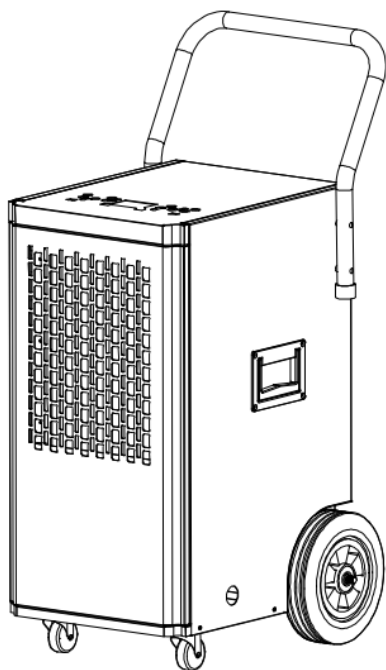


# DEHUMIDIFIER

**Keystone**<sup>®</sup>  
COMMERCIAL

## ~~OWNER'S MANUAL~~ **OWNER'S MANUAL**



Model: KSTAD110PD

Before operating this product, please read the instructions carefully and save this manual for future use.





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**Product Warranty Card**  
**Tarjeta de Garantía de Producto**

**Air conditioner warranty**

Your product is protected by this warranty:  
Your appliance is warranted by Keystone. Any obligations for services and parts under this warranty must be performed Keystone.  
To contact a Customer Service Representative, Call TOLL FREE

**800-849-1112**  
**keystonecs@keystone-products.com**

**Garantía**

Su producto está protegido por esta garantía:  
Su producto está garantizado por Keystone. Cualquier obligación de proporcionar servicio o repuestos establecida en esta garantía deberá ser cumplida por los Servicios al consumidor de Keystone.  
Para comunicarse con un Representante de Servicio al Cliente, tenga la bondad de llamar por teléfono sin cargo alguno a, al número:

**800-849-1112**  
**keystonecs@keystone-products.com**

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# 1. BEFORE YOU BEGIN

## 1.1 PRODUCT DESCRIPTION

The dehumidifier is used to remove excessive moisture from the air. The resulting reduction in relative humidity protects buildings and their contents from the adverse effects of excess humidity.

The environmentally friendly R32 is used as the refrigerant. R32 has no damaging influence on the ozone layer (ODP), a negligible greenhouse effect (GWP) and is available worldwide. Because of its efficient energy properties, R32 is highly suitable as a coolant for this application. Special precautions must be taken into consideration due to the coolant's high flammability.

## 1.2 SYMBOLS FROM THE UNIT AND USER MANUAL



### **warning**

This unit uses a flammable refrigerant.

If refrigerant leaks and comes in contact with fire or heating part, it will create harmful gas and there is risk of fire.



Read the USER MANUAL carefully before operation.



Further information is available in the USER MANUAL, SERVICE MANUAL, and the like.



Service personnel are required to carefully read the USER MANUAL and SERVICE MANUAL before operation.



## **THE FOLLOWING SHOULD ALWAYS BE OBSERVED FOR SAFETY**

- This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- The unit is designed only for use with R32(propane) gas as the designated refrigerant.
- **The refrigerant loop is sealed. Only a qualified technician should attempt to service!**
- Do not discharge the refrigerant into the atmosphere.
- R32 (propane) is flammable and heavier than air.
- It collects first in low areas but can be circulated by the fans.
- If propane gas is present or even suspected, do not allow untrained personnel to attempt to find the cause.
- The propane gas used in the unit has no odor.
- The lack of smell does not indicate a lack of escaped gas.
- If a leak is detected, immediately evacuate all persons from the store, ventilate the room and contact the local fire department to advise them that a propane leak has occurred.
- Do not let any persons back into the room until the qualified service technician has arrived and that technician advises that it is safe to return to the room.
- No open flames, cigarettes or other possible sources of ignition

should be used inside or in the vicinity of the units.

- Component parts are designed for propane and non-incentive and non-sparking. Component parts shall only be replaced with identical repair parts.

