

Owner's Manual



Dehumidifier

RDH-230
RDH-270
RDH-270P



Thank you for purchasing a Royal Sovereign RDH-200 Series Dehumidifier. This manual will provide you with safety information, instructions for optimal use, and proper care and maintenance for your product. Please read this manual carefully before operating.

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SAFETY INSTRUCTIONS

When using this machine, follow these safety precautions to reduce the risk of fire, electric shock, or injury.

WARNING

- Do not attempt to repair or replace any part of your dehumidifier unless it is specifically recommended in this manual. All other services should be referred to a qualified technician.
- If the power cord becomes worn or damaged, the cord should only be replaced by a qualified service technician using genuine replacement parts. Do not modify the cord or plug.
- The dehumidifier should be plugged into its own grounded circuit (13A, 60Hz, 115VAC).
- Do not plug other appliances into the same outlet; it can overload the circuit and cause a fire or electric shock. Do not use an extension cord.
- Do not cut or remove the round ground prong from the plug.
- This appliance is not designed for use by young children. Young children should be supervised to ensure that they do not play with or climb on the unit.
- Be sure all packaging materials are removed from the appliances before use.
- Do not disassemble or modify the appliance or the power cord.
- Do not place the power cord or appliance near a heater, radiator, or other heat source.
- Do not use this or any appliance near flammable gases or liquids or other combustibles, such as gasoline, benzene, or thinner.
- Make sure the power cord is plugged firmly and completely into the outlet.
- Do not start or stop operation by plugging in or unplugging the power cord.
- If the appliance is making unusual sounds or is emitting smoke or an unusual odor, unplug it immediately.
- Do not use if the electrical socket is loose or damaged.
- Do not operate with wet hands or place in water.
- Do not use this or any electrical appliance if you smell gas. It can result in the risk of fire or explosion.
- Turn off and unplug the appliance before cleaning to avoid the risk of electric shock.
- Do not clean the unit with water. Water can enter the unit and damage the insulation, creating a shock hazard. If water enters the unit, unplug it immediately and remove the water.

SAFETY INSTRUCTIONS

When using this machine, follow these safety precautions to reduce the risk of fire, electric shock, or injury.

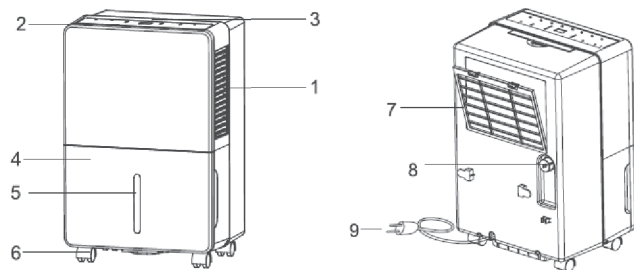
CAUTION

1. To avoid possible cuts, avoid contacting the metal parts of the appliances when removing or re-installing the filter.
2. Do not block the air inlet or outlet of the appliance. Reduced air flow will result in poor performance and can damage the unit.
3. Always grasp the plug when plugging in or unplugging the appliance. Never unplug by pulling on the cord.
4. Always turn off and unplug the appliance when it will not be used for an extended period of time. This conserves energy and reduces the chance of accidents.
5. Install the appliance on a sturdy, level floor.
6. Make sure the appliance is the correct size for the area you wish to dehumidify. Using an appliance that is the wrong size can waste energy and damage the unit.
7. Close all doors and windows to the room for most efficient operation.
8. To prevent damage to the surface finish, use only a soft cloth to clean the appliances. Do not use wax, thinner, or a strong detergent.
9. To prevent spills and property damage, be sure to drain the appliance properly.
10. To prevent the coils from freezing, do not operate the appliance if the room temperature is lower than 41 °F (5°C).
11. Do not position the appliance so that pets or house plants are exposed to the direct air flow.
12. This appliance is designed for normal household use.
13. Do not drink the water from the bucket. Dispose of it properly outdoors or down the drain.
14. Do not operate the appliance without the filter securely in place. Operation without the filter could damage the unit.
15. Clean the filter every two weeks, or more often if needed.
16. This dehumidifier must be plugged into a grounded 60 Hz, 115 VAC outlet protected by a 13 amp time delay fuse or circuit breaker.
17. This dehumidifier must be installed in accordance with national wiring codes.

