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PUREAIRO

DSC 90ES

Installation & Operations Manual

Key features:

- Quiet operation.
- Energy efficient - Super COP Energy Star Listed 3.0L/Kwh.
- Compatible with Remote Control. (Notice: sold separately).
- Ducting options.
- Hot Gas Valve Defrosting System.
- Corrosion protection.
- Overheating protection.
- Engineered for low-temperature operation.
- Coated Coils with Stainless Side Plate.
- Heavy-Duty Condensate Pump.



CE

PRODUCT INTRODUCE

The are effective solutions to environmental control problems. The DSC 90ES has CE and CETL Approved. With patent for invention protected, the item is in the top range list of energy efficient products. As the unique design compared with others, we have the humidity sensor in bypass air design which make the short-cycling go away and have quick access to pump and main board. Customers can do it by themselves and service become easy. Preassembly makes the installation process simple, thereby it reduces the overall installation and project cost.

This Unit is equipped with a "Hot Gas" defrosting system, which ensures a quick and efficient clearing of ice from the coil under a minimum operating temperature of 2°C. DSC 90ES removes maximum 90 L of water per day (AHAM) while draws only 3.95amps. DSC 90ES Dehumidifiers is one of the smallest, lightest and most powerful dehumidifiers on the market. DSC 90ES is leading the industry by introducing epoxy coated coils. This new feature will extend the life of the coils, provide protection in corrosive environments and maintain the coil's heat transfer ability over the life of the coil.

The additional features of the Condensate Pump make DSC 90ES Dehumidifier the ideal choice for unmanned installation.

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WARRANTY REGISTRATION

Congratulations on purchasing a new Sentinel Dehumidifier. Your new dehumidifier comes with an extensive warranty plan. To register, simply fill out and return the warranty form provided in the dehumidifier box. Be sure to note your dehumidifier serial number as you will need it for registration.

SAFETY NOTES

- The Sentinel Series Dehumidifier must always be connected using a grounded electrical connection (as required for all electrical appliances). If non-grounded wiring is used, all liability reverts to owner and the warranty is voided.
- Sentinel Dehumidifiers should only be maintained and repaired by a qualified technician.
- Sentinel Dehumidifiers are only intended for operation when oriented with the unit sitting on its feet and level. Operating the unit in any other orientation could allow water to flood electrical components.
- Always unplug the dehumidifier before moving it to another location.
- If there is a chance that water flooded the dehumidifier, it should be opened and allowed to dry thoroughly before reconnecting to electrical power and restarting.
- To ensure proper operation, neither the inlet nor discharge should be positioned against a wall. The inlet requires a minimum of 12" clearance and the discharge requires a minimum of 36" clearance.
- The best option for proper diffusion of air throughout the room is to have the discharge blowing away from a wall and the inlet pulling air in parallel to a wall.
- Do not insert your fingers or any object into the inlet or discharge.
- All work on the dehumidifier should be done with the unit "off" and unplugged.
- Do not use water to clean the exterior of the machine. To clean unit, unplug from power, then use a damp cloth to wipe exterior.
- Do not stand on the machine or use it as a device to hang clothes.

PRINCIPLE OF OPERATION

The Sentinel Series Dehumidifiers utilizes its integral humidistat to monitor the conditioned space. When the relative humidity goes above the selected set point, the dehumidifier will energize. Air is drawn across an evaporator coil, which is cooler than the dew point of air. This means moisture will condense out of the air. The air is then reheated through the condenser coil and distributed back into the room.

IDENTIFICATION

For future reference, write down the model, serial number, and date of purchase for your dehumidifier. This is extremely helpful if you need to seek assistance in the future. The data label on the side of your unit has the key characteristics of your specific unit.