**FAILURE TO ABIDE BY THIS WARNING COULD RESULT IN AN EXPLOSION, DEATH, INJURY AND PROPERTY DAMAGE.**



## 2. FOR YOUR SAFETY

**Your safety is the most important thing we concerned!**



**WARNING**



**Please read this manual carefully and fully understand before operating your appliance.**

### 2.1 OPERATIONAL PRECAUTIONS

**WARNING- to reduce the risk of fire, electric shock or injury to persons or property:**

- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- The appliance shall be disconnected from its power source during service.
- Always operate the unit from a power source of equal voltage, frequency and rating as indicated on the product identification plate.
- Always use a power outlet that is grounded.
- Unplug the power cord when cleaning or when not in use.
- Do not operate with wet hands. Prevent water from spilling onto the unit.
- Do not immerse or expose the unit to rain, moisture or any other liquid.
- Do not leave the unit running unattended. Do not tilt or turn over the unit.
- Do not unplug while the unit is operating.
- Do not unplug by pulling on the power cord.
- Do not use an extension cord or an adapter plug.

- Do not put objects on the unit.
- Do not climb or sit on the unit.
- Do not insert fingers or other objects into the air outlet.
- Do not touch the air inlet or the aluminum fins of the unit.
- Do not operate the unit if it is dropped, damaged or showing signs of product malfunction.
- Do not clean the appliance with any chemicals.
- Ensure the unit is far away from fire, inflammable, or explosive objects.
- The unit shall be installed in accordance with national wiring regulations.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacture.
- The appliance shall be stored in a room without continuously operation sources (for example: open flames, an operating gas appliance or an operating electric heater).
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- Do not piece or burn, even after use.
- Be aware that refrigerants may not contain an odour.
- Pipe-work shall be protected from physical damage and shall not be installed in an unventilated space, if that space is smaller than 8 m<sup>2</sup> .
- Compliance with national gas regulations shall be observed.
- Keep any required ventilation openings clear of obstruction.
- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.

|  |  |
|--|--|
| <br>WARNING | Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry, recognized assessment specification. |
| <br>WARNING | Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.  |

If you don't understand something or need help, please contact the dealer services.

## **2.2 SAFETY PRECAUTIONS ON SERVICING**

Please follow these warnings when to undertake the following when servicing an appliance with R32.

### **2.2.1 Checks to the area**

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

### **2.2.2 Work procedure**

Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.

### **2.2.3 General work area**

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the work space shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

### **2.2.4 Checking for presence of refrigerant**

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. no sparking, adequately sealed or intrinsically safe.

### **2.2.5 Presence of fire extinguisher**

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO<sub>2</sub> fire extinguisher adjacent to the charging area.

### **2.2.6 No ignition sources**

No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

### **2.2.7 Ventilated area**

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

### **2.2.8 Checks to the refrigeration equipment**

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance.

The following checks shall be applied to installations using flammable refrigerants:

- The charge size is in accordance with the room size within which the refrigerant containing parts are installed;
- The ventilation machinery and outlets are operating adequately and are not obstructed;
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;

– refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

### **2.2.9 Checks to electrical devices**

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

- those capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- that there no live electrical components and wiring are exposed while charging, recovering or purging the system;
- that there is continuity of earth bonding.



#### **WARNING!**

Install the unit in rooms which exceed 8 m<sup>2</sup> .

Do not install the unit in a place where inflammable gas may leak.



#### **NOTE!**

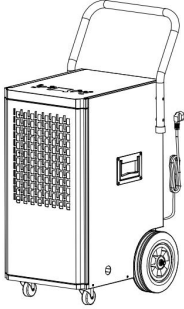



The manufacture may provide other suitable example or may provide additional information about the refrigerant odour.

