

HEAT CONTROLLER

# OWNER'S MANUAL

## Portable Dehumidifier: BHD-H Series R-410A



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## SAFETY PRECAUTIONS

To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage.

- The seriousness is classified by the following indications.

 <b>WARNING</b>	This symbol indicates the possibility of death or serious injury.
 <b>CAUTION</b>	This symbol indicates the possibility of injury or damage to property.

- Meanings of symbols used in this manual are as shown below.

	<b>Never do this.</b>
	<b>Always do this.</b>

### **WARNING**

#### Do not exceed the circuit rating.

- Otherwise, it may cause electric shock or fire due to excess heat generation.

#### Do not operate or stop the unit by disconnecting the plug from the outlet.

- It may cause electric shock or fire due to heat generation.

#### Do not damage or use an unspecified power cord.

- It may cause electric shock or fire.

#### Do not modify power cord length or share the outlet with other appliances

- It may cause electric shock or fire due to heat generation.

#### Do not plug/unplug the unit with wet hands.

- It may cause electric shock.

#### Do not place the unit near a heat source.

- Plastic parts may melt and cause a fire.

#### Disconnect the power if strange sounds, smells, or smoke comes from the unit.

- It may cause fire and electric shock.

#### You should never try to take apart or repair the unit by yourself.

- It may cause failure of machine or electric shock.

#### Before cleaning, turn off the power and unplug the unit.

- It may cause electrical shock or injury.

#### Do not use the unit near flammable gas or combustibles, such as gasoline, benzene, thinner, etc.

- It may cause an explosion or fire.

#### Do not drink or use the water drained from the unit.

- It contains contaminants and could make you sick.

#### Do not take the water bucket out during operation.

- It may cause bucket full protect of the unit and cause electric shock.

### **CAUTION**

#### Do not use the unit in small spaces.

- Lack of ventilation can cause overheating and fire.

#### Do not put in places where water may splash onto the unit.

- Water may enter the unit and degrade the insulation. It may cause an electric shock or fire.

#### Place the unit on a level, sturdy section of the floor.

- If the unit falls over, it may cause water to spill and damage belongings, or cause electrical shock or fire.

**SAFETY PRECAUTIONS**

**⚠ CAUTION**

ⓘ Do not block the air intake or exhaust openings.

- A lack of air flow can lead to overheating and fire.

ⓘ Never insert your finger or other foreign objects into grills or openings. Take special care to warn children of these dangers.

- It may cause electric shock or failure of appliance.

ⓘ Always insert the filters securely. Clean filter once every two weeks.

- Operation without filters may cause failure.

ⓘ Care should be taken when using the unit in a room with the following persons:

- Infants, children, elderly people, and people not sensitive to humidity.

ⓘ Do not place heavy objects on the power cord and take care so that the cord is not compressed.

- There is danger of fire or electric shock.

ⓘ If water enters the unit, turn the unit off and disconnect the power, contact a qualified service technician.

- It may cause failure of appliance or accident.

ⓘ Do not use in areas where chemicals are handled or stored.

- This will cause the unit deterioration due to chemicals and solvents dissolved in the air.

ⓘ Do not climb up on or sit on the unit.

- You may be injured if you fall or if the unit falls over.

ⓘ Do not place objects on top of the unit.

- Water may spill inside the unit, causing insulation failure and electrical shock or fire.

**Electrical Information**

- The manufacturer's nameplate is located on the rear panel of the unit and contains electrical and other technical data specific to this unit.
- Be sure the unit is properly grounded. To minimize shock and fire hazards, proper grounding is important. The power cord is equipped with a three-prong grounding plug for protection against shock hazards.
- Your unit must be used in a properly grounded wall receptacle. If the wall receptacle you intend to use is not adequately grounded or protected by a time delay fuse or circuit breaker, have a qualified electrician install the proper receptacle.
- **Do not use extension cords or an adapter plug with this unit.**  
To avoid the possibility of personal injury, always disconnect the power supply to the unit, before cleaning and/or servicing.

