Restoration&Moisture&Ventilation

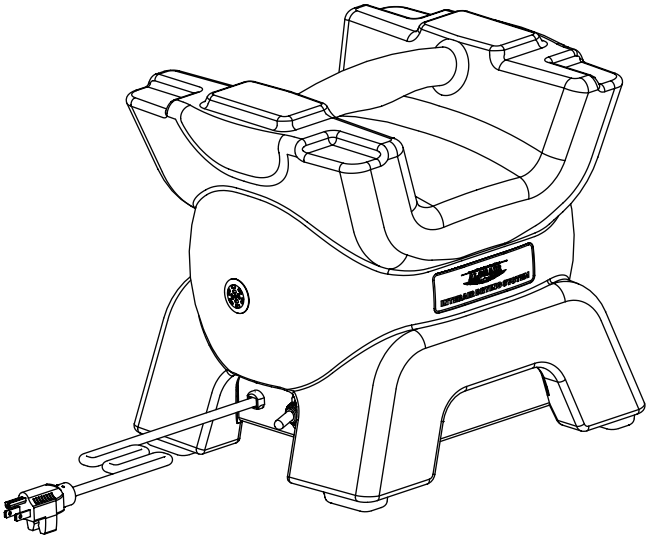
ALORAIR

X-FORCE

AIR DRYING SYSTEM

Owner's Manual

SAFETY / WARRANTY/ OPERATING/
INSTRUCTIONS/ MAINTENANCE / SPECIFICATIONS



READ AND SAVE THESE INSTRUCTIONS

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THIS MANUAL CONTAINS IMPORTANT SAFETY WARNINGS ON PAGES 12 AND 13.

DIRECTORY

INTRODUCTION

X-Force: The Ultimate Drying System for Restoration Work

Designed specifically for water damage restoration and restorative drying, the X-Force system targets challenging spaces such as wall cavities, ceiling joists, cupboards, and more. It operates on a fundamental principle – harnessing airflow for effective drying.

Key Features:

- Injection and Extraction Modes: Achieve rapid drying by injecting dry air into wall cavities or extracting moist air from them, enhancing the drying process.
- Robust Construction: The X-Force blower features a stainless steel base and a double-walled polyethylene housing, ensuring durability and longevity.
- Air Delivery System (ADS): The ADS comprises a high-temperature-resistant, unbreakable polyethylene hose connected through cuffed hose connectors for easy installation.
- Multiple Hoses: Up to 12 PVC supply hoses connect to each manifold, distributing air through specially designed air nozzles.
- Efficient Air Nozzles: Injection-molded plastic air nozzles sport a tapered design for improved airflow and a secure seal. Lock them in place with a simple turn.

Advantages:

1. Minimal Damage: Our system requires small holes, less than 1/4", for installation, ensuring inconspicuous and easily repairable access points.
2. High Coverage: Treat over 90 feet of 2x4 constructed wall with a single system.
3. Versatility: X-Force adapts to various configurations, including walls, cabinets, ceilings, headers, and more, in both injection and extraction modes.

Efficiency: Despite its high airflow capacity, the X-Force operates on less than 3 amps of standard 115-volt power. The blower unit is remarkably lightweight at 14.5 pounds, making it a practical choice for restoration needs.

PRINCIPLE OF OPERATION

Managing Moisture: Preserving Health and Property

Moisture concealed within building materials, poses a dual threat – potential damage to structures and health hazards linked to mold and mildew. Safeguarding against these risks is essential.

The Key to Moisture Control:

Professional Moisture Meters: To accurately detect and pinpoint excess moisture, rely on specialized tools like penetrating and non-penetrating moisture meters, along with thermo-hygrometers. These instruments gauge both air humidity and water vapor within materials.

Visual Indicators: Enhance monitoring with markers or color-coded adhesive strips. These simple aids provide real-time insights into your work.

Record-Keeping: Maintain detailed records of moisture levels and humidity. Such data offers clients a clear overview of the progress and helps ensure their peace of mind.
Preventing moisture-related issues is a matter of preservation and a commitment to health and safety.

