RAM FORCE

EVAP-120*U* | EVAP-165*U*

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OWNER'S MANUAL

READ THIS MANUAL CAREFULLY BEFORE OPERATING

WARNING! Always keep the unit in an upright position. If the unit has been tilted or placed on its side, allow it to rest upright for at least 20 minutes before turning it on.

> Before installing and using your dehumidifier, please read this owner's manual carefully.
> Store this manual in a safe place for future reference.
>
> The use of electrical products may create hazards that include, but are not limited to injury, fire, or electric shock.
> Failure to follow these instructions may damage and/or impair its operation and void the warranty.

Safety Tips

• Before operating, remove all packaging material and check for any damage that may have occurred during shipping or any missing items.

• Check household power supply to ensure it matches the specification of appliance.

• Always place the unit on a level surface.

• **NEVER** use or store gasoline or other flammable vapor or liquid near this unit unless instructed by this manual.

• **DO NOT** lay power cord under carpeting. **DO NOT** cover cord with throw rugs, runners, or similar coverings. **DO NOT** route cord under furniture or appliances. Arrange cord away from traffic area and where it will not be tripped over.

• To reduce the risk of fire or electric shock, **DO NOT** use this appliance with any solid-state speed control devices.

• **DO NOT** touch this appliance or the plug with wet hands or while standing in water.

• Maintain a 12-18-inch clearance space around this unit. **DO NOT** block or cover air inlet or outlet grilles.

• The unit must be connected to a correctly grounded power supply.

• **DO NOT** start or stop the unit by inserting or pulling out the power plug.

• **DO NOT** use an adapter plug or extension cord.

• **DO NOT** use the unit in the immediate surroundings of a bath, a shower, or a swimming pool.

• **DO NOT** insert anything into the air outlet. **DO NOT** obstruct air inlet or outlet grills unless instructed by this manual.

• **DO NOT** direct the air flow at human faces or bodies.

• **DO NOT** let children play near this unit.

• Always inspect the cord for signs of damage before use. If the power cord is damaged, it must be replaced by the manufacturer or a qualified service technician.

• **DO NOT** attempt to repair or adjust any electrical or mechanical functions of this appliance, as this may cause danger and void the warranty.

• If the appliance is damaged or it malfunctions, DO NOT continue to use it. Unplug the product and refer to troubleshooting guide or contact the seller.

• Make sure the unit is turned off and unplugged before cleaning or servicing this unit.

Installation safety precautions

1. The dehumidifier uses environmentally friendly R32 refrigerant, which is colorless, odorless, and combustible.
2. The room area for installing, operating, and storing the dehumidifier of combustible refrigerant should be larger than the specified room area.
3. Do not puncture or ignite the dehumidifier.
4. Dehumidifier storage should be able to prevent mechanical damage caused by accidents.
5. The dehumidifier should be stored in a room without a continuous source of fire (e.g. open flame, lit gas appliance, electric heater, ect.)
6. Safety checks must be carried out before maintenance or repair of dehumidifiers using combustible refrigerants to ensure that the risk of fire is minimized.

Maintenance precautions

1. Due to the special nature of R32 refrigerant, if the dehumidifier needs to be repaired or scrapped, please contact authorized service center.
2. Maintenance by unqualified or non-professional personnel may pose a hazard.
3. When maintaining the dehumidifier, please strictly comply with the manufacturer's requirements.

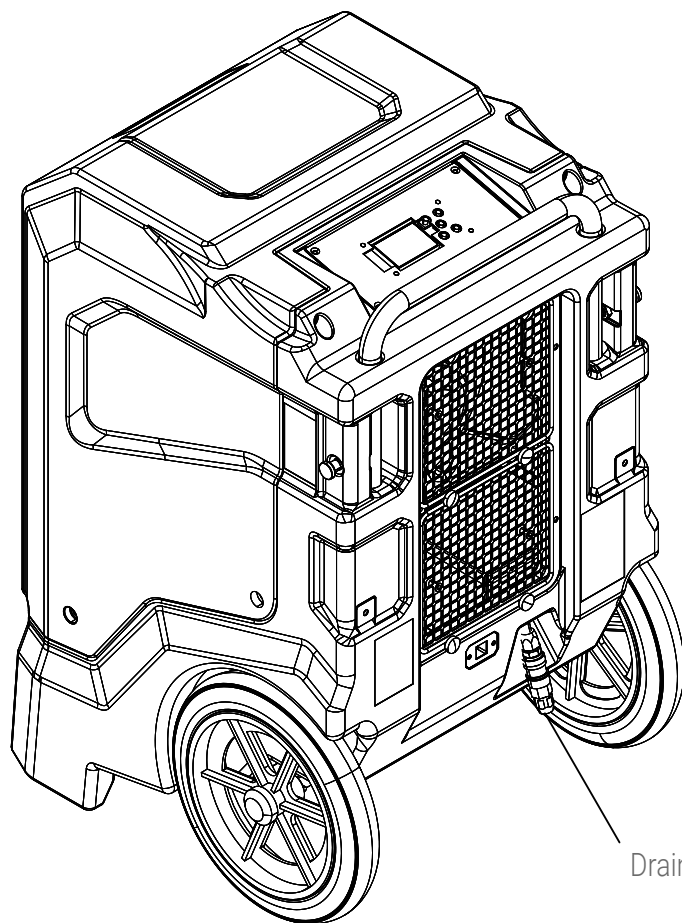★ The minimum space required for device installation is L:2m*W:2m*H:3m
 • Connect the drain hose to adaptor (clicking the end of the hose.)
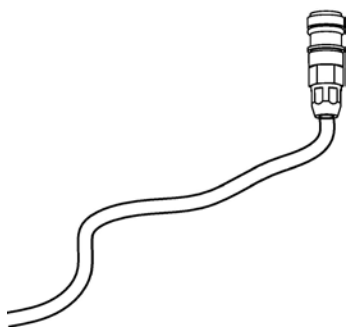 • Direct the hose to the drain area before running the machine.