## CONTROL PADS ON THE DEHUMIDIFIER

**NOTE:** The control panel of the unit you purchased may be slightly different according to the models.

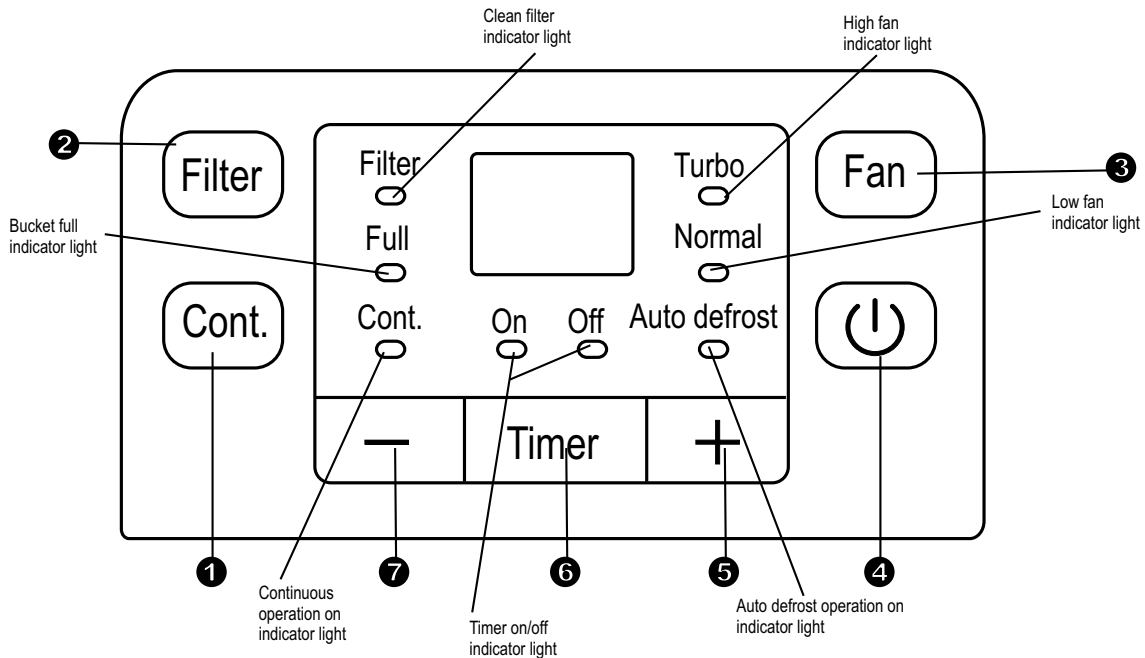


Fig.1

### Control pads

When you push the button to change operation modes, the unit will make a beep sound to indicate that it is changing modes.

#### ① Control Pad

Press to activate the continuous dehumidifying operation.

#### ② Filter Pad

The check filter feature is a reminder to clean the Air Filter for more efficient operation. The Filter light (Clean filter light) will illuminate after 250 hours of operation. To reset after cleaning the filter, press the Filter pad and the light will go off.

#### ③ Fan Pad

Controls the fan speed. Press to select High or Normal fan speed. Set the fan control to High for maximum moisture removal. When the humidity has been reduced and quiet operation is preferred, set the fan control to Normal.

#### ④ Power Pad

Press to turn the dehumidifier on and off.

#### ⑤⑦ ⊕/⊖ : Down/Up Pads

##### ● Humidity Set Control Pads

The humidity level can be set within a range of 35%RH(Relative Humidity) to 85%RH(Relative Humidity) in 5% increments.

For drier air, press the ⊖ pad and set to a lower percent value(%).

For damper air, press the ⊕ pad and set a higher percent value(%).

##### ● TIMER Set Control Pads

Use the Up/Down pads to set the Auto start and Auto stop time from 0.0 to 24.