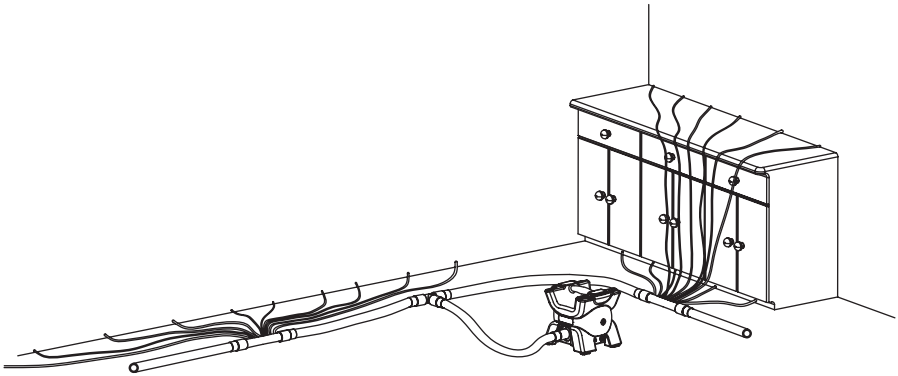
The Science Behind Building Drying

Key principles:

1. Airflow Acceleration: Controlled airflow expedites evaporation, averting potential issues.
2. Dehumidification: Precise moisture removal from the air is essential.
3. Strategic Heating: Applied heat enhances the process as needed.

X-Force System: Seamlessly uniting these principles optimizes airflow within cavities and applies heat when necessary.

With these principles, X-Force offers a comprehensive, effective solution for building drying and managing moisture-related challenges.



The X-Force will deliver air to structural cavities in walls, ceilings, under and above cabinets, and many other areas.

TOOL PARTS AND INSTALLATION INSTRUCTIONS

Tool Preparation:

Gather the following tools for air drying system installation:

1. Pencil
2. Tape measure

3. Razor knife
4. Drywall taping knife
5. Small pry bar
6. Nail puller
7. Screwdriver
8. Carpet awl (for creating holes)
9. Optionally, a drill with a 3/16 inch bit for specific situations.

1. Wall Markings:

- Use a pencil to mark the transition between the upper edge of the skirting board at the base of the wall and the wall itself.
- Carefully lift the skirting board, using a small chisel and scraper to protect the wall from damage.
- Remove the fixed skirting board, ensuring that all screws have been removed.
- Make a reference mark at a suitable location to facilitate reinstallation.
- Mark the wall 8 inches from the corner, then continue making marks at 16-inch intervals until the entire wall is marked accordingly.

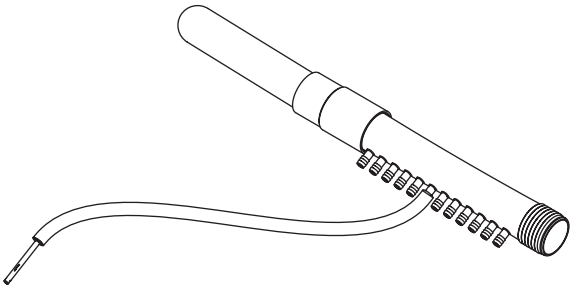
2. Making Holes

The next step involves crafting openings for the air jets at each designated point, typically just above the sill plate, a 2x4 resting flat on the wooden or concrete subfloor. These openings should be positioned approximately 2 inches above the floor while maintaining a level below the upper edge of the skirting board.

Recommended Tools:

- For this task, we suggest using a carpet awl, which provides an efficient method for hole creation. Alternatively, a drill with a 3/16 inch bit can also be employed.

Avoid making larger holes, as they can be more time-consuming to seal and may lead to air leakage.



The ADS is connected from the blower outlet to a manifold with a threaded pipe. From the manifold, PVC supply lines lead to air nozzles that are inserted into walls or other structural cavities.

Special Considerations for Delicate Surfaces

In the case of rubber grooved floors or sensitive skirting boards, a more delicate approach is necessary. We recommend drilling holes in these surfaces and meticulously patching the small openings.

Planning Ahead for Structural Elements:

When dealing with cupboards, walls, and ceilings, strategic planning will help to avoid extensive repairs down the road. For instance, when drying behind the skirting board, it is recommended to drill holes every 16cm to create openings large enough to insert the air nozzle.

Efficient Repairs:

For minor areas with flaking or damage, re-gluing is a time-saving approach that minimizes the need for extensive repair work at a later stage. This will ensure that your installation remains efficient and seamless.

3. Installing the Water Absorber

When installing the water absorber, choose a location that minimizes exposure to high-traffic areas, reducing the risk of accidental dislodging from the blower and Air Delivery System (ADS).