Handle

Air Intake

Wheel

Control Panel

Air Outlet
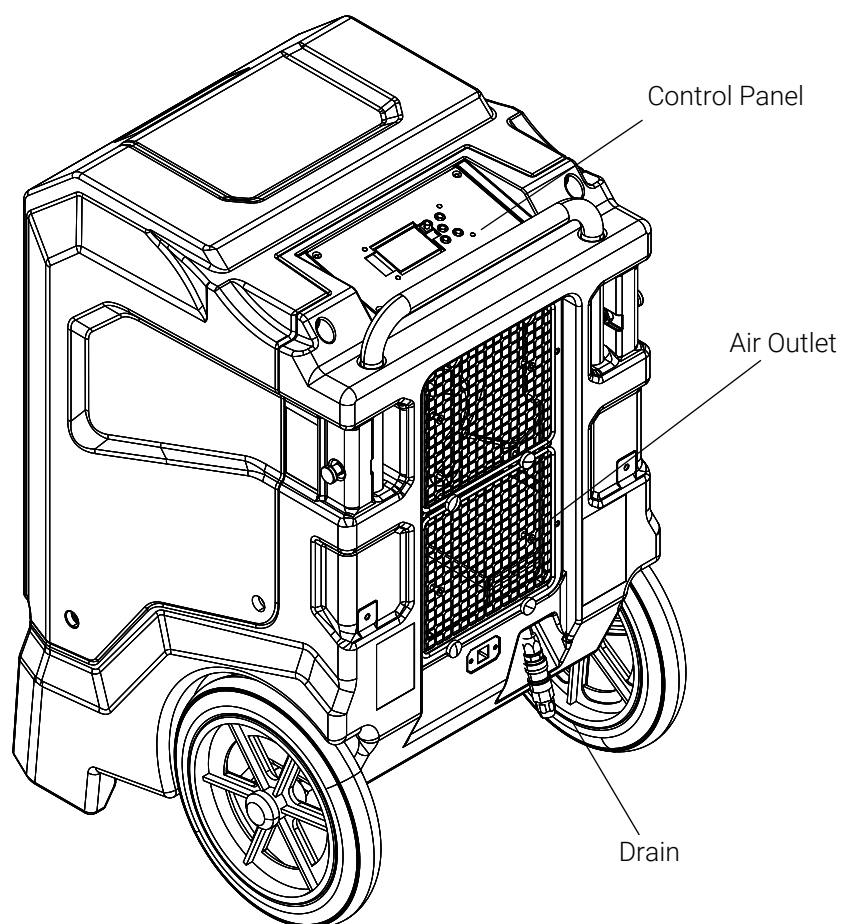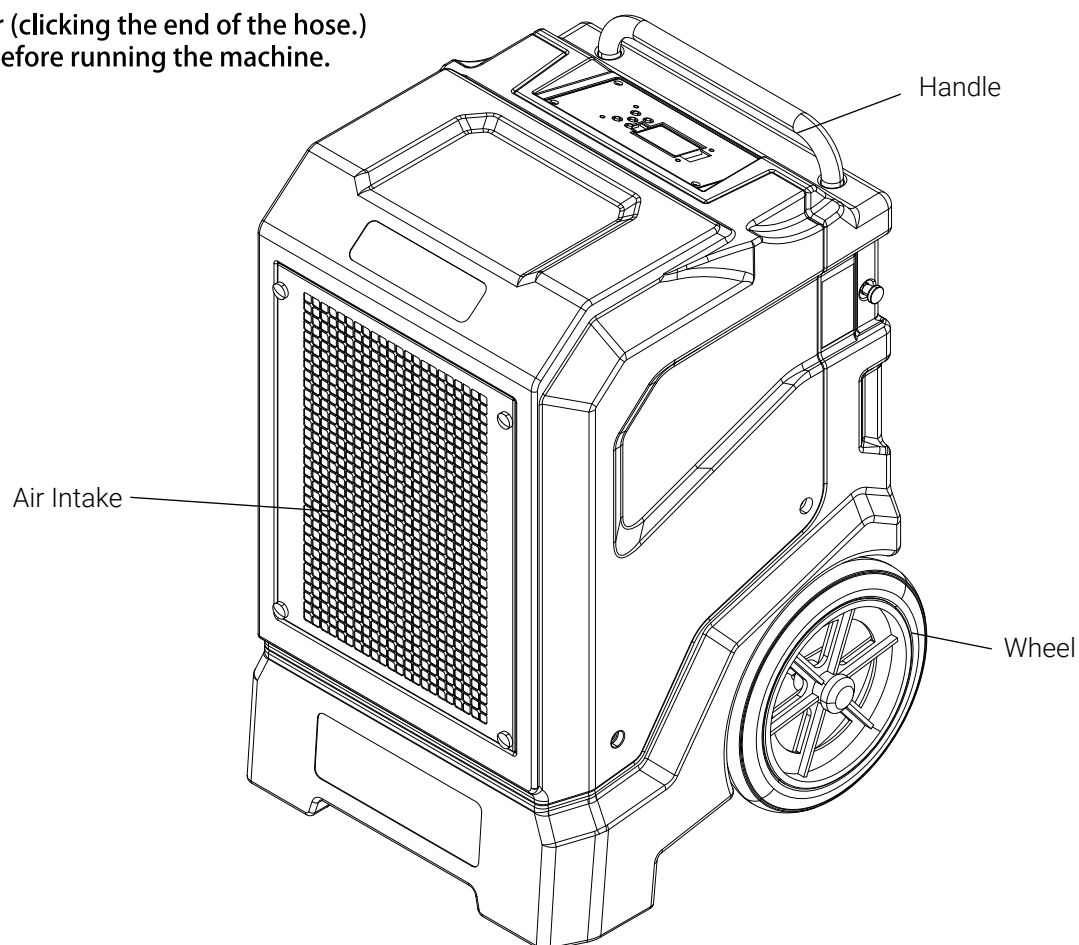
⚠ **DANGER**