#### ⑥ Timer Pad

Press to initiate the Auto start and Auto stop feature, in conjunction with the ⊕ and ⊖ key pads.

## CONTROL PADS ON THE DEHUMIDIFIER

### ⑩ Display

Shows the set % humidity level from 35% to 85% or auto start/stop time (0~24) while setting, then shows the actual (±5% accuracy) room % humidity level in a range of 30% RH(Relative Humidity) to 90%RH(Relative Humidity).

#### Error Codes and Protection Code:

**AS-** Humidity sensor error--Unplug the unit and plug it back in. If error repeats, call for service.

**ES-** Temperature sensor error-- Unplug the unit and plug it back in. If error repeats, call for service.

**P2-** Bucket is full or bucket is not in right position-- Empty the bucket and replace it in the right position.

**EC-** Unit malfunction--Ensure the unit is operating within the design parameters for temperature. If this error occurs, turn off the unit and turn on again to reset. If this error occurs after powering off and back on call for service.

## Other features

### Bucket Full Light

Illuminates when the bucket is ready to be emptied, or when the bucket is removed or not seated in the proper position.

### Auto Shut Off

The dehumidifier shuts off after 30 seconds when the bucket is full, or when the bucket is removed or not seated in the proper position. When the set humidity is reached, the unit will shut off automatically. For some models, the fan motor will continue operating.

### Auto Defrost

When frost builds up on the evaporator coils, the compressor will cycle off and the fan will continue to run until the frost disappears.

### Wait 3 minutes before resuming operation

After the unit has stopped, it can not be restarted in the first 3 minutes. This is to protect the unit. Operation will automatically occur after 3 minutes.

### Check filter feature

The system starts to count the time once the fan motor operates. The check filter feature can be only activated when the accumulated operation time achieves 250 hours or more. The Reset light(Clean filter indicator light) flashes one time per second. After cleaning the air filter, press the Filter pad to turn the filter light (clean filter indicator light) off the time resets.

### Auto-Restart

If the unit turns off unexpectedly due to power outage, it will restart with the previous function setting automatically when the power resumes.

### Setting the Timer

- When the unit is on, first press the Timer button, the Timer Off indicator light illuminates. It indicates the Auto Stop program is initiated. Press it again the Time On indicator light illuminates. It indicates the Auto Start is initiated.
- When the unit is off, first press the Timer button, the TIMER ON indicator light illuminates. It indicates the Auto Start program is initiated. Press it again the Time Off indicator light illuminates. It indicates the Auto Stop is initiated.
- Press or hold the UP or DOWN pad to change the Auto time by 0.5 hour increments, up to 10 hours, then at 1 hour increments up to 24 hours. The control will count down the time remaining until start.
- The selected time will register in 5 seconds and the system will automatically revert back to display the previous humidity setting.
- When the Auto start & Auto stop times are set, within the same program sequence, TIMER ON OFF indicator lights illuminate identifying both ON and OFF times are now programmed.
- Turning the unit ON or OFF at any time or adjusting the timer setting to 0.0 will cancel the Auto Start/Stop function.
- When LED display window displays the code of P2, the Auto Start/Stop function will also be cancelled.

## IDENTIFICATION OF PARTS

### Identification of parts

#### Front

- ❶ Control panel
- ❷ Air intake grille
- ❸ Air outlet grille
- ❹ Air filter (behind the grille)
- ❺ Water bucket
- ❻ Handle (both sides)

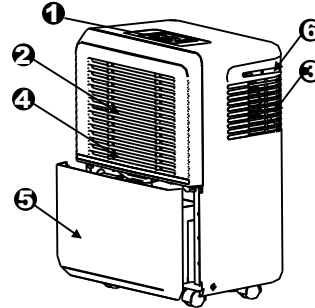


Fig.2

#### Rear

- ❶ Drain hose outlet
- ❷ Caster
- ❸ Power Cord and plug
- ❹ Cable Tie (to store power cord when unit is not in use.)

