

**EBAC MODEL CD100
DEHUMIDIFIER
OWNER'S MANUAL**

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INTRODUCTION

Dehumidifiers remove moisture from the air that is circulating through the unit.

The resulting reduction of relative humidity helps prevent rust, rot, mould, mildew and condensation within the room, or other enclosed spaces where the dehumidifier is used.

A dehumidifier consists of a motor-compressor unit, a refrigerant condenser, an air circulating fan, a refrigerated surface, a means of collecting and disposing the condensed moisture and a cabinet to house these components.

The fan draws air through the refrigerated surface and cools it below its dew point, removing moisture which is collected and led away. The cool air then passes the hot condenser, where it is reheated. With the addition of other radiated heat the air is discharged into the room at a higher temperature but lower relative humidity than when the air entered the unit. Continuous circulation of the room air through the dehumidifier unit gradually reduces the relative humidity in the room.

The CD100 dehumidifier is a rugged reliable drying unit designed to operate effectively over a broad range of temperature and humidity conditions. A powerful and reliable active hot gas defrost system, controlled by an electronic timer, guarantees positive de-icing and thereby optimising operation at low temperatures.

The unit incorporates a welded steel chassis and is finished in vinyl coated steel covers for resilience to damage caused by rough handling.

SPECIFICATIONS

MODEL:	CD100
HEIGHT:	400mm
WIDTH:	900mm
DEPTH:	500mm
WEIGHT:	50 Kg
AIRFLOW:	510 M ³ /hr
POWER SUPPLY:	UK-220V/240V, 1 ph, 50Hz/60Hz USA-110V/120V, 1 ph, 50Hz/60Hz
POWER	1.2kW (max)
FINISH:	Vinyl coated steel
REFRIGERANT TYPE/QTY:	R407c (540g)
MOBILITY:	Choice of aids – wheels or skid handles

INSTALATION

POSITIONING:

Position the dehumidifier unit in the center of the room to be conditioned if at all possible. However if a damp patch is particularly apparent the outlet grille should be pointed towards it.

NOTE: Both inlet grille and outlet grille of the dehumidifier unit must have clear space around them and not be obstructed in anyway.

WIRING:

Connect the power mains cable to a 13 Amp power supply. As follows:-

Brown	Live
Blue	Neutral
Green/Yellow	Earth (ground)

DRAINAGE:

Connect a 15mm inside diameter hose to the water outlet pipe. Secure the hose using a worm drive clip. The hose should at no point be raised higher than the outlet pipe. Failure to observe this requirement will result in flooding of the dehumidifier unit.

The CD100 may also be fitted with a water pump (optional), which is capable of discharging the condensate water 30ft away from the unit. The water can, therefore, be discharged into a drain some distance away.

OPERATION

The operation of the dehumidifier is to remove moisture from the air by having it condense on the cold tubes of the evaporator coil. The air then passes over the hot condenser coil and returns to the conditioned space slightly warmer and dryer than when it entered the dehumidifier unit. To concentrate drying all doors and windows should be kept closed.

Test for Correct Operation

WARNING: DO NOT RUN THE MACHINE WITHOUT THE COVERS IN PLACE FOR ANY LONGER THAN NECESSARY. DO NOT REMOVE/REPLACE THE COVERS WITH THE POWER ON.

Remove the cover by releasing the retaining bolts and follow the test procedure laid out below:-

1. Set the adjustable humidistat to maximum.
2. Switch the machine to the on position, this will result in the compressor starting to run and the fan blade starting to rotate.
3. When the compressor has been running for 20 minutes the coils located above the drain tray will be evenly coated in frost. (If the ambient temperature is above 25°C the coils will be covered in water.
4. After the machine has been running for approximately 50 minutes the unit will automatically enter into defrost. The defrost cycle lasts for approximately 3 minutes, this will result in the frost on the coils melting and dripping into the drainage tray.
5. After the defrost has finished the machine will return to normal operation.
6. Ensure the condensate drains away from the machine.

Setting the Adjustable Humidistat

The position of the humidistat depends on the application the CD100 is being used for and the conditions within the area to be dried. The worse the conditions within the area then the higher the humidistat should be set (i.e. the machine will run for a longer period of time to ensure all the moisture is reduced sufficiently). As a rough guide the humidistat wants to be set at approximately 50% for factories and warehouses, and for basements or de-flooding then the humidistat should be set to approximately 100%.

Optional Discharge Pump

This is an optional extra as requested at purchase. The pump works automatically and periodically pumps away collected moisture to a drain or container. The pump is capable of discharging water to a vertical height of 30ft.

Indicator Panel

The CD100 is fitted with an indicator lamp to show when power is available and the unit is switched on, if this does not appear to be functioning correctly then refer to the repairs section.

Warnings.