Do not handle the plug with wet hands. Electric shock may occur, resulting in injury or death.
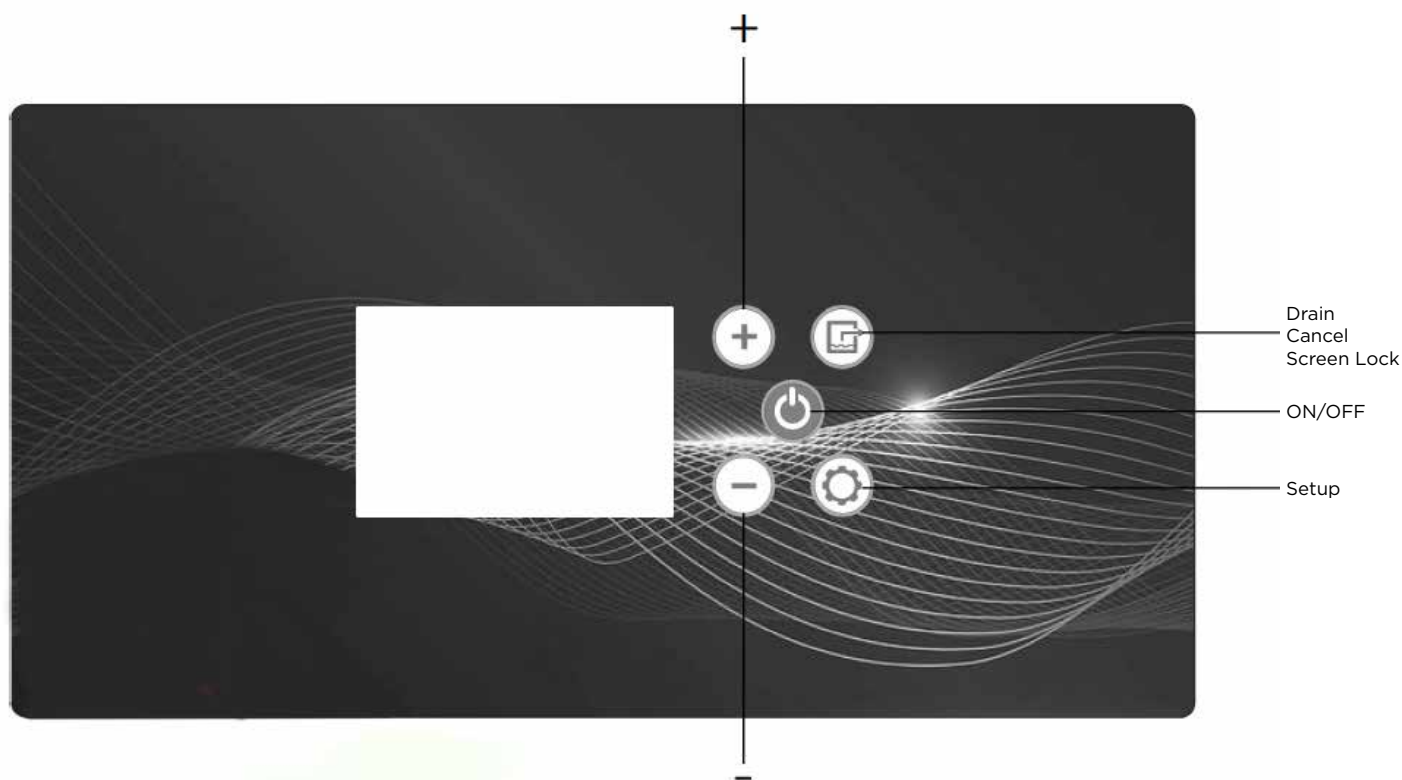
Drain

