	The light is turned on.
The Ventilation Module is ON. Andrew+ is on and connected to the Andrew+ Pod.	 Press for two seconds	The fan is turned off.
The Ventilation Module is OFF. The Andrew+ is on and connected to the Andrew+ Pod.	 Press for two seconds	The fan is turned on.
The ventilation system is installed on the Andrew+ Pod without Andrew+. **Note:** The fan options are available only when the onboard ventilation system is installed.	Press for two seconds, and then press the number of times required to select the desired speed shown in the front display indicator.	Fan is off  Fan speed 1000 rpm

From status...	Action on push-button	The action triggered by the push-button
	 Press for two seconds 	 Fan speed 2000 rpm  Fan speed 3000 rpm 

2.5 Maintenance

The Andrew+ Pod does not require periodic maintenance if used properly in a clean environment. Perform periodic checks to ensure that the Andrew+ Pod is in optimal condition and delivers the required results.

2.5.1 Recommended maintenance if the Andrew+ Pod is relocated

If the Andrew+ Pod is relocated, clean the feet at the bottom of the plate with ethanol. This ensures the required grip between the Andrew+ Pod and the bench. The bench to which the Andrew+ Pod is relocated should be clean.

2.5.2 Solvents compatible with the Andrew+ Pod

To clean all the parts of the Andrew+ Pod, the following solvents were tested for compatibility:

- Isopropanol alcohol
- Ethanol
- 2% bleach solution

Caution: To avoid possible scratches on pod surfaces, use a soft tissue to clean all the Andrew+ Pod parts.

Caution: DO NOT clean the electronic connectors present in the Andrew+ Pod.

2.6 Technical data

Technical data	Definition
Warranty	1 year
Safety instructions for power supplies	To ensure maximum safety and minimize the risk of electrocution due to accidental liquid spills, it is mandatory to follow these guidelines for the installation and use of power supplies for tools, connected devices, and Andrew+. • Install RCD/GFCI systems: The safest option is to ensure that the electrical network used to power the equipment is equipped with a Residual Current Device (RCD) or a Ground Fault Circuit Interrupter (GFCI). If installing a fixed RCD/GFCI system is not possible, use a portable adapter with built-in RCD or GFCI

Technical data	Definition
	protection. These devices provide critical protection against electrical faults that could lead to electrocution. • Suspend power supplies: It is mandatory to suspend all the power supplies of the connected Devices and Andrew+ from the top surface of the bench where the Andrew+ Pod is located. Use the provided Velcro to secure them at the highlighted location. This helps prevent contact with spilled liquids and reduces the risk of electrocution. • Ensure safe placement of power outlets: Position all non-RCD/GFCI power outlets in a safe location where they are not susceptible to collecting water. This is mandatory to prevent electrical hazards from potential spills.
External power supply input characteristics	Nominal voltages: 100 VAC ±10%, 240 VAC ±10% Power supply voltage range: 85–264 VAC AC current: 1.85 A/115 VAC, 1.0 A/230 VAC Frequency: 47–63 Hz Inrush current (max): 120 A/230 VAC
DC power requirement	24 VDC/1 A (only use the power supply provided with the Enclosure) 24 VDC/6.67 A from the external power supply
Overvoltage category DC port	Cat I
Electrical configuration	The Andrew+ Pod should be connected exclusively with the power supply GST160A24-R7B or GST160A24-R7BPE and the electrical cable supplied with the instrument
Interfaces	CAN bus directly connected to the waste domino of Andrew+
Operating temperature	4 °C to 37 °C
Operating humidity	Maximum relative humidity is 80% for temperatures up to 31 °C, decreasing linearly to 50% humidity at 40 °C
Altitude	Up to 2000 m above mean sea level
Degree of protection	IP 20
Maximum noise	56 dB(A) at 1 m with fan at 2000 rpm 63 dB(A) at 1 m with fan at 3000 rpm
Required personal computer characteristics	Tablet or computer equipped with internet browser and network capability
Dimensions	Footprint (benchtop dimensions required): 57 cm (W) x 106 cm (L) (22.5 inches x 42 inches)

Technical data	Definition
	Enclosure: 112 x 81 x 82.6 cm (44 x 32 x 32.5 inches) Enclosure with sash fully opened: 112 x 81 x 137 cm (44 x 32 x 54 inches)
Weight	Enclosure: 44 kg Ventilation system: 5.8 kg
Pollution degree of the intended environment	Pollution degree 2

2.7 Safe disposal

Contact recycling@waters.com with any questions or concerns regarding proper handling or disposal.

Dispose of Waters instrumentation products in accordance with applicable requirements and best practices as described below.

- Follow appropriate procedures for flushing the instrument's fluid paths of any hazardous samples or solvents.
- Waters instruments are subject to European Union's Waste Electrical and Electronic Equipment (WEEE) and Restriction of Hazardous Substances (RoHS) Directives. According to these directives, do not dispose of instruments in the general waste stream. Similar "e-waste" laws also apply in other jurisdictions. In all cases, ensure that a certified electronics recycler processes end-of-life instruments. Under the WEEE Directive and implementing regulations, when customers buy new electrical and electronic equipment from Waters they are entitled to:
  - Return old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country).
  - Return the new equipment for recycling when it ultimately becomes waste.

  For details on regional arrangements, see EU WEEE Compliance.
- Some Waters instruments use batteries, mercury-containing lamps, or other replaceable components during the life span of the instrument. Handle such materials in accordance with local laws governing their processing and safe disposal.