MODEL NUMBER: PureAiro DSC 90ES

SERIAL NUMBER: _____ **DATE OF PURCHASE:** _____

For additional questions concerning your dehumidifier, the following options are available:

- Contact your installing contractor
- E-mail: sales@pureairo.com

ELECTRICAL SUPPLY

POWER SUPPLY: 220 V, 50 Hz AC, Single Phase

OUTLET REQUIREMENT: 3-Prong

CAPACITY: 90 L/DAY

TO REDUCE RISK OF INJURY:

1. Disconnect electrical power before servicing
2. Only plug unit into grounded electrical circuit
3. Do not use an extension cord.
4. Do not use a plug adapter

INSTALLATION

The area to be controlled should be sealed with a vapor barrier. If unit is installed in a crawlspace, all vents should be sealed.

WARNING Do not install your dehumidifier in a corrosive environment. Some liquid vapor barriers dry via "solvent evaporation". Always make sure that barrier is completely dry and area is thoroughly ventilated before installing dehumidifier.

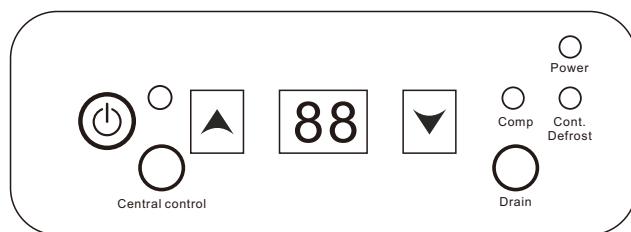
STEP #1: PLACE DEHUMIDIFIER ON A LEVEL SURFACE.

Do not place directly on vapor barrier. For example, use blocks, or pavers to create a level surface.

If the unit is handled in such a manner that the compressor did not remain in the upright position, you will need to place it on a level surface, then wait a minimum of 2 hours before turning "on".

STEP #2: SET UP DRAIN LINE

The included drain line attaches to unit via a compression type fitting on the discharge end of the unit. To attach drain line, remove the compression nut and slide it over the end of the hose to be attached to unit. Slide compression nut side of hose over the insert on the compression fitting completely. Tighten compression nut.

STEP #3: PLUG UNIT INTO 15 AMP GROUNDED CIRCUIT.**Key Functions****1 POWER KEY**

Use this button to turn the dehumidifier on and off. Press once to turn machine on. You will hear 2 beeps and the ^{Power} light will illuminate green. Press the power button a second time and you will hear one beep as the machine shuts down. Note that there is a one minute fan delay on shut - down.

2 ARROW BUTTONS

Use the up and down arrow button to set the desired humidity setpoint on the display screen. The setpoint can be any number between 36-90%. Creating a setpoint means that when the indoor humidity is lower than the set point, the machine will stop automatically. Conversely, when the indoor humidity is higher than the set level, the unit will operate.

NOTE: The humidity levels displayed are approximate only (+/- 5%)

3 CONTINUOUS MODE

To switch into continuous mode, simply use the down arrow to set the humidity below 36%. The Cont light should illuminate green on the display board to indicate that you have successfully switched into continuous mode. The display screen will show "CO".

When set to continuous, the dehumidifier will run constantly, regardless of the humidity level. To stop the machine, turn the unit off or switch back to normal humidistat operation. If you would like to switch back to normal humidistat operation, simply move the setpoint above 36%.

4 CENTRAL CONTROL

This mode is not applicable on the PureAiro DSC 90ES.

5 Manual Drain Button

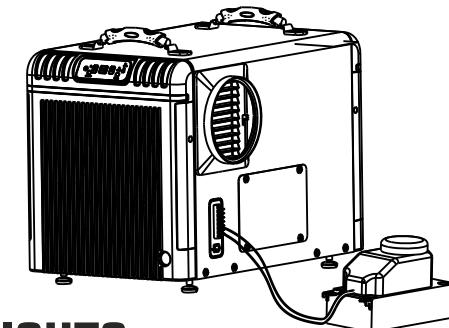
For extended storage or movement of the machine, press the "Drain" button to remove water from the integral pump's reservoir.