Drain hose installed here

Drain Hose Connection
(Rotate and plug in the hose, then tighten)

• Connect the drain hose to the machine's drain, making sure the two fittings are securely connected.
• The machine's drain outlet is located as shown above.
• Use a separate container to collect drain and periodically check for fullness, or run the hose to a drain.

Running Defrost Draining   Timer   Screen
                                            Lock

Fan
AUTO (Fan)

Inlet Humidity

Fan Speed
(Low/High)

Outlet Humidity

° C/° F

Relative   Temperature   Accumulated Time
Humidity   running

+

Drain
Cancel
Screen Lock

ON/OFF

Setup

−
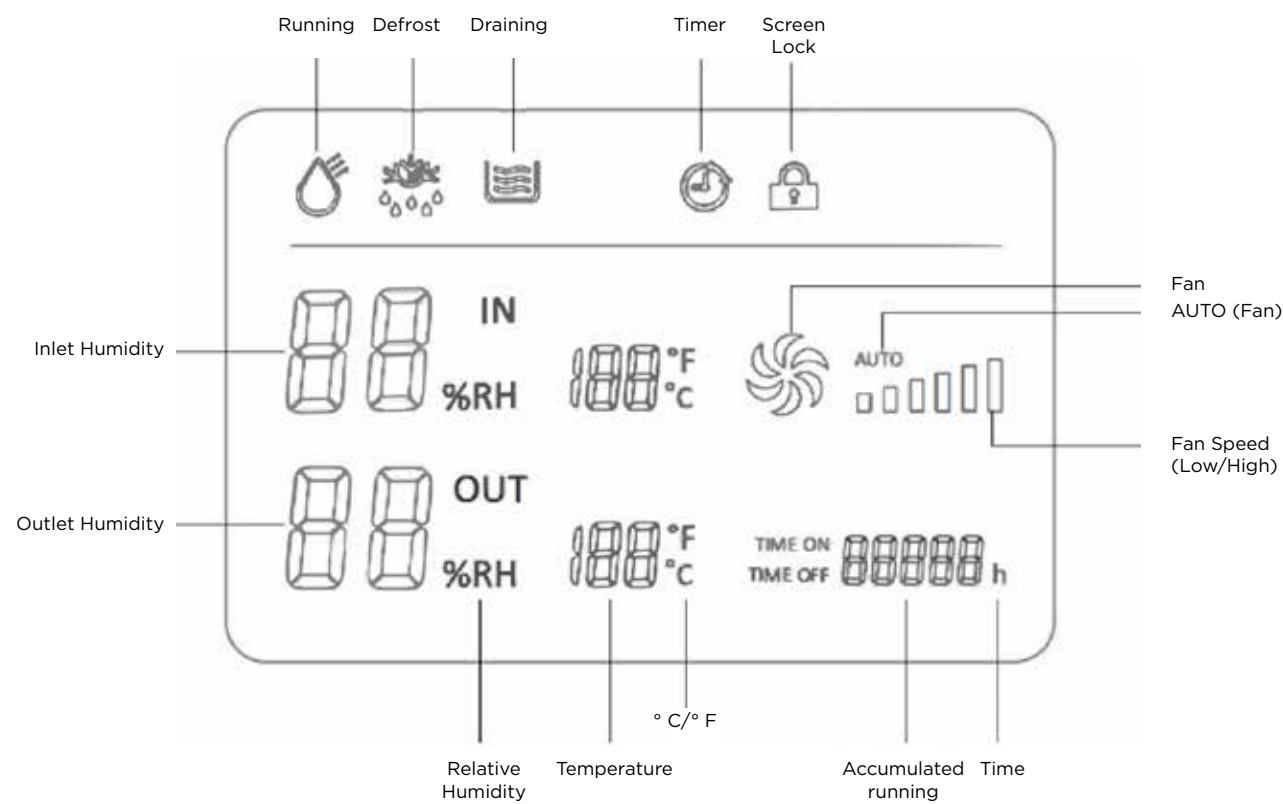
On/Off
Start / shut-down the dehumidifier

Setup
To access system settings, press the [Setup] button once. Each press will cycle through the following options:

- Fan Speed – Adjust the fan speed level.
- Time On – Set a delayed start time.
- Time Off – Set a scheduled shut-off time.
- Clock Setting – Set the current time.
- Drainage Shutdown Function (On/Off) – Enable or disable the automatic drainage shutdown.
- Fan Always-On Mode – Allows the fan to run continuously, even when the compressor is off.
- Temperature Unit Switching – Toggle between Fahrenheit (°F) and Celsius (°C).
- Humidity Sensor Calibration – Calibrate the humidity sensor if needed. Save and Exit – Save all changes and exit the settings menu.

