

Document No.: 10000036992

Quick Installation Guide

AUTOMATIC AIR DEHYDRATOR KD-M Series



PLEASE READ THIS MANUAL THOROUGHLY AND SAVE FOR FUTURE REFERENCE.

In additional to this Quick Installation Guide, a complete product manual is available for access by scanning this QR code:



Or by visiting this link:

https://www.rfstechnologies.com/images/pressurization_products/kd-m_manual_10000036991.pdf

TABLE OF CONTENTS

1. WARNINGS, CAUTIONS & NOTES.....	3
2. PRODUCT INTRODUCTION.....	4
3. INSTALLATION STEPS.....	5

1. WARNINGS, CAUTIONS & NOTES

NOTE: Read this manual before installation or operation of the dehydrator.

W A R N I N G

Power source of the dehydrator must have proper ground connection, to reduce the risk of electrical shock, electrocution, and fires caused by unexpected voltage spikes or short circuits.

High noise may be generated when the dehydrator operates.



Hazardous voltages exist inside the unit. Unplug the power before servicing. Do not energize or operate the unit with the lid removed.



The unit starts automatically when power switches to on. Do not operate unit without cover secured properly in place.

2. PRODUCT INTRODUCTION

2.1 Product Description

The KD-M Series Automatic Air Dehydrators are designed to provide a source of dry, pressurized air by removing moisture from the ambient air. The unit performs this process automatically with minimal maintenance requirements.

2.2 KD-M Series Dehydrator Models

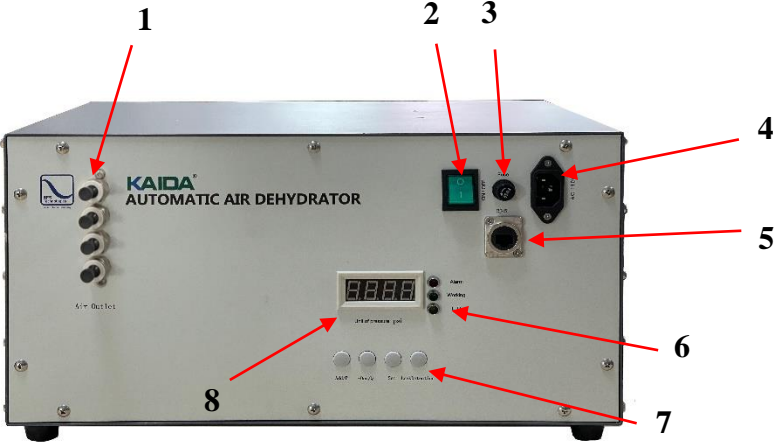
Model	Description
KD-M20	0.26SCFM (440L/h), 0.2-14psi Configurable Pressure, 110VAC Dehydrator
KD-M20S	0.26SCFM (440L/h), 0.2-14psi Configurable Pressure, 110VAC Dehydrator, support network protocols
KD-M22	0.24SCFM (402L/h), 0.2-14psi Configurable Pressure, 220VAC Dehydrator
KD-M22S	0.24SCFM (402L/h), 0.2-14psi Configurable Pressure, 220VAC Dehydrator, support network protocols
KD-M24-DC	0.24SCFM (402L/h), 0.2-14psi Configurable Pressure, -48VDC Dehydrator
KD-M24S-DC	0.24SCFM (402L/h), 0.2-14psi Configurable Pressure, -48VDC Dehydrator, support network protocols

2.3 Product Specification

Model	KD-M20/ KD-M20S	KD-M22/ KD-M22S	KD-M24-DC/ KD-M24S-DC
Flow Rate at 25°C	0.26SCFM (440L/h), ±10%	0.24SCFM (402L/h), ±10%	
Power Supply	110VAC ±10%, 60Hz	220VAC ±10%, 50Hz	-48VDC ±10%
Power Consumption	270W max		
Working Pressure	0.2-14psi, Field Adjustable. Factory set low pressure at 3psi and high pressure at 5psi.		
Dew Point	Better Than -45°C (-49°F) at 25°C (77°F)		
Drying Method	Polymeric membrane		
Gas Outlet	4 Outlets, Push-on quick fit for 3/8" OD tube		
Noise Level	<60dB at 1m		
Operation Conditions	-25°C to +65°C (-13°F to 149°F), ≤95% Humidity		
Product Dimensions and Weight	H x L x D: 8.6x16.9x10.2 inches(218x430x260mm), 30.4lbs(13.8kg)		
Shipping Dimensions and Weight	H x L x D: 16.1x22x15 inches(410x560x380mm), 38.6lbs(17.5kg)		
Network Management	S Model Only: Support Network Management Protocols (TCP Server/Client, UDP, Multicast, SNMP) via RJ45 Interface		

Alarms	Low-Pressure, High-Pressure, Dew Point, Excess Run, Compressor Failure
Installation	Desktop, 19" Rack, ETSI Rack, Wall

2.4 Appearance and Interface



- 1. Gas Outlets
- 2. Power switch on/off
- 3. Fuse
- 4. Power socket
- 5. RJ45 Port (S model only)
- 6. Indicator lights
- 7. Control buttons
- 8. Display window

3. INSTALLATION STEPS

3.1 Installation Location

The Dehydrator KD-M Series is designed for free-standing operation on a desktop, on a standard 19" rack, ETSI rack or on a wall using the supplied rack and wall mounting brackets.