PRODUCT VIEW

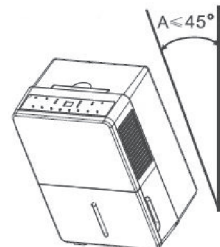
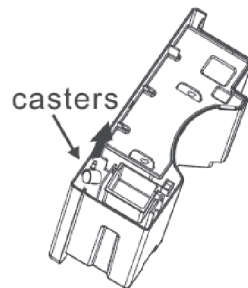
Key Parts

1. Air Outlet Grill
2. Control Panel
3. Carrying Handle
4. Bucket
5. Water Level
6. Caster Wheels
7. Air Intake Grill
8. Drain Hole
9. Power Cable



Caster Installation

1. Remove caster wheels from the bucket.
2. Tilt the dehumidifier no more than 45 degrees. Do not insert the caster wheels by force, as they should easily slide into position. Make sure the ring around the caster is flush against the bottom of the dehumidifier.

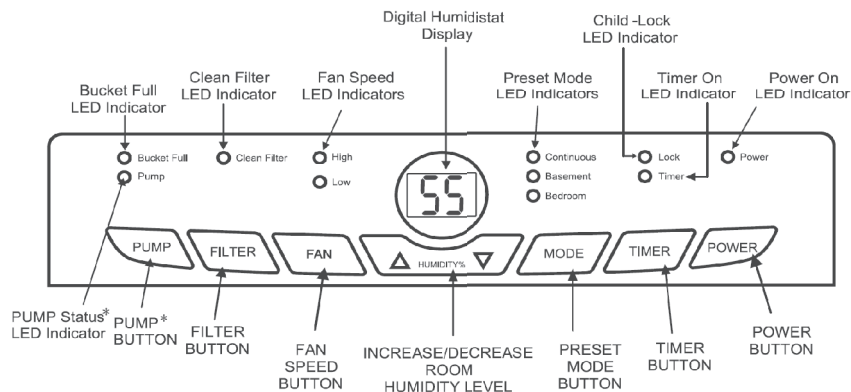


PRODUCT OPERATION

Control Panel

NOTE: When first operating the dehumidifier, run it in Continuous Mode for 24 hours.

- Power On and Off** - Press the "POWER" button once to manually turn the unit on. Press the "POWER" button once more to turn the unit off.
- Humidity Selection** - Press the ∇ or Δ buttons to choose the desired relative humidity in the room. Each press of the button will change the desired room humidity by 5%. The room humidity is selectable from 35% - 80% or continuous. The unit will cycle on and off to maintain the humidity level chosen on the digital display. If you want the dehumidifier to operate continuously regardless of the room humidity, press the "MODE" button until you see "CO" on the digital display. This will enable continuous operation and the "Continuous" Indicator will light up on the control panel.
- Fan Speed Control** - Press the "FAN" button to cycle through the different fan speeds: High and Low. The fan speed can be visually distinguished by the fan speed indicators on the control panel.



PRODUCT OPERATION

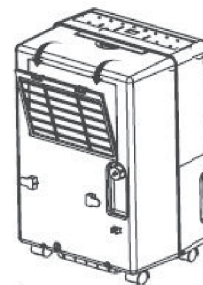
- Timer Auto On-** To program the unit to automatically turn on, press the "TIMER" button when the unit is off. Press the "TIMER" button again to increase or decrease the timer in 30 minute increments (0.5 hours) up to 10 hours. After 10 hours, each press of the button will increase the timer in 1 hour increments up to 24 hours.

Timer Auto Shut-Off- To program the unit to automatically turn off, press the "TIMER" button when the unit is on. Each press of the button will change the timer setting in 30 minute increments (0.5 hours) up to 10 hours. After 10 hours, each press of the button will increase or decrease the timer in 1 hour increments up to 24 hours. Once the desired time is over, the unit will automatically power off. Once the desired time is reached, the unit will automatically turn on.

NOTE: The fan will continue to run even when the compressor is off. This is normal, as it allows the unit to circulate air and operate more efficiently.