Note: To reset the Wi-Fi module, press and hold the [Setup] button for 3 seconds.

Notice:
When configuring system functions, press the [SET] key to enter each specific setting. If no action is taken within 5 seconds, the current settings will be automatically saved and the system will exit the setup mode. To continue configuring settings, press the [SET] key again within 5 seconds to proceed to the next option.

Drain
1. Press once to activate the water pump and begin draining water. This function also works when the unit is powered off, as long as the power cord remains plugged in.
2. Press once to cancel any active timer under the "Timing Setting" menu.
3. When the unit is running, press and hold for 3 seconds to lock the screen (the screen lock indicator will flash). Repeat the process to unlock the screen, or unlock it using the mobile app.
4. The screen lock feature is disabled when the unit is powered off.

+/-
Use the ▲ /▼ buttons to increase or decrease the value for the following settings:

- Fan Speed
- Timer On / Off
- Clock
- Humidity Level
- Temperature Unit (°F / °C)

Button & Icon Descriptions

Running
This indicator remains solid when the unit is running.

Humidity Value
This indicator displays the current room relative humidity (RH) under the default mode. When adjusting the humidity setting, the RH symbol will flash to show the set value. If no changes are made within 3 seconds, the display will automatically return to showing the current room RH.

The humidity setting range is from 30% to 90%, with a factory default of 30%. Press the "+" or "–" button to adjust the value by 1% increments. Press and hold either button for 3 seconds to activate fast adjustment mode. If no action is taken within 5 seconds, the display will revert to the current room RH.

Defrost
This indicator remains solid when the dehumidifier is in defrost mode.

Draining
This indicator flashes when the dehumidifier is draining water, whether in automatic or manual mode. If draining is unsuccessful, the screen will display an error code and the indicator will continue flashing. When the unit is turned off, the water pump will automatically run for 40 seconds to drain any remaining water.

Clock/Timer
When this symbol is solid, it indicates that the timing function has been activated.

Time Setting
1) Power-On Timer Setting
   To set the power-on timer, press the "Setting" button to enter the timer menu. Use the "+" or "–" buttons to adjust the hour in 1-hour increments (00–23). Press and hold for 3 seconds to enable fast adjustment. Press the "Setting" button again to move to the minute setting, or wait 5 seconds without any action to proceed automatically. Adjust the minutes using the "+" or "–" buttons (00–59); press and hold for 3 seconds for fast adjustment. Press the "Cancel" (Drain) button to cancel the timer, which will reset the current timer value to 00:00. Press the "Setting" button again to proceed to the power-off timer setting.

2) Shut-Down Timer Setting
   To set the shut-down timer, follow the same procedure as described above for setting the power-on timer.

Note:
The Timing Setting is not a countdown timer.
Once the timing has been set, the unit will execute the operation at the specified time. If the set time matches the current time, the function will activate immediately.

Clock Setting
After entering the clock setting, adjust the time using the same method as the power-on timer setting.

Note: Pressing the Cancel (Drain) button will not cancel the current clock setting. Press the Set button again to proceed to the temperature unit setting.

Screen Lock
Press and hold the Drain button to activate the screen lock function. The screen lock icon will blink to indicate it is active. While the screen is locked, all other buttons are disabled. To unlock the screen, press and hold the Drain button again.

Fan Speed
When this icon is displayed dynamically, the fan is running. When the icon appears static, the fan is not operating. The unit automatically adjusts fan speed (high or low) based on the room's humidity level.

Means high fan speed   Means low fan speed

Note: It is recommended to allow the unit to operate in automatic fan speed mode. Manual adjustment should only be performed by qualified professionals.

Temperature Scale Setting
After entering the temperature scale setting, the temperature unit icon will blink. Press the "+" or "–" button to switch between Celsius (°C) and Fahrenheit (°F).

Accumulative Work Time
The dehumidifier automatically begins tracking operating time each time it is turned on. The maximum recorded time is 99,999 hours, after which the counter will reset to 0.

6. System Functions

Power-On Automatic Detection
When the unit is powered on, all display indicators and backlights will illuminate for 2 seconds, and a brief beep will sound. During this time, the system performs automatic self-checks on communication and sensor functions. If no issues are detected, the unit will enter the standby (shutdown) state. If a fault is detected, the system will issue a three-beep alarm to indicate an error.

Compressor Protection (3-Minute Delay)
After the compressor stops, it must wait 3 minutes before restarting to prevent damage. Once the compressor starts, it must run for at least 3 minutes before it can automatically shut down. If the unit is shut down manually, the compressor will stop immediately.