For Air Injection Mode:

- Use a silencer filter to significantly reduce blower noise and filter out large particles drawn in by the blower.
- Position the silencer filter on the intake port and place the ADS on the exhaust port.

For Extraction Mode:

- It is recommended to utilize a HEPA filter attachment instead of the silencer filter. Refer to "Extraction drying" for further details.

Optimizing Efficiency:

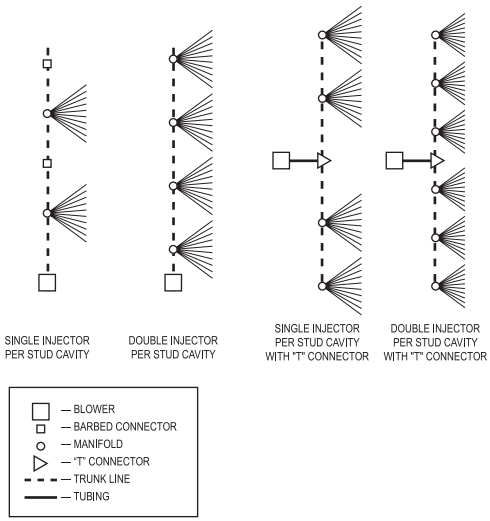
- To achieve maximum efficiency, connect the ADS to a T-pipe and add approximately equal lengths of ADS in opposite directions from the wet surface to be treated.
- Installing two shorter ADS units on either side of the T-pipe will improve airflow compared to a single row installation.
- Use locking hose clamps at the blower's outlet connection and at the intersection of the first ADS and the first manifold to prevent dislodging and air leakage.

Air Injection Mode Efficiency:

- For optimal efficiency in air injection mode, use at least two manifolds.

Protecting the Blower:

- Pay attention to the air vents on the underside of the stainless steel base of the blower. Do not cover or block these vents, as it can cause the blower to operate at higher temperatures, potentially shortening its lifespan.
- Ensure that loose clothing, fabrics, dirt, or debris do not obstruct or cover these vents to maintain the blower's performance and longevity.



The illustration shows two inline lines ADS (left) and two double lines ADS, which are connected via a T-pipe.
It also shows the arrangement of the hoses for one or two air nozzles entering each wall cavity.

4. Lay out Manifolds

Begin by assessing the number of manifolds required for your specific project. The following method provides efficient ventilation, typically achieving 25 to 30 air exchanges per hour, suitable for most scenarios.

Calculating Manifold Needs:

- For internal walls or 2x4 inch truss walls, utilize the formula of one manifold (equipped with 12 air nozzles) per every 1.5 meters of wall.
- In cases of 2x6 exterior walls, smooth walls in flats and condominiums, double-sided fire walls, and dense or waterproof cover walls, use one manifold (with 12 nozzles) for every 7 feet of wall length.
- For cladding or multi-layer walls, consider doubling the number of air nozzles used.

Creating the ADS System:

- Once you've determined the quantity and spacing of the manifolds, assemble the Air Delivery System (ADS).
- Utilize pre-assembled manifolds, oil lines, and air nozzles to streamline the installation process, saving valuable time.
- If feasible, route the blower air through a short section of ADS to the T-pipe and extend the ADS from both sides of the T-pipe. This practice enhances performance by ensuring even airflow.
- T-pipes can also be employed to facilitate drying in multiple rooms simultaneously.

5. Setting Up PVC Supply Lines

The configuration of the PVC supply line is task-specific, particularly when it connects to walls or runs above cabinets with air nozzles in the ceiling. For standard wall drying jobs, a typical arrangement is as follows:

Pipe Length Setup:

• Establish five pipe segments, each with specific lengths tailored to the task.

Qty	Length	Locations and manifolds
2	7.5 feet	Outlets 1 and 12
2	6.5 feet	Outlets 2 and 11
2	5.5 feet	Outlets 3 and 10
2	4.5 feet	Outlets 4 and 9
2	2.5 feet	Outlets 5 and 8
2	1 feet	Outlets 6 and 7

• Set the tube lengths of the other three tube shapes as follows:

Qty	Length	Locations and manifolds
4	4 feet	Outlets 1, 2, 11 and 12
4	3.5 feet	Outlets 3, 4, 10 and 11
4	1 feet	Outlets 5, 6, 9 and 10

Connecting PVC Supply Hoses

Follow these steps for an effective setup:

1. Attach Hoses to Manifold Outlets:

• Connect a piece of PVC supply hose to each outlet of the manifold.