- Due to the high pressures within the refrigeration circuit, under no circumstances must direct heat be applied to the evaporator coil in an attempt to remove the build up of ice.
- No attempt should be made to cut open any part of the refrigeration circuit due to high pressures and gas involved.
- If the unit is switched off at the mains power supply for any reason, the unit must be allowed to stand at rest for at least three minutes before restarting. Failure to do so may cause the unit to blow the fuses owing to the compressor due to there being a refrigerant imbalance.

ROUTINE MAINTENANCE

WARNING: ENSURE THAT THE POWER CORD TO THE MACHINE HAS BEEN DISCONNECTED BEFORE CARRYING OUT ROUTINE MAINTENANCE ON ITEMS 1, 2, 4, 5, AND 6.

To ensure continued full efficiency of the dehumidifier, maintenance procedures should be performed as follows:

Removal of the cover is achieved by means of four screws at the sides of the unit at base level. With the cover removed all maintenance can be carried out.

1. Clean the surface of the evaporator and condenser coils by blowing the dirt out from behind the fins with compressed air. Hold the nozzle of the air hose away from the coil (approx 6") to avoid damaging the fins. Alternatively, vacuum clean the coils.

WARNING: DO NOT STEAM CLEAN REFRIGERATION COILS.

2. Check that the fan is firmly secured to the motor shaft and that the fan rotates freely. **THE FAN IS SEALED FOR LIFE AND DOES NOT NEED LUBRICATING.**
3. To check the refrigerant charge, run the unit for 20 minutes (with humidistat set to maximum) and briefly remove the cover. The evaporator coil should be evenly frost coated across its surface. At temperatures above 25°C, the coil may be covered with droplets of water rather than frost. Partial frosting accompanied by frosting of the thin capillary tubes, indicates loss of refrigerant gas or low charge.
4. Check all wiring connections.

IF ANY OF THE PRECEDING PROBLEMS OCCUR, CONTACT THE EBAC SERVICE CENTER PRIOR TO CONTINUED OPERATION OF THE UNIT TO PREVENT PERMANENT DAMAGE.

REPAIRS

1. Should an electrical component fail, consult the Factory Service Center to obtain the correct replacement part.
2. If refrigerant gas is lost from the machine, it will be necessary to use a refrigeration technician to correct the fault. Contact the Factory Service Center prior to initiating this action.

Any competent refrigeration technician will be able to service the equipment. The following procedure must be used:

- a. The source of the leak must be determined and corrected.
- b. The machine should be thoroughly evacuated before recharging.
- c. The unit must be recharged with refrigerant measured accurately by weight.
- d. For evacuation and recharging of the machine, use the crimped and brazed charging stub attached to the side of the refrigerant compressor.

The charging stub should be crimped and rebrazed after servicing. **NEVER** allow permanent service valves to be fitted to any part of the circuit. Service valves may leak causing further loss of refrigerant gas.

3. The refrigerant compressor fitted to the dehumidifier is a durable unit that should give many years of service. Compressor failure can result from the machine losing its refrigerant gas. The compressor can be replaced by a competent refrigeration technician.

Failure of the compressor can be confirmed by the following procedure:

- a. Establish that power is present at the compressor terminals using a voltmeter.
- b. With the power disconnected, check the continuity of the internal winding by using meter across the compressor terminals. An open circuit indicates that the compressor should be replaced.
- c. Check that the compressor is not grounded by establishing that a circuit does not exist between the compressor terminals and the shell of the compressor.

TROUBLESHOOTING

<u>SYMPTOM</u>	<u>CAUSE</u>	<u>REMEDY</u>
Little or no airflow	<ol style="list-style-type: none"> 1. Loose fan on shaft 2. Fan motor burnt out 3. Dirty refrigeration coils 4. Loose electrical wiring 5. Fuse blown 	<ol style="list-style-type: none"> 1. Tighten fan 2. Replace the fan motor 3. See <i>Routine Maintenance</i> Section 4. Check the wiring diagram to find fault and repair 5. Replace the fuse or reset the circuit breaker
Little or no water extraction	<ol style="list-style-type: none"> 1. Insufficient air flow 2. Compressor fault 3. Loss of refrigerant gas 	<ol style="list-style-type: none"> 1. Check all of the above 2. Contact the Factory Service Center 3. Contact the Factory Service Center
Little or no defrost when required	<ol style="list-style-type: none"> 1. Faulty Timer 2. Faulty bypass timer 	<ol style="list-style-type: none"> 1. Contact the Factory Service Center 2. Contact the Factory Service Center
Unit vibrates excessively	<ol style="list-style-type: none"> 1. Loose compressor mounts 2. Damaged fan 	<ol style="list-style-type: none"> 1. Tighten nuts on compressor mounts 2. Replace with a new fan
Water flooding inside machine	<ol style="list-style-type: none"> 1. Faulty water pump 2. Sticking float switch 3. Drain tray blocked 	<ol style="list-style-type: none"> 1. Replace water pump 2. Remove obstruction 3. Remove obstruction

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