To maintain optimal performance, place the Dehydrator in a dry, well-ventilated location with access to the power supply and gas inlet of the pressurized dry air distribution system. Ensure that there are no flow restrictions in the location of the dehydrator and the dry air system.

3.2 Unpacking and Inspection

Carefully inspect the package before unpacking. Record any damage on the packaging.

Unpack the dehydrator in an environmentally controlled location consistent with the operating conditions of the dehydrator. Place the unit on a flat, stable surface.

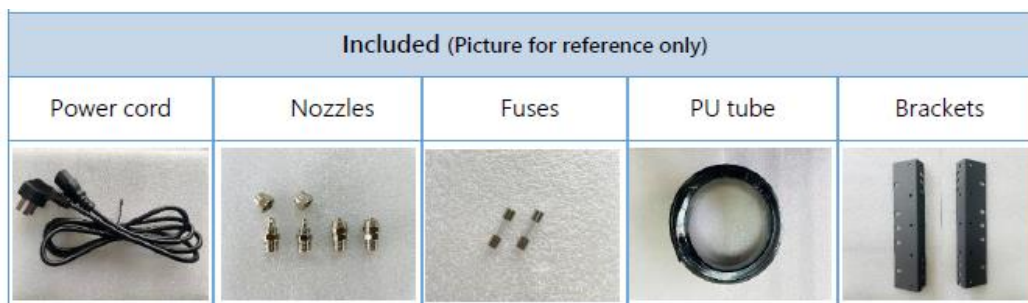
Check the contents of the package against the packing list and inspect the appearance of the dehydrator. Please inform RFS Technologies or the distributor if the unit is damaged or if any items are missing from the package.

The following accessories are included with the dehydrator:

	KD-M Series Accessories	Part Number
1	Power cord x 1 piece, 6ft (1.8m) length	KD25002/25004
2	Fuse x 2 pieces	KD22003/22002/22005
3	Nozzle connector x 4 pieces, G 1/8 to 3/8" tube	KD26001
4	Teflon tape x 1 roll	KD29001

5	PU tube x 33ft (10m) length	KD24009
6	Brackets x1 pair	KD30001

Dehydrator Model	KD-M20 / KD-M20S	KD-M22 / KD-M22S	KD-M24-DC / KD-M24S-DC
Fuse Model	3A	2A	7A
Part Number	KD22003	KD22002	KD22005



3.3 Staging the Dehydrator

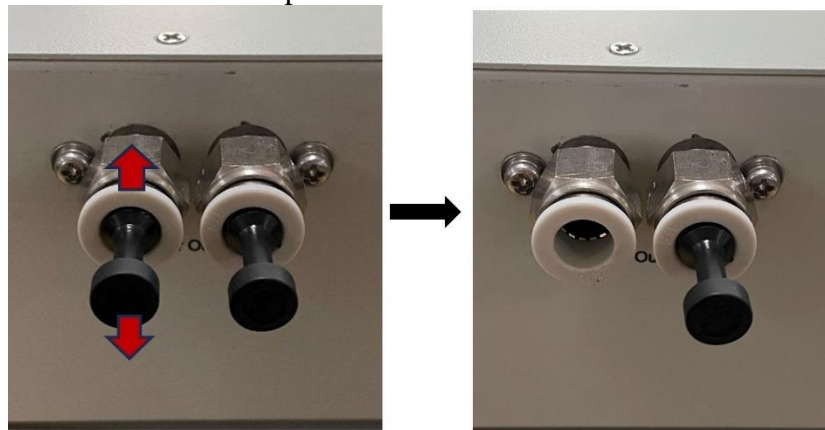
Leave the power switch on the dehydrator in the OFF position. Connect the unit to the appropriate power source using the power cord provided.

Remove the insert from one of the gas outlets by following these steps:

Step 1, Depress the release ring: using your thumb and forefinger, gently depress the white plastic ring of the gas outlet towards the unit. This will disengage the locking mechanism holding the insert in place.

Step 2, Pull the insert out: while holding the release ring, pull the black insert away from the gas port with a firm, straight motion. Refer to the following pictures.

Step 3, Store the insert in a safe place for future use.