2. Add Air Nozzles:

• Attach an air nozzle to the opposite end of each hose.

3. Closing the Route ADS:

• Seal the last distributor on the route ADS using the provided plug.

4. Insert Air Nozzles:

• Place the air nozzle into the hole you've drilled or punched. In some cases, it can be beneficial to create a small vent hole to accelerate the drying process by introducing more dry air to the affected material. While often not required, this can be a helpful step.

Note: Vent holes are typically small, making them relatively easy to repair if necessary.

6. Standard Drying Procedure

Follow this standard procedure to ensure the efficient operation of your system:

1. Safety Check:

Examine cords, plugs, and extension cords for any damage, particularly when using a 3-amp circuit.

2. System Readiness:

Power on the system, verifying that all components are correctly installed with minimal air leakage. Ensure that ADS, T-pipes, hose collars, manifolds, power cables, and air nozzles are all in their proper places.

3. Connection to Blower:

Connect the Air Delivery System (ADS) to the air inlet that drives the blower.

4. Initial Extraction Mode:

For the first phase of the job, it is advisable to operate the system in negative pressure or extraction mode. This method efficiently removes substantial amounts of moist air from the structural cavities. (Refer to "Extraction Drying.")

5. Moisture Level Assessment:

Run the system in extraction mode until moisture levels in the treated area are equal to or lower than those in the untreated section.

6. Transition and Silencer Filter Installation:

Relocate the ADS from the vacuum to the blower's air outlet. Install the silencer filter.

7. High-Pressure Air Introduction:

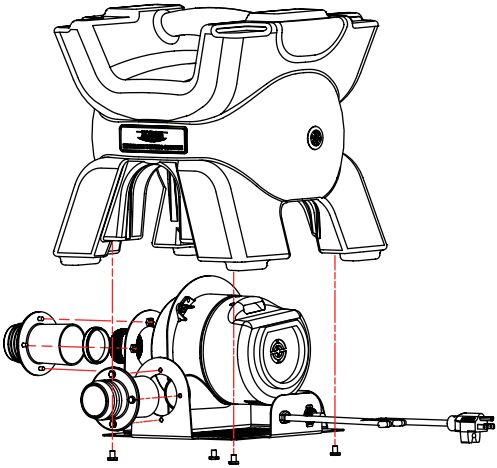
Introduce high-pressure air into the structural cavities to finalize the drying process.

7. Extraction and Drying

In the context of air extraction and dehumidification, it is imperative to emphasize the importance of removing moisture and potential contaminants from extracted air to prevent their introduction into dry, uncontaminated areas. It is crucial to avoid letting the airflow into occupied buildings when the unit is in vacuum or extraction mode. To address this, utilize a suction hose to direct the air outside or opt for a premium filtration attachment as an accessory. This approach is vital for preventing pollutants, including moisture, bacterial spores, bacterial toxins, and other by products, from escaping the enclosure into occupied spaces, which can potentially lead to health issues such as allergic reactions and illness.

8. Drying Ceilings and Cupboards

Drying ceilings follow the same procedure as drying walls and can be accomplished simultaneously with wall drying. It's important to note that ceiling joists typically have dimensions of at least 2x6. Due to the larger size of the wood and the increased volume of structural voids in ceilings, using more air jets can ensure effective and efficient drying.



When repairing or performing maintenance on the unit, remove the four screws from the stainless steel base attached to the polyethylene tray as shown.

Drying beneath and behind cabinets can pose challenges, primarily because accurately measuring moisture in these areas can be tricky, and some spaces may be inaccessible for air nozzle placement. In cases of uncertain moisture measurements, it is advisable to assume that the material is wet. Ensure a continuous supply of dry air wherever water is present. Consider disassembling the cabinet for more thorough drying and then reassemble it.

OPERATIONS SUMMARY

An air drying system helps restore building materials within walls, ceilings, joists, cabinets, and various structural voids back to their pre-damage state. This unit excels in simultaneously drying challenging areas, including the spaces beneath cabinets, the walls concealed behind them, and the ceilings above these cabinets or walls. AlorAir air drying system products are designed for versatility and user-friendliness, ensuring their reliability for years, as they effectively remove moisture from hard-to-access areas.