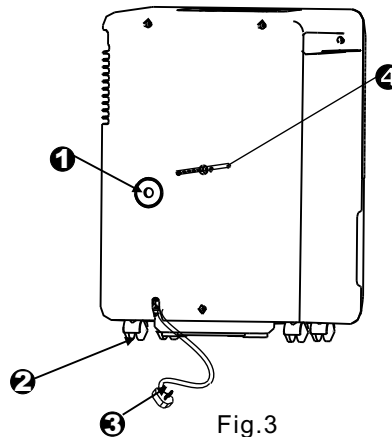
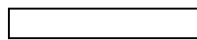


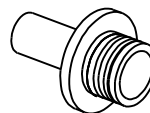
Fig.3

**NOTE:** All the pictures in the manual are for explanation purposes only. The actual shape of the unit you purchased may be slightly different, but the operations and functions are the same.

**Accessories:** Drain hose(1pc)



adaptor A(1pc)



screw(2pc)



## OPERATING THE UNIT

### Positioning the unit

A dehumidifier operating in a basement will have little or no effect in drying an adjacent enclosed storage area, such as a closet, unless there is adequate circulation of air in and out of the area.

- Do not use outdoors.
- This dehumidifier is intended for indoor residential applications only. This dehumidifier should not be used for commercial or industrial applications.
- Place the dehumidifier on a smooth, level floor strong enough to support the unit with a full bucket of water.
- Allow at least 8 inches of clearance on all sides of the unit and 15 inches above the unit for good air circulation.
- Place the unit in an area where the temperature will not fall below 41°F(5°C). The coils can become covered with frost at temperatures below 41°F(5°C), which may reduce performance.
- Place the unit away from sources of heat such as clothes dryer, heater or radiator.
- Use the unit to prevent moisture damage anywhere books or valuables are stored.
- Use the dehumidifier in a basement to help prevent moisture damage.
- The dehumidifier must be operated in an enclosed area to be most effective.
- Close all doors, windows and other outside openings to the room.

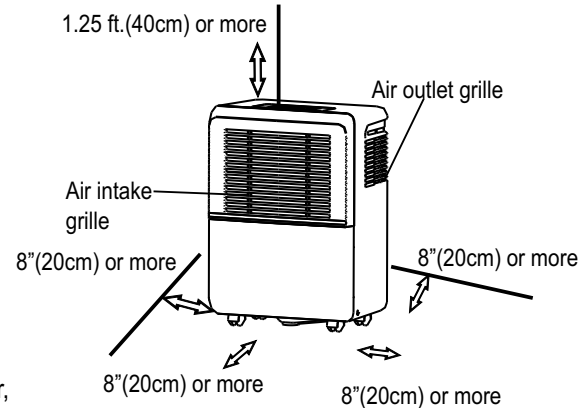


Fig.4a

#### **Casters (At four points on the bottom of unit)**

- Casters can move freely.
- Do not force casters to move over carpet, nor move the unit with water in the bucket. (The unit may tip over and spill water.)

### When using the unit

- When first using the dehumidifier, operate the unit continuously 24 hours.
- This unit is designed to operate with a working environment between 41°F(5°C) and 95°F(35°C).
- If the unit has been switched off and needs to be switched on again quickly, allow approximately three minutes for operation to resume.
- Do not connect the dehumidifier to an electrical outlet, which is also being used for other electrical appliances.
- Select a suitable location, making sure you have easy access to an electrical outlet.
- Plug the unit into a electrical socket-outlet with a proper ground connection.
- Make sure the Water bucket is correctly seated in position otherwise the unit will not operate properly.



## OPERATING THE UNIT

### Removing the collected water

There are two ways to remove collected water by emptying the bucket each time it's full or by continuously draining through a hose into a drain.