## 3. PRODUCT OVERVIEW

### 3.1 SPECIFICATIONS

|                             |                             |
|-----------------------------|-----------------------------|
| Model Number                | KSTAD110PD                  |
| Power supply                | AC 115V / 60Hz              |
| Rated capacity              | 45Pints/Day @ 65°F, 60% RH  |
|                             | 70Pints/Day @ 80°F, 60% RH  |
|                             | 120Pints/Day @ 86°F, 80% RH |
|                             | 160Pints/Day @ 95°F, 90% RH |
| Power Consumption & Current | 532W/4.7A @ 65°F, 60% RH    |
|                             | 660W/5.8A @ 80°F, 60% RH    |
|                             | 780W/6.8A @ 86°F, 80% RH    |
|                             | 930W/8.1A @ 95°F, 90% RH    |
| Noise                       | ≤60dB(A)                    |
| Air Circulation             | 265 CFM                     |
| Refrigerant Type            | R32                         |
| Water tank capacity         | 1.45 Gallon                 |
| Net Weight                  | 80 lb                       |
| Gross Weight                | 88 lb                       |
| Dimension(WxDxH)            | 21.3" x 16.8" x 35.2"       |

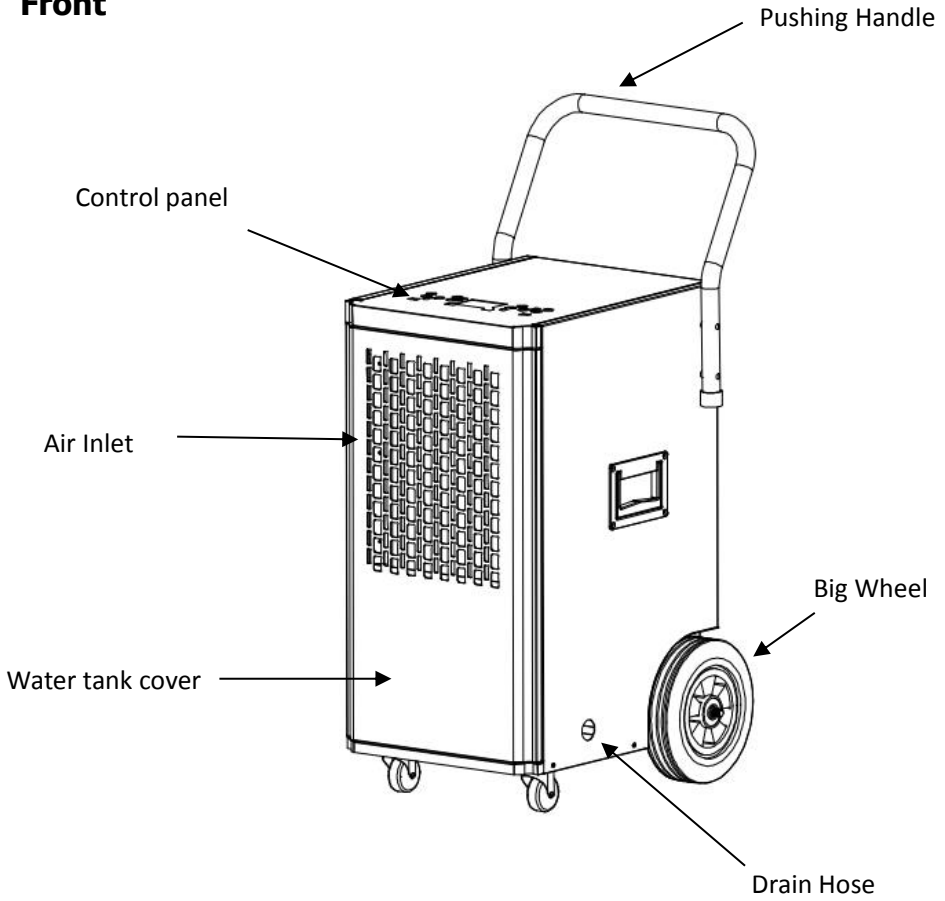
### 3.2 PACKAGE CONTENTS

| Item   | Description   | Quantity      |
|--|---|---------------|
|   | <p>120Pints industrial dehumidifier</p>                                 | <p>1 unit</p> |
|   | <p>Spare water tank plug</p>  | <p>1 pcs</p>  |
|   | <p>Handle quick fixing bolts<br/>Diameter: 0.24''<br/>Length: 1.6''</p> | <p>2 pcs</p>  |
|  | <p>PVC drain hose<br/>Length: 16.4'<br/>Inner diameter: 0.32''</p>      | <p>1 pcs</p>  |