- Clean Filter-** When the filter needs to be cleaned, the "Clean Filter" Indicator will light up (after 250 hours of use). Remove the filter from the back of the unit by using your thumbs to press down on the filter tabs directly above the filter. Clean the filter with warm, soapy water. Dry thoroughly before replacing the filter. Once the filter is completely dry, place the filter back in the unit and press the "FILTER" button to reset the filter indicator.

CAUTION: Do not operate the dehumidifier without the filter. Do not clean the filter in the dishwasher.

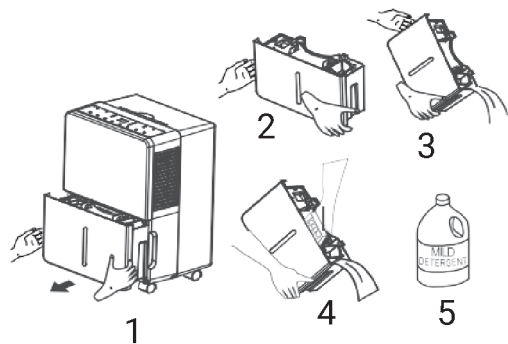


PRODUCT OPERATION

- 6. Bucket Full-** When the bucket is full of water: the unit will automatically shut off, make a beeping noise, and the "Bucket Full" Indicator will light up. The dehumidifier will not function until the water bucket is emptied and replaced back inside the unit. The bucket should be cleaned every few weeks to prevent the growth of mold, mildew, and bacteria. Use a mild detergent to clean the bucket. Once clean, completely dry the bucket and place it back inside the dehumidifier.

NOTE:

- Hold the bucket with both hands when emptying.
- When the bucket is full or removed from the machine, the compressor will turn off, but the fan will continue to run for a few minutes before shutting off.
- Do not place a full bucket on the floor, because the bottom is uneven and may spill.



- 7. Pre-Set Modes-** Preset humidity level settings allow the user to easily move the dehumidifier room-to-room and select the corresponding mode for the location in which the dehumidifier is operating for optimum performance. Press the "MODE" button to choose from Continuous, Basement, or Bedroom.

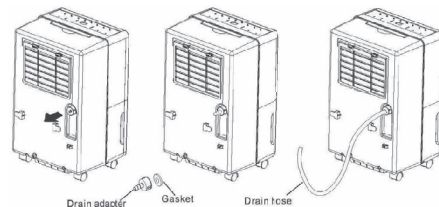
PRODUCT OPERATION

- 8. Child-Lock Mode-** To lock the control panel, press and hold the "TIMER" button for 3 seconds. Locking the control panel prevents someone from accidentally changing the settings. When locked, the "Lock" Indicator will light up. Press and hold the "TIMER" button for 3 seconds to unlock the control panel.

- 9. Internal Pump Mode (RDH-270P Only)-** The internal pump allows the unit to operate without having to empty the bucket and requires the installation of the included pump drain hose kit. To install the kit, remove the drain cap on the back of the unit. Insert the included gasket into the front of the included pump adapter. Force the included clear drain hose onto the pump adapter and turn adapter clockwise onto the garden hose type nozzle on the back of the unit. Once securely installed, lead the drain hose to a nearby drain, sink, or out a window. Turn on the dehumidifier and press the "PUMP" button to activate the internal pump. The "Pump" Indicator will light up.

NOTE: Water can be pumped up to 13 ft. Make sure there are no kinks or knots in the hose.

NOTE: In Pump Mode water may begin to rise in the bucket, but do not worry the bucket will not overflow. The pump will continuously remove water and prevent the bucket from completely filling up.



AUTOMATIC 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. When the coils are completely defrosted, the compressor or fan (depending on the model) will automatically restart and dehumidification will resume.

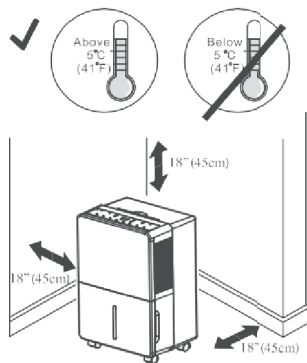
CHOOSING A LOCATION

A dehumidifier operating in a basement will have little or no effect in drying out 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 use only. Place the dehumidifier on a smooth, level floor surface that is strong enough to support the unit with a full bucket of water.
- Allow at least 12"- 18" of air flow on all sides of the unit.
- Place the dehumidifier 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 the performance.
- Use the dehumidifier in cooking, laundry, bathing, and dishwashing areas that have excessive moisture.