#### 1. Use the bucket

- When the unit is off, if the bucket is full, the unit will beep 8 times and the Full indicator light will flash, the digital display shows P2.
- When the unit is on, if the bucket is full, the compressor turns off and the fan turns off after 30 seconds for drying the water of the condenser, then the unit will beep 8 times and the Full indicator light will flash, the digital display shows P2.
- Slowly pull out the bucket. Grip the handles securely, and carefully pull out straight so water does not spill. Do not put the tank on the floor because the bottom of the bucket is uneven, which would cause the bucket to fall and the water to spill.
- Throw away the water and replace the bucket. The bucket must be in place and securely seated for the dehumidifier to operate.
- The machine will re-start when the bucket is restored in its correct position.

#### NOTES:

- When you remove the bucket, do not touch any parts inside of the unit. Doing so may damage the product or cause injury.
- Be sure to push the bucket gently all the way into the unit. Banging the bucket against anything or failing to push it in securely may cause the unit not to operate.
- When you remove the bucket, if there is some water in the unit you must dry it .

#### 2. Continuous draining

- Water can be automatically emptied into a floor drain by attaching the unit with a water hose (ID:φ5/16",not included))with a female threaded end (ID:M=1" ,not included).
- Install the drain hose onto the adaptor A (See Fig.7, placed in the bucket).
- Remove the plastic cover from the back drain outlet of the unit and set aside and remove bucket, then insert the drain hose through the drain outlet of the unit and securely press it into the connector on the front of the unit.(See.Fig.9)
- Tighten the adaptor A and the unit by using two screws (placed in the bucket).
- Install the female threaded end of the water hose into the adaptor A.(See.Fig.10),then lead the water hose to the floor drain or a suitable drainage facility.
- Make sure the hose is secure so there are no leaks.
- Direct the hose toward the drain, making sure that there are no kinks that will stop the water flowing.
- Place the end of the hose into the drain and make sure the end of the hose is level or down to let the water flow smoothly.
- Place the bucket back in the unit and make sure that it is located correctly.
- Select the desired humidity setting and fan speed on the unit for continuous draining to start.

1. Pull out the bucket a little.

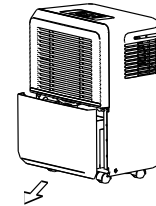


Fig.5

2. Hold both sides of the bucket with even strength, and pull it out from the unit.

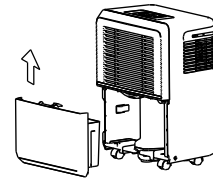


Fig.6

3. Pour the water out.

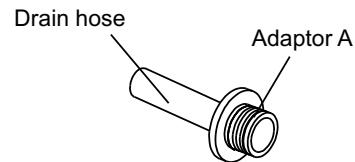


Fig.7

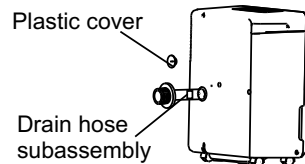


Fig.8

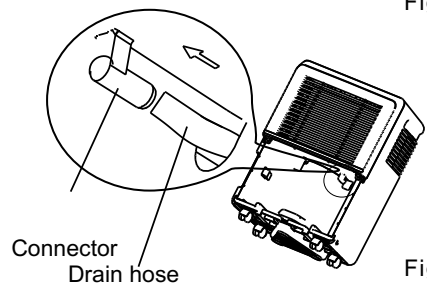


Fig.9

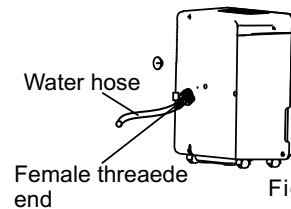


Fig.10

NOTE: When the continuous drain feature is not being used, remove the drain hose from the outlet.