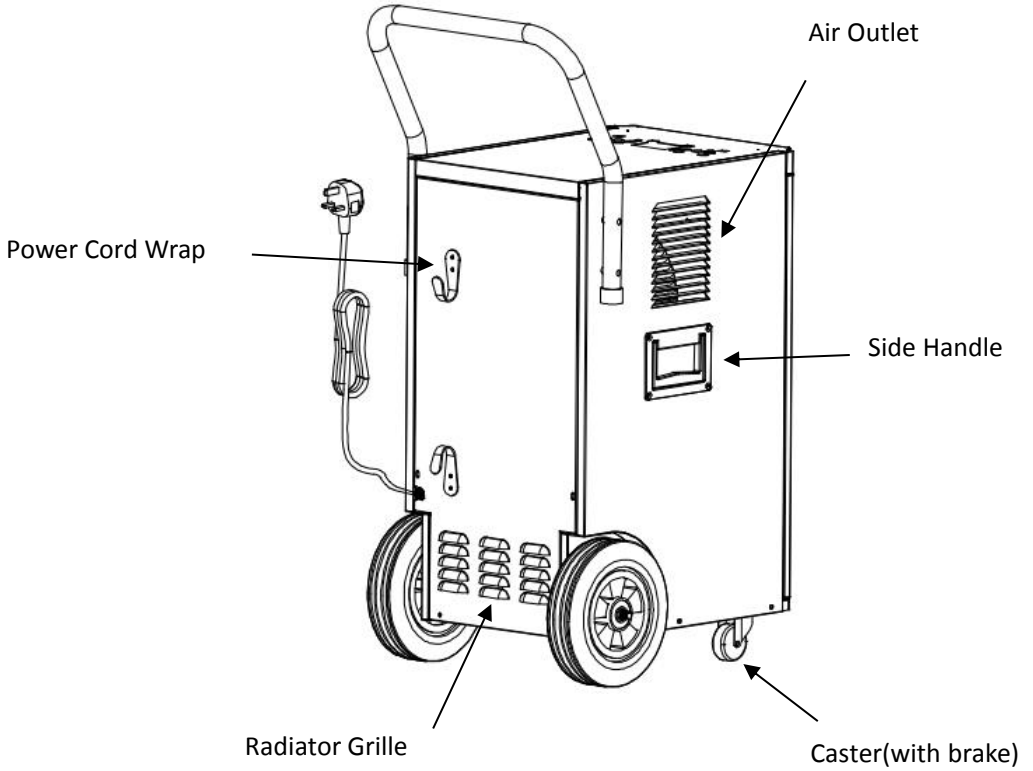


### 3.3 PRODUCT DIAGRAM

#### Front



## Back

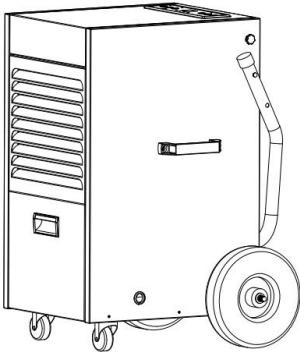


Note: The appearance is only for reference. Please see the real product for detailed information.