Note: When the unit is powered on for the first time, the 3-minute delay protection does not apply.

Power-Down Memory Function
The system is equipped with a power-down memory feature. In the event of a power outage, it will automatically save key settings, including humidity level, timer on/off times, fan speed, temperature scale, and accumulated timing data. These settings will be restored when the power is resumed.

7. Technical Specifications

Model	120*U*	165*U*
Volts/Cycle	115V/60Hz	115V/60Hz
Amperage	8.5A	10.2A
Rated Airflow	342CFM	515CFM
Water Removal Capacity AHAM	120PPD	165PPD
Power Cord Length	25ft	25ft
Drain Hose Length	20ft	20ft
Unit Weight	109lbs	126lbs
Unit Size	R32/17.6 Oz	R32/26.5 Oz

8. Wiring Diagrams & Fault Codes

Circuit diagram
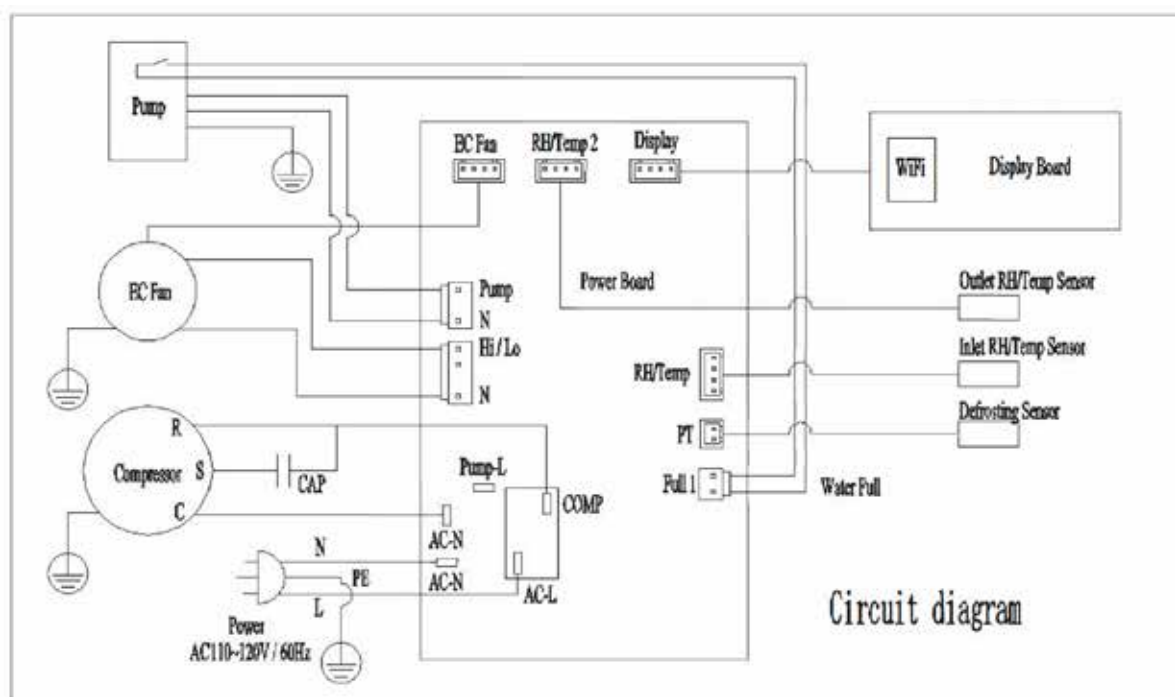
Code	Description	Solution
E0	Control Panel	Reconnect or replace cable / replace control panel
E1	Humidity Sensor A	Reconnect or replace sensor
E2	Temperature Sensor A	Reconnect or replace sensor
E3	Pump Blockage	Check for blockage or replace pump / float switch
E4	Defrost Sensor	Reconnect or replace sensor
E9	Fan Motor	Check cable connection or replace motor
E11	Humidity Sensor B	Reconnect or replace sensor
E12	Temperature Sensor	Reconnect or replace sensor