5 Pump Trouble Warning

When the pump reservoir water level is too high, the high water sensor will activate to prevent over-flow. When this occurs, the dehumidifier will stop the compressor automatically and the display will show "E4". After a 1 minute delay, the fan motor will turn off and the machine will not operate until the problem is resolved. To reset the unit after an "E4" error, check the pump to verify it is functioning, then unplug the unit for two minutes.

5 Auxillary Terminals A5/A6

The A5/A6 on the terminal strip can be used as a safety switch for an external condensate pump. It should be set to N/O (normally open) at the dehumidifier. If an E4 error occurs, switch the wiring to N/C (normally closed).

**INDICATOR LIGHTS****1 HUMIDITY DISPLAY SCREEN**

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The display screen has two functions:

1. When the unit is powered on, it shows the humidity of the space.
2. While setting the desired humidity level, the screen will show the set humidity. After a brief delay, the display will revert to current humidity level.

2 POWER INDICATOR LIGHT

Power

This light indicates that the unit is properly powered on and ready to operate. Always make sure the unit is "off" prior to performing any service.

3 CONTINUOUS MODE/AUTODEFROST LIGHT

Cont. Defrost

When this light illuminates green, it indicates that the dehumidifier is set to continuous operation mode.

When the light glows red, it means the unit is in auto defrost mode and clearing the evaporator coil of any ice buildup.

4 COMPRESSOR LIGHT

Comp

When the compressor light glows red, it indicates the compressor has been initiated but is currently warming up.

Once the compressor light switches to green, it indicates the compressor is in working status.

REMOTE CONTROL INSTRUCTIONS

Sentinel Dehumidifiers can be controlled using an optional remote accessory. The Sentinel Remote Control connects to your Sentinel Series Dehumidifier via a 25' CAT 5 cable. The remote control contains an integrated sensor which gives you multiple options for remotely controlling your unit, in addition to monitoring the conditions surrounding the dehumidifier.

One application for the remote control is to install the dehumidifier in one room with the conditioned air ducted into a second room that contains the remote. For example, the dehumidifier could be installed in a laundry room and ducted into a living room. The remote would then be mounted in the living room so the remote sensor can control the humidity and provide easy controls for the user.

Another useful application for the remote control is if the dehumidifier is in an area that's difficult to access on a regular basis. For instance, if your dehumidifier is installed in your crawl space, the remote could be mounted in your living space or garage. This provides you with an easy way to monitor the dehumidifier.

1 ON/OFF (POWER)BUTTON

Press the on/off button and the machine will start running (two beeps). Press the button again to turn the machine off.

2 UP BUTTON / DOWN BUTTON

Use the Up and Down arrow buttons to adjust the humidity level.

3 MODE

Use the Mode button to switch between dehumidification and a ducted application.

The  symbol on the display board indicates the sensor on the remote control is being utilized.

The  symbol on the display board indicates the sensor on the dehumidifier is being utilized.

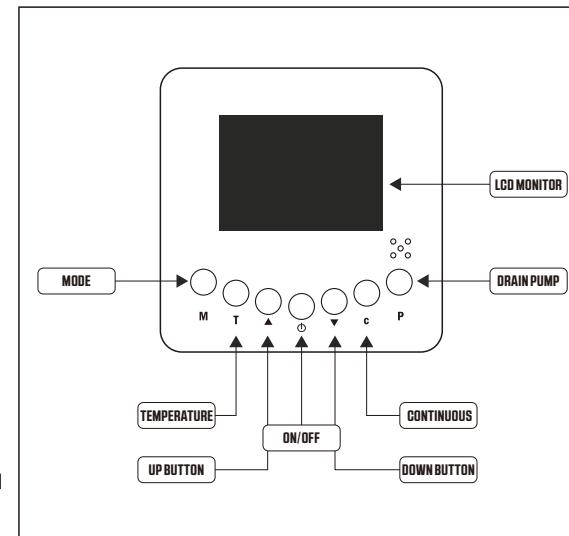
4 TEMPERATURE

Press the temperature button to display the current temperature on the screen. Press the button again to turn off the display.