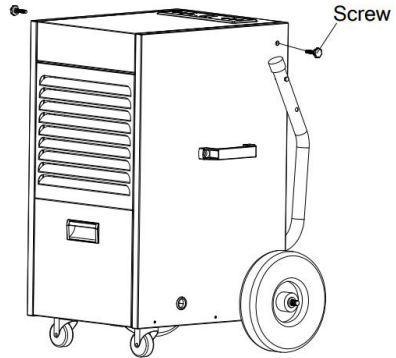
# 4. INSTALLATION

## 4.1 Handle Installation

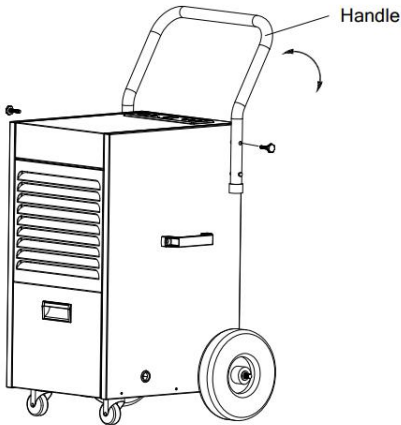
1. Open the package



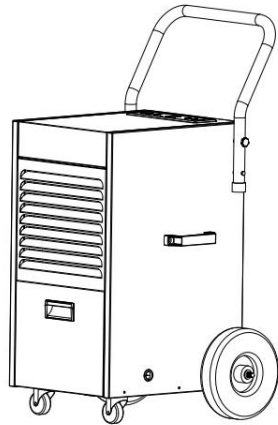
2. Remove the left and right screw



3. Rotate the handle, align the left and right side plate holes, and tighten the screw.

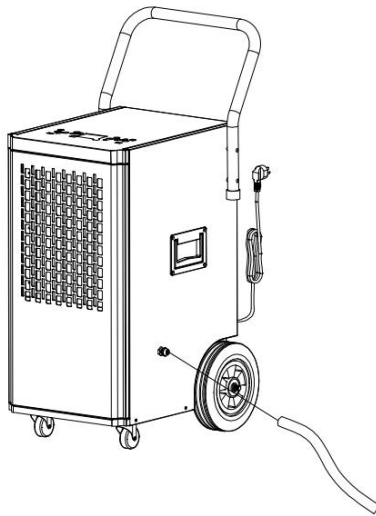


4. Installation completed



## 4.2 Drainage Installation

- Install the included drain hose to the draining nozzle on the machine and direct the hose to the desired area before operate the machine.
- If the drain area is located above the dehumidifier, the maximum capacity of the water pump is 16.4ft. If the water is drained downwards, there is no limit for the distance.
- Press and hold DRAIN button to drain the water manually. The water pump will work for 35 seconds before stopping. Repeat until all water is drained. Drain the water manually before storing or moving the unit.

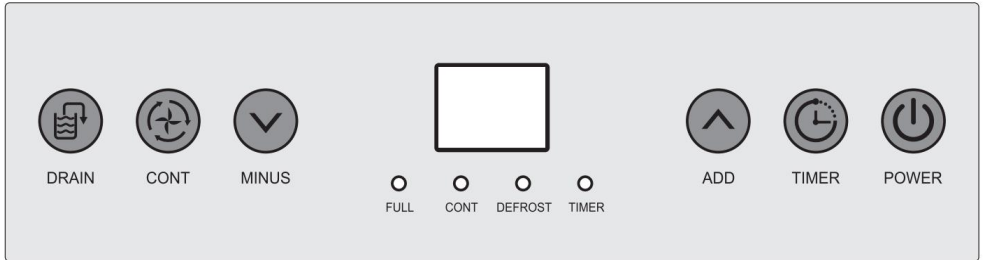


**WARNING:** Do not block the drainage hose. The end of the drainage pipe should not be higher than the outlet hole. If the drainage pipe end is higher than the outlet hole, water will not drain properly and could damage components of the unit.

## 4.3 LOCATION

1. Place the appliance on a firm and horizontal surface.
2. Never install the appliance at a place that could be subject to:
  - Heat sources such as radiators, heat registers, stoves or other products that produce heat.
  - Possible splashing of oil or water
  - Direct sunlight
  - Mechanical vibration or shock
  - Excessive dust
  - Lack of ventilation, such as cabinet or bookcase
  - Uneven surface

## 5. OPERATION



### 5.1 Button Function



#### POWER

Press this button to turn the unit on/ off. The screen will light up to show the current ambient humidity level when the unit is on. The default setting for mode and humidity level are: continuous and 50%.

NOTE: The pump will keep operating if it hasn't finished draining when the unit is turned off, and will shut down after it finishes.



#### TIMER

The first press of this button will turn the timer on, and the timer indicator will light up. Press the "ADD" or "MINUS" button to increase or decrease the timer within a 24 hour time frame.