Switch on the power to activate the dehydrator and let it run for 3-5 minutes with nothing attached to the dry air outlet fitting. Check the airflow coming from the gas outlet using your finger. Disregard any alarms shown on the front panel.

If the dryer does not operate, please check the power supply. Report the issue if the dehydrator does not function correctly or if there is no airflow from the gas outlet.

Upon completion of the staging process, power off the dehydrator and proceed with its installation at the designated final location.

3.4 Installation Mode

The Dehydrator is designed for desktop, 19-inch rack, ETSI rack, and wall mounting. Please select an appropriate installation model based on the actual site conditions.
[The following images are for reference only. Accessories may be different for different models].

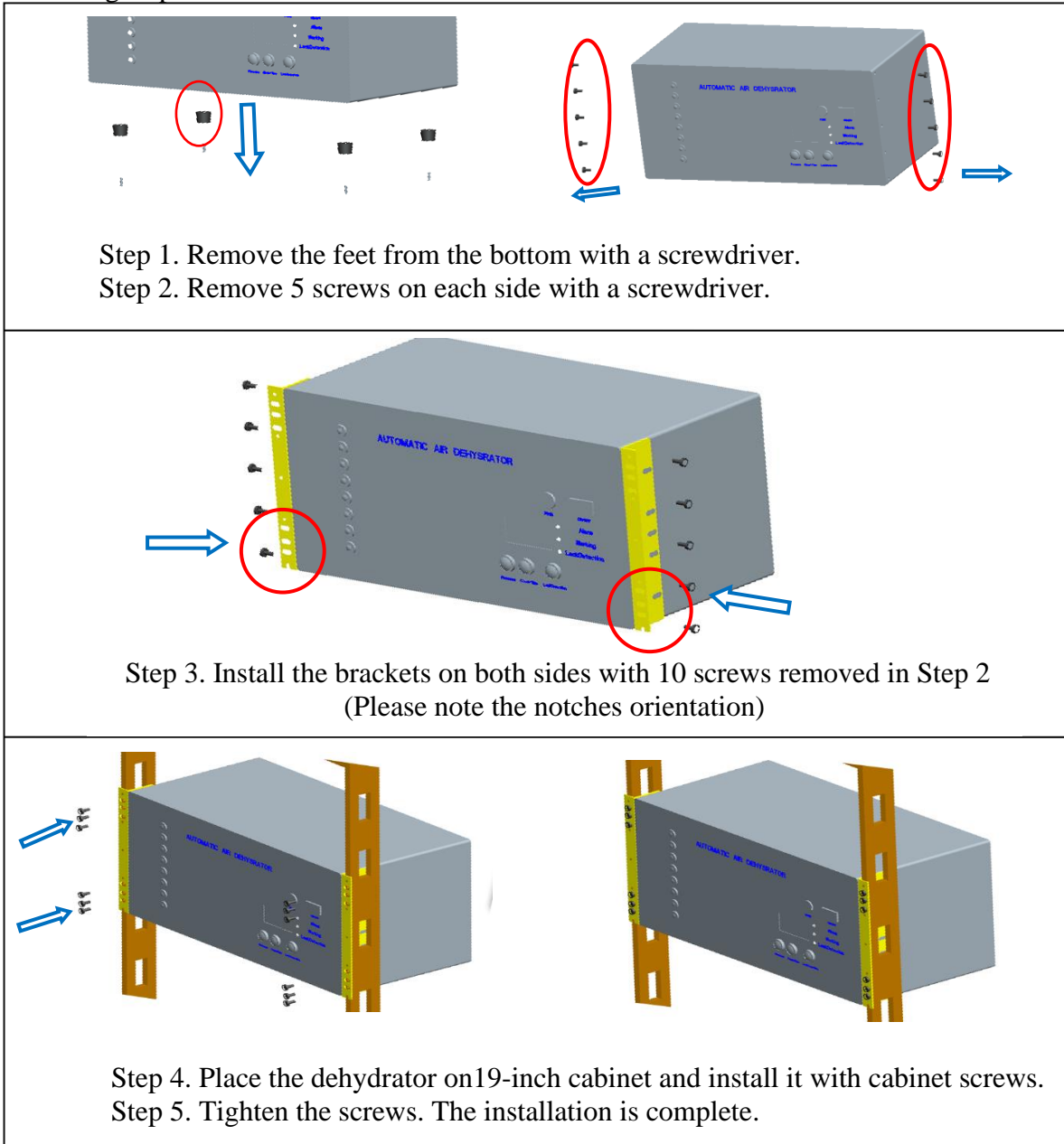
3.4.1 Desktop Installation

The dehydrator comes with four pre-installed feet and can be placed directly on a surface.