5 CONTINUOUS

Press this button to switch the unit into continuous mode.

Cont. will appear on the display to indicate continuous mode.



6 DRAIN PUMP

Use this button if the unit will not be in use for an extended period of time. Pressing the drain pump button will remove water from the pump reservoir, so the unit can be safely moved or stored.

NOTE: Symbols indicated above will only appear when the dehumidifier is powered on.

OPERATING INSTRUCTIONS

1 START THE MACHINE

Press the power key to turn the machine on.

2 ADJUST THE SETTINGS

Use the up and down arrow keys to adjust your desired setpoint (typically 50-55%).

3 STOP THE MACHINE

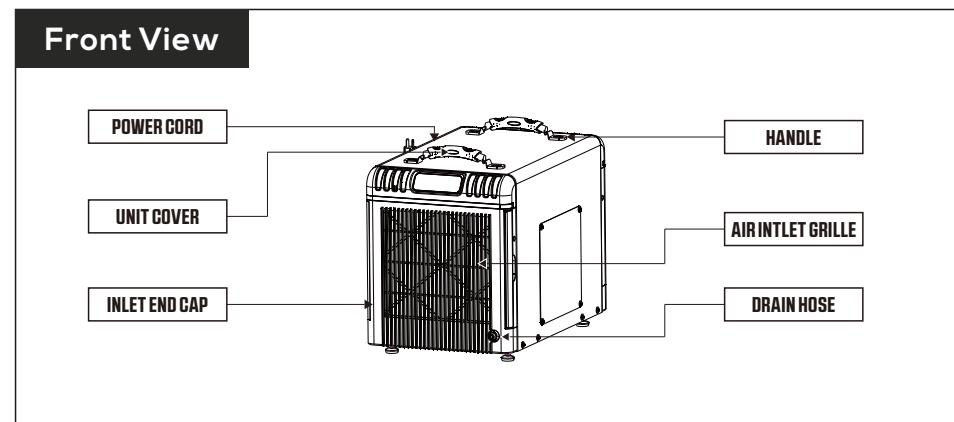
Press the power key again and the machine will stop. Note the fan will continue to operate for 1 minute after the unit has turned off. NOTE: Do not disconnect the power cord to force unit to stop. Always use the power button.

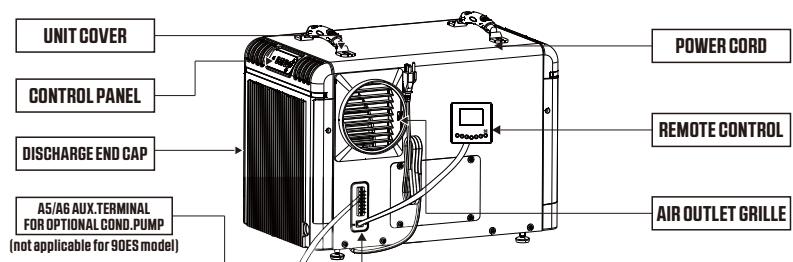
4 WATER DRAINAGE

The PureAiro DSC 90ES has both automatic and manual draining. During normal operation, the PureAiro DSC 90ES will automatically drain as required. If you would like to store or move the machine, you may press the drain button to drain the water from the pump reservoir. The drain will operate for 15 seconds each time the button is pushed. It may be necessary to push the drain button more than once to completely empty the reservoir.

PUREAIRO DSC 90ES DIAGRAM

Front View



Back View

Maintenance

WARNING Always unplug the unit before doing any maintenance.