In the power-on state, the timer indicates the length of operation time.

In the standby state, the timer indicates the length of time until

the reserved turning-on time. The timer is memoryless, so it needs to be reset each time.

Press this button for 3 seconds to show current temperature. After 10 seconds, the display will return to show current humidity.



### **MINUS**

Each press of this button will decrease the set humidity level/timer by 5 %/1 hour within the range of 20-90%/0-24 hours.



### **ADD**

Each press of this button will increase the set humidity level/timer by 5 %/1 hour within the range of 20-90%/0-24 hours.



### **CONT**

In the intelligent dehumidification mode, press this button to switch to the continuous dehumidification mode. The set humidity level is unadjustable under this mode, and the machine will operate continuously regardless of the ambient humidity level.

In the continuous dehumidification mode, press this button to switch to the intelligent dehumidification mode, where the set humidity level is adjustable.







### **DRAIN**

Press this button to activate pump drainage. The pump will operate for 35 seconds and automatically turn off.

**NOTE:**

- The dehumidifier starts operating in the mode that it was last in.
- The dehumidifier starts dehumidifying if the room humidity level is 3% higher than the set humidity level, and stops if the room humidity level is 3% lower than the set humidity level.

**5.2 INDICATORS**

|  |   |
|--|---|
|  <b>FULL</b> : Water Full Indicator    |  <b>CONT</b> : Continuous Mode Indicator |
|  <b>DEFROST</b> : Defrosting Indicator |  <b>TIMER</b> : Timer Indicator          |

**5.3 Operation**

- 1) When the water pump is full, the “FULL” light goes on red and alarm goes on after 5 seconds. Buzzer beeps 15 times and the compressor and fan shut off. After the water pump is emptied, the machine will automatically switch to the previous mode while the compressor will be in 3 minutes of self-protect. Alarm will stop in 3 seconds after the water pump is emptied, fan starts, and compressor will start in 3 minutes.
- 2) Compressor will not need 3 minutes for self-protect if it was the first time to start the machine, press “POWER” and power off; power on, press “POWER”, compressor starts immediately.
- 3) The system has auto memory. When all the mode setting has been finished, if there is sudden power cut during operation, or the power jack slips out, the system may store the current status before the power is cut and enter the operation mode before power cut automatically after power is supplied.



## **5.4 Defrost Function**

- 1) The compressor and fan will shut off when the environmental temperature goes below 41 °F or above 100.4°F.
- 2) During defrosting, if power is off or shut down, it needs to start defrosting again after the power comes in or starts up. The dehumidification mode can work properly only after the defrosting is completed.

**Note: During defrost, light won't be off until the defrosting is over.**

## 6. CLEAN AND CARE

### 6.1 CLEANING

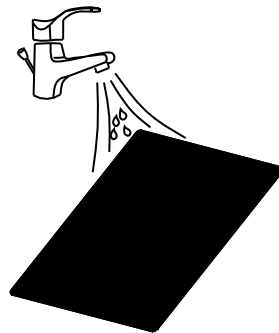
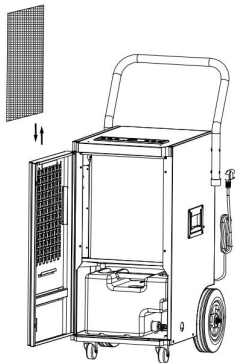
#### 1. Body Cleaning

Use a soft and slightly moist cloth to clean the dehumidifier's body. Do not use cleanser, steel balls, chemically treated dust-proof cloth, gasoline, benzene, thinners, or other chemical solvents in case of damage or distortion.

**WARNING:** Before cleaning or conducting maintenance, please turn off and unplug the machine to avoid the risk of electrocution

#### 2. Filter Cleaning (every 2 weeks)

- Pull to open the dehumidifier's back panel, and slide the filter upward to take it out from the panel.
- Use a vacuum cleaner to gently absorb the dust on the filter's surface.
- If the filter is dirty, wash it with water and a soft detergent, and dry it thoroughly afterwards.
- Put the filter back in the back panel, and close the dehumidifier's back panel.