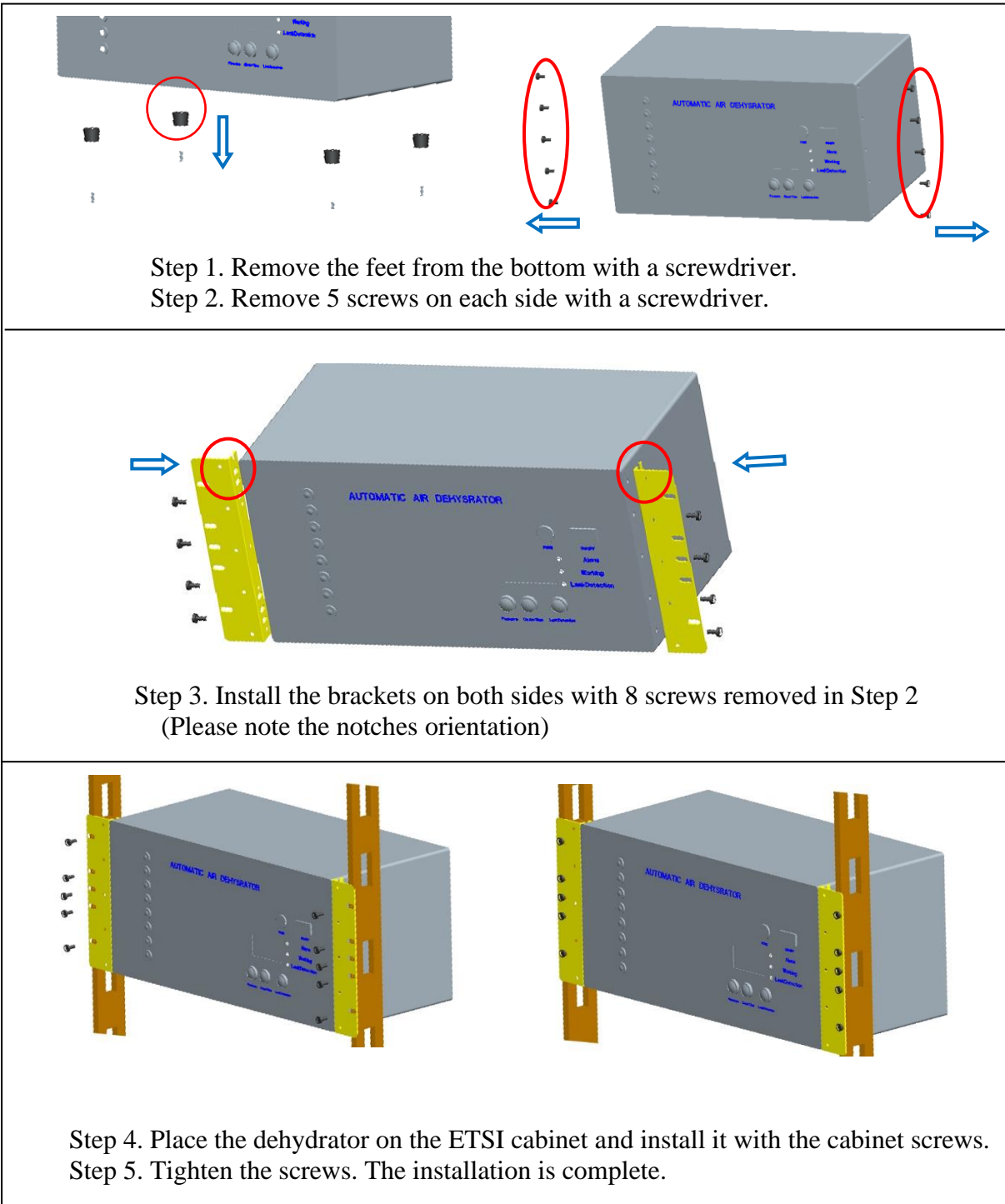
Place the dehydrator on a solid, level surface. Allow at least 2" clearance at the top for proper heat dissipation.

3.4.2 19" Rack Installation

The Dehydrator can be installed in a standard 19" rack using the brackets provided. See the following steps for rack installation and dimensions.