CONDENSATE PUMP

Your PureAiro DSC 90ES is equipped with an integral condensate pump designed to pump water from your dehumidifier out to the desired drain. This pump requires routine maintenance that is not covered by your 1 year parts warranty. Only a defective pump will be repaired or replaced during the warranty period.

PREVENTATIVE MAINTENANCE

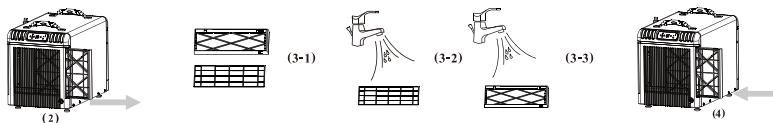
As with all pumps, preventative maintenance is necessary to prevent issues from dirt and slime that may accumulate in the drain system. This includes the drain pan, hose to the condensate pump, pump reservoir, pump head float assembly, and discharge tubing.

AT LEAST ONCE PER YEAR, CLEAN YOUR PUMP SYSTEM **CLEANING THE MACHINE BODY**

1. Use a soft damp cloth to clean exterior of unit. Do not use any soap or solvents.

 CLEANING THE FILTER

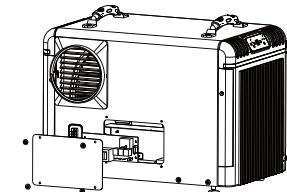
1. Unplug the unit.
2. Slide out the filter.
3. Clean the filter mesh by vacuuming or washing with warm water (no soap or solvents).
4. Be sure filter is completely dry before restarting.

 **COIL MAINTENANCE**

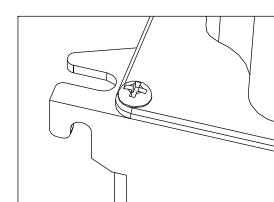
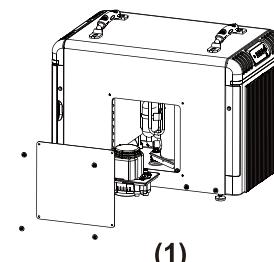
1. Once per year, clean the coils with an approved coil cleaner. The coil cleaner should be a self-rinsing, foaming cleaner such as WEBR® Coil Cleaner.

 ELECTRICAL ACCESS

1. Unscrew the 4 screws on the side panel to access the control board.

 **PUMP MAINTENANCE**

1. Unscrew the 4 screws on the pump access panel.
2. Remove the screw on the pump.
3. Undo the 3 pump quick connects.
4. Insert a flathead screwdriver into the notch on the side of the pump to help you gently lift the pump off its reservoir (the reservoir remains attached to the unit).



(2)

 CLEANING/DISINFECTING THE PUMP**Basic Cleaning** (Complete about once a year, depending on environment)

1. Open the end cap on the filter side of the unit. Press the drain button to drain the reservoir.
2. Disconnect power to the dehumidifier.
3. Mix a 16 oz solution of either (1 Oz bleach + 15 oz water) OR (4 Oz white vinegar + 12 oz water).
4. Pour solution into the drain tray at the base of the coils. If any cleaning solutions gets on coils, flush with water.
5. Allow solution to soak for 15 minutes.
6. Reconnect the dehumidifier to power.
7. Fill the reservoir with water and flush/cycle the pump at least two times.
8. If drain line is still filled with debris, repeat process. If still not cleaned, move on to Advanced Cleaning.
9. Reassemble unit, unless moving on to advanced cleaning.

Advanced Cleaning(Complete as needed)

1. Press the drain button to drain the water from the reservoir (A wet-dry vacuum or towels can be used to remove any remaining water).
2. Unplug the dehumidifier and remove the cover so you have access to the pump.
3. Remove the pump head from the reservoir by unscrewing the screw. Wipe reservoir clean with a paper towel.
4. Mix a 16 oz solution of either (1 oz bleach + 15 oz water) OR (4 oz white vinegar+ 12 oz water).
5. Fill the pump reservoir with cleaning solution.
6. Reassemble pump, then use manual drain button to flush mixture through discharge tubing.
7. Pour same cleaning solution slowly into drain tray under evaporator coils and let it clean hose from pan to pump. This process can be stopped when the pump energizes one time.