9. Explosion List EVAP-120*U*
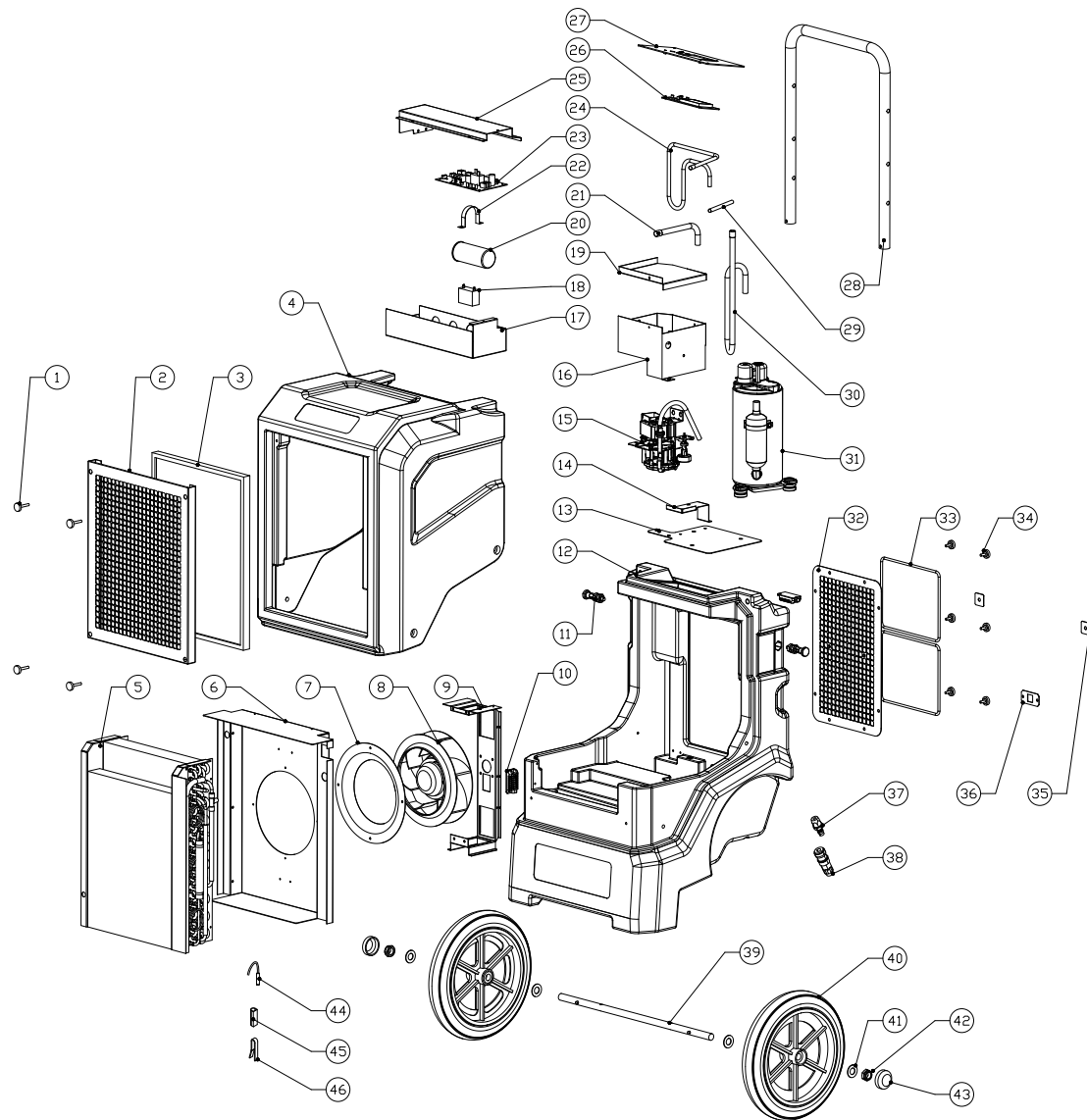
NO.	PART DESCRIPTION	QUANTITY
1	M5*30 Hand Screw nuts	4
2	Intake grate	1
3	Filter	1
4	Upper shell	1
5	Two-organ	1
6	Fan support plate	1
7	Wind guide	1
8	Fan	1
9	Fan support	1
10	Temperature and humidity sensor	2
11	Rotary plunger	2
12	Lower shell	1
13	Compressor base plate	1
14	Sink cover plate	1
15	Water pump	1
16	Pump hood assembly	1
17	Electric box	1
18	Fan capacitance	1
19	Water pump hood 1	1
20	Compressor capacitance	1
21	Return trachea I	1
22	Capacitor collar	1
23	K20 motherboard	1
24	Exhaust pipe II	1
25	Top cover of electrical box	1
26	Display panel	1
27	Display panel assembly	1
28	Hold hands	1
29	Exhaust pipe I	1
30	Return trachea II	1
31	Compressor	1
32	Air outlet panel	1
33	Steel ring	2
34	M5*15 Hand screw nuts	6
35	Velcro cover plate	2
36	Power line fixing plate	1
37	Outlet joint male head	1
38	Outlet connector female head	1
39	Wheel shaft	1
40	Wheel	2
41	Axle gasket	4
42	M16 Lock nut	2
43	Dust shield	2
44	Defrosting sensor	1
45	Temperature sensing head casing	1
46	Temperature-sensing capspring	1
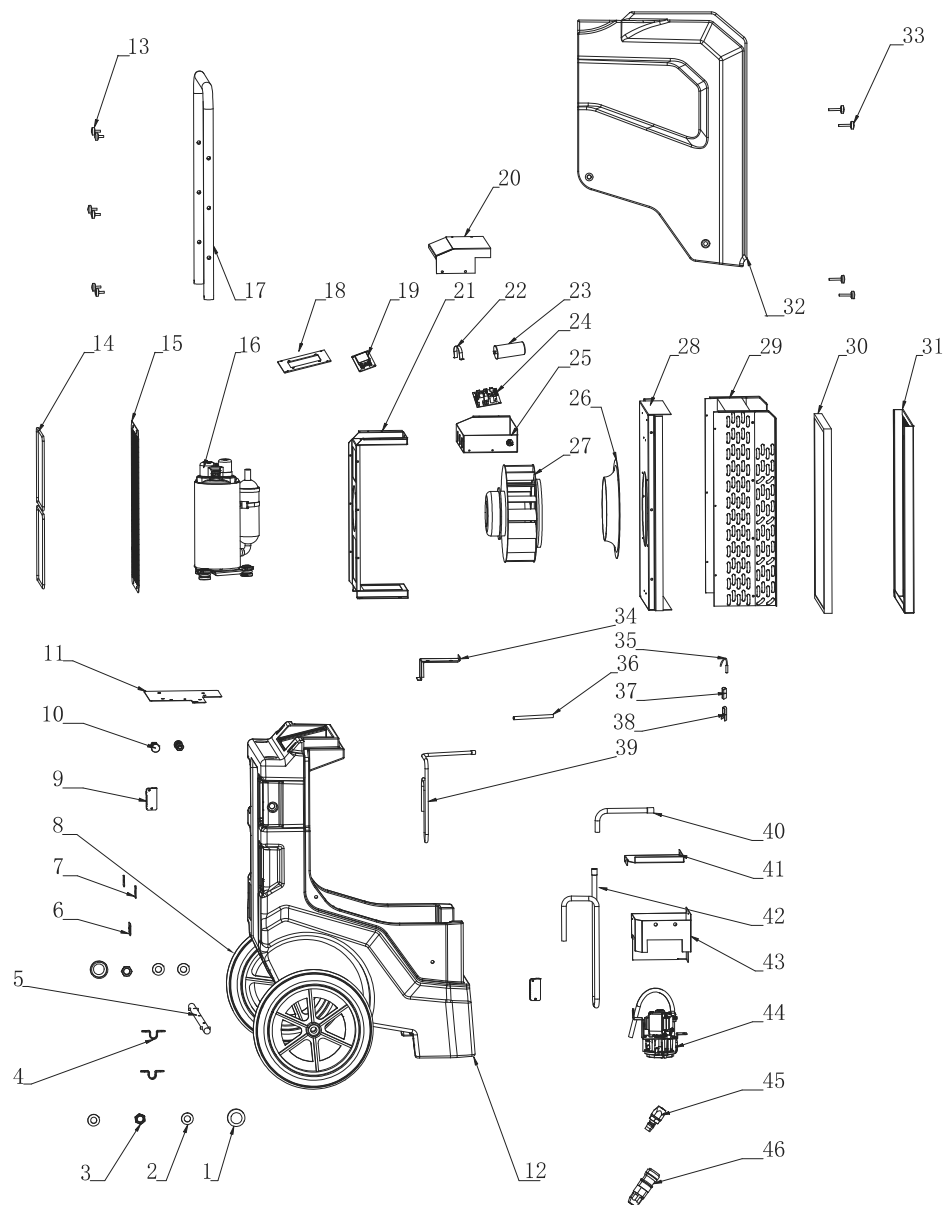