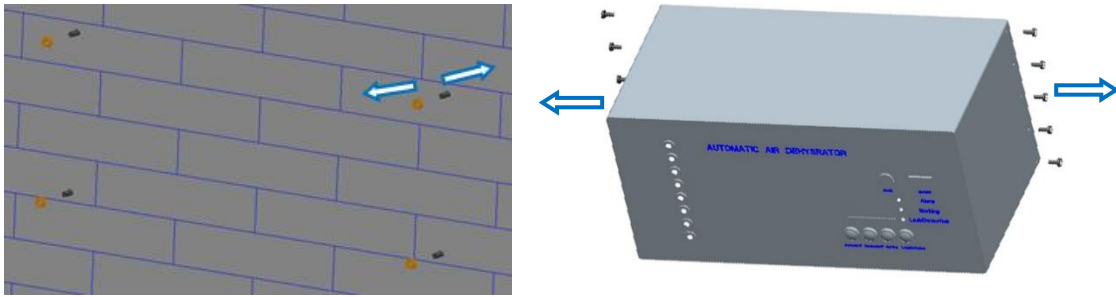


3.4.3 ETSI Rack Installation

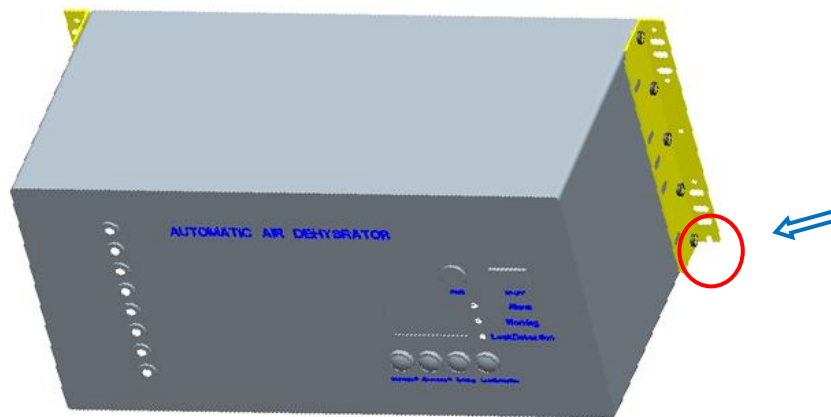


3.4.4 Wall Installation

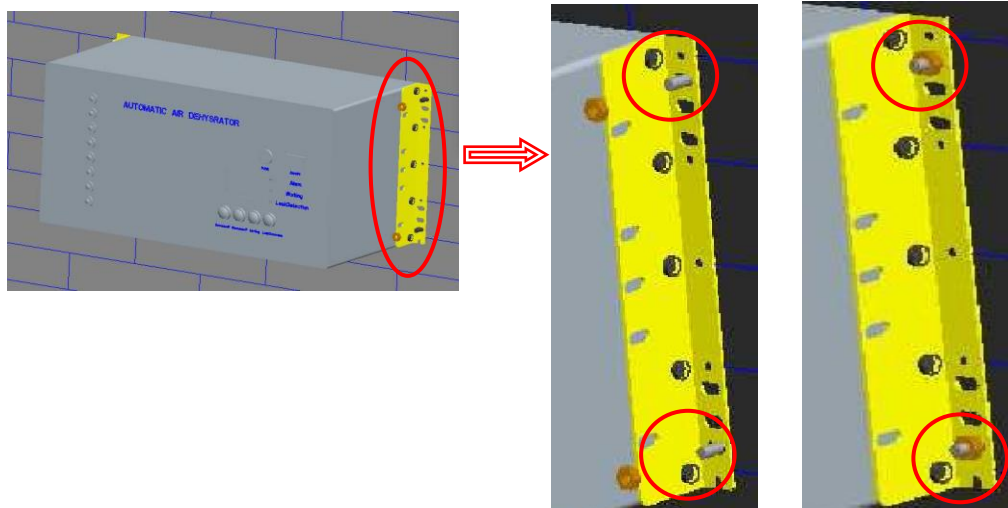
The dehydrator can be mounted on a wall using the supplied brackets. See the following steps for wall mounting and dimensions.



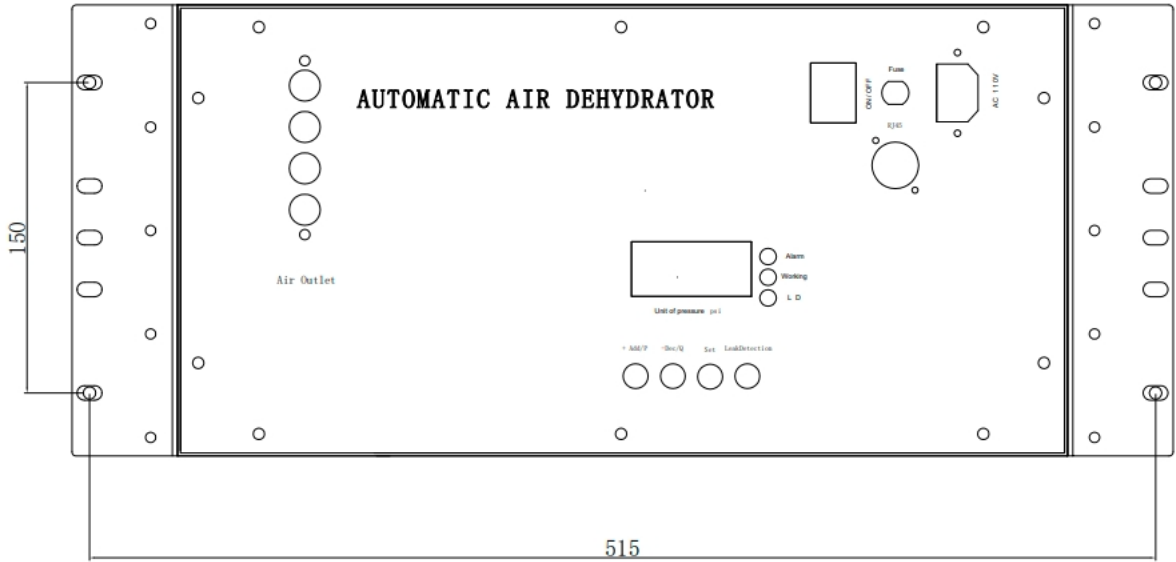
- Step 1. Drill 4x round holes according to the hole position on next drawing (unit mm). Suggested diameter is 8mm or close.
- Step 2. Hammer the expansion bolts into the round hole, and remove the nut on the expansion bolts with a hexagonal wrench.
- Step 3. Remove the 5 screws on each side with a screwdriver,