NOTE: If you get any of the cleaning solution on the coils, flush with water.

8. Pour sufficient clean water through drain pan to allow the pump to turn on twice.
9. Reassemble the unit and return it to operational status.

DEHUMIDIFIER STORAGE

If the unit will be stored for an extended period of time, complete the following steps:

1. Turn off the unit and allow to dry
2. Complete steps #1-3 in Advanced Cleaning (above) to clean out pump reservoir.
3. Wrap and secure the power cord
4. Cover filter mesh
5. Store in clean, dry space

DUCTED APPLICATIONS

Ducting the dehumidifier allows the unit to be in one room while conditioning an adjacent room. The inlet/return grille is designed for 12" flex ducting (optional accessory PN: W-103) while the supply grille is designed for 6" flex ducting.

Be sure to secure the ducting with tie wrap. Also, keep in mind, that the supply ducting can be screwed into an adapter if necessary.

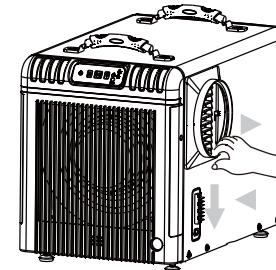
DUCTING INSATLLATION

- Maximum total length of duct run= 10'
- Maximum length if only ducting inlet or outlet= 6'
- To connect 12"return ducting, it may be helpful to:
 1. Remove inlet grille from end cap
 2. Connect duct to inlet grille
 3. Reconnect inlet grille to end cap

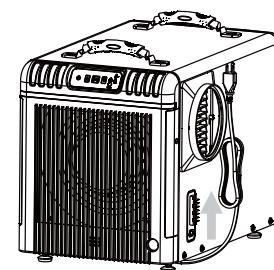
Note: The supply duct adapter is standard on all units. The return duct collar is an optional accessory.

REMOVING DUCT ADAPTER

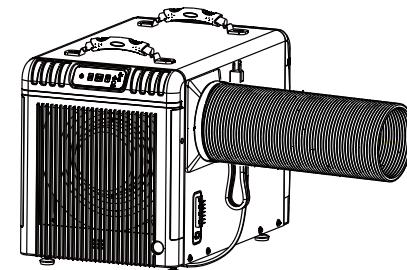
If it is necessary to remove the adapter, place hand at bottom of the adapter and use your hands to lift out and down. This will remove the cover hooks from the machine.

**ISLING DUCT ADAPTER**

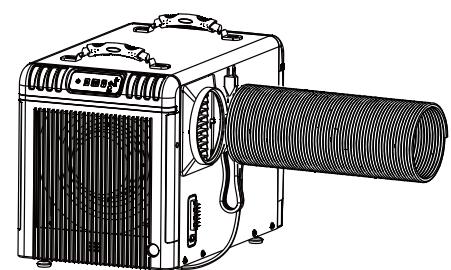
To install adapter, line it up with holes on the side of unit and push up from base of adapter.

**FLEX DUCT ISTALLATION**

Rotate the flex duct counter-clockwise.

**FLEX DUCT REMOVAL**

Rotate flex duct clockwise or remove wire tie.