**WARNING:** It is strongly advised to rinse the filter every two weeks. Any dust blocking the filter will potentially affect the machine's functionality.

## **6.2 CLEANING UP OF REFRIGERANT**

### **General Measures:**

1. Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level.
2. Eliminate every possible source of ignition.
3. Use appropriate personal protection equipment (PPE).
4. Evacuate unnecessary personnel, isolate, and ventilate area.
5. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or gas.
6. Prevent entry to sewers and public waters.
7. Stop the source of the release, if safe to do so. Consider the use of water spray to disperse vapors.
8. Isolate the area until gas has dispersed. Ventilate and gas test area before entering. Contact competent authorities after a spill.

## 7. TROUBLE SHOOTING

1. Functioning Temperature:  $41^{\circ}\text{F} \leq \text{Ambient Temperature} \leq 95^{\circ}\text{F}$

When the ambient temp is lower or higher than the functioning temp, the dehumidifier stops functioning.

When  $41^{\circ}\text{F} \leq \text{Ambient temperature} \leq 61^{\circ}\text{F}$ , the compressor automatically defrosts at intervals; during defrosting, the compressor stops and the fan keeps running.

2. Before Calling for Service

Before contacting the customer service, please review the following troubleshooting list that includes common problems that are not the result of a defect in workmanship or materials.

| <b>trouble</b>                 | <b>cause</b>   | <b>solution</b>   |
|--------------------------------|--|---|
| Not operating                  | Unit is not plugged in.  | Plug in the unit.   |
|                                | Room temperature is under $41^{\circ}\text{F}$ or above $95^{\circ}\text{F}$ . | To protect the machine, use it only when ambient temperature is between $41^{\circ}\text{F}$ and $95^{\circ}\text{F}$ . |
| Humidity level not dropping    | When the humidity set point is 2% higher than the ambient humidity level.      | Reset the humidity to a lower set point, or power the machine off if the ambient humidity level already satisfies you.  |
| Reduced dehumidifying capacity | Filter jammed.   | Clean the filter as instructed.   |
|                                | Air-in and/or Air-out louvers jammed.  | Clear the blockage from Air-in and/or Air-out louvers.  |

|                 |                                 |  |
|-----------------|---------------------------------|--|
| No air inlet    | Filter or air-in louver jammed. | Clean the filter as instructed or clean the louver blockage. |
| Loud noise      | Machine tilted.                 | Move it to a flat ground.                                    |
|                 | Filter jammed.                  | Clean the filter as instructed.                              |
| Error Code 'E1' | Temperature sensor problem      | Change the sensor  |
| Error Code 'E2' | Humidity sensor problem         | Change the sensor  |

**WARNING:**

If the Water Full indicator is always on, there may be a malfunction in the machine. Please seek technical support from professionals.

If anything unexpected happens, please turn off and unplug the machine immediately, and seek technical support from certified electrical engineers.

## 8. DECOMMISSIONING

### 8.1 STORAGE

Long-Term Storage - If you will not be using the unit for an extended period of time (more than a few weeks) it is best to clean the unit and dry it out completely. Please store the unit per the following steps:

1. Unplug the unit and remove exhaust hose and window kit store with the unit.
2. Drain the remaining water from the unit.
3. Clean the filter and let the filter dry completely in a shaded area.
4. Re-install the filter at its position.
5. The unit must be kept in upright position when in storage.
6. Preserving the machine in ventilating, dry, non- corrosive gas and safe place indoor.

#### **ATTENTION:**

**The evaporator inside the machine has to be dried out before the unit is packed avoid component damage and molds. Unplug the unit and place it in a dry open ar for days to dry it out. Another way to dry the unit is turn on the machine, adjust it low-wind ventilation mode, and maintain this state until the drainage pipe becom dry, so as to keep the inside of the body in a dry state and prevent it from mildewir**

## 8.2 DISPOSAL



**WARNING!!!**

Releasing refrigerant into atmosphere is strictly forbidden!

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