SAFETY

AlorAir places a paramount emphasis on customer safety. Our product is designed in strict adherence to the safety guidelines. Just like any other electrical equipment, the absorber holds risks when misused or damaged. Neglecting the subsequent warnings could lead to personal injury, fire hazards, or damage to the product itself. To mitigate the risk of electric shock, fires, or physical harm, it is crucial to thoroughly read and diligently adhere to the following safety precautions before using the product.

1. Existing Hazards:

Modifying the grounding plug or using a damaged drive grounding adapter can lead to serious injuries or fires if the product gets damaged or malfunctions. Please avoid operating the product if it lacks proper grounding. If you're unsure about the outlet's grounding, consider using an outlet tester or seeking guidance from an electrician.

2. Site Selection:

When installing the product, choose a location away from high-traffic areas. This not only promotes a more professional workspace but also helps reduce the risk of accidents like tripping or getting entangled with the equipment.

3. Avoid Water Absorption:

It's important to understand that this product is designed for air circulation, not for water or debris removal. Please refrain from using the product as a vacuum cleaner for water or dirt.

4. Grounding for the Blower:

Always use a three-pole grounded plug and an AlorAir socket with proper grounding. It's advised not to remove the three-pin plug and to avoid using ungrounded extension cords or adapters. Ensuring proper grounding is a fundamental safety practice that significantly reduces the risk of electric shock or fire during electrical issues.

5. Safeguarding the Power Cable:

Avoid cutting, fraying, or damaging the power cable. Never yank on the cable to unplug it. Instead, firmly grip the plug and pull it straight out. Be mindful not to use the cord in areas where it could be damaged. Additionally, keep the cables away from sources of heat. It is recommended to inspect the cables before each use and promptly replace any that show signs of damage.

6. Motor Care:

Be sure to keep the product's motor dry at all times. If the motor comes into contact with water, thoroughly dry before use.

7. Child Safety:

It is important to keep children away from the product's working area. Avoid situations where children might trip over the equipment during use or be exposed to potential hazards from falling parts.

8. Handle with Care:

To prevent damage to the motor, power cable issues, and other safety concerns, it

is advised to handle the product gently and avoid dropping or tossing it under any circumstances.

9. Secure Product Placement:

Position the unit on a stable surface. Avoid operating in areas where there is a risk of the product falling or being accidentally pulled. Be mindful that the product might vibrate or slowly slide on smooth surfaces, like a countertop, potentially leading to injury, fires, or other electrical risks.

10. Keep the Air Inlet Clean:

Refrain from operating the appliance near curtains or other materials that could come into contact with the air intakes. It's essential to keep the air inlet free from any obstructions or foreign objects, as blocking it may cause the unit to overheat, posing a fire or electrical hazard.

11. Prevent Foreign Substances:

Avoid drawing in oils, greases, solvents, or any other materials, including wood chips and drywall dust, through the air inlets of this product. Refrain from directly pouring aerosols or liquid chemicals into the air intake.

12. Stay Clear of Heaters:

Do not use the air inlet to circulate hot air, and do not position the air inlet near a heater. Doing so could result in the housing melting or the motor overheating, potentially causing a fire or electrical hazard.

13. No Component Alterations:

Under no circumstances should you make alterations to the motor, wiring, or casing. Unauthorized modifications to this product may lead to fire or electrical hazards.

14. Share the Manual:

If you loan, rent, or share the product with others for use, be sure to provide them with a copy of the user manual. They require the same safety information necessary for safe and efficient operation. Ensure that all technicians have access to this manual.

15. Maintenance and Repairs:

In the case that the product experiences issues or requires maintenance, it is advisable to contact AlorAir, or seek help from a qualified professional for repair. If you need information about authorized repair and maintenance services, contact AlorAir at *1-888-990-7469*.

SAFETY PRECAUTIONS

- **Use Only on GFCI Protected Receptacles.**
- **Operating Environment:** Please avoid using this air drying system in areas susceptible to water accumulation or contamination, as this may pose a risk of electric shock.
- **Speed Control:** To ensure safety, refrain from using the device with solid-state speed control systems to prevent potential fire or electric shock hazards.
- **Maintenance:** Never attempt to repair or clean the product while it is connected to an electrical outlet or while the blower is in operation, as this could lead to electric shock or motor damage.
- **Qualified Assistance:** The disassembly or repair of the product's mechanical components may be risky and is recommended to be performed by professionals.