TROUBLESHOOTING

SYMPTOM	CAUSE	SOLUTION
Machine Won't Run	Power Supply	Verify that there is power to the outlet and that the plug is properly installed in outlet
	Room Temperature Over 39°C (Display HI) or Below 1°C (Display LO)	The unit is outside the operating temperature range. Modify the room conditions so the temperature is between 1-39°C and operation will commence.
Low Air Flow	Air Filter is Clogged	Clean the filter mesh according to instructions listed in manual.
	Air Inlet or Outlet is Blocked.	Clear the blockage from inlet or outlet.
Loud Noise	Machine is Not Level	Move the dehumidifier to flat, firm ground.
	Filter Mesh is Blocked	Clean the filter mesh according to instructions listed in manual.
Trouble Code E:1	E1=Humidity Sensor issues	Check to ensure that wire is connected at both ends. If no issues are visible, the sensor may be faulty.
Trouble Code E:4	Pump has failed	Verify that the pump is working. If so, unplug the unit for two minutes, then restart.
Trouble Code: HI or LO	Room Temperature Over 39°C or Below 1°C (Display LO)	The unit is outside the operating temperature range. Modify the room conditions so the temperature is between 1-39°C and operation will commence. If room conditions are within temperature range, replace defective sensor.

Pump Alarm- Trouble Code E4

If a pump alarm is shown on the dsly, complete the flioin steps:

1. Reset the unit by disconnecting the power cord and then reconnecting it.
NOTE: UNIT WILL NOT FUNCTION UNTIL ERROR CODE HAS BEEN CL .EARED.
2. Manually check to see if pump is operational by pressing the drain button. Check if the pump ener-gizes and de-energizes properly. Additionally, check to see if any water purged from the system..
3. If you haven't cleaned the system recently, check the discharge line for an obstruction, then clean the balance of the pump system (see "Maintenance" on page 8 for details).
4. Replace the hoses and/or pump, if maintenance alone isn't sufficient.

PUREAIRO DSC 55S SPARE PARTS

ALL SENTINEL MODELS-PARTS	Part#	Description
	S-100	Remote Control Package(cable+remote)
	S-101	Remote Control
	S-102	Remote Control Cable,25'
	S-103	Return Duct Collar Accessory
	S-106	Duct Kit Assembly(W-103 +W-100)
	S-107	Flexible Supply Duct,72"
	S-108	Main Control Board
	S-109	Display Board
	S-110	RH/Temperature Sensor
PUREAIRO DSC 90ES-PARTS	Part#	Description
	S-900	Fan Motor
	S-901	Complete Fan Assembly
	S-902	Fan Capacitor
	S-903	Compressor
	S-904	Compressor Capacitor
	S-905	Coil Assembly
	S-906	Hot Gas Bypass Coil
	S-908	RH/Temperature Sensor Cable
	S-907	Condensate Pump Assembly
	S-909	Display Cable
	S-910	CAT 5 Prot Internal Cable
PUREAIRO DSC 90ES-FILTERS	S-911	Foot,adjustable
	Part#	Description
	S-915	Prefilter
	S-916	Filter Assembly(Cassette+ Prefilter)
	S-917	MERV-8 Filter
	S-918	HEPA Filter
	S-919	Carbon Filter

LIMITED WARRANTY

All warranty benefits apply to the original owner only. Warranty cannot be transferred or assigned.

1 YEAR (FROM DATE OF PURCHASE): PureAiro warrants the dehumidifier will operate free of defects in workmanship and materials. At its discretion, PureAiro will repair or replace any malfunctioning components, free of charge (excluding transportation costs)

3 YEARS (FROM DATE OF PURCHASE): PureAiro warrants the refrigeration circuit (compressor, condenser and evaporator) will operate free of defects in material or workmanship. At its discretion, PureAiro will replace defective parts, including factory labor or refrigerant. This does not include transportation.

5 YEARS (FROM DATE OF PURCHASE): PureAiro warrants the compressor, condenser, and evaporator will operate free of any defects in material or workmanship. At its discretion, PureAiro will repair or replace the defective parts. This does not include labor, transportation, or refrigerant.