NOTE: Place the dehumidifier away from a clothes dryer.

- Use the dehumidifier to prevent moisture damage anywhere books or valuables are stored.
- Use the dehumidifier in a basement to help prevent moisture.
- The dehumidifier must be operated in an enclosed area to be most effective.
- Close all doors, windows, and other outside openings to the room.



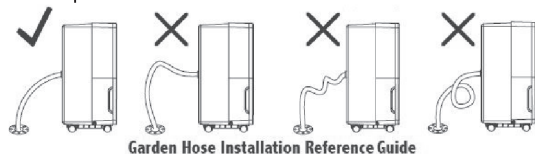
CONTINUOUS MODE SET-UP

GARDEN HOSE INSTALLATION

Water can be automatically emptied by attaching a hose to the continuous drainage port on the back of the dehumidifier. This will allow the unit to run continuously (depending on the selected humidity level) without having to empty the water bucket. To drain, simply attach a standard garden hose (*not included*).

NOTE: The thread standard for garden hoses in the US and its territories is known as GHT or "garden hose thread" which has an outer diameter of 11/16 inches (1.0625 inches or 27.0 mm) and a pitch of 11.5 TPI.

- Place dehumidifier on a level surface.
- Unscrew the cap on the back of the unit to access the garden hose nozzle.
- Thread a garden hose (*not included*) onto the accessible nozzle, lead to a floor drain, and cut to length. Make sure that there are no kinks or knots in the garden hose.
- Turn on the unit and press the "MODE" button until set to Continuous Mode.



CONTINUOUS DRAINING USING THE PUMP (270P ONLY)

The patented heavy-duty pump system allows water removal of up to 13 ft. (3.9m.) in height. If you want the water to flow directly to a drain, connect the condensation discharge tube supplied to the connection pipe located on the lower front part of the unit. Select the dehumidifying function and press the "PUMP" button.

NOTE: With the condensation discharge hose missing and the pump switched ON, the display will show the "Pump" Indicator light blinking. To eliminate this problem:

- Check the hose is correctly positioned.
- Disconnect and reconnect the plug.

MACHINE MAINTENANCE

NOTE: Make sure power is off and the power cord is not plugged into an electrical outlet prior to performing any maintenance on the unit.

Clean or Replace Filter: Refer to Operating Instructions Clean Filter Section (Page 7).

Clean the Unit Housing:

1. Clean the surface with a damp cloth and dry it with a soft towel.

Storing the Unit for an Extended Period of Time or Transporting the Unit:

1. Clean or replace the filter.
2. Unplug the unit.
3. Empty any excess water
4. The unit should be stored in a cool, dry place.

Tips on Setting Humidity Levels

Basement or Crawl Space

Basements are often overridden with moisture. There is often a substantial amount of moisture coming through the concrete. For a basement, it is recommended to keep moisture at least under 65%, although the optimal room humidity would be between 40% - 50%.

Bedroom

For some people, having too much humidity in their bedroom is very uncomfortable. It also affects a lot of people with asthma and allergies, some to the point where it decreases their quality of sleep. The healthy humidity level for a bedroom is between 40% - 60%, although the recommended dehumidifier settings should be between 40% - 50%.

Garage

More and more people are finishing their garages; many are even using them as workshops for various projects. The ideal dehumidifier humidity setting for a garage is between 40% - 60%.