MAINTENANCE

1. **Sustaining Performance:** Effective maintenance ensures the product drying system remains in optimal condition for years.
2. **Post-Use Inspection:** Following each use, inspect the inlet and outlet of the drive unit for any obstructions or debris.
3. **Component Assessment:** Regularly assess the manifold, oil line, air nozzle, and other ADS components, replacing them as needed.
4. **Cleaning: Be sure to unplug before cleaning.** Utilize a vinyl cleaner to maintain the cleanliness and tidiness of the product housing and its components.
5. **Support and Information:** To acquire spare parts or obtain further maintenance and warranty details, contact the AlorAir Service Department at *1-888-990-7469*.

SPECIFICATION

Dimensions (L - W - H)	(L) 355 mm × (W) 340 mm × (H) 310 mm
Total System Airflow	100 CFM (cubic feet per minute)
Static Pressure (maximum)	16 kPa
Weight (Net Weight)	14.7 pounds
Air nozzle hole size	< 6 mm
Flexible pipe	122 m / Diameter 12.5 mm
Voltage Power	AC 110 V, 600 W
Portable storage system	2 duffel bags with handles and wheels
Drying modes	Positive or negative pressure
Parts	100 air nozzles, 8 manifolds (12 outlets each), 4 manifold end caps, 4 connector fittings, 6 hose clamps, 2 T fittings, 13 sleeves
Warranty	7-year warranty (1-year full warranty + 2-year comprehensive warranty + 4-year case replacement)
Certification list	UL, C-UL, ETL

WARRANTY GUIDELINES

Initial Inspection:

Upon receiving your air drying system, please conduct an initial inspection for any possible damage incurred during transit.

If you identify any signs of damage, we kindly request that you promptly report it to your supplier and the shipping company. This will enable us to arrange for a replacement and ensure the safe transit of your unit. Please retain the original shipping box to facilitate any potential returns.

Preservation of Packaging:

The packaging materials accompanying our products help safeguard your unit from any damage during transportation. We strongly recommend keeping the packaging. If your product requires off-site repairs, it should be shipped in its original packaging to ensure protection.

7-Year Warranty Period:

AlorAir commits to repairing or replacing the product's casing for up to seven years, rectifying any defects in materials and workmanship. To initiate a warranty claim, please pause usage and complete the enclosed warranty card. Please note that warranty services are exclusive to registered owners.

2-Year Comprehensive Warranty:

Within two years from the date of purchase for the original buyer, AlorAir pledges to repair or replace any part found to be defective in workmanship or materials.

1-Year Comprehensive Warranty:

During the initial year, AlorAir covers all costs, including materials, labor, and transportation to and from our service center. After this period, the customer will be responsible for labor and transportation costs to and from the service center.

Warranty Limitations:

This warranty does not apply in instances of improper use, disassembly, alterations, lack of maintenance, exposure to corrosive chemicals, use of incorrect voltage, accidental damage, unauthorized repairs, failure to use genuine parts and materials, fire, flood, abnormal wear, and tear, or other causes beyond the control of AlorAir products. The scope of our warranty is limited to the repair or replacement of parts deemed defective upon inspection by AlorAir Products. This warranty outlines specific legal rights for you. Additionally, state laws may grant you other rights that vary from one jurisdiction to another.

Submitting a Warranty Claim:

To submit a warranty claim, it is imperative to contact your supplier to obtain a return authorization. No part will be accepted without the serial number of the unit and the corresponding authorization number for that specific part. Before inquiring about a defective part, contact AlorAir's customer support line *1-888-990-7469* for further guidance.

Restoration&Moisture&Ventilation

ALORAIR

WARRANTY REGISTRATION CARD

Return To:
AlorAir Solutions

ORDER NUMBER: _____

MODEL: _____ **SERIAL #:** _____

INSTALLER: _____ **INSTALLATION DATE:** _____

NAME: _____

ADDRESS: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

PHONE #: _____ **EMAIL:** _____

- If you have any questions, please feel free to contact us at 888-990-7469 or visit www.alorair.com
- Register your unit for warranty using this link: www.alorair.com/page/Warranty--Warranty-registration
- Warranty Registration https://www.alorair.com or scan this barcode to direct you to the warranty registration website.

Restoration&Moisture&Ventilation

ALORAIR

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