- Step 4. Install the brackets at the rear with the screws removed in Step 3. (Please note the notches orientation)



- Step 5. Insert 2 expansion bolts into the upper and lower mounting holes on each side of the brackets.
- Step 6. Install the nuts removed in Step 2 on the expansion bolts and tighten them with a hexagonal wrench. The installation is complete.



3.5 Connect to the Power Supply

After installing the dehydrator, leave the power switch on the unit in the OFF position. Connect the dehydrator to the appropriate power source using the power cord provided.

3.6 Change the Dehydrator Configuration

Switch the power to the ON position to turn on the dehydrator. When the dehydrator is operating, the digital display window on the front panel will show "P XX" where "XX" represents the current system pressure value.

The Dehydrator is pre-programmed with the following configurations as shown in the table below. If no configuration changes are required, skip the following steps and proceed directly to Section 3.7.

Parameter	Default Setting
Low-Pressure Limit	3 psi
High-Pressure Limit	5 psi
Push Button Tone	Off
Unit ID	245

3.6.1 High-Pressure Limit



When the display shows "P XX", press and hold the "Set" button for 5 seconds to enter the high-pressure limit setting interface. The display will change to "H XX" where XX is the current high-pressure limit setting. Press the "+Add" or "-Ded/Q" button on the front panel to increase or decrease

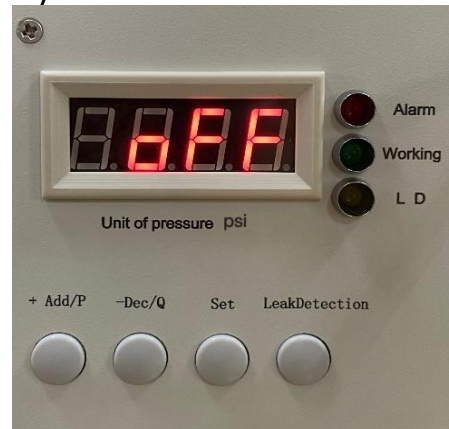
the value. The factory default high-pressure limit is 5psi. The adjustable range of the high-pressure limit is between 0.4 and 14 psi.

3.6.2 Low-Pressure Limit



At the "H XX" interface, press the "Set" button once to enter the low-pressure limit setting interface. The display will change to "L XX" where XX is the current low-pressure limit setting. Press the "+Add/P" or "-Ded/Q" button to change the setting. The factory setting for the low-pressure limit is 3psi. The adjustable range of the low-pressure limit is between 0.2 and 13.8 psi. And the low-pressure limit setting must be lower than the high-pressure limit.

3.6.3 Push Button Tone on/off



The push button tone provides a key sound indicating that a key operation is being performed.

At the "L XX" interface, press the "Set" button again to enter the push button tone setting interface. The display will show the current setting. The default setting is "off". Press the "+Add/P" or "-Ded/Q" button to change the tone setting.

3.6.4 Unit ID



From the push button tone setting interface, press the Set button to enter the Unit ID setting interface. The display will show "IXXX" where XXX is the current unit ID number. Press the "+Add/P" or "-Dec/Q" button to change the ID. The default ID is 245 and the adjustable ID range is 1 to 254.

The numbers 0 and 255 are reserved ID numbers and should not be used.

3.6.5 Save Settings

At the Unit ID setting interface, press "Set" again to save and apply the new configurations to the dryer. The display will then return to the "P XX" interface.

Configuration is not lost or changed when the dehydrator is turned off.

