

**EBAC MODEL CD30
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL**

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UNPACKING

Carefully remove the CD30 dehumidifier unit from its transit box and visually check for signs of transit damage. If there is evidence of damage DO NOT attempt to operate the unit, call your supplier for advice. Do not discard the packing, it will be useful when transporting the dehumidifier unit in the future.

INTRODUCTION

The Ebac CD30 industrial dehumidifier removes moisture from the air through the refrigeration process.

The Ebac CD30 is basically comprised of:

- A) A compressor
- B) A refrigerant evaporator coil
- C) A refrigerant condenser coil
- D) One circulation fan
- E) A drain tray for collecting and disposing of condensed moisture
- F) A solid state timer for hot gas defrost cycle
- G) An adjustable membrane-type humidistat
- H) A cabinet to house the above components

The fan draws the moist air through the cold evaporator coil which cools the air below its dew point. Moisture forms on the evaporator coil and is collected in the condensate tray which is equipped with a permanent drain. The cooled air then passes through the hot condenser coil where it is reheated using the same energy removed during the cooling phase plus the additional heat generated by the compressor. The air is, therefore discharged from the dehumidifier at a slightly higher temperature with a lower absolute humidity, than that which entered. Continuous circulation of air through the dehumidifier gradually reduces the relative humidity within the area.

The CD30 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, thereby optimizing operation at low temperatures.

The unit incorporates a welded steel chassis and is finished in an epoxy coating for resilience to damage caused by rough handling.

The CD30 dehumidifier is fitted with an adjustable humidistat to enable you to select the level of dryness.

SPECIFICATIONS

MODEL:	CD30
HEIGHT:	12"
WIDTH:	12"
DEPTH:	22"
WEIGHT:	55 lbs
AIRFLOW:	170 CFM
MAXIMUM OPERATING TEMP:	33°F
POWER SUPPLY:	115V, 60Hz
AMPS:	4
REFRIGERANT TYPE:	R134a

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.

TEST FOR CORRECT OPERATION

The following procedures should be followed to test the CD30 for correct operation.

1. After unpacking, examine all external features to confirm damage free shipment. Report all defects and damage at once.
2. Check dehumidification process:
 - a) Place unit on a level surface.
 - b) Start up unit by rotating the adjustable humidistat knob counter clockwise to the minimum setting. Plug in the unit to a grounded receptacle with a 15 amp power source. Rotate the humidistat knob clockwise to the maximum setting.
 - c) Check the compressor is running.
 - d) Leave the machine running for 15 minutes.
 - e) Observe the evaporator coils, to confirm frost formation.
 - i. If the air temperature is below 70°F, an even coating of frost should cover the entire evaporator coils, except for the last one or two coils.
 - ii. If the temperature is above 70°F, frost and/or droplets of condensed water should cover the entire evaporator coil.

If after carrying out all the above checks, the unit does not appear to function correctly refer to the section, “Trouble Shooting”, or contact your supplier.

WARNING:

- 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

<p>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.</p>
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To ensure continued full efficiency of the dehumidifier, maintenance procedures should be performed as follows:

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.

<p>WARNING: DO NOT STEAM CLEAN REFRIGERATION COILS.</p>
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2. Check that the fan is firmly secured to the motor shaft and that the fan rotates freely. **The fan motor is sealed for life and therefore does not need oiling.**
3. To check the refrigerant charge, run the unit for 15 minutes 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.
5. To check the operation of the defrost system, switch the machine on and leave it running for approximately 45 minutes. The machine will then enter "Hot Gas" defrost mode for approximately 4 minutes before returning to normal operation. If the unit will not defrost, the printed circuit timer board may be defective or the by-pass valve may be inoperable.

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 proper 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>
Unit inoperative	1. No power to unit	1. Check the power from the power supply panel.
Little or no airflow	1. Loose fan on shaft 2. Fan motor burnt out 3. Dirty refrigeration coils 4. Loose electrical wiring 5. Fuse blown or circuit breaker tripped	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	1. Insufficient air flow 2. Compressor fault 3. Loss of refrigerant gas 4. Blocked filter dryer	1. Check all of the above 2. Contact the Factory Service Center 3. Contact the Factory Service Center 4. Contact the Factory Service Center
Little or no defrost when required	1. Faulty Timer 2. Faulty bypass timer	1. Contact the Factory Service Center 2. Contact the Factory Service Center
Unit vibrates excessively	1. Loose compressor mounts 2. Damaged fan	1. Tighten the nuts on the compressor mounts 2. Replace fan
Water flooding inside the machine	1. Drain pipe blocked/frozen 2. Drain pipe too high	1. Clear the obstruction 2. No section of the drainage hose should be above the level of the water outlet

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CD30 SPARE PARTS LIST

<u>DESCRIPTION</u>	<u>QTY</u>	<u>PART NUMBER</u> <u>1133500</u>
Compressor	1	3022134
Condenser Coil	1	3020740
Evaporator Coil	1	3030175
Fan Motor	1	3040129
Fan Blade	1	130500
Timer Board	1	1132200
Humidistat	1	2017707
Humidistat Knob	1	3030421
Solenoid Coil	1	3020811
Defrost By-Pass Valve	1	3820902
Filter Dryer	1	3830211
Lo-Temp Relay	1	1013703
Cover Assembly	1	2013724
Control Panel Label	1	2013713