## CARE AND MAINTENANCE

### Care and cleaning of the dehumidifier

**Turn the dehumidifier off and remove the plug from the wall outlet before cleaning.**

#### 1. Clean the Grille and Case

- Use water and a mild detergent. Do not use bleach or abrasives.
- Do not splash water directly onto the main unit. Doing so may cause an electrical shock, cause the insulation to deteriorate, or cause the unit to rust.
- The air intake and outlet grilles get soiled easily, so use a vacuum attachment or brush to clean.

#### 2. Clean the bucket

Every few weeks, clean the bucket to prevent growth of mold, mildew and bacteria. Partially fill the bucket with clean water and add a little mild detergent. Swish it around in the bucket, empty and rinse.

**NOTE:** Do not use a dishwasher to clean the bucket. After clean, the bucket must be in place and securely seated for the dehumidifier to operate.

#### 3. Clean the air filter

- Remove the filter every two weeks based on normal operating conditions.
- Remove the filter from the top of the unit (See Fig. 11a), or to remove the filter, remove Bucket then pull filter downwards (See Fig. 11b).
- Wash the filter with clean water then dry.
- Re-install the filter, replace Bucket.

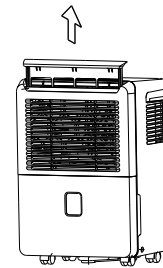


Fig. 11a

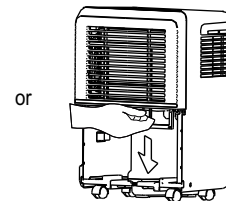


Fig. 11b

#### CAUTION:

DO NOT operate the dehumidifier without a filter because dirt and lint will clog it and reduce performance.

#### 4. When not using the unit for long time periods

- After turning off the unit, wait one day before emptying the bucket.
- Clean the main unit, water bucket and air filter.
- Wrap the cord and bundle it with the cable tie (Fig. 12).
- Cover the unit with a plastic bag.
- Store the unit upright in a dry, well-ventilated place.

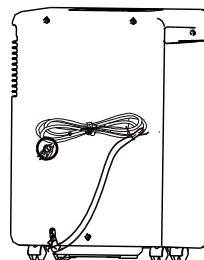


Fig. 12

## TROUBLESHOOTING TIPS

Before calling for service, review the chart below first yourself.

Problem	What to check
Unit does not start	<ul style="list-style-type: none"> <li>● Make sure the dehumidifier's plug is pushed completely into the outlet.</li> <li>● Check the fuse/circuit breaker box.</li> <li>● Dehumidifier has reached its preset level or bucket is full.</li> <li>● Water bucket is not in the proper position.</li> </ul>
Dehumidifier does not dry the air as it should	<ul style="list-style-type: none"> <li>● Did not allow enough time to remove the moisture.</li> <li>● Make sure there are no curtains, blinds or furniture blocking the front or back of the dehumidifier.</li> <li>● The humidity control may not be set low enough.</li> <li>● Check that all doors, windows and other openings are securely closed.</li> <li>● Room temperature is too low, below (41°F)5°C.</li> <li>● There is a kerosene heater or something giving off water vapor in the room.</li> </ul>
The unit makes a loud noise when operating	<ul style="list-style-type: none"> <li>● The air filter is clogged.</li> <li>● The unit is not sitting on an even, level floor.</li> </ul>
Frost appears on the coils	<ul style="list-style-type: none"> <li>● This is normal. The dehumidifier has Auto defrost feature.</li> </ul>
Water on floor	<ul style="list-style-type: none"> <li>● Hose to connector or hose connection may be loose.</li> <li>● Back drain plug is removed in error.</li> </ul>
ES, AS,P2 or EC appear on the display	<ul style="list-style-type: none"> <li>● These are error codes and protection code. See the <b>CONTROL PADS ON THE DEHUMIDIFIER</b> section.</li> </ul>

*Design, specifications, performance data and materials subject to change without notice.*

# HEAT CONTROLLER

1900 Wellworth Ave., Jackson MI 49203 • Ph. 517-787-2100 • [www.heatcontroller.com](http://www.heatcontroller.com)

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