CUSTOMER RESPONSIBILITIES: In order to take advantage of the warranty service, the customer must do the following:

- 1 Customer must provide normal care and maintenance (including, but not limited to cleaning filters, coils and pumps)
- 2 Removal and re-installation of unit is the sole responsibility of owner.
- 3 If customer cannot return unit to certified repair center, all costs associated with freight shipment are borne by the customer. In addition, all duties related to freight shipments, including but not limited to palletizing, wrapping, labeling, and pickup are associated with customer.
- 4 If shipped, customer is responsible for all risk of loss or damage.

PUREAIRO WARRANTY STEPS:

- 1 Once goods are received customers must log in www.pureairo.com to fill out the warranty Registration form and submit to PureAiro company. We will receive your purchasing and installation information and save it. If no warranty registration is sent to us, warranty period will begin the day the shipment left the warehouse. Please be sure to record serial # and date of installation. You will need this information to receive the RA number.
- 2 If warranty service is necessary, customers must contact PureAiro Tech Support by sales@pureairo.com or local technical service phone to receive a Return Authorization (RA number). Once an RA has been issued, customers should bring the unit to a certified repair center. PureAiro will arrange the shipping to bring the unit back to the Alorair warehouse (at the expense of the customers) if customers are not available.
- 3 After the unit has been received by PureAiro (whether at a repair center or the warehouse), PureAiro will have an initial inspection. If it is determined to be invalid warranty claim (see exclusions below), customers have to pay for all associated repair costs and shipping costs for units repair.
- 4 Customers can pick up the unit after repair at their own expense for shipping. Units will have a rigorous testing before sending it back to customers.
- 5 If the unit can no longer be fixed, and it is in the warranty period and determined to be valid claim, we will ship the customer a new unit within the same year warranty from the date of replacement.

- 6 After parts are repaired or replaced by PureAiro, the original warranty period continues to apply until it meets its deadline. No extensions to the original warranty period.

LIMITED WARRANTY EXCLUSIONS

EXCLUSIONS:

DAMAGE DUE TO THE FOLLOWING IS NOT COVERED UNDER WARRANTY

1 ACTS OF NATURE- INCLUDING BUT NOT LIMITED TO:

FLOODING
FIRE
WATER DAMAGE
HURRICANE / STORM DAMAGE

2 IMPROPER USAGE- INCLUDING BUT NOT LIMITED TO:

POOL / SPA / TUB APPLICATIONS
MISUSE, ABUSE, OR TAMPERING WHETHER INTENTIONAL OR ACCIDENTAL
IMPROPER INSTALLATION OR DESIGN
IMPROPER VOLTAGE
LACK OF NORMAL CARE
FAILURE TO FOLLOW INSTRUCTIONS

3 CORROSION

4 FREEZING

5 ANY ADDITIONAL COSTS DUE TO CHANGES IN LAWS OR BUILDING CODES

6 FREIGHT CHARGES

7 ANY COSTS DUE TO LOST PROFIT OR DELAY

8 DAMAGE TO PROPERTY

9 CAUSE BEYOND CONTROL

10 CONSUMABLE PARTS, INCLUDING BUT NOT LIMITED TO:

FILTERS
BATTERIES
POWER CORDS
VALVES
SWITCHES
RUBBER PARTS

11 DIRECT, INDIRECT, COLLATERAL OR INCONSEQUENTIAL DAMAGES OF ANY KIND

THE WARRANTIES AND LIABILITIES SET FORTH ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE. PureAiro's total liability, regardless of nature of claim shall not exceed original purchase price of the product if a product or component is replaced while under warranty, the applicable warranty period shall not be extended beyond the original warranty time period.

The foregoing shall constitute the total liability of seller in the case of defective performance of all or any of the equipment or services provided to buyer. buyer agrees to accept and hereby accepts the foregoing as the sole and exclusive remedy for any breach or alleged breach of warranty by seller.

Any dishonesty or fraud in connection with PureAiro warranty thoroughly voids all warranty policies. PureAiro expressly reserves the right to pursue legal action in the event of dishonesty, fraud, or attempted fraud.