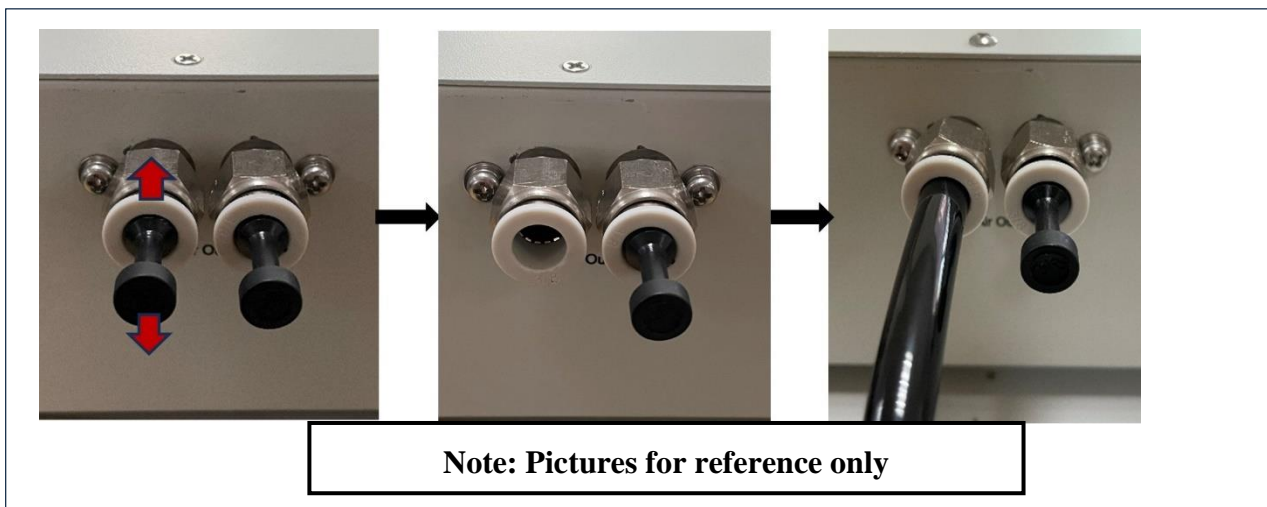
3.7 Connect the Dehydrator to the Tubing and the System

Check the configuration of the dryer and make sure the settings are correct. Turn off the unit and begin connecting the tubing.

3.7.1 Connect the Tubing with the Dehydrator

The dehydrator has four gas outlet ports and can be connected to four gas lines. Optional gas distribution manifold can be ordered if more outlets are needed. Each outlet port is sealed by an insert. Follow the instructions below to connect the tubing.

[Caution] Retain removed inserts for future use. Do not remove inserts from unused ports.



Step 1, Depress the release ring: using your thumb and forefinger, gently depress the white plastic ring of the gas outlet towards the unit. This will disengage the locking mechanism holding the insert in place.

Step 2, Pull the insert out: while holding the release ring, pull the black insert away from the gas port with a firm, straight motion.

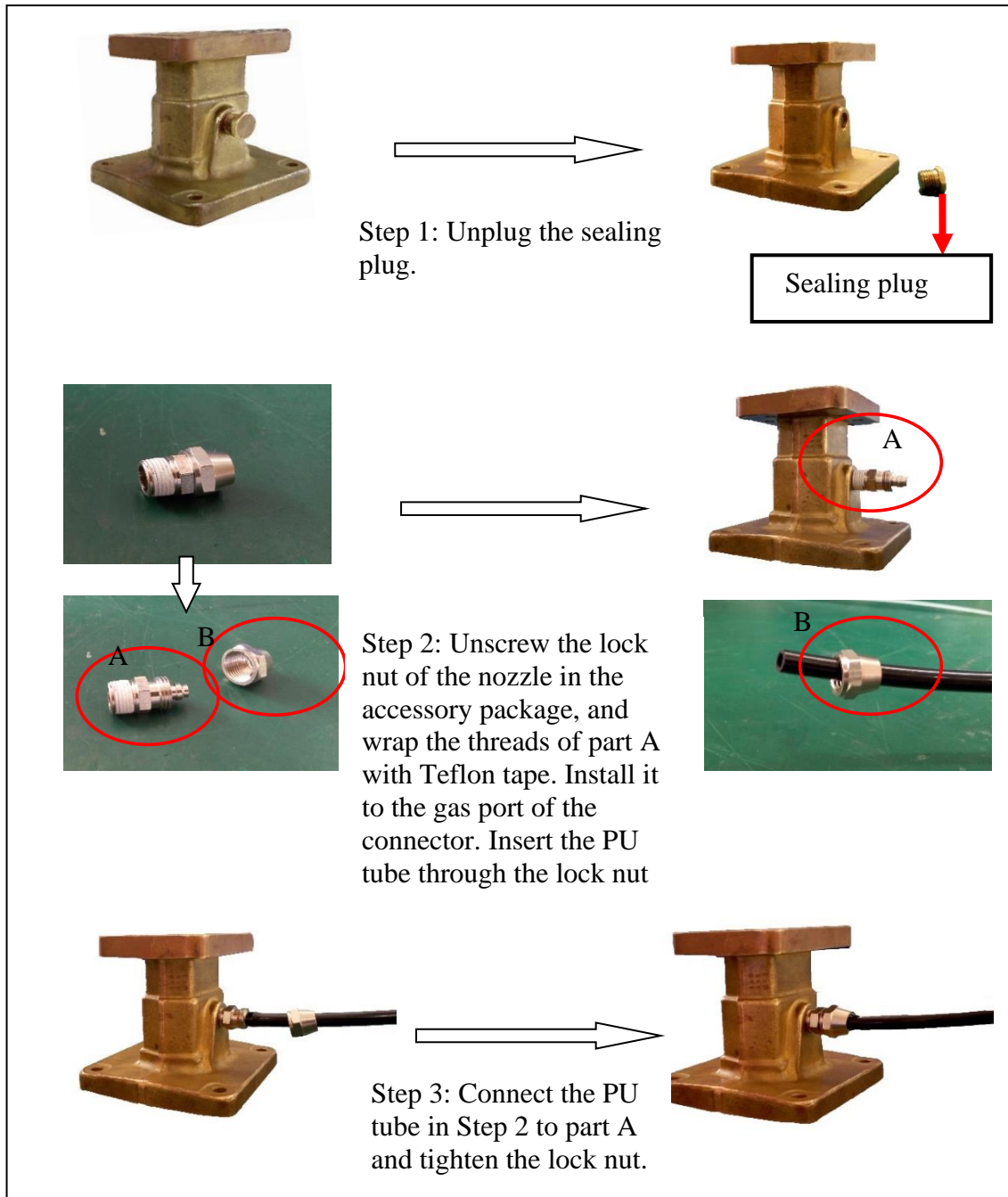
Step 3, Push the tube in: insert the 3/8" tube into the gas port until it cannot go in any further. Make sure the tube is securely locked in place by the locking mechanism.