NO.	PART DESCRIPTION	QUANTITY
1	Dust Cover	2
2	M16 Flat Pad	4
3	M16 Lock Nut	2
4	AxleU-ShapedFixings	2
5	Axle	1
6	Power Cord Fixing Plate	1
7	Velcro Cover	2
8	Wheel	2
9	Temperature And humidity Sensor	2
10	Rotary Plunger	2
11	Compressor Base Plate	1
12	Lower Shell	2
13	Hand Nut	6
14	Steel Ring	2
15	Air Outlet Panel	1
16	Compressor	1
17	Handle	1
18	Display Panel Components	1
19	K20Display Board	1
20	Electrical Box Cover	1
21	Fan Bracket	1
22	Capacitor Hoop	1
23	Compressor Capacitor	1
24	K30 Power Board	1
25	Electrical Box	1
26	Wind Guide	1
27	Fan	1
28	Middle Plate	1
29	Heat Exchanger Components	1
30	Filter	1
31	Air Intake Grille	1
32	Upper Shell	1
33	M5 Hand Screw Nut	2
34	Sink Cover	6
35	Defrost Sensor	2
36	Exhaust Pipe 2	1
37	Temperature Sensing Head Casing	1
38	Temperature Sensing Head Casing Circlip	1
39	Exhaust Pipe 1	1
40	Return Trachea 1	2
41	Water Pump Cover 2	4
42	Return Trachea 2	2
43	Water Pump Cover 1 Component	2
44	Water Pump	1
45	Plastic Quick Connector Male	1
46	Plastic Quick Connector Female	1

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Thank you for purchasing the Evap series of RAMFORCE dehumidifiers.