TROUBLESHOOTING

Symptom	Solutions
Dehumidifier does not start.	<ul style="list-style-type: none"> • Make sure the dehumidifier's plug is pushed completely into the outlet. • The dehumidifier automatically turns off when either condition occurs: <ul style="list-style-type: none"> ○ Change to a lower setting ○ Empty the water bucket and replace properly. • The bucket must be in place and securely seated for operation. • There is a protective time delay (up to 3 minutes) to prevent the overload of the compressor. For this reason, the unit may not start normal dehumidification for 3 minutes after it is powered back on.
Dehumidifier does not dry the air as it should.	<ul style="list-style-type: none"> • When first installed, allow at least 24 hours to maintain the desired dryness. • Make sure there are no curtains, blinds, or furniture blocking the front or back of the dehumidifier. See CHOOSING A LOCATION (Page 10). • See CLEAN FILTER (Page 7). • For drier air, lower the percent humidity desired in the room, or set the dehumidifier to continuous mode for maximum dehumidification. • Check that all doors, windows, and other openings are securely closed. • Install the dehumidifier away from a clothes dryer. • Moisture removal is best at high room temperatures. Lower room temperatures will reduce the moisture removal rate. This model is designed to operate at temperatures above 41°F (5°C).
Dehumidifier runs too much	<ul style="list-style-type: none"> • The capacity of your dehumidifier may not be adequate for the room size. • Close all doors and windows to the outside.
Frost appears on the coils	<ul style="list-style-type: none"> • Frost will usually disappear within 60 minutes.
Controls cannot be set	<ul style="list-style-type: none"> • Wait approximately 3 minutes and set the fan speed at the desired level.
Water on the floor	<ul style="list-style-type: none"> • Check the hose connection. See CONTINUOUS MODE - GARDEN HOSE INSTALLATION (Page 11). • Disconnect the hose if using the bucket or place the hose near a drain.

NOTE: For all replacements and repairs that need to be made, contact Royal Sovereign Customer Service at +1) 800-397-1025

ERROR CODES

Error Code	Description
EH	Humidity sensor fault
E1 or E2	Temperature sensor fault
E3	Lack of gas to protect
E5	Pump sensor fault
P1	Tank dislocation or removed

SPECIFICATIONS

MODEL	RDH-230	RDH-270	RDH-270P
Capacity (Pints / Day)	30 Pints / 24 Hrs.	70 Pints / 24 Hrs.	70 Pints / 24 Hrs.
Power Input	115V / 60Hz	115V / 60Hz	115V / 60Hz
Amps	3.0 A	8.1 A	8.1 A
High Side Pressure	530 psig (3.7 mpa)	530 psig (3.7 mpa)	530 psig (3.7 mpa)
Low Side Pressure	320 psig (2.2 mpa)	320 psig (2.2 mpa)	320 psig (2.2 mpa)
Refrigeration	R410A / 5.29oz	R410A / 9.35oz	R410A / 9.35oz
Unit Dimensions (W x D x H)	13.40"W x 10.15"D x 19.50"H 340mm x 258mm x 495mm	14.96"W x 11.34"D x 24.80"H 380mm x 288mm x 630mm	14.96"W x 11.34"D x 24.80"H 380mm x 288mm x 630mm
Unit Weight	30.8 lbs. / 13.97 kgs.	46.9 lbs. / 21.32 kgs.	49.4 lbs. / 22.4 kgs.

FCC CAUTION

CAN ICES-3 (B)/NMB-3(B)

ID: 2ANDL-TYWE1S IC: 23243-TYWE1S

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The distance between user and device should be no less than 20cm.

IC CAUTION

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

ONE YEAR LIMITED WARRANTY

Royal Sovereign International, Inc. warrants this product to be free from defects in material and workmanship for a period of one (1) year. This warranty is extended to the original purchaser only.

This warranty only covers products that are properly installed, properly maintained, and properly operated in accordance with the instructions provided. This limited warranty does not cover any failures or operating difficulties due to normal wear and tear, accident, abuse, misuse, alteration, misapplication, improper installation, or improper maintenance and service by you or any third party.

Returned product will not be accepted without a Return Authorization number. To request a Return Authorization number, please visit us at www.royalsovereign.com. All transportation costs for the return of damaged product or parts will be the responsibility of the purchaser. Return defective product, in original packaging, to the address below.

Royal Sovereign International, Inc. requires reasonable proof of your date of purchase from an authorized retailer or distributor. Therefore, you should keep your receipt, invoice, or canceled check from the original purchase. The limited warranty shall be limited to the repair or replacement of parts which prove defective under normal use and service within the warranty period.

Royal Sovereign International, Inc. (and its affiliated companies) SHALL HAVE NO LIABILITY WHATSOEVER TO PURCHASER OR ANY THIRD PARTY FOR ANY SPECIAL, INDIRECT, PUNITIVE, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above exclusion and limitations may not apply to you.

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