3.7.2 Connect the Tubing to the System

Connect the other end of the tubing to the site distribution system or to the inlets to be pressurized. Different products and systems may use different connection methods. Four gas inlet/pipe adapters are supplied with the dryer. The nozzle has a G 1/8 thread and is compatible with tubing with an outer diameter of 3/8" or 9 mm.

Refer to the following instructions when using these adapters to connect the tubing to the connector.

[Caution] Please wrap the threads of the gas adapter with Teflon tape before screwing it into the port. After connecting, please check the air tightness strictly.



After connecting the tubing, make sure that the air path of the tubing between the dehydrator and the feeder system is unobstructed. Do not bend the tubing.

3.8 System Purging

It is important to properly purge the site distribution system prior to completing the dehydrator installation. Failure to do so may result in moisture being present in the system after the dehydrator is installed. This moisture will remain in the system until it is purged from the system by normal operation of the dehydrator.

If the purge is left to the dehydrator's normal operation, the process may take days, weeks, or longer depending on the dehydrator's installed options, system size, moisture levels, and other variables. Humidity alarms may occur until the moisture is purged from the system.

Use the following steps to purge the system.

3.8.1 If the System Has a Remote Exhaust Vent

Open the exhaust vent, start the dehydrator, and allow it to run for at least one hour. Close the exhaust port and complete the purge.

3.8.2 If the System Doesn't Have a Remote Exhaust Vent

Start the dehydrator and allow it to run until it stops when the high-pressure limit is reached. Wait 15 minutes to allow the dry air to mix with the humid air in the feeder. Disconnect the dehydrator hose and allow the air to escape. Reconnect the tubing and repeat these steps ten times to complete purging.

3.9 Leak Detection

After purging, re-connect the dehydrator to the system. The next step involves checking the airtightness of the feeder system using the leak detection function. Follow these steps for the leakage test:

- Press the "Leak Detection" button and observe the pressure value on the front panel.
- The dehydrator will halt inflation and the "L D" yellow indicator will illuminate when the button is pressed.
- Monitor the change in pressure value to assess the airtightness of the system. Quick drops imply the need for better sealing.
- If the pressure value remains stable, the feeder system is airtight.
- Press the "Leak Detection" button again to end the test, the yellow indicator goes off, and the dehydrator resumes normal operation.

[Caution]

Address any leaks promptly to prevent alarms, excess running and performance decline due to humidity.

Use this function solely for testing purposes. Remember to exit using the "Leak Detection" button and restore the dehydrator operation. The "L D" indicator will turn off.

3.10 Completion of the Installation

After completing the previous steps, the installation process is now finished. Verify that the dehydrator is functioning normally by ensuring that the alarm indicator is not illuminated, and that the dehydrator stops inflating once the high-pressure limit is reached. Please refer to Section 6 if the dehydrator has the network management capability.